

## SARASOTA NORTH-SOUTH BRT CORRIDOR – CASE FOR THE PROJECT

### PROJECT IDENTIFICATION

The North-South BRT Corridor, located in Sarasota County, Florida is a proposed north-south line extending 8.27 miles from the University of South Florida (USF) in the north to Westfield Mall in the south as shown in **Figure 1**. The proposed BRT line includes 17 station locations (with 30 total stations) that would serve major employment and activity centers, educational institutions, the Sarasota Memorial Hospital (the county's largest employer), and residential areas.

### SETTING

The North-South BRT Corridor preferred alternative will operate southbound from USF via U.S. 41, east (L) on General Spaatz, serve the airport transit center, travel around the airport circle road, then turn east on Car Rental Road, then operate (L) on University Parkway. It would then turn south (R) on railroad right-of-way, exit to south (R) Orange Avenue, west (R) 10<sup>th</sup> Street, south (L) Lemon Avenue, east (L) State Street, south (R) Orange Avenue, east (L) Mound Street, south (R) on U.S. 41, then further south to travel in a center bus lane on U.S. 41 from Hillview Street to Siesta Drive, east (L) Siesta Drive to transfer center. Capital improvements proposed for this alternative are:

- Busway on Car Rental Road (SRQ right-of-way) - 0.3 miles;
- Busway on railroad right-of-way 2.65 miles;
- Busway on Lemon Avenue between 10<sup>th</sup> Street and 1<sup>st</sup> Street – 0.5 miles;
- Busway on U.S. 41 south of Hillview Street to Siesta Drive – 1.0 miles; and
- Signal preemption at 11 intersections;

Sarasota County has implemented an urban growth boundary which limits urban sprawl to the east by encouraging the development of compact, mixed-use, pedestrian friendly villages and hamlets within a system of large areas of permanent open spaces. Villages and hamlets are designed to avoid the negative impacts of urban sprawl by minimizing infrastructure costs, traffic congestion and environmental degradation. The proposed project would support the county's growth policy by providing transportation alternatives.

### CURRENT CONDITIONS

#### *Demographic Conditions*

The Sarasota County urbanized area, including the City of Sarasota, has a total year-round population of 379,000 (2008 Sarasota County EDC Community Profile), and an employment level of 156,255. Given its location along the Florida Gulf Coast, this area experiences a significant seasonal increase in population during the winter months.

#### *Key Travel Markets*

Historically, the county's predominant travel pattern has been north-south along the major roadway corridors (U.S. 41, Orange Avenue, and U.S 301). The travel pattern continues today with additional activity centers linking USF, Downtown Sarasota, Sarasota Memorial Hospital and Westfield Mall.

### **Roadway Conditions**

The North-South corridor experiences significant traffic congestion along major arterials with little or no opportunity for expansion of the existing road network. Current traffic conditions along most of U.S. 41 are at degraded level-of-service F and are projected to deteriorate even further. While congestion does vary by time of day and season, with the most severe congestion during the winter tourist months, the variation between seasons has been narrowing and traffic conditions have measurably deteriorated in recent years. Current bus routes in the corridor operate in mixed-traffic and are impacted by traffic congestion and long queuing at traffic signals. This congestion causes significant variation from scheduled travel times resulting in a pattern of unreliable bus services for riders. With this as backdrop, the principal problems analyzed and addressed in the Alternatives Analysis (AA) include:

- Current and increasing traffic congestion in the urban core, particularly along the North-South corridor;
- Delays to bus transit operations caused by congestion in mixed traffic and long queuing at traffic signals;
- The inability to meet the County's goals of increased transit ridership and efficient operations without measures to increase bus operating speeds, frequencies and on-time-performance.

It is important to note that no major limited-access highway directly serves downtown Sarasota or the urbanized portion of Sarasota County. While Sarasota is the historic terminus of U.S. 301, and downtown is a major waypoint along the historic Tamiami Trail (now U.S. 41), when IH 75 was constructed, it was routed well east (inland) of the urbanized area. As a result, north-south and east-west traffic is principally served by major arterials with no high-capacity infrastructure in place. Traffic conditions along U.S. 41, the major north-south arterial in the study area, are below standard with most of the corridor rating a level of service "F" in 2006. Conditions within the corridor are projected to continue deteriorating over time. All segments of the U.S. 41 corridor as well as adjacent and intersecting roadways are projected to reach level of service "F" in the year 2020.

### **Transit Conditions**

Public transit services within Sarasota County and the City of Sarasota are operated by the Sarasota County Transportation Authority (SCAT), a division of Sarasota County government. In March 2008, SCAT operated 41 buses on 29 fixed routes and 27 Paratransit vehicles over an approximately 200 square-mile service area. In 2007, SCAT carried an average of 8,200 passengers per day, equivalent to approximately 2.194 million passengers on an annualized basis. In June 2008, SCAT expanded its system to 32 fixed routes. Vehicles in SCAT's fleet range in size from a 27 foot Chevrolet bus (used for neighborhood routes) to 35 passenger mainline 35 foot Gillig buses, including 10 hybrid diesel-electric buses. Going forward, Sarasota County has committed to purchasing only hybrid buses as part of its overall commitment to "green" sustainable development.

Most SCAT routes originate in downtown Sarasota at the main transfer point at 1<sup>st</sup> Street and Lemon Avenue, and terminate outside the City limits. All routes operate six days a week from approximately 6:00am to 7:00pm. On February 25, 2008, SCAT initiated Sunday service on Route 12 (North Lockwood), Route 18 (Longboat Key), Route 1713 (Trail-Venice-Jacaranda), Route 8517 (Tallevast-SMH), Route 1411 (Lake Sarasota-Siesta Key) and Route 215 (Cocoanut-University). The new service has been very successful. In addition to its fixed-route bus service, SCAT also provides direct connections to several other transportation modes within Sarasota County. SCAT buses connect to Manatee County Area Transit (MCAT) bus at the Sarasota-Bradenton International Airport on an hourly basis to provide an intercommunity transfer option. In 2005, SCAT and MCAT initiated coordinated service along U.S. 41



between the City of Sarasota downtown transfer station and Palmetto in Manatee County. Currently, Route 99 is the route that interlines with Manatee County Area Transit and buses from both systems travel between the transfer center in Downtown Sarasota north to Palmetto and back again. The SCAT bus system currently provides direct service from the Sarasota-Bradenton International Airport to the Greyhound bus terminals in the City.

Sarasota County and SCAT have made a significant commitment to increased investment in transit and to improving the quantity and quality of transit services. As a result, annual system ridership over this period has increased by 14.5 percent from 1.876 million passenger trips in FY 2005 to 2.194 million passenger trips in FY 2007.

SCAT currently operates seven core bus routes that serve areas that are completely or nearly confined to the North-South corridor. Total average daily boardings for these routes for weekdays and Saturdays are 3,100 riders.

Other routes also operate in the North-South corridor; however, despite direct connections to the corridor, they are not considered core routes because most of their service area lies outside of the main corridor. Ridership for these routes has not been included in the average boardings for the North-South corridor.

Current bus routes in the corridor operate in mixed traffic and are impacted by traffic congestion and long queuing at traffic signals. This congestion causes significant variation from scheduled travel times resulting in unreliable bus service for riders, and also results in not attracting choice riders to the system. Unless measures are taken that will reduce travel times, it will continue to be difficult for SCAT to meet its operational efficiency and on-time-performance goals, and to reliably increase levels of service within the corridor.

Most of the existing bus routes terminate at the Downtown Transit Center. With the implementation of the North-South BRT Corridor project, fewer bus routes would be deviated to the Downtown Transit Center. Instead, a number of routes could be turned back at BRT stations allowing the existing routes to better serve neighborhoods with higher frequencies and improved productivity.

### **CONDITIONS IN 2030**

The land use and demographic forecasts indicate the North-South Corridor will grow substantially between now and 2030.

#### **Demographic conditions, 2030**

Significant growth in population and employment is project within a ½ mile radius on either side of the corridor. By 2030, the population is projected to increase to 521,657; the number of jobs is projected to increase to 255,334, gains of 60 and 63 percent, respectively.

#### **Key Travel Markets, 2030**

The projected trip patterns in 2030 are expected to be similar to today's conditions. However, the magnitude of trip flows is anticipated to be significantly higher as the region grows.

#### **Roadway Conditions, 2030**

Roadway congestion in the corridor is projected to worsen in 2030, based on projected demographic and employment growth in the region.

### ***Transit Conditions, 2030***

Under the No-Build option, several transit improvements are planned in the corridor for the year 2030. These bus routes will be subject to the same levels of traffic congestion as automobiles because they will be operating in mixed traffic.

### **PURPOSE OF THE PROJECT**

The Sarasota North-South Corridor has many transportation challenges and opportunities. The following is a sampling of the corridor issues that may be addressed by the studies:

- Regional transit system connectivity between Sarasota North-South Corridor and major activity centers and destinations;
- Providing additional transit capacity in the Sarasota North-South Corridor;
- Improving interregional connections to the existing and planned transit system;
- Existing and future traffic congestion on corridor freeways and thoroughfares;
- Reducing travel delay, thereby helping improve air quality;
- High existing bus ridership and projected future transit development.

A key component of the Sarasota North-South Corridor is the regional connectivity the transit improvement would offer. Bus Rapid Transit service in the Sarasota North-South corridor would provide connections between Sarasota County/Manatee County and the major activity centers along the corridor

### **MERITS OF THE PROJECT**

#### ***The TSM/Baseline Alternative***

From USF, vehicles will operate southbound via U.S. 41, east (L) General Spaatz to station near terminal, through SRQ right-of-way, exit to Old Bradenton Road, continue south on Old Bradenton, east (L) Dr. Martin Luther King, Jr. Way, south (R) Central Avenue, east (R) 10<sup>th</sup> Street, south (R) Lemon Avenue, east (L) State Street, south (R) Orange Avenue, east (L) Mound Street, south (R) U.S. 41, south (R) U.S. 41 to Siesta Drive, east (L) Siesta Drive to transfer station. Capital improvements proposed for this alternative are:

- Busway on Car Rental Road (SRQ right-of-way) - 0.3 miles;
- Busway on Lemon Avenue between 10<sup>th</sup> Street and 1<sup>st</sup> Street – 0.5 miles;
- Busway on U.S. 41 south of Hillview Street to Siesta Drive – 1.0 miles; and
- Signal preemption at seven intersections;

#### ***The Proposed Project***

The North-South BRT Corridor, located in Sarasota County is a north-south line extending 8.27 miles from the University of South Florida (USF) to Westfield Mall. The proposed BRT line includes 17 station locations that would serve major employment and activity centers, educational institutions, the Sarasota Memorial Hospital (the county's largest employer) and residential areas.

The proposed BRT line would operate in a semi-exclusive and bi-directional busway, allowing BRT vehicles to attain an average speed of 17 mph. This would allow BRT buses, operating on 15-minute peak and twenty-minute off-peak headways, to travel from the University of South Florida to Westfield

Mall in approximately 29-minutes – a savings of 9 minutes compared to the TSM Alternative, and a savings of 18 minutes as compared to the No Build alternative. It is estimated that the project would produce 3,000 boardings per day.

## **UNCERTAINTIES**

### ***Uncertainties with ridership***

Forecasts of future transit ridership are inherently uncertain. The methodology applied to develop forecasts for this analysis was designed to minimize some of the typical uncertainties which can creep into forecasts, with specific risk-minimizing steps in three key areas. First, the forecasts are built off of trip pattern information derived from a comprehensive on-board survey of the current SCAT system, to provide a good snapshot of how riders use the system today. Second, Travel times modeled for the project routes (in both baseline and build alternatives) were estimated based on extensive real-time travel time runs between key timepoints and these values were hard-coded into the model to minimize issues with modeled highway congested times. Third, land use inputs by analysis zone were extensively reviewed at a parcel-by-parcel level to ensure that the short-term land use changes analyzed were consistent not only with adopted MPO land use plans but also specific real-world development activity.

Nevertheless, there are still uncertainties to which the ridership forecasts and mobility benefits analysis are subject. Some of these uncertainties include:

- Use of On-board Survey-Based trip patterns imposes sample bias and “lumpiness” in the data; if the survey sampling did not capture particular travel patterns, the survey-based data may not reflect all users of the system appropriately. A trip table smoothing procedure was implemented to mitigate this somewhat; nevertheless, the data are still somewhat lumpy.
- Land use growth only reflects minimal growth between now and 2012. The growth is somewhat episodic at specific targeted locations. If these locations are not in synch with locations surveyed (see above point), such growth will not yield any trips. Longer term growth would provide potential for more significant land-use related trip-making changes
- Trip making potential for some special markets may not be fully captured, if the trip rate characteristics might deviate more than would be otherwise suggested by growth changes.
  - Universities (will their trip rates be different in the future?)
  - Sarasota Memorial Hospital (how will coming changes alter the workforce and user patterns?)

### ***Risks associated with project costs, scope and schedule***

A major risk to the project cost, scope and schedule is the potential for delays caused by failure to acquire and construct the rail connector at the north end of the corridor, as well as acquisition of the railroad corridor right-of-way from CSX Railroad.

## **SUMMARY**

The corridor has a large number of employment centers and educational institutions, and is extremely important to the economic vitality of this region. The current commute times both by roadway and transit modes are excessively long due to severe roadway congestion. The existing transportation infrastructure does not have the capacity to handle the corridor’s projected demand. The purpose of the North-South BRT line is to provide a safe, reliable, fast transit alternative linking key activity centers, thereby adding increased person-moving capacity to this severely congested corridor.

**Figure 1**

### North-South BRT

