

2007 Brevard Transit Quality of Service Evaluation

Submitted to:

The Brevard Metropolitan
Planning Organization



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RENAISSANCE PLANNING GROUP

Preface

The Brevard Transit Quality of Service (TQOS) Evaluation is a set of measures for the County's fixed-route public transit system. The outcome of this evaluation is a benchmark of transit performance that can be communicated to the state legislature and other decision makers. To achieve this initiative, FDOT requires all metropolitan planning organizations (MPOs) with fixed-route transit systems in their jurisdictions to perform an annual evaluation of transit service. Results of the evaluation are submitted to the FDOT Public Transit Office.

FDOT has developed a framework for evaluation, the Florida MPO Transit Quality of Service Evaluation Agency Reporting Guide, to ensure consistency across all MPOs. The framework applies the concepts presented in the Transit Capacity and Quality of Service Manual (TCRP Report A-15), and focuses on six key transit performance measures:

- Service frequency;
- Hours of service;
- Service coverage;
- Passenger loading;
- Reliability, and
- Transit vs. auto travel time.

Two of the measures – passenger loading and reliability – require a series of field observations. Such observations entail significant effort in terms of labor, and thus are only required every three years as part of a 'major update'. The 2005 Brevard TQOS Evaluation included a major update. Results of the 2005 passenger loading and reliability evaluations are included in this report. The 2007 TQOS Evaluation uses the FSUTMS travel demand model to derive required inputs, including origin-destination person trips and automobile travel time.

While this year was not officially a major update year for the TQOS, all 90 origin-destination trip pairs were reevaluated to account for routing and scheduling adjustments made by Space Coast Area Transit in 2007. These included the combining of two routes, changes in route schedules, and many routes that had increased hours and frequencies.

1.0 Agencies Involved in Evaluation

The Brevard MPO has contracted with Renaissance Planning Group (RPG) to perform the Brevard Transit Quality of Service Evaluation. RPG structured the evaluation process and performed the analysis.

2.0 Activity Centers Chosen for Analysis

Figure 1 shows the ten activity centers that were chosen for analysis. These locations are a representative cross-section of travel markets in the County, both geographically and functionally. They include residential, employment, educational, institutional and intermodal centers. Each of the County's five distinct geographic sub-areas is represented: north, central, south, Merritt Island and the beaches.

3.0 Evaluation of Service Measures

Consistent with guidance provided in FDOT's *Agency Reporting Guide*, an evaluation was performed of fixed route transit service in Brevard County. The following sections provide the results of each of the six level of service measures calculated for the 90 origin-destination (O-D) pairs resulting from the ten activity centers.

3.1 Service Frequency LOS

Service frequency measures the number of travel opportunities every hour between a given origin and destination. LOS scores range from "A" for greater than six buses per hour (greater than 10 minute headways) to "F" for less than one bus per hour. *Table 1* shows the service frequency LOS scores for the 90 O-D pairs. The mobility measures were determined using the most recent published SCAT schedules.

While most routes in the SCAT system operate on one hour headways, half of those connecting activity centers had headways of 30 minutes. Therefore, all of the O-D pairs had an LOS score of "E" or "D." Route 4 connecting Cocoa with the beaches, Route 6 serving the Cocoa area, Route 9 serving the beaches and Route 21 serving Melbourne operate on half hour headways. O-D trip pairs served entirely by these routes received an LOS score of "D."

Brevard SCAT Transit Quality of Service

Figure 1
Activity Centers

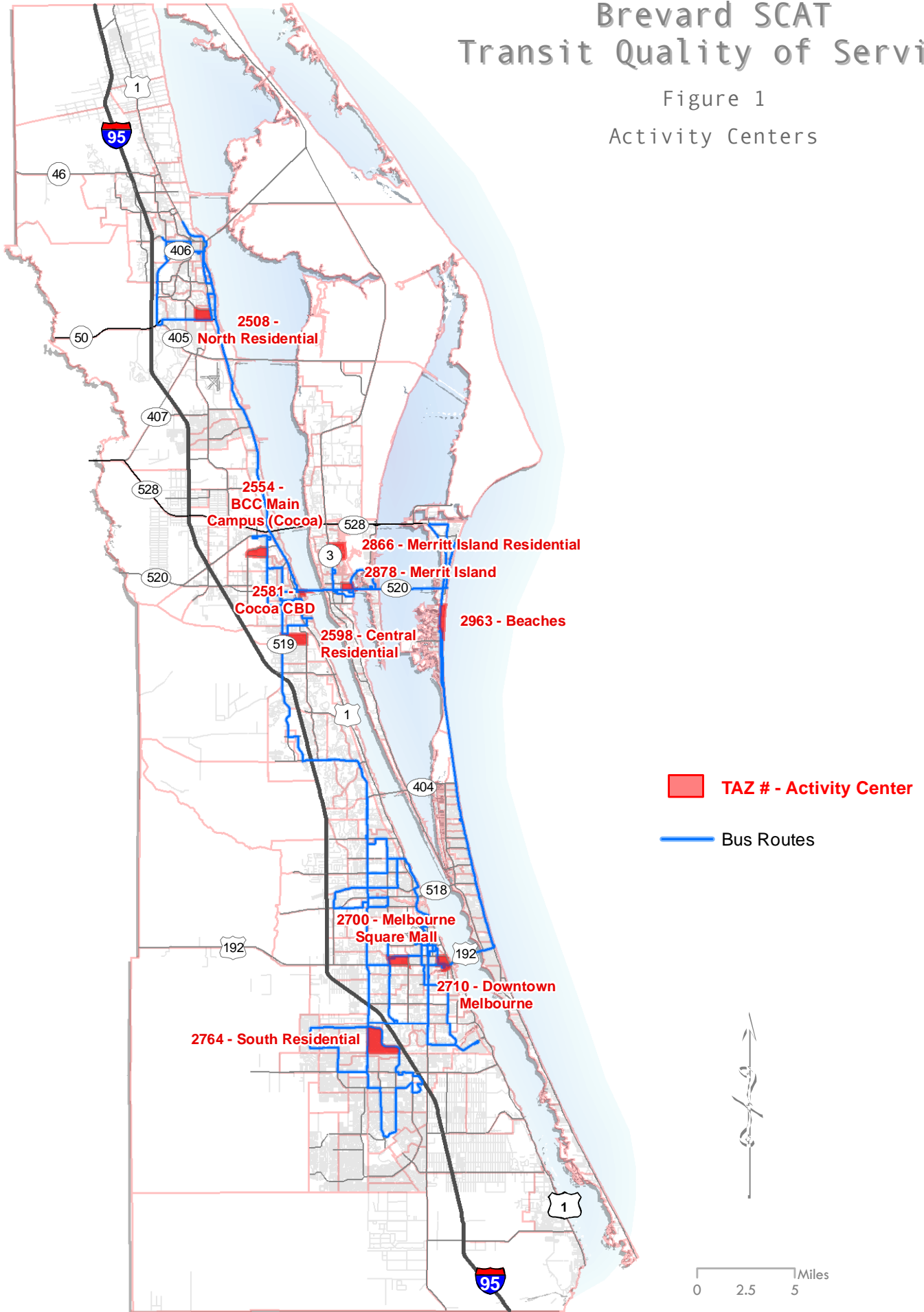


Table 1
Transit Level of Service
Mobility Measures

From: North Residential									
To	Travel Demand (trips/h)	Frequency		Hours of Service		Travel Times			
		Travel Opps/h	LOS	Hours	LOS	Transit (min)	Auto (min)	Difference (min)	LOS
North Residential						0			
BCC Main Campus	37	1	E	5	E	34	19	15	B
Cocoa CBD	10	1	E	5	E	10	22	-12	A
Central Residential	0	1	E	5	E	35	29	6	B
Melbourne CBD	0	1	E	5	E	117	50	67	F
Melbourne Square Mall	1	1	E	5	E	121	53	68	F
South Residential	0	1	E	5	E	180	53	127	F
Merritt Island Residential	5	1	E	5	E	78	26	52	E
Merritt Island	6	1	E	5	E	52	27	25	C
Beaches	5	1	E	5	E	91	35	56	E
From: BCC Main Campus									
To	Travel Demand (trips/h)	Frequency		Hours of Service		Travel Times			
		Travel Opps/h	LOS	Hours	LOS	Transit (min)	Auto (min)	Difference (min)	LOS
North Residential	7	1	E	5	E	76	19	57	E
BCC Main Campus									
Cocoa CBD	86	1	E	5	E	61	8	53	E
Central Residential	12	1	E	9	E	29	14	15	C
Melbourne CBD	3	1	E	5	E	113	39	74	F
Melbourne Square Mall	1	1	E	5	E	117	40	77	F
South Residential	1	1	E	5	E	206	41	165	F
Merritt Island Residential	32	1	E	9	E	74	14	60	F
Merritt Island	32	2	D	13	D	48	14	34	D
Beaches	16	2	D	13	D	87	23	64	F
From: Cocoa CBD									
To	Travel Demand (trips/h)	Frequency		Hours of Service		Travel Times			
		Travel Opps/h	LOS	Hours	LOS	Transit (min)	Auto (min)	Difference (min)	LOS
North Residential	4	1	E	5	E	15	22	-7	A
BCC Main Campus	74	1	E	5	E	39	8	31	D
Cocoa CBD									
Central Residential	15	1	E	5	E	24	10	14	B
Melbourne CBD	3	1	E	5	E	107	36	71	F
Melbourne Square Mall	1	1	E	5	E	111	35	76	F
South Residential	0	1	E	5	E	170	39	131	F
Merritt Island Residential	32	1	E	5	E	68	10	58	E
Merritt Island	58	1	E	5	E	42	7	35	D
Beaches	23	1	E	5	E	81	16	65	F

Table 1 continued
 Transit Level of Service
 Mobility Measures

From: Central Residential		Frequency		Hours of Service		Travel Times			
To	Travel Demand (trips/h)	Travel Opps/h	LOS	Hours	LOS	Transit (min)	Auto (min)	Difference (min)	LOS
North Residential	0	1	E	5	E	48	29	19	C
BCC Main Campus	170	2	D	13	D	32	14	18	C
Cocoa CBD	151	1	E	5	E	33	10	23	C
Central Residential									
Melbourne CBD	8	1	E	5	E	145	33	112	F
Melbourne Square Mall	9	1	E	5	E	149	33	116	F
South Residential	0	1	E	5	E	208	35	173	F
Merritt Island Residential	22	1	E	9	E	106	19	87	F
Merritt Island	60	2	D	13	D	110	16	94	F
Beaches	27	2	D	13	D	89	25	64	F
From: Melbourne CBD									
To	Travel Demand (trips/h)	Travel Opps/h	LOS	Hours	LOS	Transit (min)	Auto (min)	Difference (min)	LOS
North Residential	0	1	E	5	E	127	50	77	F
BCC Main Campus	3	1	E	5	E	134	38	96	F
Cocoa CBD	3	1	E	5	E	112	35	77	F
Central Residential	1	1	E	5	E	132	32	100	F
Melbourne CBD									
Melbourne Square Mall	120	2	D	13	D	32	7	25	C
South Residential	23	1	E	13	D	61	12	49	E
Merritt Island Residential	1	1	E	5	E	178	44	134	F
Merritt Island	1	1	E	5	E	122	41	81	F
Beaches	2	1	E	12	D	77	35	42	D
From: Melbourne Square Mall									
To	Travel Demand (trips/h)	Travel Opps/h	LOS	Hours	LOS	Transit (min)	Auto (min)	Difference (min)	LOS
North Residential	0	1	E	5	E	142	53	89	F
BCC Main Campus	1	1	E	5	E	149	39	110	F
Cocoa CBD	1	1	E	5	E	120	35	85	F
Central Residential	0	1	E	5	E	147	33	114	F
Melbourne CBD	124	1	E	5	E	24	7	17	C
Melbourne Square Mall									
South Residential	4	1	E	5	E	25	16	9	B
Merritt Island Residential	1	1	E	5	E	163	44	119	F
Merritt Island	2	1	E	5	E	107	40	67	F
Beaches	1	1	E	12	D	129	34	95	F

Table 1 *continued*
Transit Level of Service
Mobility Measures

From: South Residential		Frequency		Hours of Service		Travel Times			
To	Travel Demand (trips/h)	Travel Opps/h	LOS	Hours	LOS	Transit (min)	Auto (min)	Difference (min)	LOS
North Residential	0	1	E	5	E	140	53	87	F
BCC Main Campus	6	1	E	5	E	154	40	114	F
Cocoa CBD	3	1	E	5	E	125	38	87	F
Central Residential	1	1	E	5	E	152	34	118	F
Melbourne CBD	219	1	E	13	D	59	12	47	E
Melbourne Square Mall	1	1	E	13	D	30	16	14	B
South Residential									
Merritt Island Residential	0	1	E	5	E	198	47	151	F
Merritt Island	2	1	E	5	E	142	43	99	F
Beaches	3	1	E	12	D	134	40	94	F
From: Merritt Island Residential									
To	Travel Demand (trips/h)	Travel Opps/h	LOS	Hours	LOS	Transit (min)	Auto (min)	Difference (min)	LOS
North Residential	3	1	E	5	E	53	25	28	C
BCC Main Campus	121	1	E	9	E	60	14	46	E
Cocoa CBD	87	1	E	5	E	91	11	80	F
Central Residential	8	1	E	9	E	58	20	38	D
Melbourne CBD	1	1	E	5	E	143	45	98	F
Melbourne Square Mall	1	1	E	5	E	147	44	103	F
South Residential	0	1	E	5	E	266	48	218	F
Merritt Island Residential									
Merritt Island	0	1	E	9	E	16	7	9	B
Beaches	37	1	E	9	E	51	17	34	D

Table 1 *continued*
Transit Level of Service
Mobility Measures

From: Merritt Island		Frequency			Hours of Service		Travel Times			
To	Travel Demand (trips/h)	Travel Opps/h	LOS	Hours	LOS	Transit (min)	Auto (min)	Difference (min)	LOS	
North Residential	1	1	E	5	E	33	27	6	B	
BCC Main Campus	27	2	D	13	D	40	14	26	C	
Cocoa CBD	57	1	E	5	E	41	7	34	D	
Central Residential	5	2	D	13	D	38	16	22	C	
Melbourne CBD	2	1	E	5	E	123	42	81	F	
Melbourne Square Mall	0	1	E	5	E	127	41	86	F	
South Residential	0	1	E	5	E	186	45	141	F	
Merritt Island Residential	37	1	E	9	E	22	7	15	C	
Merritt Island										
Beaches	31	2	D	15	C	39	11	28	C	

From: Beaches		Frequency			Hours of Service		Travel Times			
To	Travel Demand (trips/h)	Travel Opps/h	LOS	Hours	LOS	Transit (min)	Auto (min)	Difference (min)	LOS	
North Residential	1	1	E	5	E	73	35	38	D	
BCC Main Campus	34	2	D	13	D	80	23	57	E	
Cocoa CBD	43	1	E	5	E	58	17	41	D	
Central Residential	4	2	D	13	D	78	26	52	E	
Melbourne CBD	6	1	E	12	D	55	35	20	C	
Melbourne Square Mall	4	1	E	12	D	96	34	62	F	
South Residential	0	1	E	12	D	155	40	115	F	
Merritt Island Residential	21	1	E	9	E	64	17	47	E	
Merritt Island	72	2	D	15	C	40	11	29	C	
Beaches										

3.2 Hours of Service LOS

Table 1 also shows the results of the hours of service LOS evaluation. Hours of service LOS is a measure of the total number of hours each day that transit service is available between a given O-D pair. Scores range from “A” for 19 or more hours of daily service to “F” for less than four hours of daily service. Most routes in the SCAT system are in operation between 12 and 13 hours per day, with Routes 4 and 9 operating for 15 and 16 hours per day, respectively. Nearly all of the O-D pairs received an LOS score of “D” or “E.” Only the Merritt Island - Beaches trip pair, which is served by Route 9, received an LOS score of “C.”

Table 2
Service Coverage LOS

Calculation Method (GIS/Manual)	GIS
Household Data Year	2000
Population Data Year	2000
Job Data Year	2000
Average Persons per Household	2.11

	% Area Served	% Population Served	% Jobs Served
County (not including principal cities)	4.8%	26.1%	42.9%
Principal City - Titusville	29.3%	33.1%	53.7%
Principal City - Melbourne	49.8%	52.7%	65.9%
Principal City - Palm Bay	19.4%	37.2%	49.6%
Transit-Supportive Area	59.1%	55.4%	70.3%
Service Coverage LOS	E		

Source: SCAT (route data); CFRPM (socioeconomic data)

3.3 Service Coverage LOS

Service coverage LOS measures the number of people in transit supportive areas that have access to transit. ‘Transit supportive area’ is defined as TAZs with at least four dwelling units or employees per gross acre, while ‘access to transit’ is defined as areas within one quarter mile of a transit route.

Table 2 shows the results of the service coverage analysis using 2000 population and employment data developed for the 2025 Brevard Long Range Transportation Plan. *Figure 2* includes a map of transit-supportive TAZs and access to transit. As shown in the table and figure, approximately 59.1 percent of transit-supportive areas in the County have access to transit based on the 2000 base year data, resulting in an LOS score of E. Service coverage LOS scores range from A for 90.0 percent or more of transit-supportive areas with access to transit to F for less than 50.0 percent with access to transit.

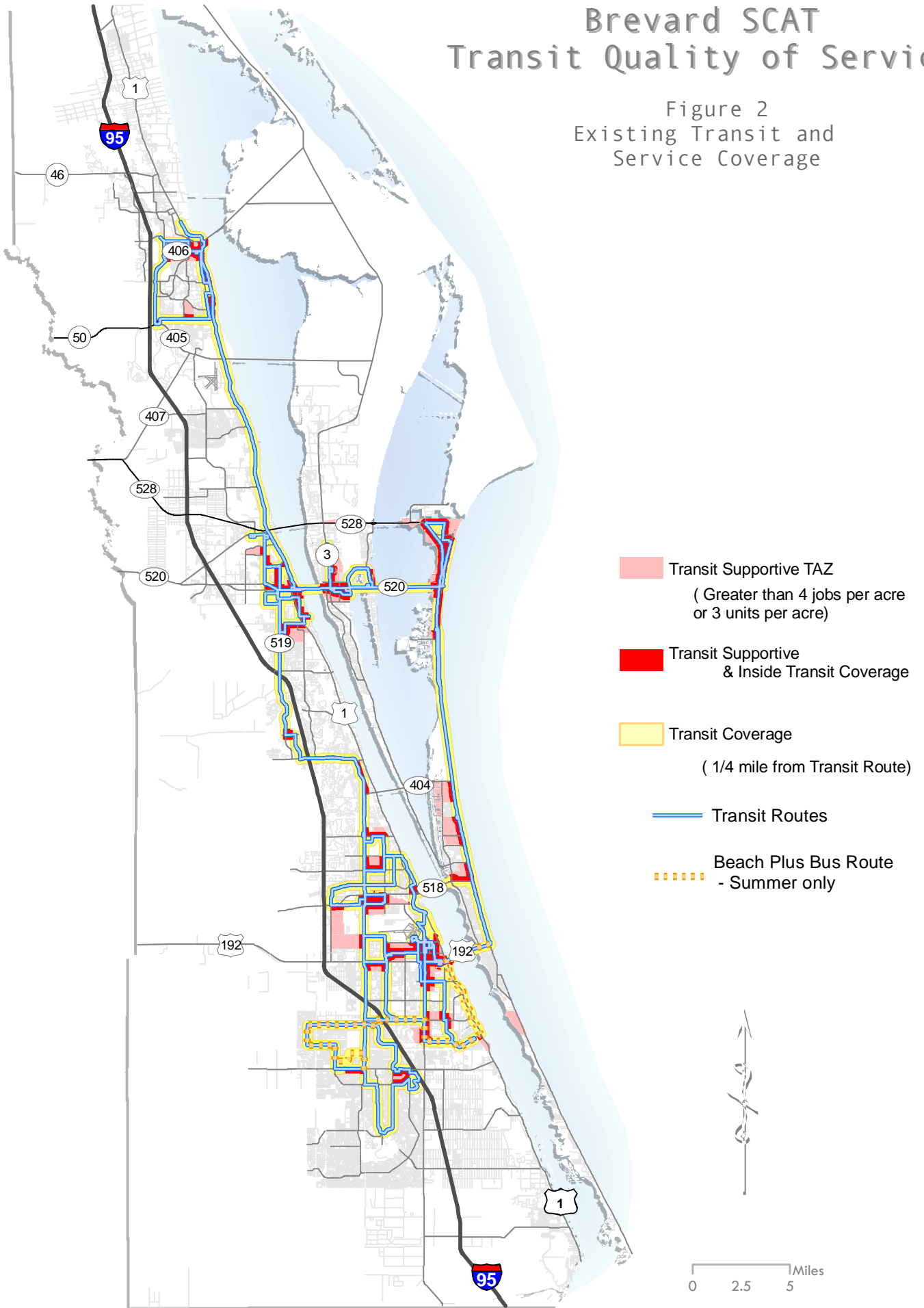
It is important to note that although service coverage score is LOS E, overall coverage has improved in the County and in the three principal cities: Titusville (north), Melbourne (central) and Palm Bay (south). Land area service coverage for the cities ranges from a low of 19.4 percent for the Palm Bay, to a high of 49.8 percent for the City of Melbourne; population coverage ranges from a low of 33.1 percent for Titusville to 52.7 percent for Melbourne; employment coverage ranges from a low of 49.6 percent for Palm Bay to a high of 59.9 percent for Melbourne.

The service coverage estimation method used for this analysis assumes an even distribution of population and employment across each TAZ. Thus, the actual amount of population and employment may be higher or lower depending on how each are clustered within a TAZ. It is reasonable to presume the amounts would be higher.

Further, the analysis is based on 2000 population and employment data and current (2007) SCAT route configurations. This temporal mismatch of data results in some inaccuracy in the coverage measures because the County's population and employment distribution has changed since 2000.

Brevard SCAT Transit Quality of Service

Figure 2
Existing Transit and
Service Coverage



3.4 Passenger Loading LOS

Passenger loading measures the comfort of transit passengers in terms of personal space while on board a bus. Passenger loading is determined by field observation during the afternoon peak over a three day period. Because of the significant staff requirement associated with field observation, passenger loading LOS is calculated only for the 15 O-D pairs with the highest travel demand, as determined by output from the MPO's 2000 Base Year FSUTMS travel demand model.

Passenger loading LOS was not evaluated as part of this year's report. However, the 2005 results are included here for reference purposes. *Table 3* shows the results of the passenger loading LOS analysis. Two LOS measures were calculated: average load and peak load. Potential LOS scores for each range from "A" for 20.0 or more square feet per passenger to "F" for less than 3.2 square feet per passenger. Based on data collected during the field observations, all O-D pairs received an LOS score of "A" for average load, while all but five O-D pairs received an LOS score of "A" for peak load (three received a score of "B" and two received a score of "C"). These results indicate that, for the 15 highest-demand O-D pairs, no transit trips operate in crowded conditions and passengers experience a maximum amount of comfort with respect to space.

Field observations were performed by riding the routes serving the 15 highest-demand O-D pairs during the Tuesday-Thursday afternoon peak period. In accordance with the FDOT methodology, each route was observed from the origin activity center TAZ either to the destination activity center TAZ (if a direct route), or to the point of transfer needed to complete the trip from the origin to destination activity center. The field observations were conducted during the week of March 28 to April 1, 2005.

Table 3
Passenger Loading LOS (2005)

From	To	Vehicle Data				Count Data		Average Load			Maximum Load		
		Len. (ft)	Wid. (ft)	Bus/Rail	# of Seats	APC/Man.	# Trips	# Pass.	Area per Pass.	LOS	# Pass.	Area per Pass.	LOS
Melbourne Square Mall	Melbourne CBD	32	8	Bus	32	Manual	1	9	28.44	A	13	19.69	B
Melbourne CBD	Melbourne Square Mall	32	8	Bus	32	Manual	1	3	85.33	A	4	64.00	A
South Residential	Melbourne Square Mall	32	8	Bus	32	Manual	1	3	85.33	A	3	85.33	A
South Residential	Melbourne CBD	32	8	Bus	32	Manual	1	3	85.33	A	3	85.33	A
Beaches	Merritt Island	34	8	Bus	31	Manual	1	3	90.67	A	4	68.00	A
Merritt Island Residential	Merritt Island	32	8	Bus	32	Manual	1	5	51.20	A	8	32.00	A
Central Residential	BCC Main Campus	32	8	Bus	32	Manual	1	9	28.44	A	15	17.07	B
Beaches	Merritt Island Residential	34	8	Bus	31	Manual	1	3	90.67	A	4	68.00	A
Merritt Island Residential	BCC Main Campus	32	8	Bus	32	Manual	1	5	51.20	A	8	32.00	A
Merritt Island	Merritt Island Residential	32	8	Bus	32	Manual	1	3	85.33	A	5	51.20	A
Central Residential	Cocoa CBD	32	8	Bus	32	Manual	1	6	42.67	A	9	28.44	A
Central Residential	Merritt Island	32	8	Bus	32	Manual	1	6	42.67	A	9	28.44	A
Beaches	BCC Main Campus	34	8	Bus	31	Manual	1	3	90.67	A	4	68.00	A
Merritt Island Residential	Beaches	32	8	Bus	32	Manual	1	5	51.20	A	8	32.00	A
Merritt Island	Beaches	32	8	Bus	32	Manual	1	6	42.67	A	7	36.57	A

3.5 Reliability LOS

Reliability is a measure of the on-time performance of a given transit route. Reliability LOS scores range from “A” for an on-time performance rate of 97.5 percent or greater to “F” for an on-time performance rate of less than 80.0 percent.

Reliability LOS was calculated for the 15 highest-demand O-D pairs using time data collected during field observation. A given transit route was considered to be on time if it arrived within five minutes of the scheduled time. Each stop at a location published on the SCAT route schedules was included in the analysis. *Table 4* shows the results of the LOS calculation. About half of the routes were on-time at every scheduled stop and received an LOS of “A.” About one quarter of the routes were on-time at almost every scheduled stop and received an LOS of “C” through “E.” The remaining one quarter of the routes were not on-time at any point of their journey and received an LOS of “F.”

The data involved in calculating Reliability LOS should be treated with caution for three reasons. First, the FDOT guidance states that the location of field data collection measurement should be the same as the maximum observed passenger load. Where this point occurs along the route may influence the measurement of on-time performance, particularly if measured later in the route after several stops.

Second, like most transit systems, SCAT bus schedules list time points only for major stops along a given route. Accordingly, it can be difficult to assess the on-time performance of a route if the measurement is taken at a point that does not correspond with a time point on the printed schedule.

Finally, the field data collection required for this measure is substantial. FDOT guidelines specify that data should be collected for the greater of 10 runs or for three days of PM peak hour observation for each route corresponding to the 15 O-D pairs. Even with some overlapping of routes (one route serving more than one activity center), the staff time and resources needed to collect this data is significant. Due to budget and time constraints, data was collected only once for each route, with additional observation for certain routes where feasible.

Table 4
 Reliability LOS (2005)

SERVICE RELIABILITY WORKSHEET*

From	To	Route Data	Count Data		On-Time Performance		
		Frequency (trips/h)	AVL/ Man.	# Trips Counted	# of On-Time Trips	% On-Time Trips	LOS
Melbourne Square Mall	Melbourne CBD	2	Manual	1	1	100.0%	A
Melbourne CBD	Melbourne Square Mall	1	Manual	1	1	100.0%	A
South Residential	Melbourne Square Mall	1	Manual	1	1	100.0%	A
South Residential	Melbourne CBD	1	Manual	1	1	100.0%	A
Beaches	Merritt Island	2	Manual	1	0	0.0%	F
Merritt Island Residential	Merritt Island	1	Manual	1	1	100.0%	A
Central Residential	BCC Main Campus	2	Manual	1	1	100.0%	A
Beaches	Merritt Island Residential	2	Manual	1	0	0.0%	F
Merritt Island Residential	BCC Main Campus	1	Manual	1	1	100.0%	A
Merritt Island	Merritt Island Residential	1	Manual	1	1	100.0%	A
Central Residential	Cocoa CBD	1	Manual	1	1	100.0%	A
Central Residential	Merritt Island	2	Manual	1	1	100.0%	A
Beaches	BCC Main Campus	2	Manual	1	0	0.0%	F
Merritt Island Residential	Beaches	1	Manual	1	1	100.0%	A
Merritt Island	Beaches	2	Manual	1	0	0.0%	F

*Information, excluding frequency, is from the 2005 manual trip counting.

3.6 Transit vs. Auto Travel Time

Transit versus auto travel time is the final of the three mobility LOS measures. It scores a given O-D pair based on the comparative travel time advantage (or disadvantage) of riding transit versus driving. LOS scores range from “A” for trips that are faster via transit to “F” for trips that take an hour or longer via transit.

Table 1 shows the results of the transit versus auto travel time LOS analysis for all 90 O-D pairs. Transit travel times were determined through an analysis of SCAT route schedules, while auto travel times were estimated using output of the Central Florida Regional Planning Model 2000 Base Year FSUTMS network. The travel time analysis resulted in a wide range of LOS scores for each of the O-D pairs. In two cases (both ends of the North Residential - Cocoa CBD trip pair), the transit travel time was actually lower than the auto travel time. This discrepancy is due to the geographical difference between the activity center and the center of associated TAZ. The LOS scores were distributed as follows:

- ❖ Two O-D pairs received an A
- ❖ Seven O-D pairs received a B
- ❖ 14 O-D pairs received a C
- ❖ Nine O-D pairs received a D
- ❖ 11 O-D pairs received an E
- ❖ 47 O-D pairs received an F

Whether or not a transfer(s) is required is the main determinant of transit travel time. A total of 80 out of the 90 transit trips require a transfer.

3.7 Summary Evaluation

Table 5 provides a weighted average score of the three mobility measures for each activity center. Individual O-D pairs were weighted by the amount of activity, as measured by FSUTMS-estimated person trips. Thus, an O-D pair with more person trips is given more weight than an O-D pair with fewer person trips. Figure 3 depicts the weighted average travel times for all ten activity centers.

Table 6 summarizes the five route-level LOS measures for each of the 90 O-D pairs (passenger loading and reliability LOS are calculated only for the 15 highest-demand O-D pairs). With the exception of passenger loading and reliability LOS, a majority of LOS scores are “D” or “E.” The relatively low LOS scores can be attributed to the fact that SCAT has limited resources (41 buses operating on 15 routes) in a large service area (Brevard County had approximately 476,000 residents during the 2000 Census) with a multi-nucleated urban distribution. SCAT routes must cover as large a service area as possible, typically with only one or two buses per route. Consequently, in spite of the system’s linear geography and limited resources, SCAT continues provide excellent service to Brevard County and to score well compared with systems its same size.

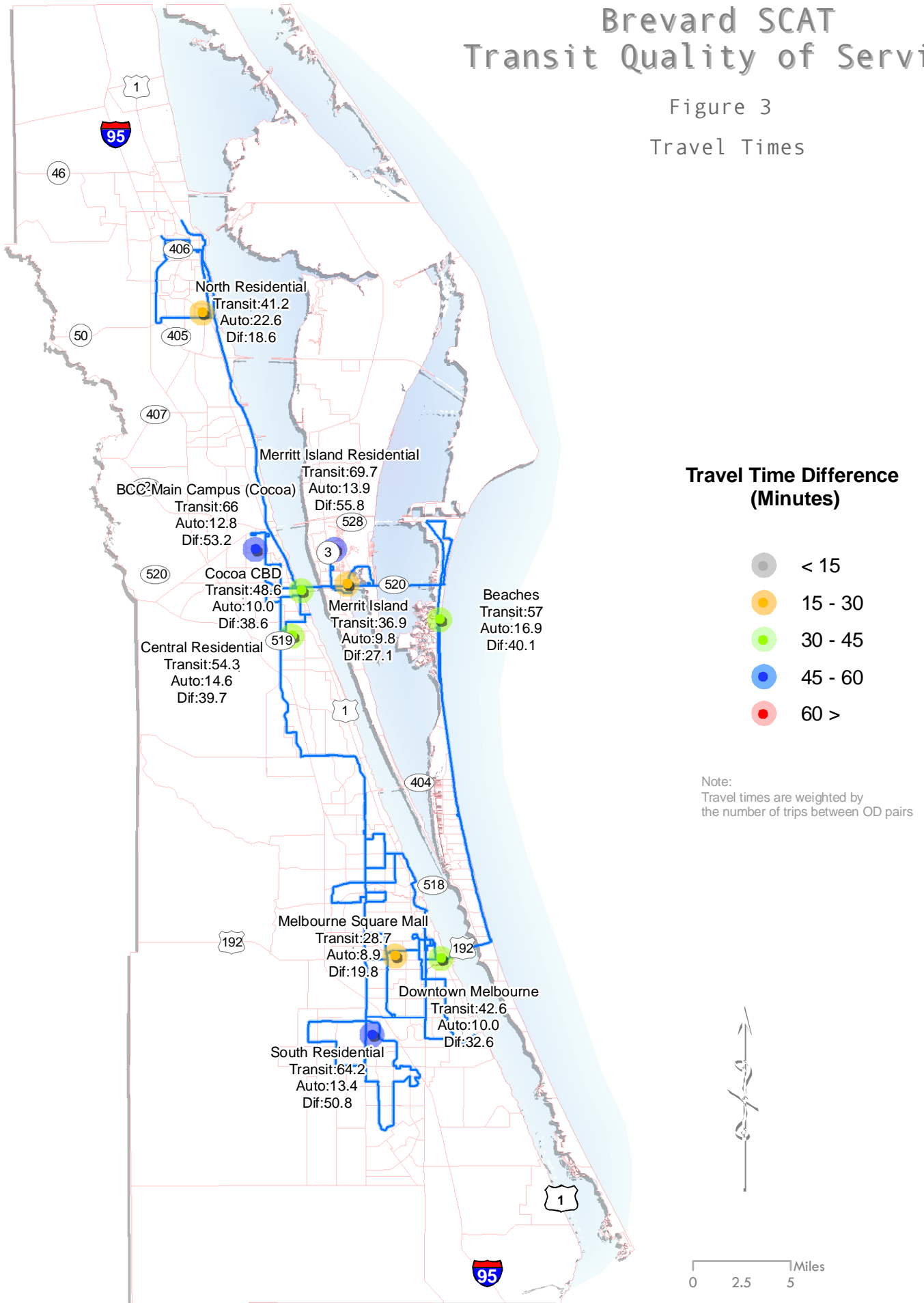
**Table 5
 Weighted Average Mobility Scores**

Origin	Average Travel Demand (trips/hr)	Frequency		Hours of Service		Travel Times			
		Travel Opp/hr	LOS	Hours	LOS	Transit (min)	Auto (min)	Difference (min)	LOS
North Residential	7.1	1	E	12	D	41.2	22.6	18.6	C
BCC Main Campus	21.1	1	E	13	D	66.0	12.8	53.2	E
Cocoa CBD	23.3	1	E	12	D	48.6	10	38.6	D
Central Residential	49.7	1	E	13	D	54.3	14.6	39.7	D
Melbourne CBD	17.1	1	E	12	D	42.6	10	32.6	D
Melbourne Square Mall	14.8	1	E	13	D	28.7	8.9	19.8	C
South Residential	26.1	1	E	13	D	64.2	13.4	50.8	E
Merritt Island Residential	28.7	1	E	9	E	69.7	13.9	55.8	E
Merritt Island	4.1	1	E	15	C	36.9	9.8	27.1	C
Beaches	20.6	1	E	16	C	57.0	16.9	40.1	D

*Travel times are weighted by the number of trips between each OD pair.

Brevard SCAT Transit Quality of Service

Figure 3
Travel Times



Appendix A
Route Segment for Transit Trips

From: North Residential

To	Bus 1	Location	Time	Bus 2	Location	Time	Bus 3	Location	Time	Bus 4	Location	Time	Time/Location at Final Destination
North Residential													
BCC Main Campus	Route 1	Port St. John Plaza	2:20	Route 6	Transit Center	2:45							2:54 BCC Main Campus
Cocoa CBD	Route 1	Port St. John Plaza	2:20										2:30 Cocoa Library
Central Residential	Route 1	Port St. John Plaza	2:20	Route 6	Transit Center	2:45							2:55 Fiske & Barton
Melbourne CBD	Route 1	Port St. John Plaza	2:20	Route 26	MLB	4:00							4:17 New Haven & Municipal
Melbourne Square Mall	Route 1	Port St. John Plaza	2:20	Route 21	MLB	4:13							4:21 Melb Sq. Mall
South Residential	Route 1	Port St. John Plaza	12:20	Route 21	MLB	2:13	Route 23	Melb Sq. Mall	2:55				3:20 Jupiter & Pace
Merritt Island Residential	Route 1	Port St. John Plaza	2:20	Route 4	Transit Center	3:00	Route 3	Merritt Sq. Mall	3:16				3:38 Manor House
Merritt Island	Route 1	Port St. John Plaza	2:20	Route 4	Transit Center	3:00							3:12 Merritt Sq. Mall
Beaches	Route 1	Port St. John Plaza	2:20	Route 4	Transit Center	3:00	Route 9	Shepard Park	3:45				3:51 Banana River Square

From: BCC Main Campus

To	Bus 1	Location	Time	Bus 2	Location	Time	Bus 3	Location	Time	Bus 4	Location	Time	Time/Location at Final Destination
North Residential	Route 6	BCC Main Campus	2:24	Route 1	Transit Center	3:20							3:40 Port St. John Plaza
BCC Main Campus													
Cocoa CBD	Route 6	BCC Main Campus	2:24	Route 1	Transit Center	3:20							3:25 Cocoa Library
Central Residential	Route 6	BCC Main Campus	4:24										4:53 Fiske & Barton
Melbourne CBD	Route 6	BCC Main Campus	2:24	Route 1	Transit Center	3:00	Route 26	MLB	4:00				4:17 New Haven & Municipal
Melbourne Square Mall	Route 6	BCC Main Campus	2:24	Route 1	Transit Center	2:35	Route 21	MLB	4:13				4:21 Melb Sq. Mall
South Residential	Route 6	BCC Main Campus	1:54	Route 1	Transit Center	2:35	Route 21	MLB	4:13	Route 23	Melb Sq. Mall	4:55	5:20 Jupiter & Pace
Merritt Island Residential	Route 6	BCC Main Campus	2:24	Route 4	Transit Center	3:00	Route 3	Merritt Sq. Mall	3:16				3:38 Manor House
Merritt Island	Route 6	BCC Main Campus	2:24	Route 4	Transit Center	3:00							3:12 Merritt Sq. Mall
Beaches	Route 6	BCC Main Campus	2:24	Route 4	Transit Center	3:00	Route 9	Shepard Park	3:45				3:51 Banana River Square

From: Cocoa CBD

To	Bus 1	Location	Time	Bus 2	Location	Time	Bus 3	Location	Time	Bus 4	Location	Time	Time/Location at Final Destination
North Residential	Route 1	Cocoa Library	3:25										3:40 Port St. John Plaza
BCC Main Campus	Route 1	Cocoa Library	4:30	Route 6	Transit Center	5:00							5:09 BCC Main Campus
Cocoa CBD													
Central Residential	Route 1	Cocoa Library	4:30	Route 6	Transit Center	4:45							4:54 Fiske & Barton
Melbourne CBD	Route 1	Cocoa Library	2:30	Route 26	MLB	4:00							4:17 New Haven & Municipal
Melbourne Square Mall	Route 1	Cocoa Library	2:30	Route 21	MLB	4:13							4:21 Melbourne Square Mall
South Residential	Route 1	Cocoa Library	12:30	Route 21	MLB	2:13	Route 23	Melb Sq. Mall	2:55				3:20 Jupiter & Pace
Merritt Island Residential	Route 1	Cocoa Library	4:30	Route 4	Transit Center	5:00	Route 3	Merritt Sq. Mall	5:16				5:38 Manor House
Merritt Island	Route 1	Cocoa Library	4:30	Route 4	Transit Center	5:00							5:12 Merritt Sq. Mall
Beaches	Route 1	Cocoa Library	4:30	Route 4	Transit Center	5:00	Route 9	Shepard Park	5:45				5:51 Banana River Square

From: Central Residential

To	Bus 1	Location	Time	Bus 2	Location	Time	Bus 3	Location	Time	Bus 4	Location	Time	Time/Location at Final Destination
North Residential	Route 6	Fiske & Barton	2:52	Route 1	Transit Center	3:20							3:40 Port St. John Plaza
BCC Main Campus	Route 6	Fiske & Barton	4:52										5:24 BCC Main Campus
Cocoa CBD	Route 6	Fiske & Barton	2:52	Route 1	Transit Center	3:20							3:25 Cocoa Library
Central Residential													
Melbourne CBD	Route 6	Fiske & Barton	1:52	Route 1	Transit Center	2:35	Route 26	MLB	4:00				4:17 New Haven & Municipal
Melbourne Square Mall	Route 6	Fiske & Barton	1:52	Route 1	Transit Center	2:35	Route 21	MLB	4:13				4:21 Melbourne Square Mall
South Residential	Route 6	Fiske & Barton	11:52	Route 1	Transit Center	12:35	Route 21	MLB	2:13	Route 23	Melbourne Square Mall	2:55	3:20 Jupiter & Pace
Merritt Island Residential	Route 6	Fiske & Barton	2:52	Route 4	Transit Center	3:30	Route 3	Merritt Sq. Mall	4:16				4:38 Manor House
Merritt Island	Route 6	Fiske & Barton	2:52	Route 4	Transit Center	3:30							3:42 Merritt Sq. Mall
Beaches	Route 6	Fiske & Barton	2:52	Route 4	Transit Center	3:30	Route 9	Shepard Park	4:15				4:21 Banana River Square

From: Melbourne CBD

To	Bus 1	Location	Time	Bus 2	Location	Time	Bus 3	Location	Time	Bus 4	Location	Time	Time/Location at Final Destination
North Residential	Route 26	Trinity Towers East	3:40	Route 1	MLB	4:00							5:47 Port St. John Plaza
BCC Main Campus	Route 26	Trinity Towers East	3:40	Route 1	MLB	4:00	Route 6	Transit Center	5:45				5:54 BCC Main Campus
Cocoa CBD	Route 26	Trinity Towers East	3:40	Route 1	MLB	4:00							5:52 Cocoa Library
Central Residential	Route 26	Trinity Towers East	3:40	Route 1	MLB	4:00	Route 6	Transit Center	5:45				5:52 Fiske & Barton
Melbourne CBD													
Melbourne Square Mall	Route 21	Trinity Towers East	4:19										4:51 Melbourne Square Mall
South Residential	Route 21	Trinity Towers East	3:19	Route 23	Melbourne Square Mall	3:55							4:20 Jupiter & Pace
Merritt Island Residential	Route 26	Trinity Towers East	11:40	Route 1	MLB	12:00	Route 4	Transit Center	1:30	Route 3	Merritt Sq. Mall	2:16	2:38 Manor House
Merritt Island	Route 26	Trinity Towers East	3:40	Route 1	MLB	4:00	Route 4	Transit Center	5:30				5:42 Merritt Sq. Mall
Beaches	Route 26	New Haven & Municipal	4:17	Route 9	Atlantic & 12th St.	5:29							5:34 Banana River Square

From: Melbourne Square Mall

To	Bus 1	Location	Time	Bus 2	Location	Time	Bus 3	Location	Time	Bus 4	Location	Time	Time/Location at Final Destination
North Residential	Route 21	Melb Sq. Mall	3:25	Route 1	MLB	4:00							5:47 Port St. John Plaza
BCC Main Campus	Route 21	Melb Sq. Mall	3:25	Route 1	MLB	4:00	Route 6	Transit Center	5:45				5:54 BCC Main Campus
Cocoa CBD	Route 21	Melb Sq. Mall	11:25	Route 1	MLB	12:00							1:25 Cocoa Library
Central Residential	Route 21	Melb Sq. Mall	3:25	Route 1	MLB	4:00	Route 6	Transit Center	5:45				5:52 Fiske & Barton
Melbourne CBD	Route 21	Melb Sq. Mall	4:55										5:19 Trinity Towers East
Melbourne Square Mall													
South Residential	Route 23	Melb Sq. Mall	3:55										4:20 Jupiter & Pace
Merritt Island Residential	Route 21	Melb Sq. Mall	1:55	Route 1	MLB	2:00	Route 4	Transit Center	3:30	Route 3	Merritt Sq. Mall	4:16	4:38 Manor House
Merritt Island	Route 21	Melb Sq. Mall	1:55	Route 1	MLB	2:00	Route 4	Transit Center	3:30				3:42 Merritt Sq. Mall
Beaches	Route 21	Melb Sq. Mall	2:25	Route 26	Airport Blvd.	3:04	Route 9	Atlantic & 12th St.	4:29				4:34 Banana River Sq.

From: South Residential

To	Bus 1	Location	Time	Bus 2	Location	Time	Bus 3	Location	Time	Bus 4	Location	Time	Time/Location at Final Destination
North Residential	Route 23	Jupiter & Pace	1:20	Route 21	Mel Sq. Mall	1:55	Route 1	MLB	2:00				3:40 Port St. John Plaza
BCC Main Campus	Route 23	Jupiter & Pace	1:20	Route 21	Mel Sq. Mall	1:55	Route 1	MLB	2:00	Route 6	Transit Center	3:45	3:54 BCC Main Campus
Cocoa CBD	Route 23	Jupiter & Pace	1:20	Route 21	Mel Sq. Mall	1:55	Route 1	MLB	2:00				3:25 Cocoa Library
Central Residential	Route 23	Jupiter & Pace	1:20	Route 21	Mel Sq. Mall	1:55	Route 1	MLB	2:00	Route 6	Transit Center	3:45	3:52 Fiske & Barton
Melbourne CBD	Route 23	Jupiter & Pace	4:20	Route 21	Mel Sq. Mall	4:51							5:19 Trinity Towers East
Melbourne Square Mall	Route 23	Jupiter & Pace	4:20										4:50 Mel Sq. Mall
South Residential													
Merritt Island Residential	Route 23	Jupiter & Pace	1:20	Route 21	Mel Sq. Mall	1:55	Route 1	MLB	2:00	Route 4	Transit Center	3:30	4:38 Manor House
Merritt Island	Route 23	Jupiter & Pace	1:20	Route 21	Mel Sq. Mall	1:55	Route 1	MLB	2:00	Route 4	Transit Center	3:30	3:42 Merritt Sq. Mall
Beaches	Route 23	Jupiter & Pace	1:20	Route 21	Mel Sq. Mall	1:55	Route 26	MLB	2:00	Route 9	Atlantic & 12th St.	3:29	3:34 Banana River Sq.

From: Merritt Island Residential

To	Bus 1	Location	Time	Bus 2	Location	Time	Bus 3	Location	Time	Bus 4	Location	Time	Time/Location at Final Destination
North Residential	Route 3	Manor House	4:54	Route 4	Merritt Sq. Mall	5:14	Route 1	Transit Center	5:27				5:47 Port St. John Plaza
BCC Main Campus	Route 3	Manor House	3:54	Route 4	Merritt Sq. Mall	4:14	Route 6	Transit Center	4:45				4:54 BCC Main Campus
Cocoa CBD	Route 3	Manor House	1:54	Route 4	Merritt Sq. Mall	2:44	Route 1	Transit Center	3:20				3:25 Cocoa Library
Central Residential	Route 3	Manor House	3:54	Route 4	Merritt Sq. Mall	4:14	Route 6	Transit Center	4:45				4:52 Fiske & Barton
Melbourne CBD	Route 3	Manor House	11:54	Route 4	Merritt Sq. Mall	12:14	Route 1	Transit Center	12:35	Route 26	MLB	2:00	2:17 New Haven & Municipal
Melbourne Square Mall	Route 3	Manor House	1:54	Route 4	Merritt Sq. Mall	2:14	Route 1	Transit Center	2:35	Route 21	MLB	4:13	4:21 Mel Sq. Mall
South Residential	Route 3	Manor House	8:54	Route 4	Merritt Sq. Mall	9:14	Route 1	Transit Center	9:35	Route 21	MLB	11:13	1:20 Jupiter & Pace
Merritt Island Residential													
Merritt Island	Route 3	Manor House	4:54										5:10 Merritt Sq. Mall
Beaches	Route 3	Manor House	4:54	Route 4	Merritt Sq. Mall	5:12	Route 9	Shepard Park	5:40				5:45 Banana River Sq.

