



West Side Transit Plan



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VOTRAN WEST SIDE TRANSIT PLAN

1.0 PURPOSE

Votran and Volusia County MPO intend to update and refine service plans for its West Side service area (Deltona, DeLand, Orange City, DeBary, Pierson); identify short-term improvements for affected fixed routes; and specify needs, opportunities and proposed feeder bus plans for integration with the proposed Central Florida Commuter Rail Transit (CFCRT) project.

The West Side Transit Plan is intended to accomplish the following objectives:

- Provide a reliable data base upon which existing services can be evaluated with respect to measures of efficiency and effectiveness.
- Evaluate existing fixed route service to develop near-term changes to route alignments, schedules, span of service and service frequencies that will improve individual routes and system productivity and align transit services with demand.
- Provide a solid foundation for future service expansion by developing system level service concepts, design guidelines and performance monitoring techniques.
- Develop service plan recommendations that can be incorporated into regional and long range transportation plans and improvements.

2.0 RELEVANT PLANS AND STUDIES

The first challenge in developing a West Side Service Plan is to understand the unique character of the urban area -- its history, demographics, land use form, travel patterns, governmental institutions, public expectations and attitudes, and the performance characteristics of its transit system. To begin this effort, the project team collected, reviewed and assimilated previous transportation and land use studies. Following is synopsis of the most relevant studies.

2.1 Votran Transit Development Plan, 2003-2007

Votran's Transit Development Plan, 2003-2007 (prepared by Center for Urban Transportation Research, University of South Florida, August 2002) contains a thorough analysis of existing fixed route and paratransit services. The TDP also presents service plan alternatives and recommendations for the entire Votran system, many of which have been implemented.

Some specific recommendations for west Volusia County routes include: (35) Implement Saturday service on the Route 60 East-West Connector, and (37) Implement more frequent service on the Route 60 East-West Connector (Reference: Pages 220, 221). Votran has since implemented Saturday service on #60, but has not yet increased the frequency of service on #60.

Votran has updating its TDP 2007-2016. The West Side Transit Plan provided input to the updated TDP.

2.2 CFCRT Environmental Assessment, Final Transit Operations Plan

The Federal Transit Administration (FTA) is serving as the lead agency in the preparation of an Environmental Assessment (EA) for the Central Florida Commuter Rail Transit (CFCRT) project. The CFCRT project sponsors include the Florida Department of Transportation (FDOT), the Central Florida Regional Transportation Authority (LYNX), and Volusia County Transit Authority (Votran).

The Alternatives Analysis (AA) study phase of the CFCRT project (completed in June 2004) concluded that the CFCRT was the Locally Preferred Alternative (LPA). The EA is being prepared to provide more detailed environmental analyses of the CFCRT. The full build option of the CFCRT is 61.5 miles long extending along the CSXT "A" Line from the DeLand Amtrak station in DeLand in the north to Poinciana Blvd in the south.



The CFCRT service includes sixteen station stops with bi-directional service on weekdays only. Commuter rail service would be operated with diesel-multiple unit (DMU) cars. The communities directly impacted by the CFCRT are DeLand, Orange City and DeBary in Volusia County; Sanford, Lake Mary, Longwood and Altamonte Springs in Seminole County; Maitland, Winter Park, Orlando, Edgewood and Meadowoods in Orange County; and Kissimmee and Poinciana in Osceola County.

The Final Operations Plan Report provides a detailed description of the bus and commuter rail operating plans for the EA project. The No-Build Alternative serves as the baseline for comparison of the other alternatives. The Transportation System Management (TSM) Alternatives will provide a basis for comparison to determine whether lower cost investments provide similar benefits to the higher investment Build Alternatives. The Build Alternatives were developed based upon the previous study (AA) which specified the 61.5-mile CFCRT corridor alignment along the CSXT "A" line from DeLand to Poinciana.

The Build Alternatives feature all of the transit services and projects included in the No-Build Alternative with the addition of commuter rail services along the CSXT "A" line tracks. Commuter rail service would be operated with diesel-multiple unit (DMU) cars that can be operated singly or coupled together to form multiple unit trains.

Local and circulator bus routes in the CFCRT north and south corridors would be modified to feed commuter rail stations, with headway and span of service changes that would be compatible with the proposed commuter rail service. New local and circulator bus routes would provide improved connections between the commuter rail line and nearby activity centers and/or residential neighborhoods. Duplicate local and/or express route service would be reduced or eliminated.

Three Build Alternatives were tested and evaluated: (1) "Full" Build, a 61.5-mile commuter rail line between DeLand and Poinciana Boulevard; (2) Locally Preferred Alternative, a 53.5-mile line the between Saxon Boulevard extension in DeBary and Poinciana Boulevard; and (3) Initial Operating Segment, a 31.0-mile line from the Saxon Boulevard extension to ORMC/Amtrak.

"Full" Build – DeLand to Poinciana Boulevard

The "Full" Build alternative would extend from the DeLand Amtrak station to Poinciana Boulevard, a distance of 61.5 miles, via the CSXT "A" line. Sixteen (16) stations would be located at: DeLand, Saxon Boulevard

extension (DeBary), Sanford Amtrak, Lake Mary, Longwood, Altamonte Springs, Winter Park, Florida Hospital, LYNX Central Station, Church Street, ORMC/Orlando Amtrak, Sand Lake, Meadow Woods, Osceola Parkway, Kissimmee Amtrak, and Poinciana Boulevard. Park & Ride facilities would be provided at all stations except Florida Hospital, LYNX Central Station, and ORMC/Orlando Amtrak.

Commuter rail stations would have the following access/egress facilities and/or passenger amenities:

- Park & Ride spaces (where applicable)
- Kiss & Ride spaces (where applicable)
- Bicycle racks or lockers (where applicable)
- Bus bays (where applicable)
- ADA accessible station platforms
- Canopy(s) for weather protection
- Benches or seating
- Ticket vending machines
- Lighting
- Public address communications system
- Public and/or emergency telephones
- ADA-compatible signage
- Arts and landscaping (station specific)

Commuter Rail Service Plan

Commuter rail service would be operated on weekdays, approximately 260 days per year. The proposed service plan features 15-minute service during the AM and PM peak periods, 60-minute service during the midday, and 120-minute service during the early evening.

Commuter Rail Operating Requirements

Operating requirements for the "Full" Build Alternative are summarized in Table 1. Station-to-station run times were simulated based on propulsion and braking characteristics of the DMU vehicle, engineering track plans, and maximum allowable speeds through each track section. The estimated terminal-to-terminal run time is 93:12 (min:sec).

Fourteen (14) trainsets would be required to operate the service plan. All trains would be dispatched to/from the Sanford yard in the a.m. and p.m. Limited midday train storage would be available at the end of line stations. The peak period schedules would require 21 bi-level DMUs and seven (7) single-level DMUs. The total fleet, including maintenance spares, would be 34 DMUs – 26 bi-level and eight (8) single-level DMUs.



Table 1. Operating Requirements for “Full” Build Alternative

PARAMETER	VALUE
Peak Passenger Cars	28
Peak Trainsets	14
Annual Revenue Train-Hours	25,480
Annual Revenue Car-Hours	50,960
Annual Revenue Train-Miles	880,298
Annual Revenue Car-Miles	1,760,595
Directional Route Miles	120.9
Stations	16
Daily Revenue Train Trips	56

Feeder Bus Service Plan

The Full Build feeder bus service plan for west Volusia County featured the implementation of one new local route, described below, and peak period service frequency improvements on local routes #20 and #60 (from 60 to 30 minutes) and #21 and #22 (from 120 to 60 minutes).

A new route, DeLand/Seminole Towne Center, would begin at Northgate Plaza in DeLand and operate south to the Seminole Towne Center Mall via US 17/92, County Road 15, and County Road 46. Service would operate every 30 minutes during peak periods and every 60 minutes during midday periods and on Saturdays.

Table 2 presents the Votran bus routes that would serve the proposed commuter rail stations and the optimum number of bus bays required (subject to available right-of-way).

Table 2. Votran Feeder Bus Routes for “Full” Build Alternative

STATION	BUS ROUTES	BUS BAYS
Deland	20, 24, 60	3
Saxon Blvd. (DeBary)	21, 22, New (23)	4
Sanford	New (23)	3

Table 3 summarizes the peak and fleet buses, annual revenue bus-miles and annual revenue bus-hours for the “Full” Build Alternative.

Table 3. “Full” Build Alternative Votran Bus Operating Requirements

PEAK BUSES	FLEET BUSES	ANNUAL REVENUE BUS-MILES	ANNUAL REVENUE BUS-HOURS
22	26	1,355,815	87,904



The commuter rail feeder bus service plan, described above, will be reevaluated when the CFCRT project advances into the design phase. Input from this West Side Service Plan will be an important input to the modified CFCRT feeder bus plan.

2.3 2025 Long Range Transportation Plan

The 2025 Long-Range Transportation Plan prepared by the Volusia County MPO (Adopted Nov. 22, 2005; Amended Jan. 24, 2006) describes a network of roadway, public transportation and other improvements that would be implemented in two phases: Phase 1 – Year 2006 through 2010, and Phase 2 – Year 2010 through 2025. Table 4 lists the Public Transportation projects included in the Cost Feasible 2025 LRTP.

Table 4. 2025 Cost Feasible LRTP Public Transportation Projects

PROJECT	ESTIMATED COST
Phase 1 (2006 – 2010)	
Commuter Rail	\$11,822,225
Commuter Rail Bus Service	\$117,596
DeLand Intermodal Center	\$6,230,504
Flagler Co. Bus Facility	\$501,600
Phase 1 Subtotal	\$18,671,925
Phase 2 (2011 – 2025)	
Commuter Rail	\$35,466,686
Transit Capital & Operations Projects	\$35,130,764
Phase 2 Subtotal	\$70,597,450

The Public Transportation share of the total Phase 1 estimated cost (\$359.4 million) is 5.2 percent and the share of the total Phase 2 cost (\$903.9 million) is 7.8 percent.

2.4 FY 2005-2006 to FY 2009-2010 Transportation Improvement Program

The purpose of the Transportation Improvement Program (TIP) is to identify all federal and state funded transportation projects that have been scheduled for implementation in Volusia County during the FY 2005/2006 to FY 2009/2010 timeframe. The projects listed in the TIP include improvements to the County’s highway, public transportation and aviation systems, as well as bicycle facilities, sidewalks, and other enhancement projects.



All projects included in the TIP have been drawn from the MPO's adopted Long-Range Transportation Plan (described above). The projects are consistent with FDOT's Five-Year Adopted Work Program, Votran's Transit Development Plan, and all approved local government comprehensive plans located within the planning area boundary of the MPO. Table 5 lists the Public Transportation projects and projected funding levels listed in the FY 2005/06 to FY 2009/10 TIP.

Table 5. FY 2005/06 to 2009/10 Transportation Improvement Program

Project	Description	2005/06	2006/07	2007/08	2008/09	2009/10
2470841	5311 Operating Assistance	215,304	307,947	0	0	0
2470851	5307 Operating Assistance	12,669,399	13,095,009	0	0	0
2470861	STP Capital Bus Purchase	2,564,425	1,780,987	3,655,200	0	0
2470871	5303 PTO Studies	165,591	0	0	0	0
4046161	5307 Operating Assistance	0	0	13,957,436	14,906,166	14,756,397
4073651	5311 Operating Assistance	0	0	323,335	339,667	360,088
4077621	New Smyrna Beach Transfer	0	0	155,355	0	0
4093481	5307 Capital Equipment	6,875,000	0	0	0	0
4127391	5307 Capital Equipment	0	6,528,000	0	0	0
4131571	Daytona Beach Amtrak	1,717,820	0	0	0	0
4161771	Commuter Assistance	124,284	144,998	0	0	0
4161781	STP Capital Bus Purchase	0	0	0	6,054,412	1,821,825
4170441	5307 Capital Equipment	0	0	7,125,000	0	0
4170451	5307 Capital Equipment	0	0	0	7,312,200	0
4179691	5303 PTO Studies	0	0	155,355	155,355	0
4179731	5303 PTO Studies	0	0	0	0	155,355
	Total	24,331,823	21,856,941	25,371,681	28,767,800	17,093,665

Note: 5307 Operating Assistance includes local funding.



2.5 Growth Management Plans

This section briefly describes the physical and socio-economic characteristics of the West Side service area and summarizes the growth management plans of affected West Side jurisdictions as it relates to land use and transportation policies and programs.

2.5.1 Service Area Description

Volusia County has developed around its natural environment, and has two distinctive developed areas, divided into an east and west side. The two sides are divided by a central area that is primarily wetlands and wildlife refuges. The east and west sides are connected by I-4, US 92 and SR 44. The east side includes 47 miles of shore along the Atlantic Ocean, and includes Daytona Beach, New Smyrna Beach and Ormond Beach. Development has occurred along the ocean, and along the US 1 and I-95 corridors. The west side of the county has developed along one of the historic Florida highways, US 17, local lakes and the St. John's River. The west side includes the county seat, DeLand, which contains Stetson University, Florida's oldest private university, as well as the county's largest city in physical size and population, Deltona.

Other than tourism which is the predominate activity on both the east and west sides, the major industries of Volusia County include medical supplies, mechanical and electronic components, citrus juices, skin care products, plastics and other manufacturing and commercial activities. The county is the home of five universities or colleges, numerous parks and recreational area, and several art centers, museums and area of cultural interests. The county consists of 16 incorporated areas that contain more than 75% of the county's population. The incorporated and unincorporated areas that are located in western Volusia County are briefly described below.

Barberville

This small unincorporated community was established in 1882, and is located at the intersection of US 17 and Tomoka Road southeast of Pierson. It is known for its Pioneer Settlement for the Creative Arts where "old Florida" crafts such as weaving, quilting, blacksmithing, log milling and cane grinding are taught. Like much of the area north of DeLand, this area's economy is based on tourism and agriculture. The majority of the commercial development is located along US 17. Barberville has existing transit service, with limited headways (#24).

Cassadaga

This small unincorporated town is located south of Lake Helen and east of I-4. It is home of the Southern Cassadaga Spiritualist Camp Association, which was established in 1894, and is the oldest continuously active religious community in southeastern United States. The town consists of several tourist related facilities including three restaurants and a hotel. This area, due to its small size and remote location, does not have existing transit service.

DeBary

The City of DeBary was incorporated on January 1, 1994. It is located in the southwestern corner of Volusia County along US 17-92, just south of Orange City. It is bordered by the St. John's River to the west and I-4 to the east. The city is primarily residential, with a small town character. The primary commercial is along US 17-92, with small retail shops and restaurants. The town's major attraction is the DeBary Mansion, named after the town's namesake Baron Frederick DeBary, which is on the National Registry of Historic Places. DeBary has existing transit service (#20).

DeBary will be the location of a future commuter rail station. The Saxon Boulevard Extension/DeBary station is located along the CSX Railroad tracks and a planned extension to Saxon Boulevard. Saxon Boulevard is a four to six lane major arterial that currently runs from SR 417 in Deltona to US 17-92 in DeBary, with a major interchange at Interstate 4 to the east of the proposed commuter rail station. Progress Energy owns much of the land surrounding the proposed station, as well as the land along the Saxon Boulevard extension. The road extension and commuter rail station will help generate economic development in the corridor. In addition, Votran plans to construct a West Side service facility near the station.

DeLand

DeLand was founded in 1876, is the oldest city in western Volusia County and has been the county seat since 1888. DeLand is located at the junction of US 17 and US 92, as well as SR 44, along the east bank of the St. John's River. The city is the home of Stetson University, and has a historic downtown business and shopping district, as well as diverse residential areas. The area surrounding the city is quickly growing in planned developments. The city's economic base includes technical industries, agribusiness, aviation related and marine products. The majority of the commercial is along US 17, US 92 and SR 44. DeLand has existing transit service (#20 and #60), focused on US 92 and US 17-92. In addition, DeLand has one of the two major transfer centers for the West Side (Northgate Shopping Plaza).



DeLand is planning an intermodal station, to be located at the south end of downtown. It will be located in the northeast quadrant of the intersection of US 17-92 (South Woodland Boulevard) and East Euclid Avenue, with access on South Alabama Avenue. The planned Intermodal Center would serve Votran fixed route service, Greyhound Bus Lines, local taxi service, park and ride lot and will accommodate bicyclists, as well as pedestrian travelers. This facility will also serve and accommodate parking for the Melching Field at Conrad Park, the Earl Brown Park and Sports Complex, as well as a centralized location to serve the downtown area.

The City of DeLand also has future plans for a trolley circulator bus route that would serve the new Intermodal center and downtown DeLand. However, this trolley circulator project is currently not funded or programmed for implementation.

In addition, DeLand will be the location of a future commuter rail station. Located several miles west of downtown DeLand, the DeLand Amtrak station is a short distance from Hontoon Island State Park, Florida Hospital DeLand, DeLand's downtown historic district, and other amenities including the St. John's River. The proposed station is on SR 44, which provides access to most of central Volusia County as well as Lake County. In addition, the area immediately surrounding the station provides a unique redevelopment opportunity for local residents and elected officials to serve commuter rail passengers in one of the fastest growing residential areas of the state.

DeLeon Springs

DeLeon Springs is an unincorporated community located along US 17, north of the city of DeLand. DeLeon Springs State Recreation Area is a popular attraction, where explorer Ponce DeLeon discovered what he thought was the Fountain of Youth. The area contains a large horse training facility. Other than tourism, its economy centers on agriculture, service industry and small industrial businesses. The majority of the commercial development is located along US 17. DeLeon Springs has existing transit service (#24), with limited headways.

Deltona

Deltona was first developed in 1962 and was incorporated in 1995. Deltona is the largest city in Volusia County, and is located on the north bank of Lake Monroe, east of I-4. This city is a large planned development that is popular with retirees and younger families, who often commute to Daytona Beach or Orlando metropolitan areas. Deltona has existing transit service along its major streets (#20, #21 and #22), and is the current location of the West Side maintenance facility.

Lake Helen

This small incorporated city is located just north of Cassadaga, east of I-4. This area is known for its recreational activities, but has a growing film production business. Like DeLand, this area has experienced recent growth in planned developments on its outskirts. However, much of the growth is in large estate lots. This area, due to its size and remote location, does not have existing transit service.

Orange City

Located in southwestern Volusia County between US 17-92 and I-4, Orange City was founded in 1875 as a citrus town and was later incorporated in 1882. Today, Orange City is the growing retail center for the US 17-92 corridor on the west side of the county. The city is also known for its recreation activities and for Blue Springs State Park, the manatee refuge area. Orange City has existing transit service (#20), and contains one of the West Side's transfer centers (Marketplace Shopping Center).

Pierson

Pierson is located in the northwestern of Volusia County along US 17 between the small municipalities of Barberville and Seville. The community was originally founded in the 1800's as Piersonville, and is the northernmost incorporated town in the county. Most of the employment in the area is in agriculture, and the area is primarily noted for the ferns that are grown there and shipped worldwide. The majority of the commercial development is located along US 17. Pierson has existing transit service (#24), with limited headways.

2.5.2 Growth Management Legislation

In reviewing land use and transportation programs within the State of Florida, it should be noted that comprehensive planning is deeply rooted in state statute and law. That is, a city or county comprehensive plan is not just a vision or master plan for the respective jurisdiction as it is elsewhere in the nation; the comprehensive plan is a legally binding document that must be followed, monitored, reevaluated and updated periodically. The land use and resulting capital infrastructure must be financially feasible, and no development can occur within the jurisdiction without the needed facilities being in place at the time of impact (known as concurrency). Furthermore, there is a minimum level of service requirement for all facilities, especially transportation (including transit), which must be met in order for development to occur. There have been recent changes to Florida's growth management legislation, which encourages implementation of multi-modal transportation districts, permits concurrency free zones that mandate transit, and require Transit Orient Development

(TOD) goals, objectives and policies as well as Land Development Code requirements for TOD development.

The following paragraphs present an overview of Florida's growth management legislation, and land use and transportation element requirements. This is followed by a brief overview of the significant or relevant growth management plans for west Volusia County.

Legislative Overview

Adopted by the 1985 Legislature, Florida's Growth Management Act (Chapter 163, Part II, Florida Statutes, the Local Government Comprehensive Planning and Land Development Regulation Act) requires all of Florida's 67 counties and 410 municipalities to adopt Local Government Comprehensive Plans that guide future growth and development. Comprehensive plans contain chapters or "elements" that address future land use, housing, transportation, infrastructure, coastal management, conservation, recreation and open space, intergovernmental coordination, and capital improvements. A key component of the Act is its "concurrency" provision that requires facilities and services to be available concurrent with the impacts of development.

The Florida Legislature first visited the subject of growth management in 1972 with the adoption of two land use programs within Chapter 380, F.S. (the Environmental Land and Water Management Act): Section 380.05, F.S., to protect Areas of Critical State Concern through state designation; and Section 380.06, F.S., to regulate developments of regional impact (large scale developments with multi-jurisdictional impacts) through regional and state oversight by means of an appeal process. The laws adopted during the 1984-86 period established Florida's growth management system, including the adoption of a state comprehensive plan. It also required regional planning councils to prepare and adopt comprehensive regional policy plans consistent with the state comprehensive plan.

The Growth Management Act requires the Department of Community Affairs (DCA), Division of Community Planning, to review comprehensive plans and plan amendments for compliance with the Act. Other review agencies, including the regional planning councils, water management districts, the Departments of State, Transportation, Environmental Protection, and Agriculture, and the Florida Fish and Wildlife Conservation Commission also review comprehensive plans and amendments and issue recommended objections to DCA. Local governments may amend their comprehensive plans twice per year under strict review and guidelines from DCA. These comprehensive plans are binding in law. Land use plans must be adhered to, and the resulting capital

improvements must be financially feasible and contained in an adopted, legally binding work program. Local governments are required to develop future land use plans that reduce the transportation and environmental impacts of growth, focusing on new urbanism and Transit Oriented Development land development techniques mandated by law.

Transportation and Land Use Elements

Chapter 163.3177 F.S. requires that the local governments prepare a transportation element, which addresses:

- Traffic circulation (including major thoroughfares and other routes, bicycle and pedestrian ways;
- All alternative modes of travel, such as public transportation, pedestrian, and bicycle travel;
- Parking facilities;
- Aviation, rail, seaport facilities, access to those facilities, and intermodal terminals;
- Availability of facilities and services to serve existing land uses and the compatibility between future land use and transportation elements;
- Airports, projected airport and aviation development, and land use compatibility around airports; and
- Identification of land use densities, building intensities, and transportation management programs to promote public transportation systems in designated public transportation corridors so as to encourage population densities sufficient to support such systems.

The element may include transportation corridors intended for future transportation facilities. If transportation corridors are designated, the local government may adopt a transportation corridor management ordinance.

The element which has the most impact on the transportation element is the future land use plan element, which designates proposed future general distribution, location, and extent of the uses of land for residential uses, commercial uses, industry, agriculture, recreation, conservation, education, public buildings and grounds, other public facilities, and other categories of the public and private uses of land. The jurisdictions within the service area of the proposed Central Florida Commuter Rail project have, through their growth management plans, ensured or are working to ensure optimization of both the future land use and transportation elements. That is, they have maximized or will maximize land use to its highest and best use, while identifying and hopefully minimizing the roadway improvements required of that land use plan due to the implementation of transit improvements.

Inversely, the element that the transportation element has the most impact on is the capital improvements element, which contains a schedule of capital improvements, including publicly funded projects, and may include privately funded projects for which the local government has no fiscal responsibility, necessary to ensure that adopted level-of-service standards are achieved and maintained. The capital improvements element must include transportation improvements included in the applicable metropolitan planning organization's transportation improvement program to the extent that such improvements are relied upon to ensure concurrency and financial feasibility. The proposed Central Florida Commuter Rail project is contained in those plans and programs, and it is hoped that the corresponding West Side Service Plan improvements will be contained in the updated capital improvements element. The schedule must also be coordinated with the applicable metropolitan planning organization's long-range transportation plan. The region's growth management plans have identified financially feasible multi-modal improvements including commuter rail, and have established goals, objectives and policies that ensure that the county implements a multi-modal transportation system.

2.5.3 West Volusia Comprehensive Plans

The following paragraphs provide an overview of the West Side's comprehensive plans, focusing on the Future Land Use and Transportation Elements. Not all of the respective local government's goals, objectives or policies will be listed or analyzed. It is the intention to outline the major policies that impact the provision of transit in the respective jurisdiction or those unique items that creatively address transit or future transit provision.

Volusia County

The current Future Land Use Element establishes the pattern of land uses and location of urban growth for Volusia County through 2020. This element represents the growth policy from which Volusia County ensures that physical expansion of the urban areas are managed: (1) at a rate to accommodate projected population and economic growth; (2) in a contiguous pattern centered around existing urban areas; and (3) in locations which optimize efficiency in public service delivery and conservation of valuable natural resources. The overall direction of the Future Land Use Element evolves around what has been referred to as the "Urban Service Concept." The future land use pattern will be influenced by the availability of urban services. New urban growth will be encouraged adjacent to the major cities that have a full range of urban services or inside County service areas. County service areas may include undeveloped land inside or near existing unincorporated urban areas

where the developer agrees to provide necessary urban services through private means.

The Comprehensive Plan has two future land use designations which may have an impact on transit. The first is the Urban High Intensity (UHI). These are areas that contain residential development at a range of 8.1 to 20 dwelling units per acre. The types of housing allowed under this category include recreational vehicle, townhouse, low-rise apartments, and high-rise condominiums. The area should contain excellent transportation access, primarily via the arterial road network and be served by public transportation (where available). This category may allow business centers or shopping center that meet specific criteria.

The second designation is an Activity Center. These are areas planned to accommodate a range of activities from employment-based office and industrial activities to support and ancillary uses such as commercial services, recreational facilities, and housing. Design, aesthetics and environmental protection and enhancement are emphasized as part of the development. Activity Centers are intended to be high-intensity design unified areas which will contain a concentration of different urban functions. The concentration of these economic uses provides the chance for the efficient provision of public facilities, such as transit. The location of Activity Centers has been targeted near major transportation nodes, such as airports, railroads, or interstate interchanges. Public transportation also should be a key ingredient in a successful Activity Center.

The Future Land Use Map indicates both existing and proposed Activity Centers in the unincorporated areas that are not currently in west Volusia County. The new centers are encouraged in areas having the following qualities: excellent county-wide accessibility; compatibility with future surrounding development; and programmed provision of public services. This designation indicates that Volusia County will encourage and support such development. The County should give emphasis to providing public mass transit service to all Activity Centers. Three areas have been identified in the unincorporated portions of Volusia County as initial Activity Centers. While there are no activity centers in the immediate service area, the three identified locations on the Future Land Use Map do not preclude the proposal of Activity Centers in other locations.

With regards to objects and policies in the Future Land Use Element, it is required that all neighborhood, community and regional shopping centers shall include bicycle parking areas, and where appropriate, bus bays or shelters to encourage alternative transportation modes. In addition, regional shopping centers should be served by mass transportation routes



and designed to accommodate mass transit riders, vehicles and amenities.

Features of the Transportation Element include transit route system expansions and higher frequency of bus service. Systems of future bicycle and sidewalk facility improvements are also envisioned. Increased future transit service and improved bicycle and pedestrian features could dramatically enhance the quality of service provided by these modes of travel. The plan indicates that Volusia County shall consider multimodal terminals and access to multimodal facilities, where applicable, in its assessment of future transportation needs, and support state-wide high-speed, regional commuter, and/or light rail in Volusia County. Volusia County is working to establish land use, site, and building design guidelines for development in exclusive public transportation corridors to assure the accessibility of new development to public transportation, and to establish criteria for the provision of passenger amenities along major public transportation corridors. As part of this, the county is working with the municipalities to establish programs directed toward financing public transportation passenger amenities to enhance the attractiveness of public transportation usage. In addition, the county is coordinating with the Volusia County MPO to ensure that the provision of public transportation is considered in lieu of or part of major transportation construction projects.

With regard to roadway facilities, Volusia County discourages, through policy, the use of dead-end streets, loop streets, and oversized blocks in favor of through-streets (collectors) and shorter blocks; provide cut-throughs for pedestrian access to public transportation; and promote landscaping of rights-of-way. The Transportation Element is coordinated with the Future Land Use Element to ensure that future high intensity areas are served by public transportation.

With regard to service level provision, Volusia County is coordinating with the Volusia County Metropolitan Planning Organization (MPO) and other related agencies to achieve and maintain levels of service on the thoroughfare system as well as for mass transit services. Volusia County has established and is attempting to maintain level of service standards for fixed route public transportation as shown on the Public Transportation System Map. The development community shall provide fixed route public transportation when the plan specified minimum residential and non-residential floor space areas are exceeded.

City of DeBary

The Future Land Use Element of the DeBary Comprehensive Plan contains policies that designate the areas near the city center near as a

Commercial Village/Village Center. The design of development projects in these areas, according to the comprehensive plan should include consideration of pedestrian circulation, access to the transit system, and vehicular circulation and parking. Where possible, parking needs must be fulfilled in coordination with nearby uses, through joint parking practices and principles. The DeBary Comprehensive Plan includes requirements to encourage reduction in parking where individual users must share a common parking area and driveways. Projects must provide an internal network for pedestrian circulation, linked to the larger network. The development review process assists in the elimination of individual parking areas in order to meet parking needs on an area wide basis.

According to the Comprehensive Plan land use with the Commercial Retail designation, which is along the US 17-92 frontage, must be in well-integrated commercial centers which function efficiently. These areas will be served by coordinated parking areas and traffic circulation systems, which will be well designed from the perspective of pedestrians and bicyclists, and must be easily accessible by transit. The Comprehensive Plan also requires in the Commercial Retail designation that on-site parking will be adequate to serve the needs of the uses and activities on the property. Where special conditions exist (such as in a redevelopment area, in a transit station area, or in an area of intensive mixed uses) parking will be provided on an overall basis, rather than on a site by site basis, and provisions will be required to assure legal access for joint use.

Finally, the Plan requires that provisions will be made to facilitate pedestrian circulation and use of bicycles and transit in all land use designations. Such provisions will include a comprehensive system of sidewalks, separate secure bicycle parking areas, transit bus shelters and bus pullouts, and (where appropriate) design of the on-site circulation to facilitate through movement by bus traffic.

The Transportation Element of the City of DeBary Comprehensive Plan contains the policy to obtain future rights-of-way through dedication and/or reservation or future purchase. Where this is accomplished, consideration may be given to density increases, changes in use, modification of environmental boundaries and/or other measures. This will be critical in the development of the future commuter rail station area to allow for higher density and intensity development. This, coupled with a future designation of Commercial Village/Village Center will allow the area to develop according to Transit Oriented Development practices and principles.

City of DeLand

The City of DeLand's Future Land Use Element contains several land use designations which could encourage the use of transit service. These include medium density residential (up to 12 units per acres), high density residential (up to 16 units per acre), community and regional shopping center, downtown commercial, mixed commercial (residential, office and retail), mixed office residential, and activity center designation. The last designation is very important, as activity centers are designated adjacent to major transportation facilities such as rail lines, major highways, and major intersections. The Future Land Use Element has policies that encourage infill and redevelopment districts, which require Transit Oriented Development (TOD) design practices, "smart growth" techniques and the provision of mass transit services.

The Transportation Element contains policies that support the provision of transit service. These policies include, but are not limited to provisions for transit friendly site design for roadway layout, the integration of land use and transportation planning efforts to ensure effective land development that reduces the need for the single occupant auto, and the promotion of alternative modes of transportation.

According to the Deland Intermodal Transportation Facility Project Outline (June 2005), the City of DeLand is preparing to designate a Multimodal Transportation District, as allowed under Chapter 163 F.S., to facilitate the ease of pedestrian, bicycle and vehicular travel. The City intends to implement the following:

- Create a Multimodal Transportation District as part of the Comprehensive Plan Update.
- Reserve vacant or redeveloped areas inside the district with higher densities and intensities.
- Implement bicycle and pedestrian Level of Service enhancements, which include sidewalk construction and DeLand Greenway improvements.
- Explore means of enhancing public transit services including the downtown circulator concept.

The Intermodal Transportation Facility (ITF), previously mentioned in this section, will provide connections to local mass transit services, interstate bus passenger carrier service, a satellite parking facility, and will serve as a destination for the DeLand bike way system, as well as providing other services to the community. This facility will become an integral part of the multimodal transportation district. According to the Project Overview, the DeLand ITF would serve as the hub for the "Westside Super Stop" service and expansion of intermodal transit centers in the County. The paratransit

services would be tied into the ITF allowing passengers having adequate mobility to transfer to accessible bus routes.

In addition to improved transit service throughout the West Volusia area, the ITF Project Overview indicates the facility would enable the bus network to be modified to work more efficiently. The transit network could include:

- Neighborhood Circulator Routes (Multi-Modal District)
- Activity Center Circulators
- Local Bus Routes
- Point to Point Express Routes
- Demand Responsive Services
- A Park and Ride Facility

According to the Project Overview, the goal of a multimodal transportation district is to facilitate the use of multiple modes of transportation, leading to reduced automobile use and fewer vehicle miles traveled. The boundaries of the Multimodal District include Hill Avenue to the East, Beresford Avenue to the South, Plymouth Avenue to the North, and Boundary Avenue to the West. Analysis to support the designation of a multimodal transportation district will demonstrate that the City of DeLand will provide an adequate level of mobility and accessibility within the district and reflect the minimum community design elements outlined in the Growth Management Act as follows.

- The district will provide a diverse and complementary mix and range of land uses, including residential, educational, recreational, and cultural uses.
- The district will provide an interconnected networks of streets designed to encourage walking and bicycling use, with traffic-calming where desirable;
- The district will provide the appropriate densities and intensities of land uses within walking distance of transit stops.
- The district will provide daily activities within walking distance of residences, allowing independence to persons who do not drive; public uses, streets, and squares that are safe, comfortable, and attractive for the pedestrian, with adjoining buildings open to the street and with parking not interfering with pedestrian, transit, automobile, and truck travel modes.

In addition to these four criteria, Florida's Growth Management Act prescribes that local government agencies must demonstrate through a professionally accepted multimodal analysis that the area will provide an



adequate level of mobility using multimodal level of service criteria that rely primarily on modes of transportation other than private motor vehicles.

In addition, according to the Project Overview, the City of DeLand envisions a circular shuttle (trolley) service through the core of DeLand during peak hours, providing pedestrian travelers an efficient way of moving throughout the downtown area, reducing traffic congestion on Woodland Boulevard. Transportation between the County Administration building, County Courthouse, City government buildings, the commercial district, and the Stetson University campus will be made more convenient for pedestrian traffic. The ultimate goal of the shuttle service is to move people efficiently without having to move their cars. In order for the shuttle to better compete with the private automobile, service frequency must be increased especially during peak hours.

The aim of the future transit service is to fully integrate the Multimodal District and provide a proficient way for travel throughout the City between Volusia, Seminole and Orange counties using mass transit. By utilizing existing services, such as Votran, and connecting them through the ITF, travel in the City and between the surrounding areas of Volusia County will help reduce traffic congestion on I-4 and other major roadways.

Finally, the City of DeLand is in the process of implementing a citywide bicycle and pedestrian system and making the City more "bicycle-friendly". Creating "bicycle-friendly" streets in DeLand means designing and operating streets with the needs of bicyclists considered. Specifically, "bicycle-friendly" mean law-abiding motorists, bicycle lanes on roadway and pedestrian corridors, and traffic calming on neighborhood streets.

Deltona

Like the Volusia County Growth Management Plan, the City of Deltona's Future Land Use Element requires that all neighborhood, community and regional shopping centers shall include bicycle parking areas, and where appropriate, bus bays or shelters to encourage alternative transportation modes. Regional shopping centers should be served by mass transportation routes and designed to accommodate mass transit riders, vehicles and amenities.

In addition, the City has established a Deltona Activity Center Designation. This designation is located in the State Road 472/Saxon Boulevard/Interstate 4 corridor, and has provisions that seek to promote mass transit service and pedestrian access to the Activity Center; that encourage site design and use that provides internal trip capture; that promotes traffic reduction, which may include, but may not be limited to, the feasibility of adopting a traffic reduction ordinance, requiring a



transportation management agreement as a condition of project approval, the formation of traffic management areas, and the possible establishment of a transportation concurrency management area; that are designed to encourage the internal movement of mass transit vehicles (only where the size/intensity of the proposed development warrants such considerations), and provide preferential off-street parking locations for carpool and vanpool usage; and that provide appropriate pedestrian linkages, internal trip capture, and reduced impact on thoroughfare roads. The polices also indicated that the City shall coordinate with FDOT and Votran to identify appropriate sites and establish an area inside the Activity Center for a multi-modal transportation facility such as a high occupancy vehicle facility that may be developed along I-4 and/or to serve other regional mass transit uses.

With regard to the Transportation Element, the comprehensive plan text devotes several pages to an analysis and description of existing and potential Votran service, as well as the issues and opportunities surrounding the future provision of rail and bus transit. In addition, the community vision sessions that were held in association with the comprehensive plan exercise indicated that increased transit access was a key desire and critical for the future of Deltona.

With regard to policies, the City of Deltona is required to coordinate with the Florida Department of Transportation, Volusia County, and Votran to implement programs as appropriate to provide a safe, convenient, and efficient motorized and non-motorized transportation system, to ensure efficient mass transit availability to the residents of Deltona, and to ensure the transportation disadvantaged population is adequately served by transit. Policies in the element require the City to strive towards the coordination of a public transit system to help meet the City's transportation needs and at an acceptable level of service.

The policies require that, where appropriate, City transportation projects, new or expanded, shall include: bicycle facilities, sidewalks (except in controlled access facilities), parking bays for buses, and passenger shelters for both public and private bus or ride sharing programs. The City may consider, as applicable, an exception from the concurrency requirements for transportation facilities if the proposed development is otherwise consistent with the adopted local government comprehensive plan and is a project that promotes public transportation or is located within an area designated in the comprehensive plan for: Urban Infill Development, Urban Redevelopment, or Downtown Revitalization.

3.0 PUBLIC INVOLVEMENT

Effective service planning is not conducted in a vacuum. As part of the public involvement tasks, several interviews, via e-mail, survey form and by telephone, were conducted with key West Side community leaders, identified by Votran staff. In addition, informal interviews with Votran bus operators, road supervisors, and service planners were conducted face to face and through a survey instrument. Finally, several meetings were held with key Votran staff at the beginning of the study and after preliminary service plans had been developed in concept. These key stakeholder and staff interviews aided the project team to elicit attitudes and opinions regarding current Votran service and possible service enhancements, as well as garner support for the implementation of those enhancements.

3.1 Stakeholder Interviews

A stakeholder interview is a one-on-one discussion with an individual recognized as a community leader, elected or appointed official, agency staff member and/or neighborhood activist from the study area. The stakeholders identified by Votran staff represented various audiences and target groups. Approximately 10-12 stakeholder interviews with West Side community leaders were attempted, the majority of which were identified by Votran. The number of successful interviews was about 50% of the amount attempted. The interviews enabled the study team to learn about the stakeholder's current perceptions of Votran and thoughts about future service enhancements.

3.1.1 Proposed Service Improvements

As part of the interview, stakeholders were asked to rank (1 through 5) a list of nine (9) potential improvements to West Side service. This list included the following improvements:

- More frequent service
- Later evening service
- Later morning service
- Sunday service
- More, closer bus stops
- More bus shelters
- Better transfer connections
- Better route and schedule information
- New routes

With one exception, the potential service improvements that received the least emphasis were later evening service, later morning service and

Sunday service. The last two received no support, while later evening service was ranked first in one interview, but was not ranked at all in others. Inversely, the potential service improvements that received the most interest included more frequent service (highest interest and highest number of first place rankings), more, closer bus stops (highest number of second place rankings), better transfer connections (highest number of third place rankings), more bus shelters (highest number of fourth place rankings) and new routes (several high and several lower rankings).

It was clear from the interviews that more frequent service, coupled with ease of transfer and passenger amenities is desired by the West Side stakeholders. New routes also appeared to garner interest by the group.

3.1.2 Existing Service Levels

The next set of questions addressed existing serviced levels, including those of Routes 20, 21, 22, 24, and 60/61. Surprisingly, given the response summarized above regarding potential service improvements, there was little response to this issue. The one exception was a citizen/customer stakeholder, who indicated that the West Side transit service needed extended evening hours, and earlier morning service to accommodate working class on all routes.

3.1.3 Route Modifications

With regard to route modifications, the stakeholders were asked as to whether there were any existing routes that require modification. One re-occurring suggestion included extending Route 20 east from US 17-92 on Voorhis Ave. to the Daytona Beach Community College (DBCC) Westside campus. One citizen/customer indicated that from a user standpoint, it appears that Routes 21 and 22 run over the same ground, with no service to the aforementioned community college and that many well-populated neighborhoods are excluded altogether from service. One suggestion was that the existing buses could cover more areas if dispatched and routed differently. The suggested service would include four buses. Of these buses, one bus would run up and down US 17-92 all day, one bus would serve greater DeLand, one bus would serve Orange City/Deltona and one bus would serve Deltona/DeBary. Connections would be focused at key location/transfer points along US17-92.

3.1.4 New Services

The stakeholders were asked if there were any areas in west Volusia County where new services should be implemented. In general, it was indicated that the West Side routes cover most of the basic major generators and attractors. As in a previous question, it was pointed out that the only attractor where a route currently does not connect with is the DBCC Westside campus. Again, it was suggested that a route going east on Voorhis Avenue connecting to the DBCC campus might be reasonable, and would provide service to many low income and elderly residents along Voorhis Avenue.

There was a suggestion that service be added that includes the Victoria Park community in DeLand. The suggested service would extend from downtown DeLand to the area near the intersection of Martin Luther King Boulevard and Orange Camp Road in DeLand.

3.1.5 Passenger Amenities/Other Facilities

Finally, stakeholders were asked about other services, passenger amenity (stops, shelters, transfer area), or facilities recommendations that they thought needed to be addressed in the West Side Study. It was pointed out that there are no shelters in the City of DeBary, and very few along US 17-92. It was felt that placing shelters on US 17-92 would attract new riders. In addition, it was recommended that locations such as the Winn Dixie store and the library would benefit from having shelters for the elderly and mothers with small children who wait in the hot sun.

Concurrent with the service suggested in the previous section to the new development on the east side of DeLand, it was recommended that a stop/shelter facility be added in the future (to coincide with new service) to the Victoria Park Village Center located in Victoria Commons at the southeast corner of Martin Luther King and Orange Camp Road.

Although not indicated in the response to the stakeholder interviews, the City of DeLand intends for the planned Intermodal Transportation Facility (ITF) to serve as the hub for the "Westside Super Stop" service. The paratransit services would be tied into the ITF allowing passengers having adequate mobility to transfer to accessible bus routes. In addition to improved transit service throughout the West Volusia area, DeLand feels that the ITF would enable the bus network to be modified to work more efficiently. The transit network could include:

- Neighborhood Circulator Routes
- Activity Center Circulators

- Local Bus Routes
- Point to Point Express Route
- Demand Responsive
- Park and Ride Facility

The City of DeLand envisions a circular shuttle (trolley) service through the core of DeLand during peak hours, providing pedestrian travelers an efficient way of moving throughout the downtown area, especially on Woodland Boulevard. Transportation between the County Administration building, County Courthouse, City government buildings, the commercial district, and the Stetson University campus will be made more convenient for pedestrian traffic. The ITF proposal also alludes to the potential for neighborhood shuttle/circulator services, but does not specify routes.

There were also two general comments in the stakeholder interviews regarding West Side Service. In addition to recommending service to community college, and suggesting that the existing service excludes whole vast neighborhoods, the first major comment was that service hours do not really start early enough or run long enough to accommodate any one who does not work a 9-5 type job. The customer stakeholder also thought that Volusia County should start east west connectors including one that would utilize State Road 44 from DeLand to New Smyrna.

A governmental stakeholder stated that the way to increase ridership is to make the service more convenient (decrease headways, shuttles, more bus routes, etc.), but recognized that traffic volumes on the West Side are not at Level of Service F. The stakeholder felt that the area would need to experience more congestion before taxpayers will support transit. There is a need for a higher level of transit service, but there is not enough funding committed to have a state of the art public transportation system, which would in turn, attract more riders. The stakeholder indicated that there is local interest in investigating transit Levels of Service standards as well as requiring developers to pay their proportionate fair share for both highway and transit improvements.

Votran was also complimented on the revised route schedule and map information. Several stakeholders stated that great progress has been made and the maps are 110% better than before. The information was online, very easy to read and easy to understand.

3.2 Votran Staff Interviews

In addition to the stakeholder interviews, informal interviews were conducted with Votran supervisors, bus operators and service planners.

These employees interact face-to-face with Votran riders on a daily basis and often have an excellent perspective of “what works, what doesn’t”.

In general, the staff interviews mirrored some of the stakeholder interviews, but added more specificity. Both the stakeholders and the staff thought that better transfer connections were needed in the West Side service. The area near Ft. Smith and Providence was mentioned as a good transfer site. In addition, both groups felt that more frequent service is needed. The Route #20 run times were identified as being tight, and having an impact on service frequency and transferability.

However, the majority of staff comments tended to focus on new services. Provided below are a list of new services suggested by Votran drivers and supervisors.

- East and West side service connections to Saxon Park and Ride lot
- Service connections to the AMTRAK station in DeLand
- Service connections to DeLand High School
- Service connections to Sanford, especially the Seminole Towne Mall
- Service connections to Orlando/Orlando suburbs
- Service connections to Hospital on US 17-92 in Sanford
- Extend Route #20 further south to DeBary-Dirksen to serve hotels near interchange with I-4
- Extend service to new Deltona shopping center at Howland and Graves

3.3 Votran Staff Workshops

In addition to the above, two workshops were conducted with Votran staff, one at the beginning of the planning process to solicit thoughts and ideas, and one after preliminary recommendations had been sketched out by the study team. These meetings were held with operations staff and service planners, and agency executives attended the second meeting. During these interviews, the study team received specific suggestions about particular trips, routes or route segments. These suggestions, as well as the suggestions of the stakeholders, drivers and supervisors were considered in developing service plan options.

The first set of meetings was held in March of 2006. Discussion at this meeting focused on several “big picture” or “hot topic” items that the agency was currently facing. These included but were not limited to the following:

- Integration of feeder bus service for commuter rail.
- The need for a new West Side service/maintenance facility, as the current one at the school board site was being terminated.

- The potential for a new West Side maintenance facility on the Saxon extension.
- The DeLand Intermodal Transportation Facility service and implementation issues.
- The issues, including near term relocation, surrounding the existing transfer center at Northgate in DeLand.
- The potential for service to Stetson University and Daytona Beach Community College.
- The viability of existing service to the Deltona Middle School, and whether it should be continued in the future.
- Observations regarding Route #20 that contains three (3) routes in one.
- The positive and negative attributes of the existing routes servicing the West Side, including tight schedules due to traffic volumes on the major roadway facilities, the need for evening service and the need for increased service frequencies.
- Potential future service: on Lakeshore Drive, on SR15A, on 15A extension, on Orange Camp Road, to Victoria Park and to the city of Lake Helen.
- Potential future service to: future I-4/SR 44 park and ride, Saxon park and ride, and potential Howland park and ride.

The next meetings were held in early June 2006. The purpose of these meetings was to provide an assessment of the existing routes and receive feedback from staff, and to solicit a reaction from the staff regarding preliminary service recommendations from the study team. The strengths and weakness analysis for the existing service is presented elsewhere in this report, and the recommendations from the study team are presented later in this report. However, the general items discussed at these meetings included, but was not limited to the following:

- The need to streamline Route #20 through various methods.
- The need to eliminate or refine loops in West Side system.
- The need to facilitate transfers through intelligent service planning and scheduling.
- The need to add service to the new developments in Deltona, including Wal-Mart.
- The need to continue service on Tivoli as part of Routes 21/22.
- The need to add buses to several of the routes to maintain headways.
- The potential for local routes in DeLand.

These items were included in the service plans contained in this report.



4.0 EVALUATION OF EXISTING SERVICES

Votran’s West Side fixed route bus routes include: #20 Deltona/DeLand, #21 Orange City, #22 Deltona, #24 Pierson/Seville, and #60 East/West Connector. Service is provided on each route Monday through Saturday. No service is operated on New Year’s Day, Thanksgiving Day and Christmas Day.

Currently, West Side buses on routes #20, #21, #22 and #24 are dispatched, fueled and serviced from the Volusia County School Board maintenance site located north of the Deltona Library on Eustace Avenue. Preventive and unscheduled maintenance is performed at Votran’s garage on Big Tree Road in South Daytona.

Weekday service characteristics of the five local bus routes are summarized in Table 6. Revenue service on each bus route starts about 6:00 a.m. and ends about 7:30 p.m. Round-trip cycle times vary from 120 to 180 minutes. Scheduled times are generally constant throughout the day (i.e., peak and off-peak run times are the same).

**Table 6
 Weekday Service Characteristics**

Route	Begin Service	End Service	Scheduled Cycle Time			Total	Percent Layover	Average Speed
			EB/NB	WB/SB	Layover			
20	6:17 AM	7:40 PM	84	86	10	180	5.6%	18.7
21	5:44 AM	7:36 PM	42	60	18	120	15.0%	18.6
22	6:18 AM	7:37 PM	52	48	20	120	16.7%	18.2
24	5:40 AM	7:17 PM	51	54	15	120	12.5%	28.4
60	6:32 AM	7:23 PM	58	48	14	120	11.7%	24.2

NOTES:

1. Schedules effective December 2005.

Table 7 summarizes current Saturday service characteristics. Generally, service levels on Saturdays are identical to weekdays, except that service begins about 30 minutes later in the morning and ends about 30 minutes earlier in the evening.



**Table 7
Saturday Service Characteristics**

Route	Begin Service	End Service	Scheduled Cycle Time			Total	Percent Layover	Average Speed
			EB/NB	WB/SB	Layover			
20	6:58 AM	6:54 PM	84	86	10	180	5.6%	19.3
21	6:54 AM	6:54 PM	42	60	18	120	15.0%	18.5
22	6:57 AM	6:44 PM	52	48	20	120	16.7%	17.5
24	7:30 AM	7:17 PM	51	54	15	120	12.5%	28.1
60	7:30 AM	7:23 PM	58	48	14	120	11.7%	24.0

NOTES:

1. Schedules effective December 2005.

4.1 Operating Statistics

Weekday operating statistics for the West Side bus routes are shown on Table 8. The service frequency is 60 minutes for routes #20 and #60 and is 120 minutes for routes #21, #22 and #24. Eight peak buses are used to operate the West Side service.

**Table 8
Weekday Operating Statistics**

Route	One-Way Trips	Service Frequency		Revenue		Peak Buses
		Peak	Off-Peak	Bus-Hours	Bus-Miles	
20	26	60	60	38.1	713.8	3
21	14	120	120	13.9	258.3	1
22	14	120	120	13.3	241.5	1
24	14	120	120	13.6	386.4	1
60	26	60	60	25.3	611.0	2

Saturday operating statistics for the West Side bus routes are shown on Table 9. Saturday service is, again, virtually identical to weekday service except that service begins 30 minutes later in the morning and ends 30 minutes earlier in the evening. As a result, Saturday bus-hours and bus-miles are slightly less than on weekdays.

**Table 9
Saturday Operating Statistics**

Route	One-Way Trips	Service Frequency		Revenue		Peak Buses
		Peak	Off-Peak	Bus-Hours	Bus-Miles	
20	22	60	60	31.3	604.0	3
21	12	120	120	12.0	221.4	1
22	12	120	120	11.8	207.0	1
24	12	120	120	11.8	331.2	1
60	23.5	60	60	23.0	552.3	2

4.2 Performance Measures

The next stage of the evaluation of existing service was to assess the performance of Votran’s West Side fixed routes. Current ridership and service level data was collected for each fixed route and analyzed to calculate measures of effectiveness and efficiency.

- **Effectiveness.** Effectiveness measures indicate how productive a transit system or route is in terms of ridership per unit of service operated (e.g., passengers per revenue-hour, passengers per revenue-mile and passengers per trip).
- **Efficiency.** Efficiency measures indicate how costly a transit system or route is to operate in terms of cost per passenger boarding.

Table 10 presents the average weekday ridership, estimated daily operating and maintenance cost, effectiveness measures (weekday riders per vehicle trip, vehicle mile, and vehicle hour), and efficiency (cost per rider) for each West Side fixed route.

Operating statistics (number of trips, revenue miles and revenue hours) are based on current bus schedules. The annual operating cost per route is based on a three-variable cost model (revenue miles, revenue hours, peak buses) utilizing Votran’s 2005 National Transit Database (NTD) expenses data. Average weekday ridership is taken from Votran’s farebox reports for April 2006. All monetary values are reported in 2005 dollars.

As shown in Table 10, the riders per trip measure varied from 3.9 (#24) to 26.2 (#20), the riders per bus-hour varied from 4.0 (#24) to 22.2 (#60), and

the riders per mile varied from 0.1 (#24) to 1.0 (#20). The efficiency measure, O&M cost per rider, varied from \$2.76 (#60) to \$16.48 (#24). Overall, routes #20 and #60 were most effective and efficient, routes #21 and #22 had moderately effective and efficient, and #24 was least effective and efficient. The less effective and efficient routes indicate a possible need for route restructuring or optimization of service frequency and/or hours operated.

Table 10
Weekday Performance Measures

Route	Weekday Riders	O&M Cost	Weekday Riders per			Cost per Rider
			Trip	Bus-Hour	Bus-Mile	
20	682	\$2,090	26.2	17.9	1.0	\$3.06
21	163	\$750	11.6	11.7	0.6	\$4.60
22	144	\$720	10.3	10.8	0.6	\$5.00
24	54	\$890	3.9	4.0	0.1	\$16.48
60	561	\$1,550	21.6	22.2	0.9	\$2.76

NOTES:

1. Daily ridership based on April 2006 farebox counts.
2. O&M Cost is based on unit costs derived from FY 2005 NTD costs.

Table 11 shows the effectiveness and efficiency performance measures for Saturday operations. The Saturday performance measures indicated similar trends as the weekday data. Routes #20 and #60 were most effective and efficient, routes #21 and #22 had moderately effective and efficient, and #24 was least effective and efficient. The Saturday riders per trip measure varied from 3.2 (#24) to 18.3 (#20), the riders per bus-hour varied from 3.2 (#24) to 13.8 (#60), and the riders per mile varied from 0.1 (#24) to 0.7 (#20). The efficiency measure, O&M cost per rider, varied from \$4.44 (#20) to \$20.53 (#24).

Overall, Saturday service was about 20 to 50 percent less effective and efficient than weekday service, reflecting significantly lower Saturday ridership but only marginally lower costs and service levels.

Table 11
Saturday Performance Measures

Route	Saturday Riders	O&M Cost	Saturday Riders per			Cost per Rider
			Trip	Bus-Hour	Bus-Mile	
20	403	\$1,790	18.3	12.9	0.7	\$4.44
21	82	\$660	6.8	6.8	0.4	\$8.05
22	60	\$640	5.0	5.1	0.3	\$10.67
24	38	\$780	3.2	3.2	0.1	\$20.53
60	318	\$1,420	13.5	13.8	0.6	\$4.47

NOTES:

1. Daily ridership based on April 2006 farebox counts.
2. O&M Cost is based on unit costs derived from FY 2005 NTD costs.

4.3 Ridecheck Survey

To complement the Votran route-level ridership and operations data, a ridecheck survey was conducted for each West Side fixed route. The ridecheck survey provided a comprehensive picture of the fixed route service, indicating where passengers boardings (“ons”) and alightings (“offs”), which routes are used most heavily, and on time performance. This data is especially valuable for route service planning and provides the following information:

- **Ridership by Bus Stop** – profiles of each route depicting where passengers board is an important tool for analyzing the effectiveness of the current route alignment. This information can be used for future transit service improvements.
- **Boardings by Trip** – helps identify times of day where the service is over- or underutilized. This information can be valuable in optimizing the use of trolleys throughout the day.
- **Schedule Adherence** – reflects whether buses on a particular route adhere to their published schedule. For this survey, specific control points were designated along each route to broadly assess on time performance.

Using Microsoft Excel and a Votran bus stop inventory, ridecheck forms were developed by route and by direction of travel. The forms also identified the location of peak load points and actual travel times. Ridecheck forms listed every stop, inbound and outbound, with additional columns for recording the number of boardings and alightings and the total

number of passengers the bus was carrying (“load”). In addition, the forms provided a means for recording bus arrival times at select time points and for assessing schedule adherence. The ridecheck survey was designed to be a 100 percent sample of average weekday and Saturday bus trips.

Employees of a local temporary agency were recruited and trained to collect the data. Prior to administering the survey, the TDP team developed training materials and facilitated a 2-hour training session for survey personnel, including a round trip on a Votran bus. During the training session, personnel were informed on the appropriate dress and conduct, purpose and importance of the survey, how to complete surveys, shift assignments and supervisors, meeting places and times, how to interact with operators and patrons, and other general information. The ridecheck survey was conducted March 25 through April 8, 2006.

Supervisors from the TDP team were on-site for the duration of the survey to ensure that the survey technicians had ample questionnaires and supplies, to answer questions and resolve issues, and to monitor overall progress. At the end of each shift, the TDP supervisor collected the completed surveys and confirmed assignments for the next day.

Survey data was tabulated in Microsoft Excel spreadsheets. Graphs were prepared for each route showing ridership by trip (inbound and outbound), and boardings and alightings by bus stop (inbound and outbound). Results of the ridecheck survey are included in the Weekday and Saturday Route Profiles attached in Appendices A and B, respectively.

4.4 Route Strengths and Weaknesses

The analysis of performance measures and ridecheck survey results were used to assess the strengths and weaknesses of each West Side route. The following tables summarize the strengths and weaknesses of each route for the following five categories:

- Ridership Productivity
- Span of Service
- Service Frequency
- Route Directness
- On-Time Performance

Table 12
Route 20 DeLand Strengths and Weaknesses

Category	Strengths	Weaknesses
Ridership Productivity	<p>Ridership productivity is about average:</p> <ul style="list-style-type: none"> ▪ Weekday productivity is 18 pass/revenue hour, 1.0 pass/revenue mile. ▪ Saturday productivity is 13 pass/revenue hour, 0.7 pass/revenue mile 	
Span of Service	<p>Weekday morning start (6:17) and early evening end (19:40) are consistent with ridership demand.</p> <p>Saturday morning start (6:58) and early evening end (18:54) are consistent with ridership demand.</p>	
Service Frequency	60 minute service frequency accommodates ridership demand throughout day.	
Route Directness		<p>Branches to Deltona (Library) and DeBary (SR 17/92) result in indirect travel for many passengers.</p> <p>Loops in Deltona (Saxon/Providence/Elkcam/Normandy) and DeLand (SR 92/Spring Garden/ Plymouth) add to travel time and confuse passengers.</p>
On-Time Performance		<p>Very low on-time performance on weekdays (most trips run late). On Saturdays some trips run early.</p> <p>Very long cycle time (180 minutes) combined with very short scheduled layover (10 minutes, 5.6% of cycle time) leaves insufficient time for schedule recovery, particularly during afternoon peak period.</p>



Table 13
Route 21 Orange City Strengths and Weaknesses

Category	Strengths	Weaknesses
Ridership Productivity		Ridership productivity is below average: <ul style="list-style-type: none"> ▪ Weekday productivity is 12 pass/revenue hour, 0.6 pass/revenue mile. ▪ Saturday productivity is 7 pass/revenue hour, 0.4 pass/revenue mile
Span of Service		Weekday early evening end (19:36) may be later than warranted by demand. Saturday early evening end (18:54) may be later than warranted by demand.
Service Frequency	120 minute service frequency accommodates ridership demand throughout day.	Long service frequency discourages use.
Route Directness		Large 1-way loop in Deltona (Newark /Montecito /Howland /Ft. Smith). Smaller 1-way loop on Austin /Kimberly /Elkcam.
On-Time Performance	Excellent on-time performance on weekdays. Adequate layover (18 minutes per cycle, 15% of cycle time).	On Saturdays some trips run early.



Table 14
Route 22 Deltona Strengths and Weaknesses

Category	Strengths	Weaknesses
Ridership Productivity		<p>Ridership productivity is below average:</p> <ul style="list-style-type: none"> ▪ Weekday productivity is 11 pass/revenue hour, 0.6 pass/revenue mile. ▪ Saturday productivity is 5 pass/revenue hour, 0.3 pass/revenue mile
Span of Service		<p>Weekday early evening end (19:37) may be later than warranted by demand.</p> <p>Saturday early evening end (18:44) may be later than warranted by demand.</p>
Service Frequency	120 minute service frequency accommodate ridership demand throughout day.	Long service frequency discourages use.
Route Directness		<p>Large 1-way loop in Deltona (Newark /Montecito /Howland /Ft. Smith).</p> <p>Smaller 1-way loop on Austin /Kimberly /Elkcam.</p>
On-Time Performance	Good on-time performance on weekdays.	<p>On Saturdays some trips run early.</p> <p>Excessive layover (20 minutes per cycle, 17% of cycle time).</p>

Table 15
Route 24 Pierson/Seville Strengths and Weaknesses

Category	Strengths	Weaknesses
Ridership Productivity		Ridership productivity is poor: <ul style="list-style-type: none"> ▪ Weekday productivity is 4 pass/revenue hour, 0.1 pass/revenue mile. ▪ Saturday productivity is 3 pass/revenue hour, 0.1 pass/revenue mile
Span of Service		Weekday morning start (5:40) is earlier than may be warranted by demand; early evening end (19:17) may be later than warranted by demand. Saturday early evening end (19:17) may be later than warranted by demand.
Service Frequency	120 minute service frequency accommodates ridership demand throughout day.	Long service frequency discourages use.
Route Directness	No loops; route alignment is direct.	
On-Time Performance		Many trips run early on weekdays and Saturdays. Excessive layover (15 minutes scheduled, 21 minutes actual per cycle time).

Table 16
Route 60 East/West Connector Strengths and Weaknesses

Category	Strengths	Weaknesses
Ridership Productivity	Ridership productivity is above average: <ul style="list-style-type: none"> ▪ Weekday productivity is 22 pass/revenue hour, 0.9 pass/revenue mile. ▪ Saturday productivity is 14 pass/revenue hour, 0.6 pass/revenue mile 	
Span of Service		Saturday early evening end (19:23) may be later than warranted by demand.
Service Frequency	60 minute service frequency accommodates ridership demand throughout day.	
Route Directness	No loops; route alignment is direct.	
On-Time Performance	On-time performance is good. Adequate layover (14 minutes scheduled, 15 minutes actual per cycle time).	Some trips run early on weekdays and Saturdays.

Following the identification of strengths and weaknesses, service planning options were developed and evaluated for each route. The project consultants met with Votran staff in a workshop setting to review initial service plans recommendations (June 2006). Following that workshop, the service plan options were refined. Chapter 5.0 describes the recommended service plans for the West Side routes.



5.0 RECOMMENDED SERVICE PLAN

A recommended service plan was developed for each of the following operating scenarios / time periods:

- Near-Term Improvements (FY 2007). The Near-Term Improvements reflect the extension of service to the new WalMart SuperCenter located on south S.R. 415. During the Near-Term scenario, Votran may also relocate its West Side bus fueling and storage facility from the current School Board site on Eustace Avenue to a County Fleet Maintenance site, also located on south S.R. 415.
- CFCRT Service to DeBary (FY 2010). This scenario assumes completion of the Phase 1 of the Central Florida Commuter Rail Transit project from downtown Orlando to the proposed DeBary Station, located along the west Saxon Blvd. extension. Votran plans to construct a permanent West Side bus fueling and storage facility adjacent to the planned DeBary CR Station.
- CFCRT Service to DeLand (FY 2012). The final scenario assumes extension of the CFCRT project to the DeLand Station. Alternative DeLand Station sites include: (1) Old New York Avenue and SR 44 near the DeLand Amtrak Station and (2) Minnesota Avenue and Clara Avenue. The DeLand Amtrak Station site was assumed for this service plan scenario.

These service plan scenarios are described below.

5.1 Existing Conditions

Table 17, below, summarizes Votran's existing West Side fixed route operations. The current service requires eight (8) peak buses operated on five routes: 20 Deltona/Deland, #21 Orange City, #22 Deltona, #24 Pierson/Seville, and #60 East/West Connector.



Table 17
West Side Routes -- Existing Conditions (June 2006)

No.	From	To	Time & Distance		Day	Headway			Revenue		Lay Over	Cycle Time	No. of Buses							
			Minutes	Miles		Peak	Base	Eve.	Bus-Miles	Bus-Hours			Peak	Base	Eve.					
20	Deltona Library	Northgate Plaza	85.0	27.5	Weekday	60	60	60	715	40.5	10.0	180.0	3	3	3					
					Saturday	60	60	60	605	36.0						10.0	180.0	3	3	3
					Annual				213,070	12,159										
21	Dupont Lakes S.C.	Market Place	51.0	18.5	Weekday	120	120	120	250	13.5	18.0	120.0	1	1	1					
					Saturday	120	120	120	222	12.0						18.0	120.0	1	1	1
					Annual				75,044	4,053										
22	Dupont Lakes S.C.	Market Place	50.0	17.3	Weekday	120	120	120	234	13.5	20.0	120.0	1	1	1					
					Saturday	120	120	120	208	12.0						20.0	120.0	1	1	1
					Annual				70,252	4,053										
24	Northgate Plaza	New Hope Villas	52.5	27.6	Weekday	120	120	120	373	13.5	15.0	120.0	1	1	1					
					Saturday	120	120	120	331	12.0						15.0	120.0	1	1	1
					Annual				111,954	4,053										
60	Northgate Plaza	Transfer Plaza	53.0	23.5	Weekday	60	60	60	611	27.0	14.0	120.0	2	2	2					
					Saturday	60	60	60	552	24.0						14.0	120.0	2	2	2
					Annual				183,898	8,106										
Total West Side Routes					Weekday				2,183	108.0			8	8	8					
					Saturday				1,918	96.0			8	8	8					
					Annual				654,218	32,424										

NOTES:

- (1) Annual operating requirements based on 254 weekdays and 52 Saturdays per year.
- (2) Operating hours are 06:00 to 19:30 (13.5 hours) on weekdays and 07:00 to 19:00 (12.0 hours) on Saturdays.

28-Jan-07

5.2 Near-Term Improvements

The proposed Near-Term service plan includes the following route modifications.

#20 Deltona/DeLand. The current #20 is a long route that has two branches on the south end: (1) Deltona Library via Saxon Blvd eastbound and Fort Smith/Elkcam Blvd./Normandy Blvd./Saxon Blvd. westbound; and (2) Spring View Center on south Charles Beall Blvd. The recommended plan would truncate these two southern branches, terminating service at the Market Place Shopping Center. Route #20 buses would continue to serve the Memorial Hospital in DeLand via Spring Garden and Stone Avenue. Route #20 buses would run every 60 minutes during peak and off-peak hours but the shortened route would require 2 buses instead of the current 3 buses.

#21 Deltona. This route currently operates from the Market Place Shopping Center to Deltona Library, with a counter-clockwise loop operated along Fort Smith Blvd., Howland Blvd., Elkcam Blvd., Montecito Avenue, and Newmark Drive. A smaller loop is also operated along Austin Avenue and Kimberly Drive. Route #22 provides service in the clockwise direction on the same loops. Route #21 is proposed to be extended to the Deltona Community Center near Lakeshore Drive and the new WalMart SuperCenter on S.R. 415. Service on the Austin/Kimberly loop would be discontinued.

Eastbound buses would leave Market Place Shopping Center, south on Enterprise Road, south on Deltona Blvd. to Deltona Middle School, north on Deltona Blvd., east on Normandy Blvd., south on Providence Blvd. to



Deltona Community Center, north on Providence Blvd., east on Fort Smith Blvd., and south on S.R. 415 to a terminal at WalMart. Westbound buses would leave WalMart, north on Howland Blvd., west on Elkcam Blvd., south on Montecito Ave., west on Newmark Dr., west on Fort Smith Blvd., north on Providence Blvd., west on Eustace Avenue to the Deltona Library, south on Providence Blvd., west on Normandy Blvd., south on Deltona Blvd., south on Enterprise Road to Deltona Middle School, and north on Enterprise Road ending at Market Place Shopping Center. Buses would run every 120 minutes. One bus would be required to operate the service.

#22 Deltona. This route currently operates from the Market Place Shopping Center to Deltona Library, with a clockwise loop operated along Elkcam Blvd., Howland Blvd., and Fort Smith Blvd. A smaller loop is also operated along Austin Avenue and Kimberly Drive. Route #22 is proposed to be extended to the Deltona Community Center near Lakeshore Drive and the new WalMart SuperCenter on S.R. 415. Service on the Austin/Kimberly loop would be discontinued.

Eastbound buses would leave Market Place Shopping Center, south on Enterprise Road, south on Deltona Blvd. to Deltona Middle School, north on Deltona Blvd., east on Normandy Blvd., north on Providence Blvd., west on Eustace Avenue to the Deltona Library, south on Providence Blvd., west on Elkcam Blvd., south on Howland Blvd., and south on S.R. 415 to a terminal at WalMart. Westbound buses would leave WalMart, north on Howland Blvd., west on Fort Smith Blvd., south on Providence Blvd. to Deltona Community Center, north on Providence Blvd., west on Normandy Blvd., south on Deltona Blvd., south on Enterprise Road to Deltona Middle School, and north on Enterprise Road ending at Market Place Shopping Center. Buses would run every 120 minutes. One bus would be required to operate the service.

#23 DeBary / Deltona. This proposed new route would replace #20 on Charles Beall Blvd., Volusia Medical Center, and Saxon Blvd. Eastbound buses would begin at the DeBary City Hall, north on Charles Beall Blvd., east on Saxon Blvd., stopping at Market Place Shopping Center and Volusia Medical Center, east on Saxon Blvd., and north on Providence Blvd. Westbound buses would go west on Fort Smith Blvd., west on Elkcam Blvd., south on Normandy Blvd., west on Saxon Blvd., stopping at Volusia Medical Center and Fish Memorial Hospital, west on Strickland Blvd., stopping at Crown Center Plaza and Market Place Shopping Center, west on Saxon Blvd., and south on Charles Beall Blvd. to City Hall. Selected midday trips would be extended south on Charles Beall Blvd. to Spring View Center. Buses would run every 60 minutes on this new route. One bus would be required to operate the service.



#24 Pierson. Due to its low ridership and poor productivity, this study recommends that #24 should be discontinued or restructured to improve its ridership and productivity. Alternatively, operating resources could be reallocated to other growing or underserved parts of the west Volusia service area. Votran will conduct a detailed route assessment in the near future to determine whether to modify or discontinue the route.

#60 East-West Connector. No changes are proposed.

Service statistics for these proposed route modifications are shown on Table 18. Compared to current schedules, the Near-Term plan (including #24) would require the same number of peak buses (8) and annual revenue bus-hours and 2.6% more annual revenue bus-miles. The Near-Term plan is shown in Figure 1.

**Table 18
West Side Routes – Proposed Near Term Improvements (2007)**

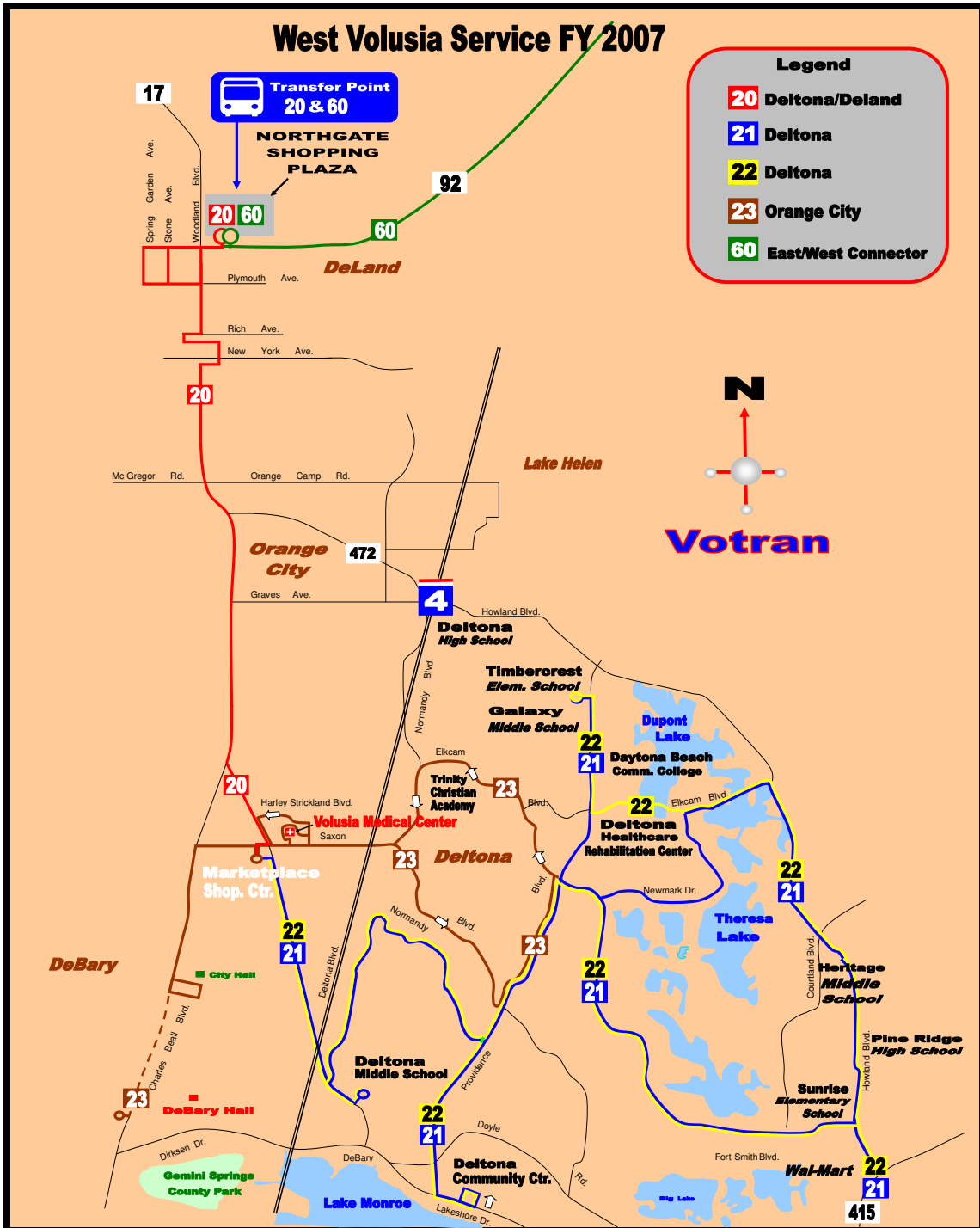
No.	From	To	Time & Distance		Headway			Revenue		Lay Over	Cycle Time	No. of Buses			
			Minutes	Miles	Day	Peak	Base	Eve.	Bus-Miles			Bus-Hours	Peak	Base	Eve.
20	Market Place	Northgate Plaza	49.5	14.8	Weekday	60	60	60	384	27.0	21.0	120.0	2	2	2
					Saturday	60	60	60	325	24.0			2	2	2
					Annual				114,436	8,106					
21	Market Place	WalMart	58.0	22.0	Weekday	120	120	120	297	13.5	4.0	120.0	1	1	1
					Saturday	120	120	120	264	12.0			1	1	1
					Annual				89,166	4,053					
22	Market Place	WalMart	57.0	20.8	Weekday	120	120	120	281	13.5	6.0	120.0	1	1	1
					Saturday	120	120	120	249	12.0			1	1	1
					Annual				84,322	4,053					
23	DeBary	Deltona	54.0	10.8	Weekday	60	60	60	292	13.5	6.0	60.0	1	1	1
					Saturday	60	60	60	259	12.0			1	1	1
					Annual				87,636	4,053					
24	Northgate Plaza	New Hope Villas	52.5	27.6	Weekday	120	120	120	373	13.5	15.0	120.0	1	1	1
					Saturday	120	120	120	331	12.0			1	1	1
					Annual				111,954	4,053					
60	Northgate Plaza	Transfer Plaza	53.0	23.5	Weekday	60	60	60	611	27.0	14.0	120.0	2	2	2
					Saturday	60	60	60	552	24.0			2	2	2
					Annual				183,898	8,106					
Total West Side Routes					Weekday				2,238	108.0			8	8	8
					Saturday				1,980	96.0			8	8	8
					Annual				671,412	32,424					

NOTES:

- (1) Annual operating requirements based on 254 weekdays and 52 Saturdays per year.
- (2) Operating hours are 06:00 to 19:30 (13.5 hours) on weekdays and 07:00 to 19:00 (12.0 hours) on Saturdays.
- (3) #20 operates between Market Place and Northgate Plaza with service to Florida Hospital.
- (4) #21 operates via Enterprise, Deltona, Normandy, Providence, Deltona CC, Providence, Fort Smith, Howland (EB). Extend to WalMart & Deltona Community Center. Eliminate Austin/Kimberly loop.
- (5) #22 operates via Enterprise, Deltona, Normandy, Providence, Library, Elkcam, Howland, WalMart (EB). Extend to WalMart & Deltona Community Center. Eliminate Austin/Kimberly loop.
- (6) #23 New DeBary / Deltona route operates via Charles Beall, Saxon, Market Place, Volusia Medical Center, Saxon, Providence, Fort Smith, Normandy, Saxon, Volusia Medical Center, Market Place, Saxon, C
- (7) #24 will be reevaluated to improve performance or eliminate service due to poor performance.
- (8) #60 - No change from existing.

5.3 CFCRT Phase I Service Plan

When the planned CFCRT Phase 1 project (DeBary to downtown Orlando) is completed in FY 2010, southbound commuter rail trains will leave the DeBary Station every 30 minutes during the a.m. peak period (e.g., 6:00 to 8:00 a.m.) and northbound trains will arrive every 30 minutes in the p.m. peak period (e.g., 5:00 to 7:00 p.m.). Feeder bus service will be timed to meet the arrival and departure of CFCRT trains. Several West Side routes will be extended to the DeBary Station during peak periods.



#20 Deltona/DeLand. #20 will be extended west from Market Place Shopping Center along the planned Saxon Blvd. extension to the DeBary Station. This short extension will add about 6 minutes of one-way travel time during peak periods. Layovers at Market Place Shopping Center will be reduced accordingly, so that the extension does not impact either the peak period service frequency (60 minutes) or the number of peak buses needed to operate the service (2).

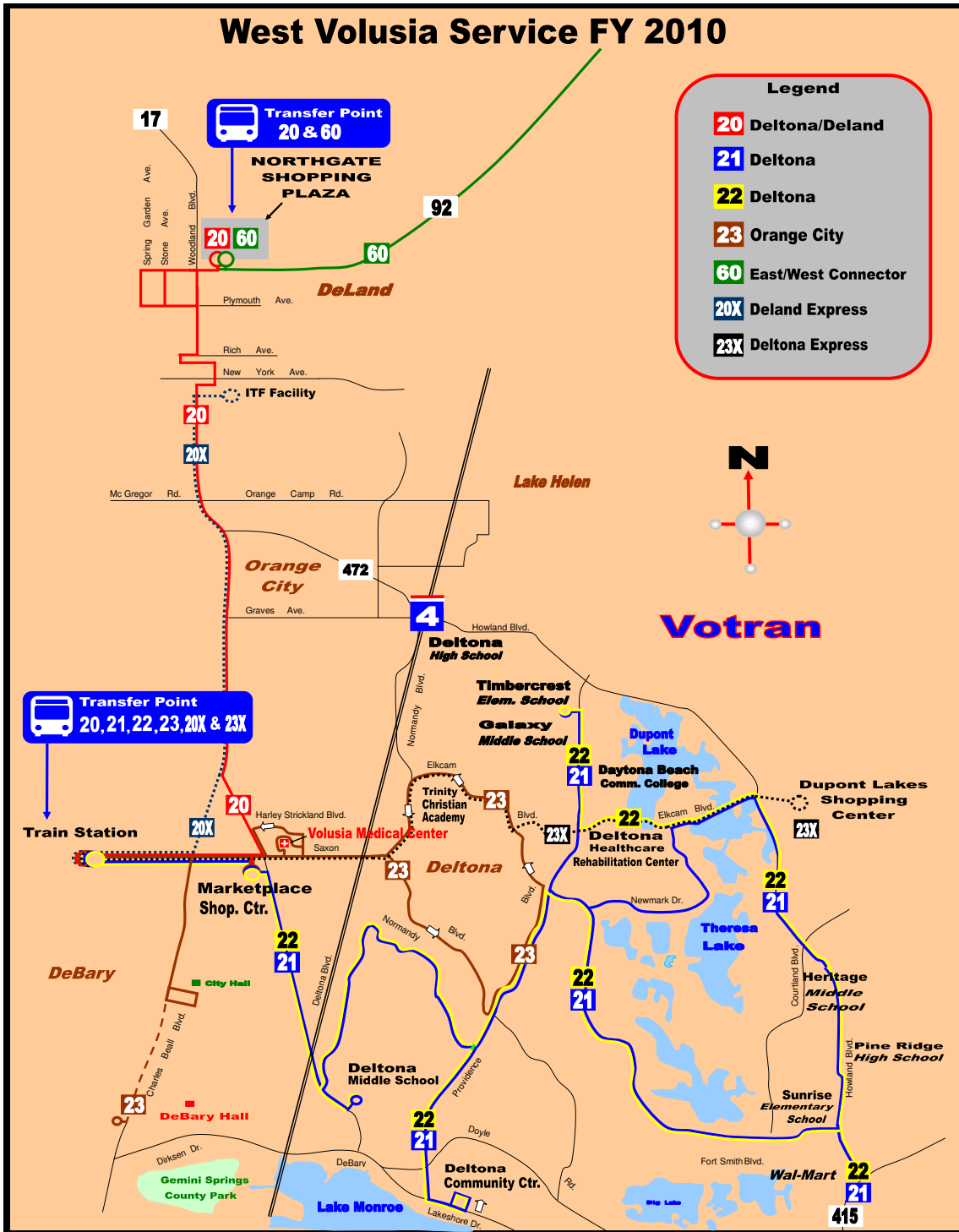
#20X Deland/Orange City Express. A new express bus will serve the DeBary Station on the alternative half hour as the Route 20 to provide overall 30 minute peak service from the Downtown Deland Intermodal Facility (ITF) through Orange City along US 17/92. This will require one additional peak bus operating on a 60 minute frequency.

#21 Deltona and #22 Deltona. Likewise, buses on #21 and #22 will be extended west along the planned Saxon Blvd. extension to the DeBary Station. In addition, the peak period service frequency on each route is proposed to improve to 60 minutes, thereby enabling Deltona riders access to the rail system on average every 30 minutes. This will require 3 additional peak buses.

#23 DeBary/Deltona. #23 will be extended west from Market Place Shopping Center along the planned Saxon Blvd. extension to the DeBary Station. This short extension will add about 6 minutes of one-way travel time during peak periods. Layovers at Market Place Shopping Center will be reduced accordingly, so that the extension does not impact either the peak period service frequency (60 minutes) or the number of peak buses needed to operate the service (1).

#23 Deltona City Express. A new express bus will serve the DeBary Station on the alternative half hour as the Route 23 to provide overall 30 minute peak service from the greater Deltona Area, beginning at the Dupont Lakes Shopping Center, through Deltona City Hall, Saxon Park and Ride to the DeBary Station. This will require one additional peak bus operating on a 60 minute frequency.

Service statistics for these proposed route modifications are shown on Table 19. Compared to current schedules, the FY 2010 plan would require four additional peak buses (12), about 2,800 additional annual revenue bus-hours (+8.7 percent), and about 51,000 additional annual revenue bus-miles (+7.7 percent). The CFCRT Phase I feeder bus plan is shown in Figure 2.





**Table 19
West Side Routes – CFCRT to DeBary Station (2010)**

No.	From	To	Time of Day	Time & Distance		Day	Headway			Revenue		Lay Over	Cycle Time	No. of Buses		
				Minutes	Miles		Peak	Base	Eve.	Bus-Miles	Bus-Hours			Peak	Base	Eve.
20	Market Place	Northgate Plaza	All Day	49.5	14.8	Weekday	60	60	60	384	27.0	21.0	120.0	2	2	2
						Saturday	60	60	60	323	24.0	21.0	120.0	2	2	2
						Annual				114,436	8,106					
20X	DeBary CR Station	DeLand ITF	Peak	20.0	10.0	Weekday	60	na	na	120	6.0	20.0	60.0	1	0	0
						Saturday	na	na	na	0	0.0			0	0	0
						Annual				30,480	1,524					
21	Market Place	WalMart	Peak	64.0	24.5	Weekday	60	120	120	454	21.0	22.0	150.0	2.5	1	1
						Saturday	120	120	120	294	12.0	4.0	120.0	1	1	1
						Annual				130,604	5,958					
22	Market Place	WalMart	Peak	63.0	23.3	Weekday	60	120	120	432	21.0	24.0	150.0	2.5	1	1
						Saturday	120	120	120	280	12.0	6.0	120.0	1	1	1
						Annual				124,288	5,958					
23	DeBary	Deltona	Peak	60.0	10.8	Weekday	60	60	60	292	13.5	0.0	60.0	1	1	1
						Saturday	60	60	60	259	12.0	6.0	60.0	1	1	1
						Annual				87,636	4,053					
23X	DeBary CR Station	Dupont Lakes / Deltona	Peak	25.0	11.0	Weekday	60	na	na	132	6.0	10.0	60.0	1	0	0
						Saturday	na	na	na	0	0.0			0	0	0
						Annual				33,528	1,524					
60	Northgate Plaza	Transfer Plaza	All Day	53.0	23.5	Weekday	60	60	60	611	27.0	14.0	120.0	2	2	2
						Saturday	60	60	60	552	24.0	14.0	120.0	2	2	2
						Annual				183,898	8,106					
Total West Side Routes						Weekday				2,425	122			12	7	7
						Saturday				1,710	84			7	7	7
						Annual				704,870	35,229					

NOTES:

- (1) Annual operating requirements based on 254 weekdays and 52 Saturdays per year.
- (2) Operating hours are 06:00 to 19:30 (13.5 hours) on weekdays and 07:00 to 19:00 (12.0 hours) on Saturdays.
- (3) #20 operates between Market Place and Northgate Plaza with service to Florida Hospital.
- (4) #20X operates between DeLand Intermodal Transit Facility and Saxon CR Station during peak periods only.
- (5) #21 operates via Enterprise, Deltona, Normandy, Providence, Deltona CC, Providence, Fort Smith, Howland (EB). Extend to WalMart, Deltona Community Center & Saxon CR Station (peak periods). Eliminate Austin/Ki
- (6) #22 operates via Enterprise, Deltona, Normandy, Providence, Library, Elkcam, Howland, WalMart (EB). Extend to WalMart, Deltona Community Center & Saxon CR Station (peak periods). Eliminate Austin/Kimberly too
- (7) #23 New DeBary / Deltona route operates via Charles Beall, Saxon, Market Place, Volusia Medical Center, Saxon, Providence, Fort Smith, Normandy, Saxon, Volusia Medical Center, Market Place, Saxon, Charles Beall
- (8) #23X operates between Dupont Lakes S.C. and Saxon CR Station during peak periods only.
- (9) #24 eliminated due to poor performance.
- (10) #60 - No change from existing.

In addition to these fixed route bus improvements, Votran expects to operate twelve (12) new van pools between two Park & Ride lots in east Volusia County and the Saxon CR Station. Six vans would depart the Beville and Williamson Park & Ride lot in the a.m. peak period, arriving at the Saxon Station to meet departing trains (e.g., 5:30, 6:00, 6:30, 7:00, 7:30 and 8:00 a.m.). Similarly, six vans would depart the WalMart at New Smyrna Beach in the AM peak period to meet trains at the Saxon CR Station. These vans would make the return trips in the p.m. peak period, departing the Saxon Station every 30 minutes (e.g., 5:00, 5:30, 6:00, 6:30, 7:00 and 7:30 p.m.).

5.4 CFCRT Full-Build Service Plan

When the planned CFCRT Phase 3 project (DeLand to Poinciana) is completed in FY 2012, southbound commuter rail trains will leave the DeLand and DeBary Stations every 30 minutes during the a.m. peak period (e.g., 6:00 to 8:00 a.m.) and northbound trains will arrive every 30 minutes in the p.m. peak period (e.g., 5:00 to 7:00 p.m.).

#23 Deltona City Express. The #23X express bus will be redirected to serve the DeLand CR Station instead of the DeBary CR Station. #23X buses will operate every 60 minutes, requiring one peak bus.



#60 East-West Connector. Route #60 would be extended west to the proposed DeLand commuter rail station via International Speedway Blvd., south on Spring Garden Ave., west on New York Ave., and west on Old New York Avenue. Service would be operated to the DeLand commuter rail station during peak periods.

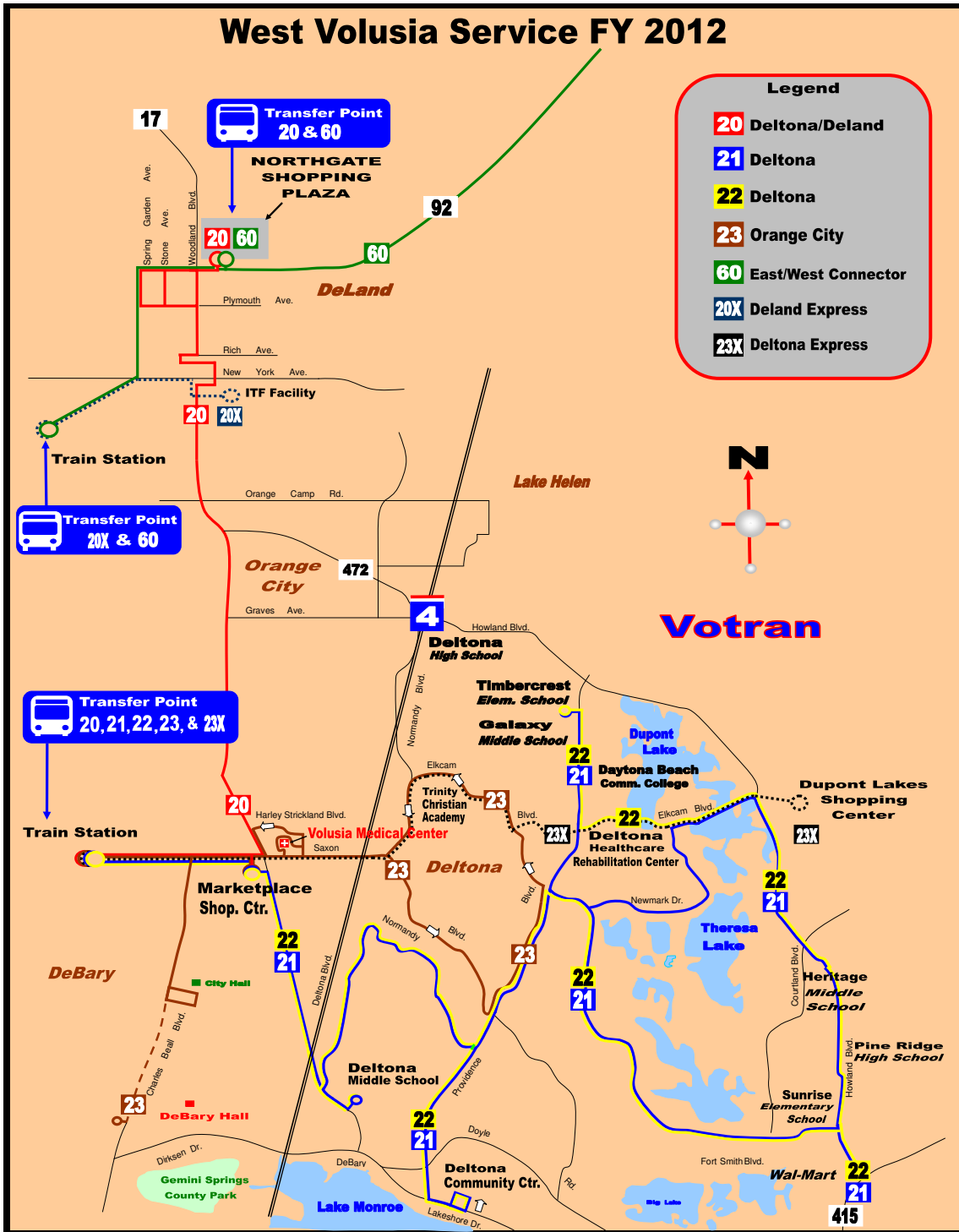
Service statistics for these proposed route modifications are shown on Table 20. Compared to current schedules, the FY 2012 plan would require five additional peak buses (13), about 4,100 additional annual revenue bus-hours (+13 percent), and about 77,000 additional annual revenue bus-miles (+12 percent). The CR Full-Build plan is shown in Figure 3.

**Table 20
West Side Routes – CFCRT to DeLand Station (2012)**

No.	From	To	Peak Off-Peak	Time & Distance Minutes Miles		Headway			Revenue		Lay Over	Cycle Time	No. of Buses			
						Day	Peak	Base	Eve.	Bus-Miles			Bus-Hours	Peak	Base	Eve.
20	Market Place	Northgate Plaza	All Day	49.5	14.8	Weekday	60	60	60	384	27.0	21.0	120.0	2	2	2
						Saturday	60	60	60	325	24.0			2	2	2
						Annual				114,436	8,106					
20X	DeLand CR Station	DeLand ITF	Peak	12.0	3.0	Weekday	30	na	na	72	6.0	6.0	30.0	1	0	0
						Saturday	na	na	na	0	0.0			0	0	0
						Annual				18,288	1,524					
21	Market Place	WalMart	Peak	64.0	24.5	Weekday	60	120	120	454	21.0	22.0	150.0	2.5	1	1
			Off-Peak	58.0	22.0	Saturday	120	120	120	294	12.0			1	1	1
			Annual				130,604	5,958								
22	Market Place	WalMart	Peak	63.0	23.3	Weekday	60	120	120	432	21.0	24.0	150.0	2.5	1	1
			Off-Peak	57.0	20.8	Saturday	120	120	120	280	12.0			1	1	1
			Annual				124,288	5,958								
23	DeBary	Deltona	Peak	60.0	10.8	Weekday	60	60	60	292	13.5	0.0	60.0	1	1	1
			Off-Peak	54.0	10.8	Saturday	60	60	60	259	12.0			1	1	1
			Annual				87,636	4,053								
23X	DeBary CR Station	Deltona	Peak	25.0	11.0	Weekday	60	na	na	132	6.0	10.0	60.0	1	0	0
			Off-Peak			Saturday	na	na	na	0	0.0			0	0	0
			Annual				33,528	1,524								
60	Northgate Plaza	Transfer Plaza	Peak	73.0	28.4	Weekday	60	60	60	739	32.0	34.0	180.0	3	2	2
			Off-Peak	53.0	23.5	Saturday	60	60	60	658	24.0			2	2	2
			Annual				222,442	9,376								
Total West Side Routes						Weekday				2,505	127			13	7	7
						Saturday				1,826	84			7	7	7
						Annual				731,222	36,499					

NOTES:

- (1) Annual operating requirements based on 254 weekdays and 52 Saturdays per year.
- (2) Operating hours are 06:00 to 19:30 (13.5 hours) on weekdays and 07:00 to 19:00 (12.0 hours) on Saturdays.
- (3) #20 operates between Market Place and Northgate Plaza with service to Florida Hospital.
- (4) #20X operates between DeLand Intermodal Transit Facility and Saxon CR Station during peak periods only.
- (5) #21 operates via Enterprise, Deltona, Normandy, Providence, Deltona CC, Providence, Fort Smith, Howland (EB). Extend to WalMart, Deltona Community Center & Saxon CR Station (peak periods). Eliminate Austin/Ki
- (6) #22 operates via Enterprise, Deltona, Normandy, Providence, Library, Elkcam, Howland, WalMart (EB). Extend to WalMart, Deltona Community Center & Saxon CR Station (peak periods). Eliminate Austin/Kimberly loo
- (7) #23 New DeBary / Deltona route operates via Charles Beall, Saxon, Market Place, Volusia Medical Center, Saxon, Providence, Fort Smith, Normandy, Saxon, Volusia Medical Center, Market Place, Saxon, Charles Beall
- (8) #23X operates between Dupont Lakes S.C. and Saxon CR Station during peak periods only.
- (9) #24 eliminated due to poor performance.
- (10) #60 - extend to new DeLand CR Station via Spring Garden, New York Avenue, Old New York Avenue.





5.5 Summary of Service Statistics

Table 21 summarizes the key service statistics (peak buses, annual revenue bus-miles, annual revenue bus-hours) for each of the service scenarios. In addition, this table also projects the estimated annual operating and maintenance cost for the West Side routes using a fully allocated O&M cost model based on Votran's FY 2005 National Transit Database report.

Table 21
West Side Routes – Summary of Service Statistics

Year	Peak Buses	Annual Rev. Bus-Miles	Annual Rev. Bus-Hours	Annualized O&M Cost
2006	8	654,218	32,424	\$1,890,000
2007	8	671,412	32,424	\$1,986,000
2010	12	704,870	35,229	\$2,513,000
2012	13	731,222	36,499	\$2,839,000

NOTES:

- (1) O&M cost estimates are in year of expenditure dollars.
- (2) Assumed annual inflation rate = 4.0%.

6.0 CAPITAL IMPROVEMENT PLAN

This chapter of the West Side Transit Plan outlines a ten year capital improvements program. The Capital Improvements Program will utilize the service plans that were outlined in Chapter 5.0. These service plans specify the number of buses required to support existing and future fixed route and complimentary services. The Capital Improvement Program will also specify other capital improvements including fixed route buses, passenger shelters, signage, and relocation of the West Side operations and maintenance facility. Elements of the Capital Improvement Program will be assigned to a procurement and/or implementation year corresponding to the recommended service plan. Capital cost estimates will be based on average unit costs for similar equipment or facilities procured by Votran or unit costs for similar equipment or facilities procured by other transit systems.

The following sections provide a discussion of the components that comprise the Capital Improvements Program. It should be noted that this program corresponds with the service and physical plant improvements contained in this report. Votran also has numerous programs that they are advancing, and there has been an attempt to include the cost impact of these programs in this report. The following paragraphs address bus, support vehicles, signage, maintenance facilities and miscellaneous costs.

6.1 Vehicle Procurement and Replacement

Votran has indicated, through past earmark requests, that four (4) new buses will need to be purchased in 2009 to accommodate the implementation of commuter rail, which will impact West Side services. Those requests have not been accepted at this time and these buses are still unfunded. This ten-year Capital Improvement Program builds upon that TIP item based on the recommended service plan contained in this report.

Table 22 contains a summary of the bus procurement schedule, assuming a 10 year useful life and a 15-20% spare ratio. Table 23 summarizes the van procurement schedule, assuming a 3-5 year useful life and a 15-20% spare ratio. The bus and van fleets contained in these tables are sufficient to support the service plans described in section 5.



**Table 22
West Side Bus Fleet Requirements**

Fiscal Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total Buses	10	10	10	14	14	16	16	16	16	16
Peak Buses	8	8	8	12	12	13	13	13	13	13
Spare Buses	2	2	2	2	2	3	3	3	3	3
Bus Spare Ratio	25%	25%	25%	17%	17%	23%	23%	23%	23%	23%
New Buses Purchased	0	0	4	0	2	0	0	0	0	0
Buses Replaced	1	1	1	1	1	1	1	1	1	1
Cost of New Buses (1)	\$348	\$365	\$1,918	\$403	\$1,269	\$444	\$466	\$490	\$514	\$540

(1) Unit cost for 35' bus is \$347,555 per vehicle (FY 07 dollars).

(2) Unit cost inflated by 5% per year. Cost expressed in \$1,000's (YOE dollars).

**Table 23
West Side Van Fleet Requirements**

Fiscal Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total Vans	0	0	14	14	14	14	14	14	14	14
Peak Vans	0	0	12	12	12	12	12	12	12	12
Spare Vans	0	0	2	2	2	2	2	2	2	2
Van Spare Ratio	na	na	17%	17%	17%	17%	17%	17%	17%	17%
New Vans Purchased	0	0	14	0	0	0	0	0	0	0
Vans Replaced	0	0	0	0	0	3	4	4	3	0
Cost of New Vans (1)	\$0	\$0	\$515	\$0	\$0	\$128	\$179	\$188	\$148	\$0

(1) Unit cost for van is \$33,343 per vehicle (FY 07 dollars).

(2) Unit cost inflated by 5% per year. Cost expressed in \$1,000's (YOE dollars).

6.2 Maintenance Facility

Should the County decide to expand the bus system as previously outlined in its FY 2005/2009 Transportation Development Plan and as part of this West Side transit plan, eventually, the construction of a new bus maintenance garage will be necessary. The current facility at the school board site in Deltona is being moved to a temporary site on SR 415 adjacent to an existing county fleet maintenance facility. Eventually, a new or significantly refurbished facility will be required to accommodate over 15

vehicles, plus administrative and support functions. Tentatively, Votran has targeted a site adjacent to the proposed commuter rail station at the Saxon Boulevard extension in DeBary. Garage functions would include vehicle maintenance and fueling, parts storage, overnight storage, and administrative offices.

The construction costs of a maintenance garage can vary significantly, depending on the location and size of the garage and the type of the fueling facilities. Votran has estimated the cost for a new west side maintenance facility at \$4.15 million, excluding right-of-way costs. The right-of-way required for the new maintenance facility is about five acres. It was also assumed that this facility would be built in the same timeframe as the Saxon CR Station. Table 24 presents the costs of the maintenance facility.

**Table 24
West Side Maintenance Facility**

Fiscal Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Environmental Study		\$300								
R-O-W Acquisition (1)		\$0								
Design Services		\$150	\$200							
Construction Cost		\$1,000	\$2,000	\$500						
Total Cost (2)	\$0	\$1,450	\$2,200	\$500	\$0	\$0	\$0	\$0	\$0	\$0

(1) R-O-W may be donated by county. If R-O-W was purchased, the estimated cost is \$1.5 million (5 acres @ \$300,000 / acre).

(2) Total cost does not include R-O-W. Cost expressed in \$1,000's (YOE dollars)

6.3 Passenger Amenities

In order to make passenger transfers as convenient as possible, a limited number of transit centers may be constructed. For the purpose of this study, it is assumed that the proposed Deland ITF and the Saxon Boulevard commuter rail station will serve as transit centers for the West Side Routes. In addition, it is assumed that two or three other potential locations may be considered for a transit center. These locations include a location at the north end of DeLand near Northgate Plaza, a location along US 17-92/Enterprise Road near Market Place or the Saxon Park and Ride.

Each transit center would have limited passenger amenities (e.g. bus shelters, information kiosks), and spaces for buses to temporarily stop.



The order of magnitude capital cost for a transit center can vary significantly, from about \$50,000 to \$1.0 million, depending on right-of-way costs, number of bus bays and passenger amenities. Votran has indicated that small transit centers would be provided at an estimated cost of about \$50,000 to \$60,000 each. Further, it is assumed that these transit centers will not require the purchase of new right-of-way. The total cost of two to three small-scale transit centers would be about \$150,000 to \$180,000 (FY 07 dollars).

Likewise, transit shelters are appropriate at areas of high activity, and where routes intersect. The cost of a standard shelter is approximately \$7,500 to \$15,000, depending on size and associated infrastructure improvements (i.e., sidewalks, pad). Votran has indicated that an average cost of installing a new shelter is about \$7,500 (FY 07 dollars). Assuming the basic route structure outlined in this analysis, the number of shelters required is estimated to be 10. These new shelters would be programmed about one to two years following the service plan improvements, thereby allowing time for ridership patterns and shelter locations to be established.

Table 25
Passenger Amenities

Fiscal Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Transit Centers	\$0	\$0	\$55	\$58	\$0	\$64	\$0	\$0	\$0	\$0
Transit Shelters	\$0	\$0	\$0	\$35	\$27	\$0	\$30	\$0	\$0	\$0

(1) Cost expressed in \$1,000's (YOE dollars).

7.0 FINANCIAL PLAN

This financial element should provide a framework for Volusia County and Votran to fund, operate and implement services and facilities recommended in this West Side Transit Plan. Estimated capital and annual operating and maintenance costs were developed in previous tasks for the recommended service and capital improvements plan. Potential funding sources and the financial plan are described in the following sections.

7.1 Funding Sources

A feasible financial plan depends upon the identification of secure funding sources with sufficient revenue capacity to support the financing, operation, and implementation of any existing and proposed transit options. As a result, a key feature of the financial analysis will be to assess each funding source's revenue capacity and stability and to develop a funding package that will provide sufficient resources to support Votran's future operations and capital program for the West Side Transit Plan. Following is an outline of potential federal, state, local, and public/private sources of revenue that could be used to fund the operating and capital costs of existing and future transit options.

7.1.1 Federal Funds

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) recently replaced the previous transportation authorization act, the Transportation Equity Act for the 21st Century (TEA 21). SAFETEA-LU authorizes a Federal transit program through Fiscal Year 2009. Under SAFETEA-LU, the FTA administers two primary funding programs that are applicable for urban transit providers: Section 5309 Major Capital Investment Program and Section 5307 Urbanized Area Formula Program. FTA also provides the Job Access and Reverse Commute Program, Section 5311 Non-urbanized Area Formula Program, and the Section 5310 Elderly and Persons with Disabilities Program which can provide some targeted and limited funding. There are several other categories of flexible transportation funding that are available under the provisions of SAFETEA-LU. These and other potential sources of federal funds are identified and discussed below.

5309 Bus and Bus Facilities (SAFETEA-LU Transit Project Earmarks)

The Capital Investment Grants and Loans Program (formerly Discretionary Grants) provides transit capital assistance for new fixed guideway systems and extensions to existing fixed guideway systems (New Starts), fixed guideway modernization, and bus and bus related facilities. This program



is funded from both the Mass Transit Account of the Highway Trust Fund and the General Fund. The authorization continues 90% Federal share for the incremental costs of vehicle-related equipment needed to comply with the Clean Air Act Amendments and the Americans with Disabilities Act requirements and 80% Federal share for all other eligible costs, and continues the 40%, 40%, 20% allocation formula among fixed guideway modernization, new fixed guideway systems and extensions, and bus and bus-related facilities. Furthermore, SAFETEA-LU continues the discretionary nature of the program. Projects must still compete for funding using expanded criteria to justify the major investment involved. Projects will be evaluated and rated as “high”, “medium-high”, “medium”, “medium-low”, and “low”. SAFETEA-LU continues the discretionary nature of the bus-related program in current law.

This Federal source of funding can be utilized for bus facilities such as intermodal centers, as well as park and ride facilities, new or refurbished operations and maintenance facility, new buses and demand responsive vehicles, signage, and associated transit capital equipment. For the most part, this Federal source is at 80%, and requires a 20% state/local match. This source could be relied upon heavily for the park and ride and operations and maintenance facility portion of the capital improvement plan, as well as for buses, vans and associated capital improvements.

5307 Formula Funds

The Urbanized Area Formula Grants Program provides transit capital and operating assistance to urbanized areas with populations of more than 50,000. Approximately \$18 billion is provided to transit agencies for bus and rail vehicle replacements and facility recapitalization. The apportionment formula in the current law is, for areas under 200,000 in population, based on population and population density. For areas over 200,000 in population, it is based on population, population density, and transit data. The program is funded from both the Mass Transit Account and the General Fund. The program continues 90% Federal share for the incremental costs of vehicle related equipment needed to comply with the Clean Air Act Amendments and the Americans with Disabilities Act requirements, and 80% Federal share for all other eligible costs.

This Federal program will be relied on for both the capital program as well as the operating program. This program, in association with 5309 capital funds, are the backbone of the Federal Transit program, and will continue to assist Votran in capital facilities and operating funds.

Section 5311 Capital Grant Program

This program provides grants for transportation projects that are included in a State program of mass transportation service projects (including



service agreements with private providers of mass transportation service) for areas other than urbanized areas. Each State receives an apportioned amount based on its amount of non-urban area. This program is often utilized for operating assistance, and at least 15 percent of the amount made available in each fiscal year must be utilized to carry out a program to develop and support intercity bus transportation. Eligible activities under the program include planning and marketing for intercity bus transportation; capital grants for intercity bus shelters; joint-use stops and depots; operating grants through purchase-of-service agreements, user-side subsidies, and demonstration projects; and coordinating rural connections between small mass transportation operations and intercity bus carriers. A capital project under this section may not be more than 80 percent of the net cost of the project. A grant to pay a subsidy for operating expenses may not be more than 50 percent of the net cost of the operating expense project.

As indicated in the current Volusia County Metropolitan Planning Organization's (MPO) Transportation Improvement Program (TIP) this program can be utilized for Votran's program of service to those areas outside the urban area boundary.

Section 5310 Capital Grant Program

This program assists State and local governmental authorities in providing mass transportation service planned, designed, and carried out to meet the special needs of elderly individuals and individuals with disabilities. Amounts made available for this section may be used for transportation projects to assist in providing transportation services for elderly individuals and individuals with disabilities that are included in a State program of projects. A recipient of amounts under this section may include acquiring transportation services as an eligible capital expense.

This program will continue to be utilized for Votran's program of service to those with special needs, the elderly and individuals with disabilities.

STP/CMAQ Flex Funds

The primary purpose of the Congestion Mitigation and Air Quality Improvement Program (CMAQ) is to fund projects and programs in air quality non-attainment and maintenance areas for ozone, carbon monoxide (CO), and small particulate matter (PM-10) which reduce transportation related emissions. This program is not applicable to Volusia County at this time, due to the relatively good air quality status.

Funds are to be distributed according to a formula based on population and severity of pollution, as under existing law. A modification to the law during TEA-21 provides States that receive the minimum apportionment of



1/2% with some flexibility to use CMAQ funds for STP-eligible purposes. It also provides greater flexibility for public/private partnerships by allowing States to allocate CMAQ funds to private and non-profit entities for land, facilities, vehicles and project development activities.

Should that air quality status in Volusia County change in the future, this funding source has potential for use in Votran for the purchase of new buses, park and ride facilities as well as to support operations of new fixed route services for up to 3 years.

Surface Transportation Program Highway “Flex” Funds

These funds are excess highway funds or those chosen to be flexed to transit projects. Federal and state funds which are flexed are permanently removed from a highway project, or from potential highway project funding. Use of flex funding is often utilized when there is a consensus in the community regarding the importance of a transit project, and the MPO agrees to flex funds that would typically be reserved for highway projects to a transit project. This funding source has potential for any park and ride facilities, and possibly the operations and maintenance facility.

5316 Job Access and Reverse Commute

Section 3037 of Title III outlines a grant program entitled “Job Access and Reverse Commute Grants.” Eligible projects include an access to job project, or a reverse commute project. FTA defines an access to job project as one relating to the development of transportation services designed to transport welfare recipients and eligible low-income individuals to and from jobs and activities related to their employment. FTA may make access to job grants for:

- capital projects and to finance operating costs of equipment, facilities, and associated capital maintenance items related to providing access to jobs;
- promoting the use of transit by workers with non-traditional work schedules;
- promoting the use by appropriate agencies of transit vouchers for welfare recipients and eligible low income individuals under specific terms and conditions; and
- promoting the use of employers provided transportation including the transit pass benefit program.

FTA defines a reverse commute project as one related to the development of transportation services designed to transport residents of an urban area, urbanized areas, and areas other than urbanized areas to suburban employment opportunities. This includes any project that:

- subsidizes the costs associated with adding a reverse commute bus, train, carpool, van routes or service from urban areas, urbanized areas, and areas other than urbanized areas to suburban workplaces;
- subsidizes the purchase or lease by a nonprofit organization or public agency of a van or bus dedicated to shuttling employees from their residences to a suburban workplace; or
- facilitates the provision of mass transportation service to suburban employment opportunities.

There are several requirements and factors for consideration in awarding these grants. The amount of the grant may not exceed 50% of the total project cost. The funding comes from both the Mass Transit Account of the Highway Trust Fund, as well as the General Fund. This program could be utilized for the capital infrastructure, as well as limited operating subsidy, to support some of the services recommended in the Westside Service Plan.

Transit Enhancement Funds

Transit enhancement projects must enhance mass transportation service or use and be physically or functionally related to transit facilities. A one-percent set-aside for transit enhancements only in urbanized areas of more than 200,000 population was established during TEA-21 and continued during SAFETEA-LU. These funds must be used for activities defined as transit enhancements. If funds available for transit enhancements are not obligated for an enhancement project within three years following the fiscal year in which the funds are apportioned, the funds will be reapportioned under the urban area formula program. Under a related provision, projects providing bicycle access to mass transportation funded with the enhancement set aside shall be funded at a 95% Federal share.

The nine eligible project categories in the transit enhancement program are:

- Historic preservation, rehabilitation, and operation of historic mass transportation buildings, structures, and facilities (including historic bus and railroad facilities)
- Bus shelters
- Landscaping and other scenic beautification, including tables, benches, trash receptacles, and street lights
- Public art
- Pedestrian access and walkways
- Bicycle access, including bicycle storage facilities and installing equipment for transporting bicycles on mass transportation vehicles



- Transit connections to parks within the recipient’s transit service area
- Signage
- Enhanced access for persons with disabilities to mass transportation.

All items above have been previously eligible under the FTA program except for operating costs of historic facilities.

7.1.2 State Funds

A review of Florida Statutes, as well as state planning documents, indicates several methods by which the state can support an existing or new transit program or services. These are listed in Table 26, with a description of the funding source, associated issues and revenue potential/applicability.

**Table 26
Preliminary Assessment of State Funding Sources**

Funding Source/Program	Implementing Agency	Description	Associated Issues	Revenue Potential
Transit/Rail Service Development	FDOT	Discretionary funding allocated to specific projects by FDOT policy makers to assist in initiating new transit or rail service. Assistance can be either capital or operating grants, although operating assistance is limited to a defined timeframe – typically three years.	Project must be consistent with the local comprehensive plan, and be included in MPO plan and TIP.	High potential. Can be as much as 50% of the non-federal share of capital and operating costs.
Strategic Intermodal System (SIS)	FDOT	A new initiative by FDOT to provide funding for statewide and regionally significant transportation facilities and services.	Initial focus is on improving intercity transportation corridors, rather than local services.	Low potential.
Park and Ride; Commuter Assistance	FDOT	Programs to facilitate the use of car pools/vanpools by providing funding for planning, marketing, and capital projects.	Not designed for the West Side Services.	Low potential.
Intermodal Development	FDOT	Program designed to provide funding for improved access, connections to other modes (airports, seaports, rail, etc.), and to facilitate intermodal or multi-modal movement of people and goods.	Project must be consistent with the local comprehensive plan, and be included in MPO plan and TIP.	Medium potential, as most of the services developed access the future commuter rail system.
Public Transit Block Grants	FDOT	Formula grants to established transit providers (MDT) for use on capital projects or operating assistance.	Project must be consistent with the local comprehensive plan, and be included in MPO plan and TIP.	Medium potential. Provides a recurring source of state funds for operating assistance to existing transit agencies.
State Infrastructure Bank (SIB) Loans	FDOT	Provides low interest loans for transportation projects – all modes. Repayment terms are flexible and are negotiated on a case-by-case basis. This is a financing tool, not a grant.	Project must be consistent with the local comprehensive plan, and be included in MPO plan and TIP. Not a grant requires repayment.	Medium potential. The commuter rail project sponsors are receiving SIB loans.



Funding Source/Program	Implementing Agency	Description	Associated Issues	Revenue Potential
TRIPS	FDOT	Program to improve travel on regionally significant facilities, or benefit regional travel or commerce; 50% of project cost or 50% of non-fed. share	Project must be consistent with the local comprehensive plan, and be included in MPO plan and TIP	Medium potential. Could be used for bus costs.
CIGP	FDOT	Up to 50% for improvements to relieve congestion on State Highway System	Project must be consistent with the local comprehensive plan, and be included in MPO plan and TIP	Low potential for initial program. Higher potential for ultimate program
New Starts	FDOT	Dollar for dollar match of local funds for new start projects.	Project must be consistent with the local comprehensive plan, and be included in MPO plan and TIP	Low potential for initial program. Higher potential for ultimate program

Currently, Votran receives State Block Grant funds and will continue to do so for the existing and future services. In addition, it is assumed that the other sources of state revenue will continue to the Votran program, including the expanded bus system on the West Side. In addition to the existing funding sources, it appears that the state Service Development Plan funding would be an appropriate source for the expanded service to service the new commuter rail station in DeBary. This source can be utilized for up to three years, and can cover up to 50% of the non-federal share of the capital or operating expenditure.

It should be noted that the Final Transit Operations Plan for the Central Florida Commuter Rail Transit (CFCRT) project has identified the incremental additional operational funding required to provide transit service to the commuter rail station. This funding is assumed in the operations and maintenance costs for the CFCRT project. That funding will be assumed in this service plan for the years 2009 and beyond.

7.1.3 Local/Private Funds

Local funds will be necessary to provide the local match share of the federal capital grants and the operating and maintenance costs not covered by the passenger farebox revenue and federal or state assistance. Local funds for transit can come from any available local funding source. Most transit systems fund the local share from the general fund or with special taxes dedicated to public transportation (e.g., vehicle registration).

In Florida, local communities provide most funding for public transit. Local revenue sources, including fare receipts, have a primary role in funding transit programs. Most communities make either discretionary contribution from a general fund or dedicate specific revenues to transit. For example,

some communities fund transit by dedicating a portion of hotel/motel taxes, property tax revenues or vehicle registration fees.

There are other types of local funding sources that are used throughout the country for local share of transit. These include, but are not limited to: fuel tax, property tax, income tax, sales tax, real-estate transfer tax, emission fees, auto registration fees, utility excise tax, payroll/"head" tax, rental vehicle tax, parking tax, hotel/motel room tax, business licenses and fees, ad valorem tax, special-benefit assessment districts, local/business improvement districts, utility/service districts, impact fees, in-kind contributions, land transfer fees, and tax increment assessments.

Finally, there is potential for private sector participation. Typically, private financial participation in the provision of transit services primarily is limited to specific projects such as the joint development of a tract of real estate or the leasing of new equipment. Potential private fund sources typically include: advertising, joint development, concession agreements, selling surplus, park and ride agreements, lease equipment agreements, grant anticipation notes, revenue anticipation notes, and infrastructure banking.

The following are potential revenue sources:

General Revenue Contributions to Votran Capital and Operating

This funding is used to provide local match for capital expenditures such as buses and customer amenities, as well as to offset operating deficits after farebox recovery. This will continue to be an important revenue source for Votran, especially for transit operations.

Local Option Gas Tax

Often, an interest on the local government's part to also consider bonding other revenue sources for transportation improvements, such as the Local Option Gas Tax. This revenue source would provide a steady resource for the Votran system.

Special Benefit Assessment Districts

To capture benefits associated with enhanced real estate development partially attributable to improvements in transportation corridors, many jurisdictions create special assessment districts. Often called a Municipal Services Taxing Unit (MSTU) or a Municipal Services Benefit Unit (MSBU), a special assessment is charged upon real estate deriving a special benefit from a nearby capital improvement that is used to cover debt service for the improvement. Frequently, the assessment is apportioned on the basis of the front footage of the land, although other valuations such as land area or the value of the property benefited are also used. This type of assessment has been utilized to pay for special

public works projects. This source would be difficult to implement, as it would be difficult to property owners additional fees for the large projects such as park and ride facilities or maintenance facilities.

Right-of-Way

This source of funding only becomes relevant should Votran decide to pursue Federal Section 5309 funding for the maintenance and operations base. Should this occur, Votran could utilize the non-Federal share of the purchase as a "local match" for the federal funding. The right-of-way alone could serve as the match to Federal Funds. This number does not include state and local funds for development of conceptual plans and programs. The large capital projects would require a 20% local match.

Tax Increment Financing:

Per requirements stipulated in F.S. Chapter 163, municipalities or counties may designate a Community Redevelopment Area to address the removal of slum and blight. Following a process that includes the Finding of Necessity (by resolution), the adoption of a Redevelopment Plan (by public hearing/ordinances), and the creation of a Tax Increment Trust Fund (by public hearing/ordinances), the city/county may establish a Community Redevelopment Agency (CRA). The financing instrument under this program enables the CRA to receive contributions from the affected taxing jurisdictions within the planning area. The contribution formula is based on 95% of the ad valorem tax revenues generated by each taxing entity from any new taxes generated within the CRA area subsequent to the adoption of the Redevelopment Plan. All revenues from these contributions must be deposited into the Tax Increment Trust Fund and the monies spent on implementing programs identified in the adopted plans. The CRAs have a thirty-year "sunset" provision. However, this revenue stream takes several years to mature. Consequently TIF revenues, or similar mechanisms that depend on the increase in property values, may be better suited as a potential source of operating funds.

Business Improvement Districts

Under F.S. Chapter 170, Business Improvement Districts may be established by a municipality or county resolution. The establishment of a BID is predicated on the approval of a majority of the property owners to be included in the designated districts. The funds from the non-ad valorem assessment of the property owners can be used to promote/market the area enhance security, maintenance, beautification and transportation. The property owners must be specially benefited by the provision of the BID services and are assessed upon each such property in reasonable proportion to the benefits derived from the services. There are numerous such BIDs established throughout the State. BIDs typically rely on an assessment applied to the properties

within a defined area based on assessed property values, per square foot charges, or linear frontage. The property owners must agree to the assessment. The statutes enabling the formation of BIDs provide flexibility in purpose and disposition of BID assessments. For example, the provision of mass transportation systems is specifically referenced in the law.

7.2 Finance Plan

This section presents a 10-year finance plan which includes estimated costs and proposed revenue sources for capital outlays as well as annual operating costs. This Financial Element clearly indicates the projected amount of capital and operating requirements that Votran would have to fund for planned system and capital expansions. This element also outlines potential sources of funding for the capital and operating program. It should be noted that the following financial element is preliminary and conceptual in nature. The reader is cautioned that no verbal or written financial commitments have been made by any Federal, state or local governmental entity or government official for this West Side Transit Plan. The element represents a reasonable or plausible funding alternative that Votran could begin to utilize to advance the proposed transit system operating and capital program.

7.2.1 Capital Program

The capital program contained in this report is primarily based upon the Volusia County 2006/2007 through 2010/2011 Transportation Improvement Program (TIP). That is to say, the number of new buses, capital maintenance, service and facility improvements in the TIP are assumed as a base for this capital program. Chapter 6.0 outlines the additional capital program items that result from the recommended service plan. The 10 year capital program also contains additional items such as additional transit signs, passenger amenities, and a new operations and maintenance facility. These items are staged in a logical sequence, and are placed in the capital program over several years.

With regard to capital program funding, it was assumed that Votran would continue to utilize the sources that it currently utilizes. Thus, the future capital program will continue to access Federal 5307 and 5309 funding on an 80% basis, with the remaining 20% to be split between the State of Florida and Volusia County. Implementation of the passenger facilities and the West Side operations and maintenance facility will require specific project earmarks through the Federal Section 5309 program, and should require, depending on the location, minimal environmental study such as an Environmental Assessment or Categorical Exclusion.



Table 27 presents the financial element capital program in terms of uses of funds and sources of funds over a 10-year period. This program totals approximately \$12,334,000 over the next 10 years for an average of \$1.2 million per year. This would equate to a yearly local expenditure of about \$120,000 per year as a match to State and Federal funds. The bigger cost items in this program over the 10 year period include bus purchases of approximately \$6.8 million, and an operations and maintenance facility at approximately \$4.2 million. All of the figures contained in Table 27 are in Year of Expenditure (YOE) dollars.

7.2.2 Operations Program

The operations program is also based upon the service plans described in Chapter 5. This concept outlines the proposed operations for the West Side Transit Plan for the Fiscal Year (FY) 2006-2016 timeframe. Chapter 5 provides an analysis that results in an estimate of route distances; peak, base and evening headways; revenue bus miles; revenue bus hours; layover and cycle times; and the required number of peak, base and evening vehicles. This information is relied upon heavily for the operations portion of the financial element.

For the purpose of this financial element, increases in proposed fixed route bus service between FY 2007 and FY 2016 were allocated according to the service plan. With regard to costs, information contained in the National Transit Database submitted by Votran for 2005 was utilized as a base. A cost allocation model was developed for both direct cost allocation and full allocation, which utilizes garages, bus hours, bus miles and peak buses and data inputs. This number was inflated at 4% per year to arrive at an estimated cost for each individual year.

Table 28
Votran FY2005 Cost Allocation Model

EXPENSE OBJECT	DIRECT COST ALLOCATION				FULL ALLOCATION			
	Garages	Bus-Hrs	Bus-Miles	Peak Buses	Garages	Bus-Hrs	Bus-Miles	Peak Buses
501.01 Operators Salaries/Wages	0	2,623,542	0	0	0	2,623,542	0	0
501.02 Other Salaries/Wages	538,260	0	372,390	88,963	728,646	0	413,767	355,853
502.00 Fringe Benefits	254,769	1,252,759	141,164	22,494	338,918	1,252,759	156,849	89,975
503.00 Services	0	0	0	106,997	0	0	0	427,986
504.01 Fuel & Lubricants	0	0	1,350,686	0	0	0	1,350,686	0
504.02 Tires & Tubes	0	0	88,868	0	0	0	88,868	0
504.03 Other Materials & Supplies	0	0	665,626	0	0	0	734,162	0
505.00 Utilities	0	0	0	32,226	0	0	0	128,904
506.00 Casualty/Liability	0	0	157,354	0	0	0	196,693	0
507.00 Taxes	0	0	0	14,095	0	0	0	28,189
508.00 Purchased Transportation	0	0	0	0	0	0	0	0
509.00 Miscellaneous Expenses	16,113	0	0	53,376	40,631	0	0	213,504
510.00 Expense Transfers	0	0	0	0	0	0	0	0
Total Operating Expenses:	809,142	3,876,301	2,776,088	318,150	1,108,195	3,876,301	2,941,025	1,244,411
FY2005 Units of Service	2	150,523	2,582,915	42	2	150,523	2,582,915	42
Unit Cost (oper. expenses only)	\$404,571	\$25.75	\$1.07	\$7,575	\$554,098	\$25.75	\$1.14	\$29,629

Variables:

1. Garages = number of storage and maintenance garages.
2. Bus-hours = actual annual revenue bus-hours (Form S-10).
3. Bus-miles = actual annual revenue bus-miles (Form S-10).
4. Peak Buses = maximum buses in revenue service (Form S-10).

With regard to the sources of fund, it was assumed that Votran would continue to utilize the sources that it currently utilizes. Thus, the future operations program will continue to access Federal 5307 and 5311 funding, with the remaining funds to be allocated between the farebox return, state funds and Volusia County. The percentages listed in the most recent National Transit Data Base was utilized for percentage breakdowns, and applied to the estimated costs of service. In the year 2009, when commuter rail starts, there is an annual subsidy that will be provided to Votran for additional service required to support the commuter rail service. This amount was reported in the *Commuter Rail Operations and Maintenance Cost Results Final Report*. The amount was reported in a year 2005 dollar, and was increased by 4% per year for this financial analysis. The amount of subsidy was reduced proportionally (33% state/67% local) from the state and local contribution to Votran's West Side funding. It is assumed that those funds would be used elsewhere in the system.

Table 29 presents the financial element operations program in terms of uses of funds and sources of funds over a 10-year period. All of the figures contained in Table 29 are in Year of Expenditure (YOE) dollars.

7.3 Economic Impact

The economic impact of transit has been extensively documented in recent studies across the nation. Overall, according to the American Public Transit Association, every dollar taxpayers invested in public transportation generates \$6 or more in economic returns. Furthermore, every \$1 million in capital investment in public transit yields \$3 million in increased sales and creates 30 new permanent jobs. For example, the operations and maintenance facility, an estimated \$4 million project, would have a direct additional economic impact of \$12 million.

The 10-year capital program contained in this report totals approximately \$12.3 million (YOE dollars). This means that the new additional economic impact of the capital program is approximately \$37 million over the ten-year period, which also equates to more than 340 new jobs over the same 10-year period. Finally, every \$10 million in operating investment yields \$32 million in increased sales. The total operating estimate contained in this report for the 10-year period is approximately \$28.4 million (YOE dollars), which yields almost \$91 million in increased sales over the next 10 years.



Table 27
Financial Element – Capital Sources and Uses of Funds (Year of Expenditure Dollars)

FISCAL YEAR	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Totals
Uses of Funds											
Buses	\$348,000	\$365,000	\$1,918,000	\$403,000	\$1,269,000	\$444,000	\$466,000	\$490,000	\$514,000	\$540,000	\$6,757,000
Vans	\$0	\$0	\$515,000	\$0	\$0	\$128,000	\$179,000	\$188,000	\$148,000	\$0	\$1,158,000
Maintenance Facility	\$0	\$1,450,000	\$2,200,000	\$500,000	\$0	\$0	\$0	\$0	\$0	\$0	\$4,150,000
Transit Centers	\$0	\$0	\$55,000	\$58,000	\$0	\$64,000	\$0	\$0	\$0	\$0	\$177,000
Transit Shelters	\$0	\$0	\$0	\$35,000	\$27,000	\$0	\$30,000	\$0	\$0	\$0	\$92,000
Total Capital Uses	\$348,000	\$1,815,000	\$4,688,000	\$996,000	\$1,296,000	\$636,000	\$675,000	\$678,000	\$662,000	\$540,000	\$12,334,000
Sources of Funds											
Federal 5307/5309	\$278,400	\$1,452,000	\$3,750,400	\$796,800	\$1,036,800	\$508,800	\$540,000	\$542,400	\$529,600	\$432,000	\$9,867,200
State	\$34,800	\$181,500	\$468,800	\$99,600	\$129,600	\$63,600	\$67,500	\$67,800	\$66,200	\$54,000	\$1,233,400
Local	\$34,800	\$181,500	\$468,800	\$99,600	\$129,600	\$63,600	\$67,500	\$67,800	\$66,200	\$54,000	\$1,233,400
Total Capital Sources	\$348,000	\$1,815,000	\$4,688,000	\$996,000	\$1,296,000	\$636,000	\$675,000	\$678,000	\$662,000	\$540,000	\$12,334,000



Table 29
Financial Element – Operating Sources and Uses of Funds (Year of Expenditure Dollars)

FISCAL YEAR	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
USES OF FUNDS										
Bus Service										
<i>Revenue Bus Hours</i>	32,424	32,424	32,424	35,229	35,229	36,499	36,499	36,499	36,499	36,499
<i>Revenue Bus Miles</i>	671,412	671,412	671,412	704,870	704,870	731,222	731,222	731,222	731,222	731,222
<i>Peak Buses</i>	8	8	8	12	12	13	13	13	13	13
Total Bus Use of Funds	\$1,986,000	\$2,065,000	\$2,148,000	\$2,513,000	\$2,614,000	\$2,839,000	\$2,953,000	\$3,071,000	\$3,193,000	\$3,321,000
Van Service										
<i>Number of Vans in Service</i>	0	0	0	12	12	12	12	12	12	12
Total Van Use of Funds	\$0	\$0	\$0	\$246,000	\$246,000	\$246,000	\$246,000	\$246,000	\$246,000	\$246,000
Total Uses of Funds	\$1,986,000	\$2,065,000	\$2,148,000	\$2,759,000	\$2,860,000	\$3,085,000	\$3,199,000	\$3,317,000	\$3,439,000	\$3,567,000
FISCAL YEAR	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
SOURCES OF FUNDS										
Federal 5307/5311	\$99,300	\$103,250	\$107,400	\$125,650	\$130,700	\$141,950	\$147,650	\$153,550	\$159,650	\$166,050
Farebox	\$635,520	\$660,800	\$687,360	\$804,160	\$836,480	\$908,480	\$944,960	\$982,720	\$1,021,760	\$1,062,720
State	\$397,200	\$413,000	\$281,568	\$348,647	\$362,689	\$401,284	\$417,424	\$434,097	\$451,293	\$469,400
Local	\$794,400	\$826,000	\$562,692	\$696,831	\$724,897	\$802,069	\$834,327	\$867,652	\$902,023	\$938,215
Other	\$59,580	\$61,950	\$64,440	\$75,390	\$78,420	\$85,170	\$88,590	\$92,130	\$95,790	\$99,630
Commuter Rail	\$0	\$0	\$444,540	\$462,322	\$480,814	\$500,047	\$520,049	\$540,851	\$562,485	\$584,984
Total Operations Sources	\$1,986,000	\$2,065,000	\$2,148,000	\$2,513,000	\$2,614,000	\$2,839,000	\$2,953,000	\$3,071,000	\$3,193,000	\$3,321,000



Appendix A

Weekday Route Profiles

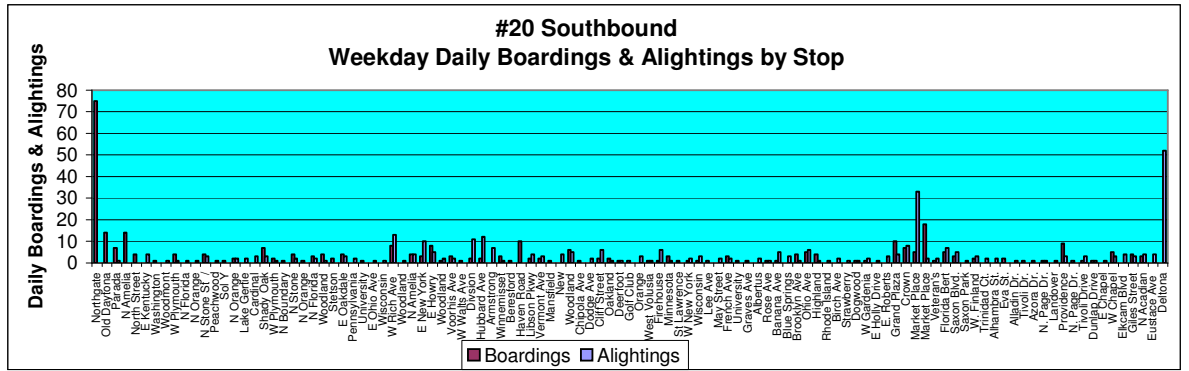
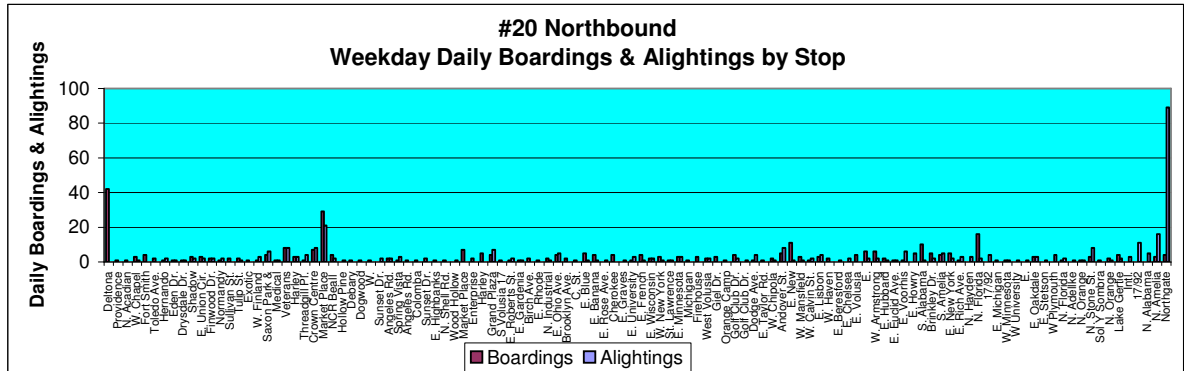
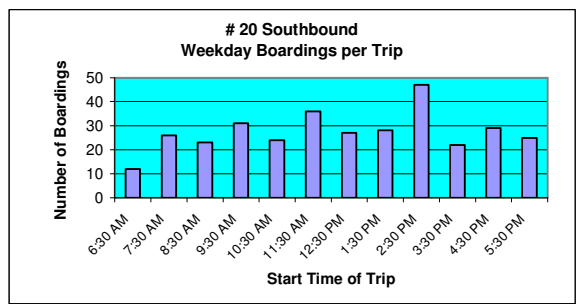
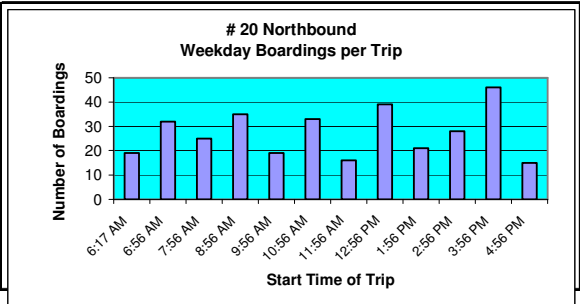


**Weekday Route Profile
#20 Deltona/DeLand**

Schedule Characteristics			
Run Time (NB)	84	Schedule	84.5 Actual
Run Time (SB)	86	Schedule	89.7 Actual
Layover Time	10	Schedule	5.7 Actual
Round-Trip Cycle Time	180	Schedule	180.0 Actual
Layover (% of Cycle)	5.6%		3.2%

Weekday Service Characteristics	
Begin / End Service	6:17 a.m.
Begin Revenue Service	7:40 p.m.
Span of Service	13.4
Scheduled One-Way Trips	26
Average One-Way Trip Length	27.5
Peak/Base Frequency	60/60
Peak/Base Buses	3/3
Daily Rev. Bus-Hours	38.1
Daily Rev. Bus-Miles	713.8
Average Daily Riders (GFI)	682

Performance Measures	
Passengers / Rev. Hour	17.9
Passengers / Rev. Mile	1.0
Passengers / Vehicle Trip	26.2
On-Time Performance (+ or - 5 min.)	66%



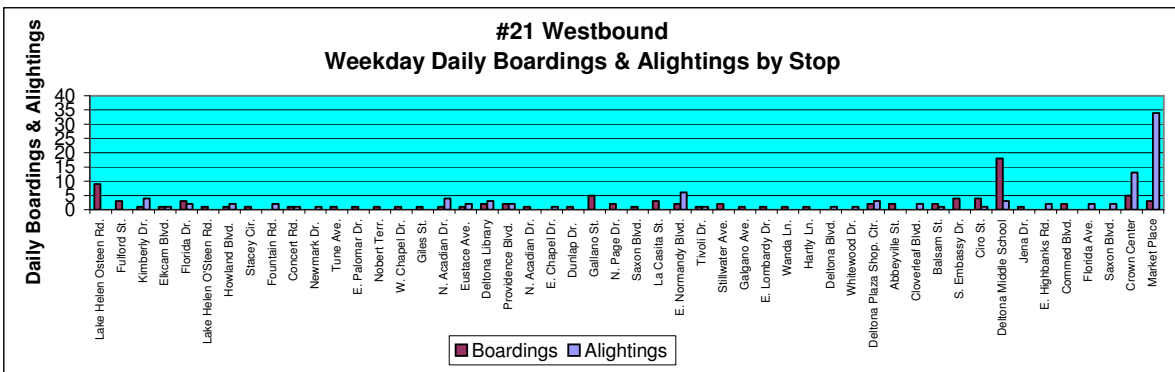
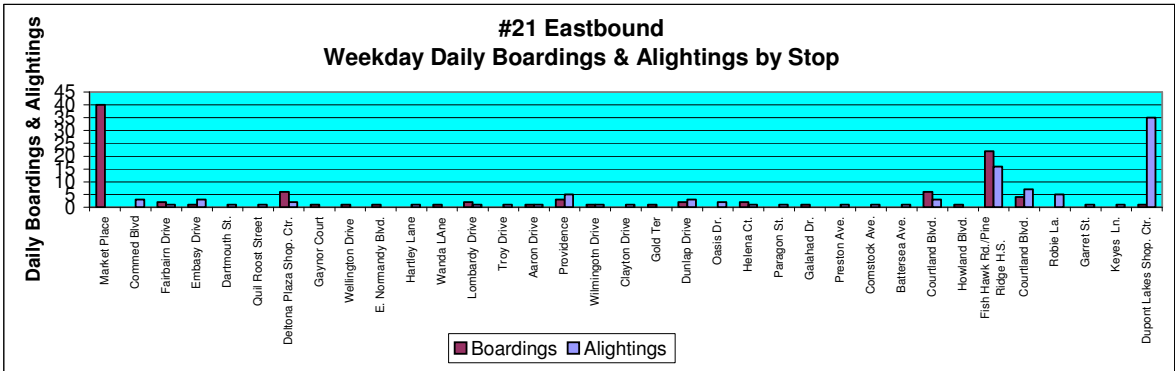
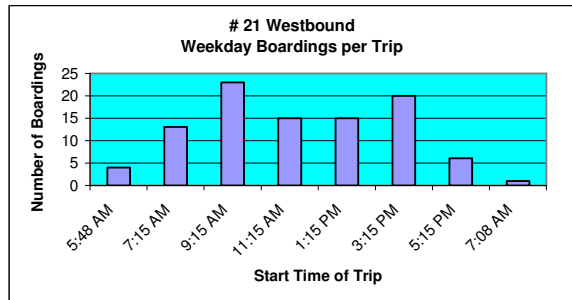
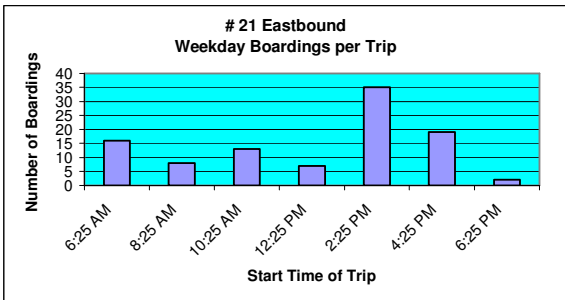


**Weekday Route Profile
#21 Orange City**

Schedule Characteristics			
Run Time (EB)	42	Schedule	40.7 Actual
Run Time (WB)	60	Schedule	62.5 Actual
Layover Time	18	Schedule	16.8 Actual
Round-Trip Cycle Time	120	Schedule	120.0 Actual
Layover (% of Cycle)	15.0%		14.0%

Weekday Service Characteristics	
Begin / End Service	5:44 a.m.
Begin Revenue Service	7:36 p.m.
Span of Service	13.9
Scheduled One-Way Trips	14
Average One-Way Trip Length	18.5
Peak/Base Frequency	120/120
Peak/Base Buses	1/1
Daily Rev. Bus-Hours	13.9
Daily Rev. Bus-Miles	258.3
Average Daily Riders (GFI)	163

Performance Measures	
Passengers / Rev. Hour	11.8
Passengers / Rev. Mile	0.6
Passengers / Vehicle Trip	11.6
On-Time Performance (+ or - 5 min.)	100%



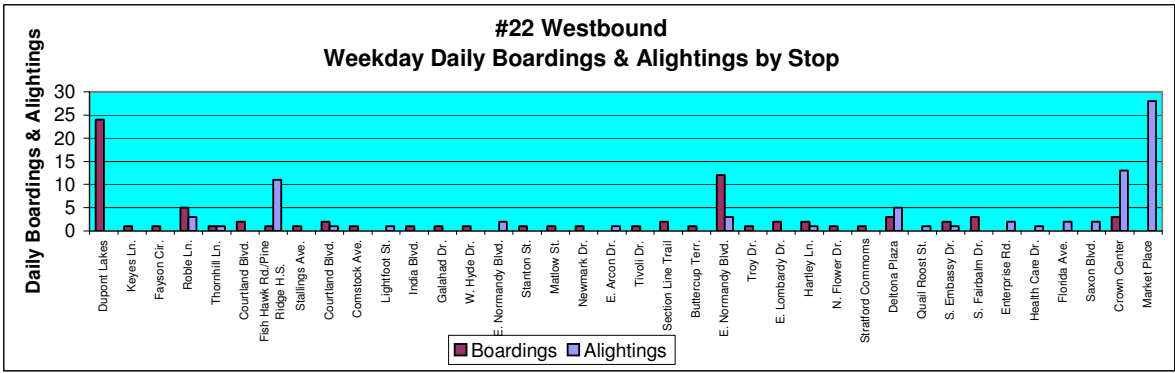
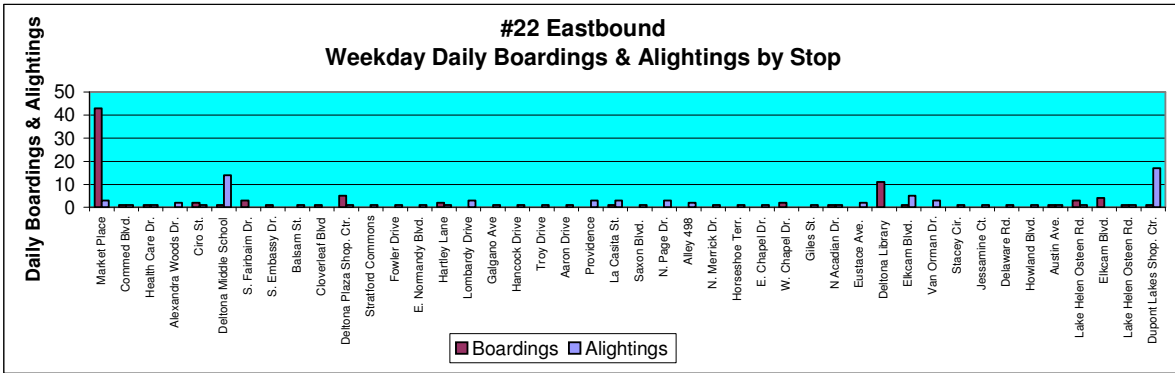
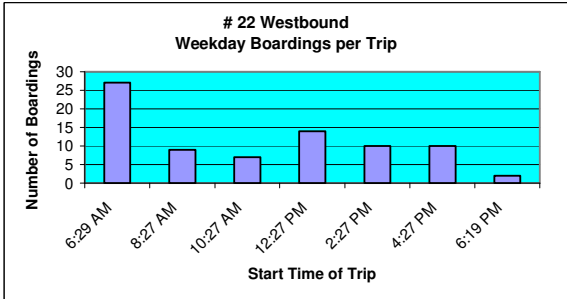
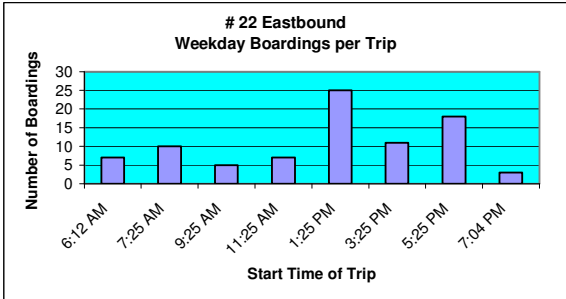


Weekday Route Profile #22 Deltona

Schedule Characteristics			
Run Time (EB)	52	Schedule	53.3 Actual
Run Time (WB)	48	Schedule	45.8 Actual
Layover Time	20	Schedule	21.0 Actual
Round-Trip Cycle Time	120	Schedule	120.0 Actual
Layover (% of Cycle)	16.7%		17.5%

Weekday Service Characteristics	
Begin / End Service	6:18 a.m.
Begin Revenue Service	7:37 p.m.
Span of Service	13.3
Scheduled One-Way Trips	14
Average One-Way Trip Length	17.3
Peak/Base Frequency	120/120
Peak/Base Buses	1/1
Daily Rev. Bus-Hours	13.3
Daily Rev. Bus-Miles	241.5
Average Daily Riders (GFI)	144

Performance Measures	
Passengers / Rev. Hour	10.8
Passengers / Rev. Mile	0.6
Passengers / Vehicle Trip	10.3
On-Time Performance (+ or - 5 min.)	88%



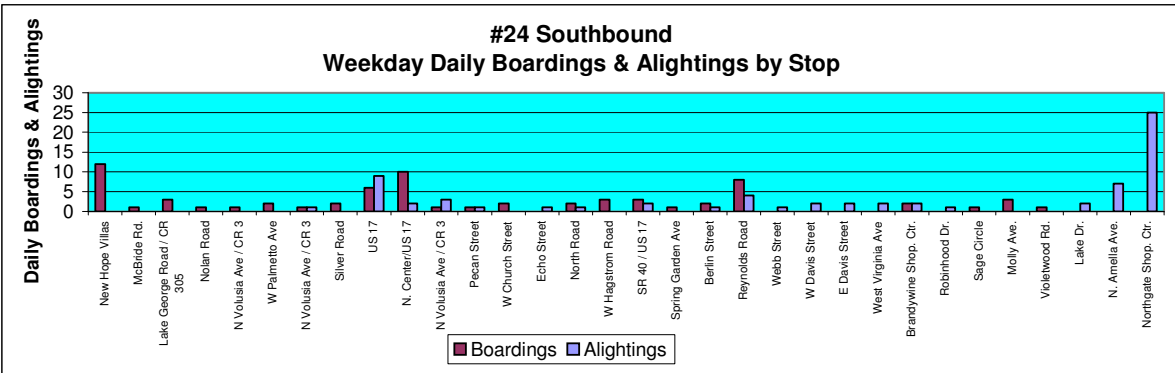
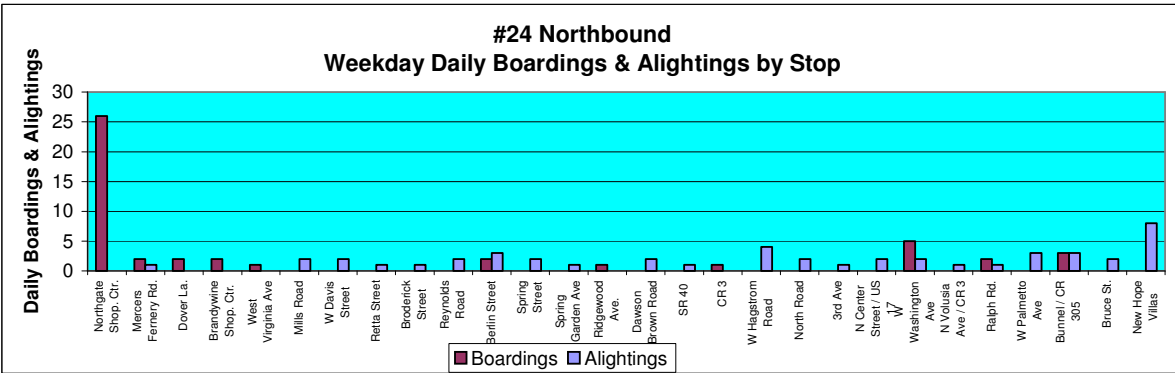
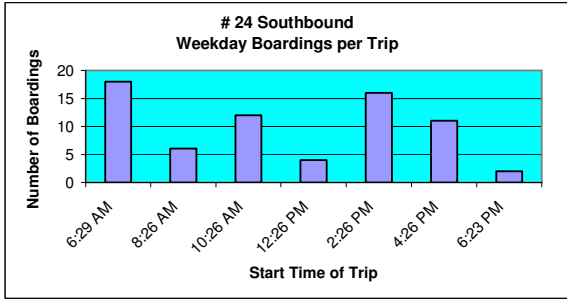
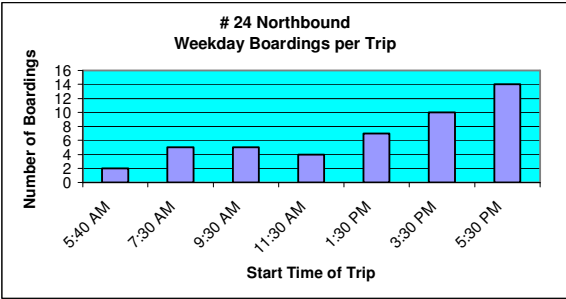


**Weekday Route Profile
#24 Pierson/Seville**

Schedule Characteristics			
Run Time (NB)	51	Schedule	48.4 Actual
Run Time (SB)	54	Schedule	50.6 Actual
Layover Time	15	Schedule	21.0 Actual
Round-Trip Cycle Time	120	Schedule	120.0 Actual
Layover (% of Cycle)	12.5%		17.5%

Weekday Service Characteristics	
Begin / End Service	5:40 a.m.
Begin Revenue Service	7:17 p.m.
Span of Service	13.6
Scheduled One-Way Trips	14
Average One-Way Trip Length	27.6
Peak/Base Frequency	120/120
Peak/Base Buses	1/1
Daily Rev. Bus-Hours	13.6
Daily Rev. Bus-Miles	386.4
Average Daily Riders (GFI)	54

Performance Measures	
Passengers / Rev. Hour	4.0
Passengers / Rev. Mile	0.1
Passengers / Vehicle Trip	3.9
On-Time Performance (+ or - 5 min.)	93%



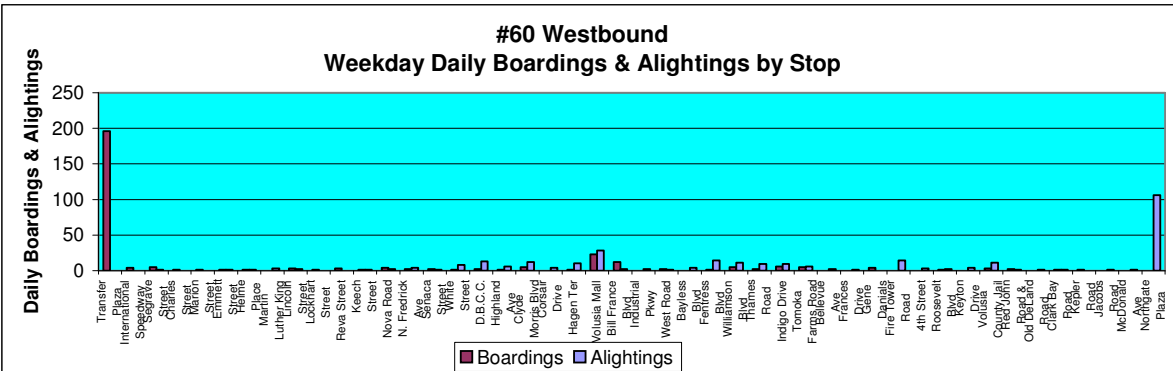
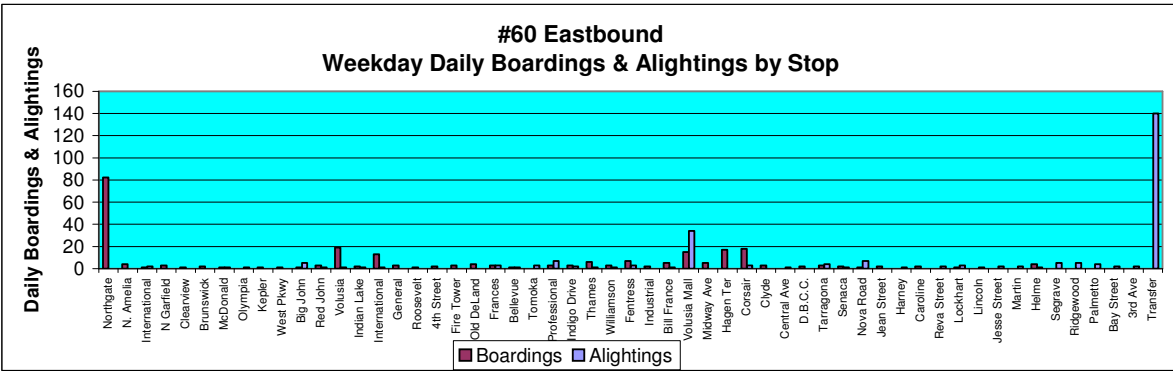
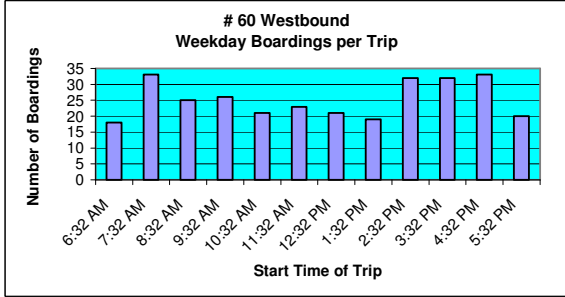
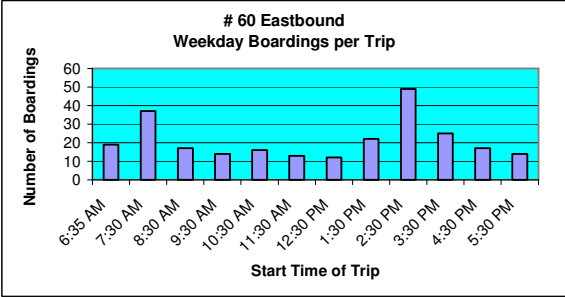


**Weekday Route Profile
#60 East/West Connector**

Schedule Characteristics			
Run Time (EB)	58 Schedule	55.3 Actual	
Run Time (WB)	48 Schedule	49.9 Actual	
Layover Time	14 Schedule	14.8 Actual	
Round-Trip Cycle Time	120 Schedule	120.0 Actual	
Layover (% of Cycle)	11.7%	12.3%	

Weekday Service Characteristics	
Begin / End Service	6:32 a.m.
Begin Revenue Service	7:23 p.m.
Span of Service	12.9
Scheduled One-Way Trips	26
Average One-Way Trip Length	23.5
Peak/Base Frequency	60/60
Peak/Base Buses	2/2
Daily Rev. Bus-Hours	25.3
Daily Rev. Bus-Miles	611.0
Average Daily Riders (GFI)	561

Performance Measures	
Passengers / Rev. Hour	22.2
Passengers / Rev. Mile	0.9
Passengers / Vehicle Trip	21.6
On-Time Performance (+ or - 5 min.)	85%





Appendix B
Saturday Route Profiles



**Saturday Route Profile
#20 Deltona/DeLand**

Schedule Characteristics

Run Time (NB)	84 Schedule	81.6 Actual
Run Time (SB)	86 Schedule	85.7 Actual
Layover Time	10 Schedule	12.7 Actual
Round-Trip Cycle Time	180 Schedule	180.0 Actual
Layover (% of Cycle)	5.6%	7.1%

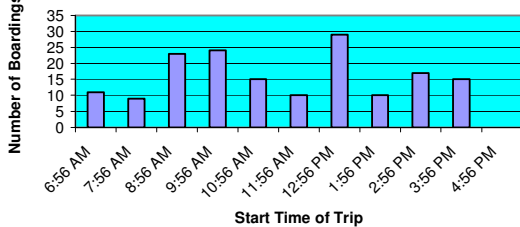
Saturday Service Characteristics

Begin / End Service	6:58 a.m.
Begin Revenue Service	6:54 p.m.
Span of Service	11.9
Scheduled One-Way Trips	22
Average One-Way Trip Length	27.5
Peak/Base Frequency	60/60
Peak/Base Buses	3/3
Daily Rev. Bus-Hours	31.3
Daily Rev. Bus-Miles	604.0
Average Daily Riders (GFI)	403

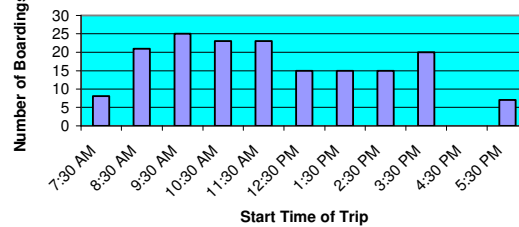
Performance Measures

Passengers / Rev. Hour	12.9
Passengers / Rev. Mile	0.7
Passengers / Vehicle Trip	18.3
On-Time Performance (+ or - 5 min.)	89%

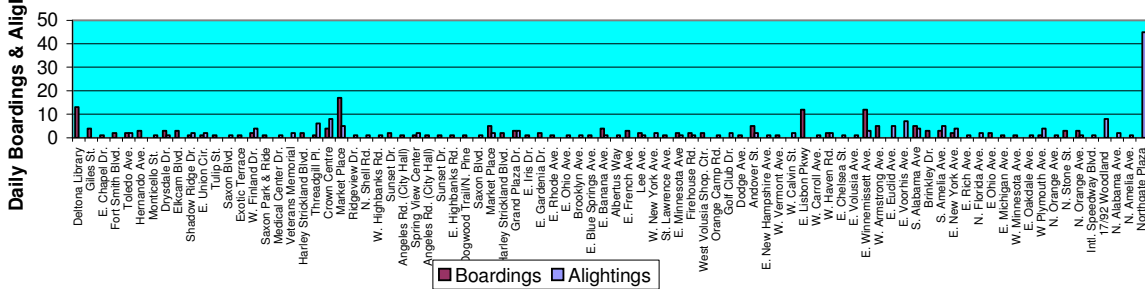
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Saturday Boardings per Trip**



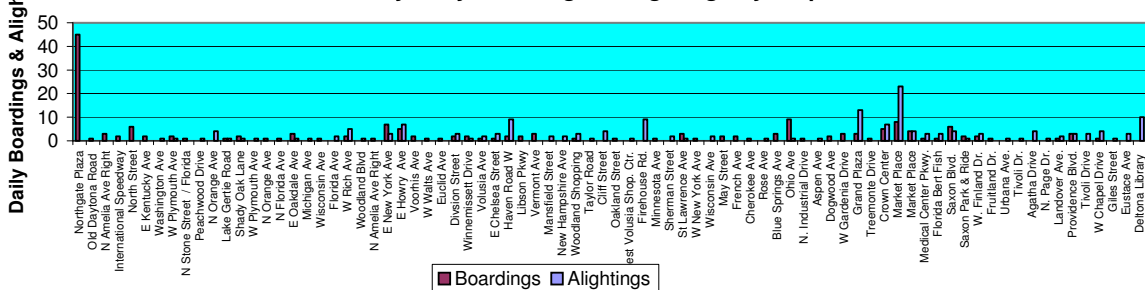
**# 20 Southbound
Saturday Boardings per Trip**



**#20 Northbound
Saturday Daily Boardings & Alightings by Stop**



**#20 Southbound
Saturday Daily Boardings & Alightings by Stop**



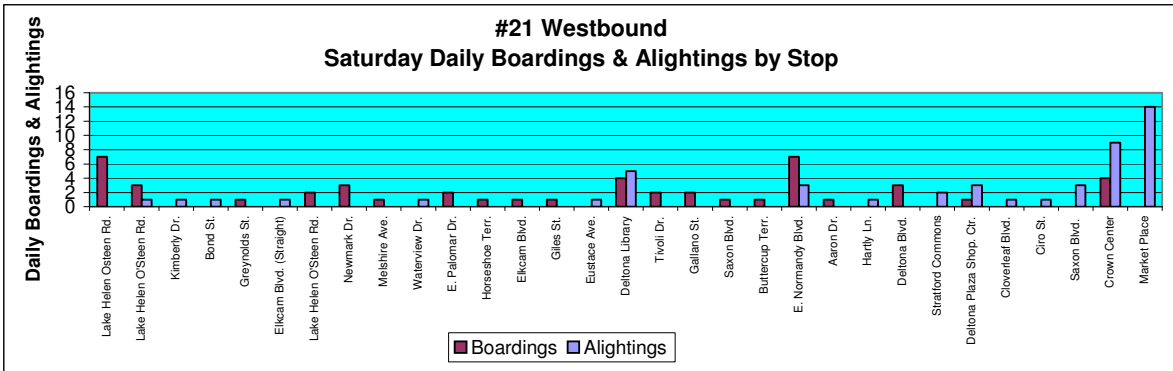
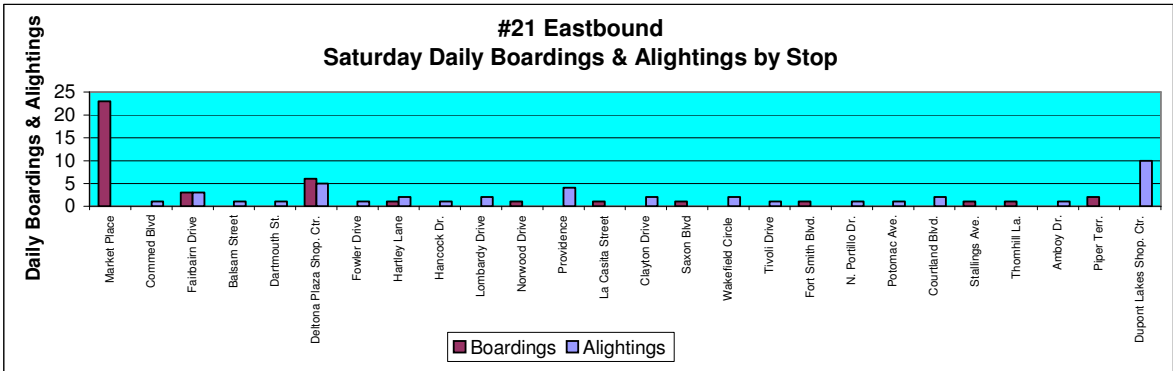
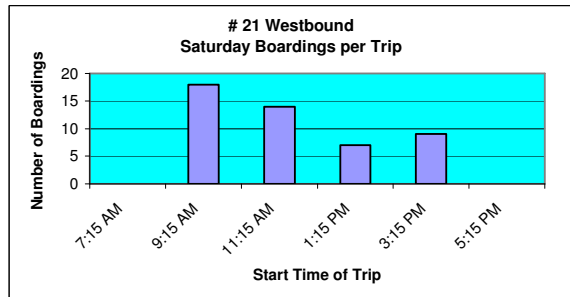
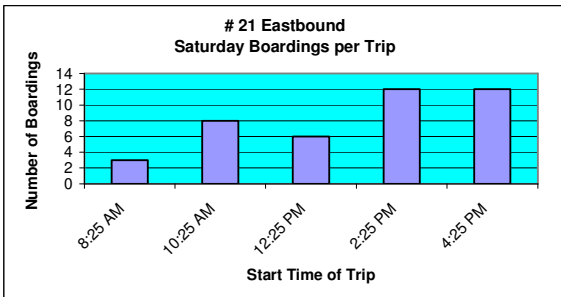


**Saturday Route Profile
#21 Orange City**

Schedule Characteristics			
Run Time (EB)	42	Schedule	43.8 Actual
Run Time (WB)	60	Schedule	56.8 Actual
Layover Time	18	Schedule	19.4 Actual
Round-Trip Cycle Time	120	Schedule	120.0 Actual
Layover (% of Cycle)	15.0%		16.2%

Saturday Service Characteristics	
Begin / End Service	6:54 a.m.
Begin Revenue Service	6:54 p.m.
Span of Service	12.0
Scheduled One-Way Trips	12
Average One-Way Trip Length	18.5
Peak/Base Frequency	120/120
Peak/Base Buses	1/1
Daily Rev. Bus-Hours	12.0
Daily Rev. Bus-Miles	221.4
Average Daily Riders (GFI)	82

Performance Measures	
Passengers / Rev. Hour	6.8
Passengers / Rev. Mile	0.4
Passengers / Vehicle Trip	6.8
On-Time Performance (+ or - 5 min.)	90%



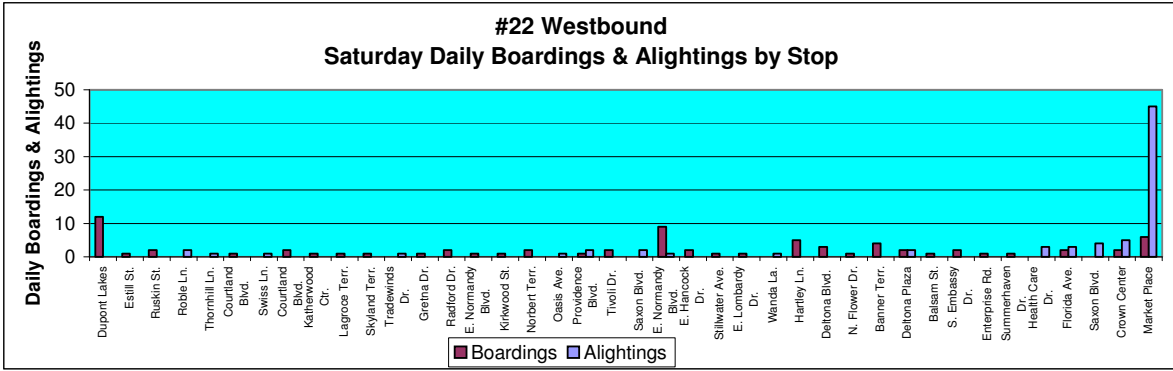
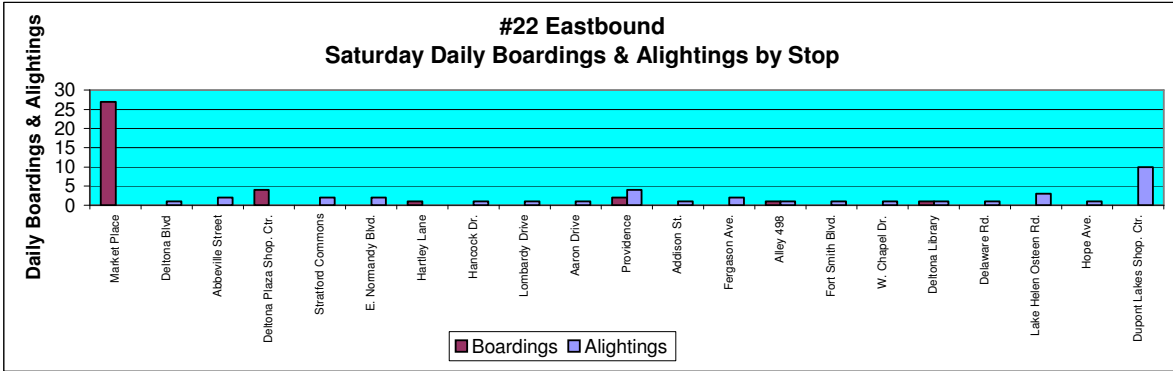
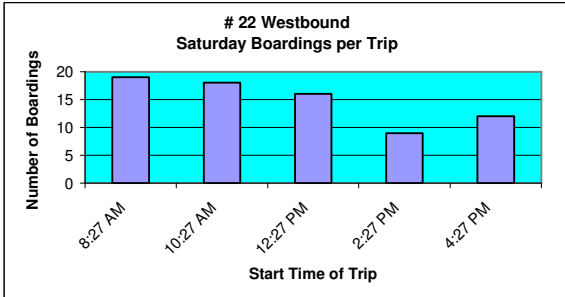
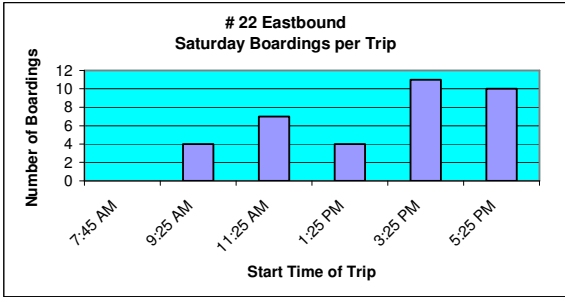


**Saturday Route Profile
#22 Deltona**

Schedule Characteristics			
Run Time (EB)	52 Schedule	48.0	Actual
Run Time (WB)	48 Schedule	47.2	Actual
Layover Time	20 Schedule	24.8	Actual
Round-Trip Cycle Time	120 Schedule	120.0	Actual
Layover (% of Cycle)	16.7%	20.7%	

Saturday Service Characteristics	
Begin / End Service	6:57 a.m.
Begin Revenue Service	6:44 p.m.
Span of Service	11.8
Scheduled One-Way Trips	12
Average One-Way Trip Length	17.3
Peak/Base Frequency	120/120
Peak/Base Buses	1/1
Daily Rev. Bus-Hours	11.8
Daily Rev. Bus-Miles	207.0
Average Daily Riders (GFI)	60

Performance Measures	
Passengers / Rev. Hour	5.1
Passengers / Rev. Mile	0.3
Passengers / Vehicle Trip	5.0
On-Time Performance (+ or - 5 min.)	95%



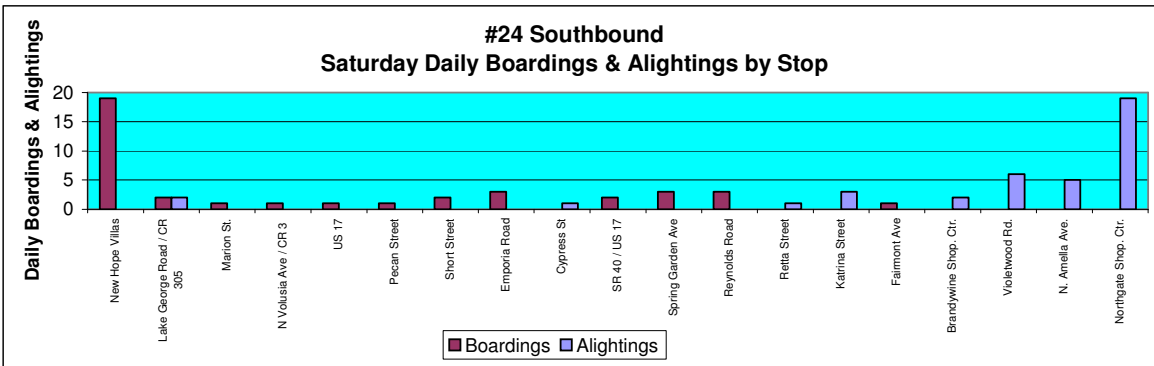
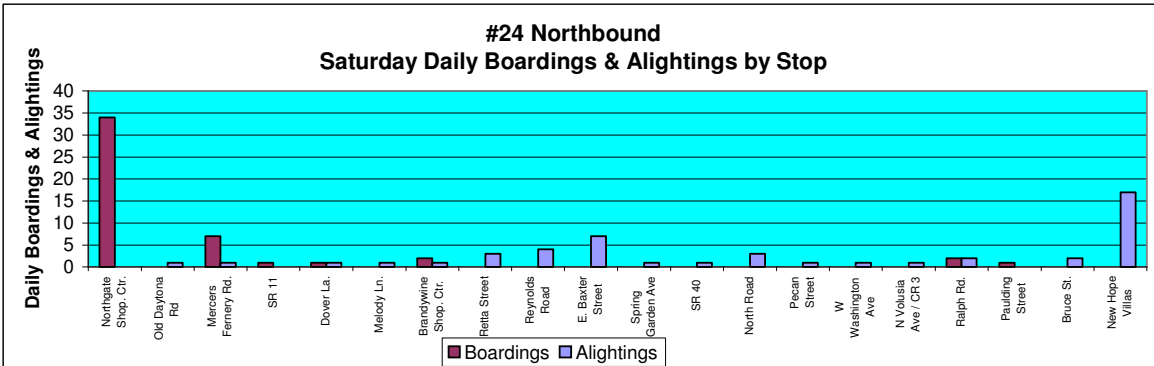
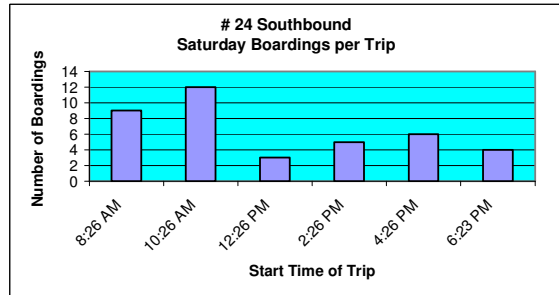
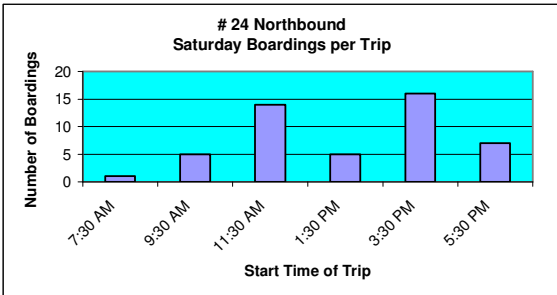


**Saturday Route Profile
#24 Pierson/Seville**

Schedule Characteristics			
Run Time (NB)	51	Schedule	44.7 Actual
Run Time (SB)	54	Schedule	49.0 Actual
Layover Time	15	Schedule	26.3 Actual
Round-Trip Cycle Time	120	Schedule	120.0 Actual
Layover (% of Cycle)	12.5%		21.9%

Saturday Service Characteristics	
Begin / End Service	7:30 a.m.
Begin Revenue Service	7:17 p.m.
Span of Service	11.8
Scheduled One-Way Trips	12
Average One-Way Trip Length	27.6
Peak/Base Frequency	120/120
Peak/Base Buses	1/1
Daily Rev. Bus-Hours	11.8
Daily Rev. Bus-Miles	331.2
Average Daily Riders (GFI)	38

Performance Measures	
Passengers / Rev. Hour	3.2
Passengers / Rev. Mile	0.1
Passengers / Vehicle Trip	3.2
On-Time Performance (+ or - 5 min.)	88%





**Saturday Route Profile
#60 East/West Connector**

Schedule Characteristics			
Run Time (EB)	58 Schedule	53.3 Actual	
Run Time (WB)	48 Schedule	47.5 Actual	
Layover Time	14 Schedule	19.2 Actual	
Round-Trip Cycle Time	120 Schedule	120.0 Actual	
Layover (% of Cycle)	11.7%	16.0%	

Saturday Service Characteristics	
Begin / End Service	7:30 a.m.
Begin Revenue Service	7:23 p.m.
Span of Service	11.9
Scheduled One-Way Trips	23.5
Average One-Way Trip Length	23.5
Peak/Base Frequency	60/60
Peak/Base Buses	2/2
Daily Rev. Bus-Hours	23.0
Daily Rev. Bus-Miles	552.3
Average Daily Riders (GFI)	318

Performance Measures	
Passengers / Rev. Hour	13.8
Passengers / Rev. Mile	0.6
Passengers / Vehicle Trip	13.5
On-Time Performance (+ or - 5 min.)	86%

