



COLLIER COUNTY AREA TRANSIT COMPREHENSIVE OPERATIONS ANALYSIS

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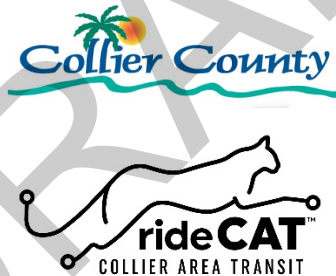
Collier County Area Transit Comprehensive Operations Analysis

DRAFT Report

June 2021

Prepared For:

Collier County Area Transit



Prepared By:

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Kimley»»Horn



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I. Introduction

A Comprehensive Operations Analysis (COA) is an in-depth evaluation of transit services for the purpose of increasing value and efficiency in the short-term. By examining the performance of bus services, the Collier Area Transit (CAT) COA identifies opportunities to repurpose transit resources from low-performing areas of service. Key components of a COA include the following:

- ◆ Detailed review of performance data including ridership and on-time performance data
- ◆ Field observation of bus operations
- ◆ Interviews with bus drivers and transit agency operations staff
- ◆ Public outreach
- ◆ Review of passenger activity at transfer stations
- ◆ Assessment of service operations and fare policies

All transit agencies want to maximize the use of scarce resources while providing a high level of service to their customers. A COA allows an agency the opportunity to reevaluate the nuts and bolts of their operation to determine what is working and what is not. A COA is distinguished from other transit planning efforts as conveyed by the two (2) primary objectives:

1. **A Focus on the Short Term:** A COA is focused largely on short to mid-term operational improvements (i.e., less than five (5) years). Operations improvements consist primarily of service changes. Other planning efforts have a longer planning horizon and focus on major capital and infrastructure investments in addition to major service modifications or new types of service programs.
2. **A Cost Neutral Approach:** A COA is focused on operational efficiencies that are cost neutral or that require minimal investment. A key element of the COA is the reallocation of resources from underperforming services. The COA determines service changes that can occur today, within the means of the existing operating budget.

To that end, this COA project was conducted with the support and feedback of CAT staff and the CAT Public Transit Advisory Committee (PTAC). The result is an actionable and phased implementation plan that is inclusive of both service changes and service policy changes with a focus on the short-term and a minimal impact on the operating budget.

The remainder of this report is organized into the following sections:

- ◆ **Section II. Evaluation of Existing Service** – This includes descriptions of all service evaluation tasks completed for the COA. Data and analysis are presented for each CAT fixed bus route including route-by-route level of service, service statistics, and service performance measures. Route-by-route service and performance profiles are provided in this section.
- ◆ **Section III. Performance Standards** – Key performance indicators and performance standards are developed and applied to the existing fixed-route network. This section provides a basis for evaluating routes for modification.

- ◆ **Section IV. Service Alternatives and Evaluation** – The section presents the range of service alternatives developed from the existing conditions evaluation. An evaluation of the alternatives is provided including input from public outreach activities performed over the course of the project.
- ◆ **Section V. Service Policies** – The analysis of existing transit service operations allows for a close examination of several of CAT’s operating practices and policies. Several policies are identified and described for potential modification or enhancement.
- ◆ **Section VI. Implementation Plan** – This section includes the COA phased implementation plan. That plan consists of near-term, short-term, and mid-term service improvement recommendations.

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II. Evaluation of Existing Service

The evaluation of existing services consisted of a variety of tasks which are summarized in this section. Collectively, the compiled data provides the foundation for development of service change alternatives, a service policy review, and preparation of the COA implementation plan.

Table 1 summarizes the data used for the existing services evaluation. Data sources are noted in the table and include data from CAT, prior plans and reports, and direct data collection efforts.

All data, except for data collected during field observations, precedes the COVID-19 pandemic. A large portion of CAT’s ridership is transit dependent and this is reflected in the most recent on-board survey of bus riders completed in January 2020 where over 80 percent of respondents indicated using the bus at least two (2) days a week.

Table 1: Existing Services Data and Sources

Data	Type	Timeframe	Source
Annual On-Time Performance	Transit Service	April 2019 – November 2019	Collier Area Transit
Stop-By-Stop Ridership	Transit Service	March 2019 – February 2020	Farebox
Annual Route Ridership	Transit Service	FY 2019	Farebox
Annual Revenue Hours	Transit Service	FY 2019	Collier Area Transit
Annual Operating Expense	Transit Service	FY 2019	Collier Area Transit
Fare Revenue	Transit Service	FY 2019	Collier Area Transit
Transit Development Plan Alternatives	Transit Service	2020	2020 CAT TDP
Low-Income Population	Socio-Economic	2018	CAT Title VI Program Update
Population Density	Socio-Economic	2020	2020 CAT TDP
Dwelling Unit Density	Socio-Economic	2020	2020 CAT TDP
Employment Density	Socio-Economic	2020	2020 CAT TDP

Service Description and Service Area

CAT's existing fixed-route bus service network consists of 20 routes that operate throughout Collier County. The service area largely consists of urbanized part Collier County, including the City of Naples and the City of Marco Island. Unincorporated rural communities in the County that receive transit service include Ave Maria and Immokalee. The fixed-route service is supplemented with compliant Americans with Disabilities Act (ADA) complementary paratransit service, the Transportation Disadvantaged (TD) services program, and connections to Lee County Transit (LeeTran).

Service is provided seven (7) days a week, all year round except for six (6) holidays. Daily service typically begins between 5:30 AM and 6:00 AM and ends later in the evening between 7:30 PM and 8:00 PM for most routes. There is early morning service for Immokalee residents who must travel into Naples or Marco Island for work. A summary of the existing level of service for all CAT bus routes is provided in **Table 2**.

Services Evaluation

The evaluation of services is presented in a series of tables and graphics. They consist of both system-wide and route-by-route summaries of service. Tables and graphics are organized into three (3) major categories:

- ◆ Annual Performance by Route
 - Table 3: Route Service Statistics (FY 2019)
 - Table 4: Route Performance Measures (FY 2019)
- ◆ System-Wide Service Level Summaries
 - Figure 1: Systemwide Weekday Frequency Summary
 - Figure 2: Systemwide Weekday Productivity Summary
- ◆ Route Profiles
 - Page 11 – Page 29

Understanding what is working and what is not is at the heart of any COA. To that end, the individual service profiles present key service statistics and performance indicators as a visual summary of strengths and weaknesses for each of CAT's fixed routes. These elements combine to provide a basis for evaluating services and assist in answering key questions including, but not limited to, the following:

- ◆ Where is service under-performing?
Routes with low trips per hour or high cost per trip
- ◆ Where are the most ridership productive areas/locations in the County?
Stop locations with high annual ridership
- ◆ Is there service coverage in low-income communities?
Routes that serve areas below the poverty line

In this manner, realignment of routes, or repurposing limited resources, becomes more targeted, resulting in a more efficient delivery of transit services. Analysis of transit service consists of technical language and unique service measures. To facilitate review of the existing service, each analysis variable presented in Table 2 – Table 4 and the graphics series is presented below with a brief definition. Several of these definitions are drawn from the Florida Department of Transportation (FDOT) [2020 Florida Transit Information and Performance Handbook](#). It

should be noted that Route 29 – Beach Bus is a seasonal service and not included in the review of existing service and the route profiles.

Route Profile Characteristics

- ◆ **Service Type** – These service types are defined in Section III of this report: Core Network, Circulator, Limited, Commuter Express, and Seasonal
- ◆ **Level of Service**
 - **Service Period (i.e., Service Span)** – The daily hours of service.
 - **Service Frequency** – How often a vehicle departs from the same location within a given time period.
- ◆ **Service Statistics**
 - **Service Type** – Defined in Section III
 - **Annual Ridership** – Annual number of passenger boardings onto transit vehicles. A trip is counted each time a passenger boards a transit vehicle.
 - **Revenue Hours** – Total hours of operation by revenue service vehicles in active revenue service.
 - **Operating Expense** – Reported total spending on operations, including administration, maintenance, and operation of service vehicles.
 - **Revenue** – All revenues directly generated through the operation of the transit agency inclusive of passenger fares, special transit fares, subsidy from other sectors of operations, and non-transportation revenues.
 - **Peak Vehicle Requirement** – The maximum number of vehicles that are needed to operate during peak service. Excludes atypical days or one-time special events.
- ◆ **Performance Measures**
 - **On-Time Performance (OTP)** – The percentage of arrivals and/or departures that are within the transit agency’s OTP standards. CAT’s current OTP goal is 85 percent.
 - **Trips Per Hour** – The ratio of annual ridership to annual revenue hours of operation. Used to indicate service effectiveness.
 - **Cost Per Trip** – Operating expenditures divided by the total annual ridership per route. Used to measure the efficiency of transporting passengers.
 - **Average Fare** – The ratio of passenger fare revenues divided by the total number of passenger trips.
 - **Subsidy Per Trip** – The difference between Cost Per Trip and Average Fare. Used to represent the cost to the transit agency for each passenger boarding.
 - **Average Trip Length** – Annual passenger miles divided by annual passenger trips (annual ridership).
- ◆ **Map Data**
 - **Average Daily Ridership by Stop by Route** – the annual ridership for stops along each fixed route.
 - **On-Time Performance by Timepoint by Route** – The OTP for stops indicated as timepoints for each fixed route.
 - **Households Below Poverty Percentages** – Based on low income and household income data from the latest CAT Title VI Program. Data is visualized for Census block groups in proximity to each fixed route.

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Table 2: Route Level of Service (FY 2019)

Route	Description	Weekday Service Period	Weekday Service Frequency	Weekday Number of Trips	Saturday Service Period	Saturday Service Frequency	Saturday Number of Trips	Sunday Service Period	Sunday Service Frequency	Sunday Number of Trips
11	US 41 to Creekside Commerce Park	6:00 AM to 8:48 PM	45 min to 110 min	13	6:00 AM to 8:48 PM	90 min to 110 min	7	7:30 AM to 5:19 PM	90 min to 110 min	6
12	Airport Rd to Creekside	6:05 AM to 7:00 PM	45 min to 105 min	9	6:05 AM to 7:00 PM	90 min to 105 min	8	7:30 AM to 5:19 PM	90 min to 105 min	6
13	NCH to Coastland Mall	6:05 AM to 8:10 PM	60 min to 75 min	13	6:05 AM to 8:10 PM	60 min to 75 min	13	7:05 AM to 5:52 PM	60 min to 75 min	10
14	Bayshore Dr to Coastland Mall	6:35 AM to 6:32 PM	60 min to 70 min	11	6:35 AM to 6:32 PM	60 min to 70 min	11	No Sunday Service		
15	Golden Gate City	5:35 AM to 8:26 PM	90 min to 105 min	10	5:35 AM to 8:26 PM	90 min to 105 min	10	6:58 AM to 5:58 PM	90 min to 105 min	7
16	Golden Gate City	4:35 AM to 5:26 PM	90 min to 105 min	9	4:35 AM to 5:26 PM	90 min to 105 min	9	No Sunday Service		
17	Rattlesnake to FSW	6:00 AM to 7:05 PM	90 min to 105 min	8	6:00 AM to 7:05 PM	90 min to 105 min	8	7:30 AM to 5:21 PM	90 min to 105 min	6
18	US 41 East to Naples Manor	6:30 AM to 5:53 PM	90 min to 105 min	7	6:30 AM to 5:53 PM	90 min to 105 min	7	No Sunday Service		
19	Golden Gate Estates to Immokalee	4:25 AM to 8:29 PM	162 min to 170 min	6	4:25 AM to 8:29 PM	162 min to 170 min	6	6:51 AM to 9:25 AM	--	1 AM trip
20	Pine Ridge Road	6:00 AM to 6:00 PM	--	2 AM Trips 1 PM Trip	6:00 AM to 6:00 PM	--	2 AM Trips 1 PM Trip	7:30 AM to 6:00 PM	--	1 AM Trip 1 PM Trip
21	Marco Circulator	7:40 AM to 4:50 PM	--	3 AM Trips 2 PM Trips	7:40 AM to 4:50 PM	--	3 AM Trips 2 PM Trips	7:40 AM to 4:50 PM	--	3 AM Trips 2 PM Trips
22	Immokalee Circulator (Commerce)	5:45 AM to 8:52 PM	60 min	15	5:45 AM to 8:52 PM	60 min	15	7:00 AM to 8:00 PM	120 min	7
23	Immokalee Circulator (Eustis)	7:00 AM to 7:50 PM	60 min	13	7:00 AM to 7:50 PM	60 min	13	8:00 AM to 7:00 PM	120 min	6
24	Government Center to Charlee Estates	6:40 AM to 6:08 PM	85 min	9	6:40 AM to 6:08 PM	85 min	9	9:00 AM to 5:20 PM	85 min	6
25	Golden Gate Pkwy to Goodlette Frank Rd	6:00 AM to 6:00 PM	90 min to 95 min	7	6:00 AM to 6:00 PM	90 min to 95 min	6	12:05 PM to 4:29 PM	--	1 Midday Trip 1 PM Trip
26	Pine Ridge Rd to Clam Pass	9:05 AM to 4:27 PM	--	2 AM Trips 1 PM Trips	9:05 AM to 4:27 PM	--	2 AM Trips 1 PM Trips	9:05 AM to 4:27 PM	--	2 AM Trips 1 PM Trips
27	951 to Immokalee Rd	6:00 AM to 7:03 PM	90 min to 105 min	8	6:00 AM to 7:03 PM	90 min to 105 min	8	7:30 AM to 5:17 PM	90 min to 105 min	6
28	Golden Gate Estates to Ave Maria to Immokalee	3:35 AM to 7:55 PM	--	1 AM Trip 1 Midday Trip 1 PM Trip	3:35 AM to 7:55 PM	--	1 AM Trip 1 Midday Trip 1 PM Trip	5:05 PM to 7:55 PM	--	1 PM Trip
121	Immokalee to Marco Island	5:30 AM to 6:52 PM	--	1 AM Trip 1 PM Trip	5:30 AM to 6:52 PM	--	1 AM Trip 1 PM Trip	5:30 AM to 6:52 PM	--	1 AM Trip 1 PM Trip

Source: Collier Area Transit

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Table 3: Route Service Statistics (FY 2019)

Route	Description	Ridership (FY 2019)	Revenue Hours (FY 2019)	Operating Expense (FY 2019)	Revenue (FY 2019)	Vehicle Requirement (Spring Sign Up)
11	US 41 to Creekside Commerce Park	96,554	6,614	\$575,087	\$91,889	2
12	Airport Rd to Creekside	74,053	4,866	\$423,099	\$77,372	2
13	NCH to Coastland Mall	66,365	4,815	\$418,664	\$69,644	1
14	Bayshore Dr to Coastland Mall	51,111	3,660	\$318,237	\$54,396	1
15	Golden Gate City	86,683	5,078	\$441,506	\$85,941	1
16	Golden Gate City	43,509	4,030	\$350,387	\$52,179	1
17	Rattlesnake to FSW	41,221	4,521	\$393,116	\$37,232	1
18	US 41 East to Naples Manor	27,836	3,554	\$308,986	\$26,564	1
19	Golden Gate Estates to Immokalee	64,392	5,046	\$438,713	\$88,167	1
20	Pine Ridge Road	6,545	1,448	\$125,941	\$7,279	1
21	Marco Circulator	11,688	1,840	\$160,010	\$16,959	1
22	Immokalee Circulator (Commerce)	49,650	4,943	\$429,836	\$58,905	1
23	Immokalee Circulator (Eustis)	27,918	4,241	\$368,738	\$34,158	1
24	Government Center to Charlee Estates	49,587	4,111	\$357,450	\$52,627	1
25	Golden Gate Pkwy to Goodlette Frank Rd	15,986	2,858	\$248,540	\$19,069	1
26	Pine Ridge Rd to Clam Pass	5,730	1,511	\$131,353	\$7,137	1
27	951 to Immokalee Rd	29,874	4,654	\$404,699	\$32,435	1
28	Golden Gate Estates to Ave Maria to Immokalee	27,697	2,626	\$228,328	\$39,142	1
121	Immokalee to Marco Island	22,229	1,326	\$115,311	\$34,142	1

Source: Collier Area Transit

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Table 4: Route Performance Measures (FY 2019)

Route	Description	On-Time Performance	Trips Per Hour	Cost Per Trip	Average Fare	Subsidy Per Trip	Average Trip Length (Miles)
11	US 41 to Creekside Commerce Park	79.07%	14.6	\$5.96	\$0.95	\$5.00	8.71
12	Airport Rd to Creekside	81.32%	15.2	\$5.71	\$1.04	\$4.67	7.08
13	NCH to Coastland Mall	91.59%	13.8	\$6.31	\$1.05	\$5.26	5.95
14	Bayshore Dr to Coastland Mall	93.36%	14.0	\$6.23	\$1.06	\$5.16	6.10
15	Golden Gate City	88.30%	17.1	\$5.09	\$0.99	\$4.10	7.29
16	Golden Gate City	90.07%	10.8	\$8.05	\$1.20	\$6.85	7.01
17	Rattlesnake to FSW	88.69%	9.1	\$9.54	\$0.90	\$8.63	6.85
18	US 41 East to Naples Manor	88.57%	7.8	\$11.10	\$0.95	\$10.15	7.03
19	Golden Gate Estates to Immokalee	75.48%	12.8	\$6.81	\$1.37	\$5.44	24.08
20	Pine Ridge Road	86.84%	4.5	\$19.24	\$1.11	\$18.13	6.61
21	Marco Circulator	82.78%	6.4	\$13.69	\$1.45	\$12.24	8.10
22	Immokalee Circulator (Commerce)	74.40%	10.0	\$8.66	\$1.19	\$7.47	7.98
23	Immokalee Circulator (Eustis)	86.30%	6.6	\$13.21	\$1.22	\$11.98	7.24
24	Government Center to Charlee Estates	81.75%	12.1	\$7.21	\$1.06	\$6.15	8.00
25	Golden Gate Pkwy to Goodlette Frank Rd	89.78%	5.6	\$15.55	\$1.19	\$14.35	7.19
26	Pine Ridge Rd to Clam Pass	88.00%	3.8	\$22.92	\$1.25	\$21.68	7.64
27	951 to Immokalee Rd	86.20%	6.4	\$13.55	\$1.09	\$12.46	9.38
28	Golden Gate Estates to Ave Maria to Immokalee	74.52%	10.5	\$8.24	\$1.41	\$6.83	25.70
121	Immokalee to Marco Island	72.82%	16.8	\$5.19	\$1.54	\$3.65	40.17

Source: Collier Area Transit

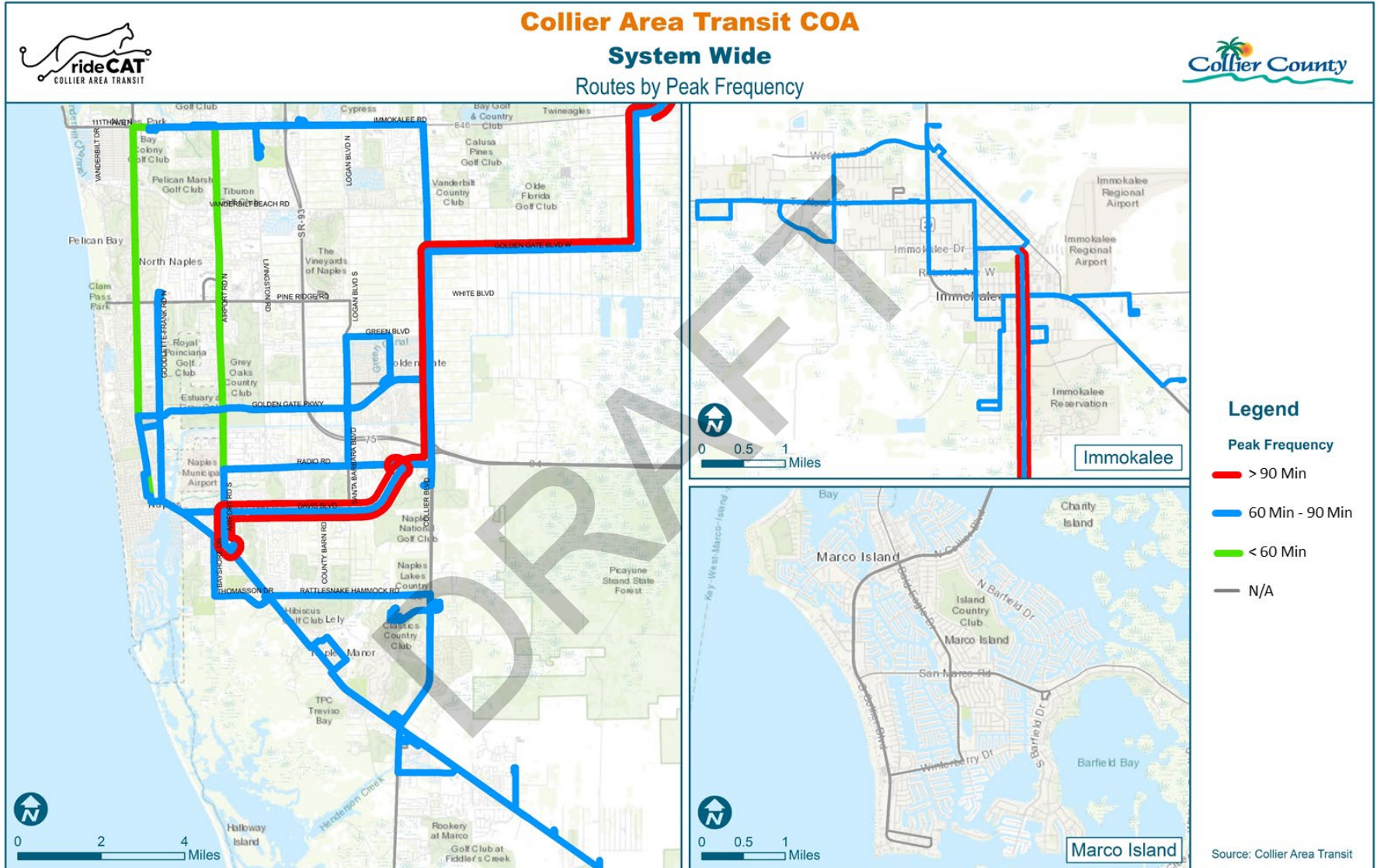


Figure 1: Systemwide Weekday Frequency Summary

COLLIER COUNTY AREA TRANSIT COMPREHENSIVE OPERATIONS ANALYSIS

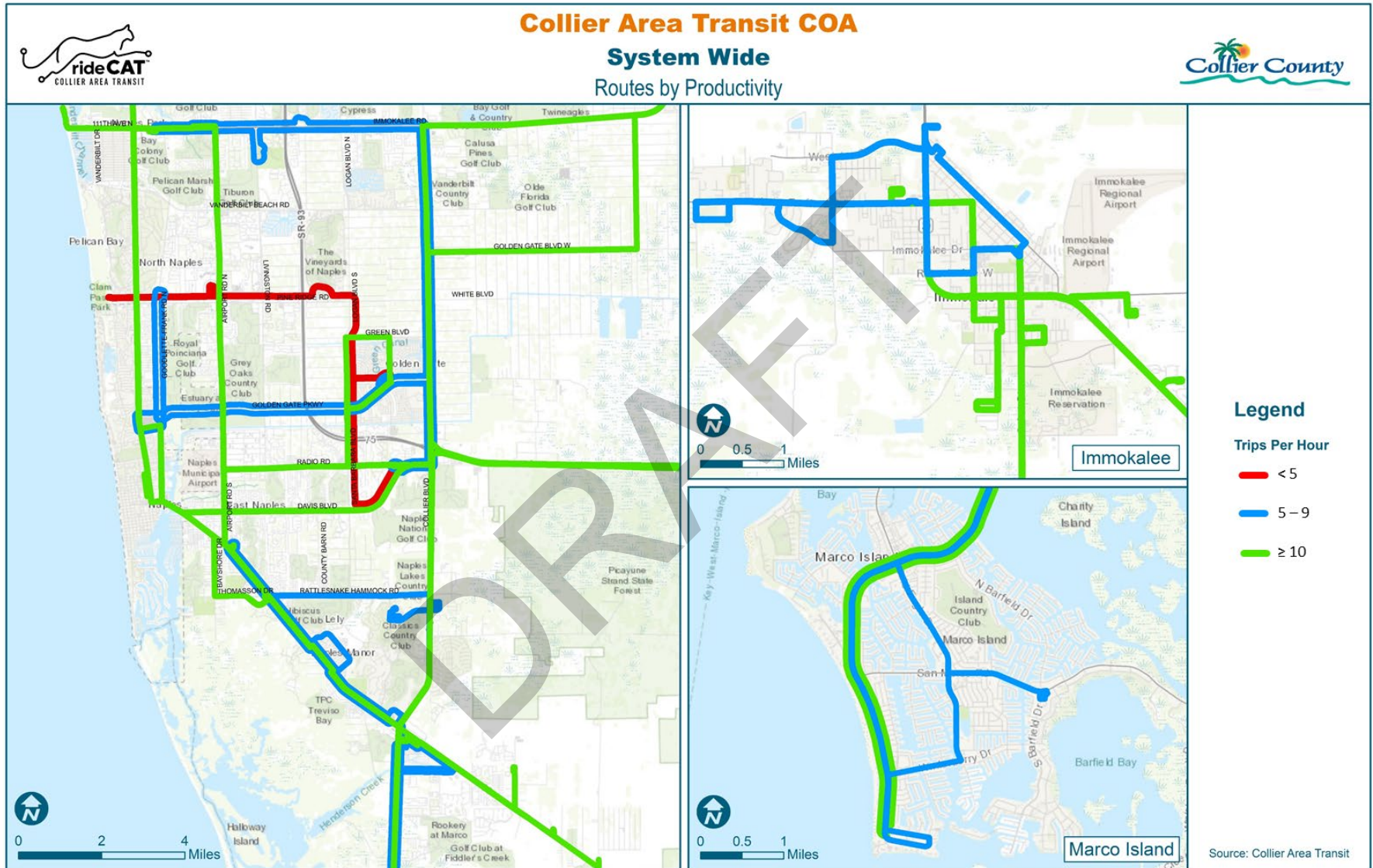


Figure 2: Systemwide Weekday Productivity Summary



Collier Area Transit COA

Route 11: US 41 - Creekside

Service Type: Core Network

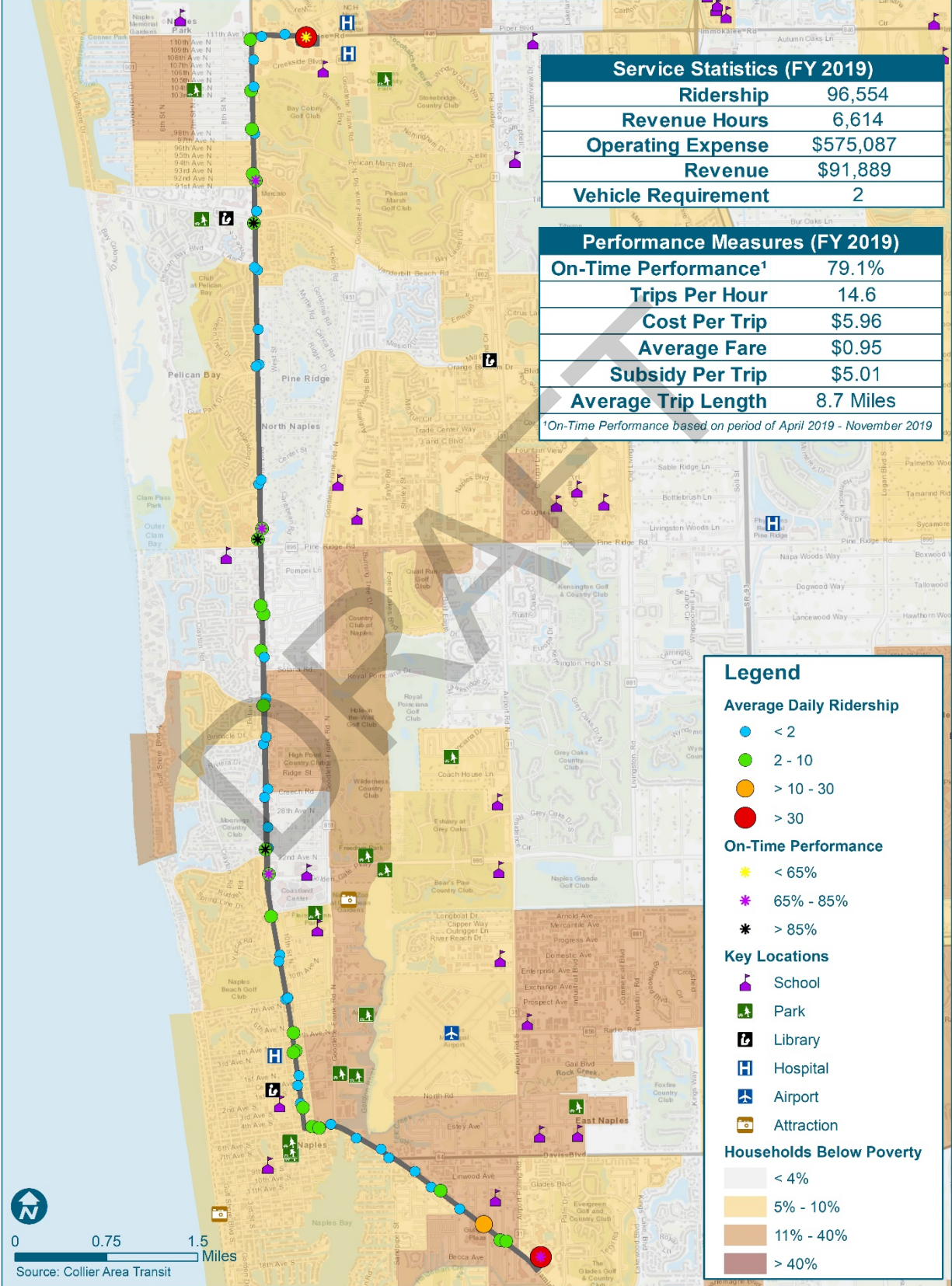


Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
6:00 AM - 8:48 PM	45 - 110 Min	6:00 AM - 8:48 PM	90 - 110 Min	7:30 AM - 5:19 PM	90 - 110 Min

Service Statistics (FY 2019)	
Ridership	96,554
Revenue Hours	6,614
Operating Expense	\$575,087
Revenue	\$91,889
Vehicle Requirement	2

Performance Measures (FY 2019)	
On-Time Performance ¹	79.1%
Trips Per Hour	14.6
Cost Per Trip	\$5.96
Average Fare	\$0.95
Subsidy Per Trip	\$5.01
Average Trip Length	8.7 Miles

¹On-Time Performance based on period of April 2019 - November 2019



Legend

Average Daily Ridership

- < 2
- 2 - 10
- > 10 - 30
- > 30

On-Time Performance

- ★ < 65%
- ★ 65% - 85%
- ★ > 85%

Key Locations

- 🏫 School
- 🌳 Park
- 📖 Library
- H Hospital
- ✈ Airport
- 🎪 Attraction

Households Below Poverty

- < 4%
- 5% - 10%
- 11% - 40%
- > 40%



Collier Area Transit COA

Route 12: Airport Rd - Creekside

Service Type: Core Network

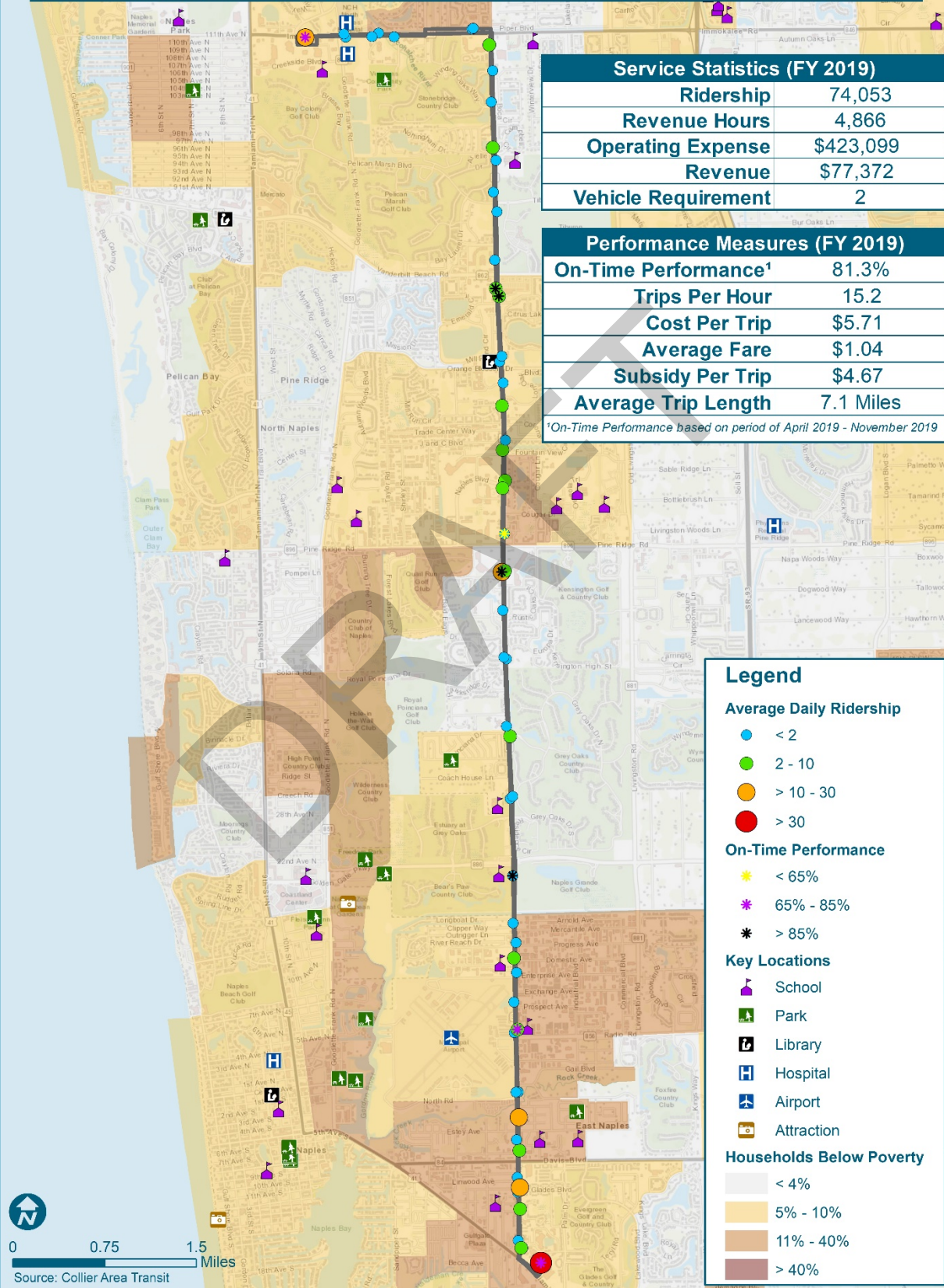


Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
6:05 AM - 7:00 PM	45 - 105 Min	6:05 AM - 7:00 PM	90 - 105 Min	7:30 AM - 5:19 PM	90 - 105 Min

Service Statistics (FY 2019)	
Ridership	74,053
Revenue Hours	4,866
Operating Expense	\$423,099
Revenue	\$77,372
Vehicle Requirement	2

Performance Measures (FY 2019)	
On-Time Performance ¹	81.3%
Trips Per Hour	15.2
Cost Per Trip	\$5.71
Average Fare	\$1.04
Subsidy Per Trip	\$4.67
Average Trip Length	7.1 Miles

¹On-Time Performance based on period of April 2019 - November 2019



Legend

Average Daily Ridership

- Blue dot: < 2
- Green dot: 2 - 10
- Orange dot: > 10 - 30
- Red dot: > 30

On-Time Performance

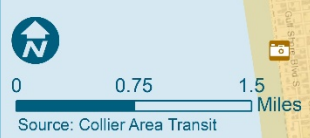
- Yellow star: < 65%
- Purple star: 65% - 85%
- Black star: > 85%

Key Locations

- Purple flag: School
- Green tree: Park
- Black book: Library
- Blue hospital: Hospital
- Blue plane: Airport
- Orange building: Attraction

Households Below Poverty

- Lightest yellow: < 4%
- Yellow: 5% - 10%
- Orange: 11% - 40%
- Dark orange: > 40%





Collier Area Transit COA

Route 13: NCH - Coastland Mall

Service Type: Circulator

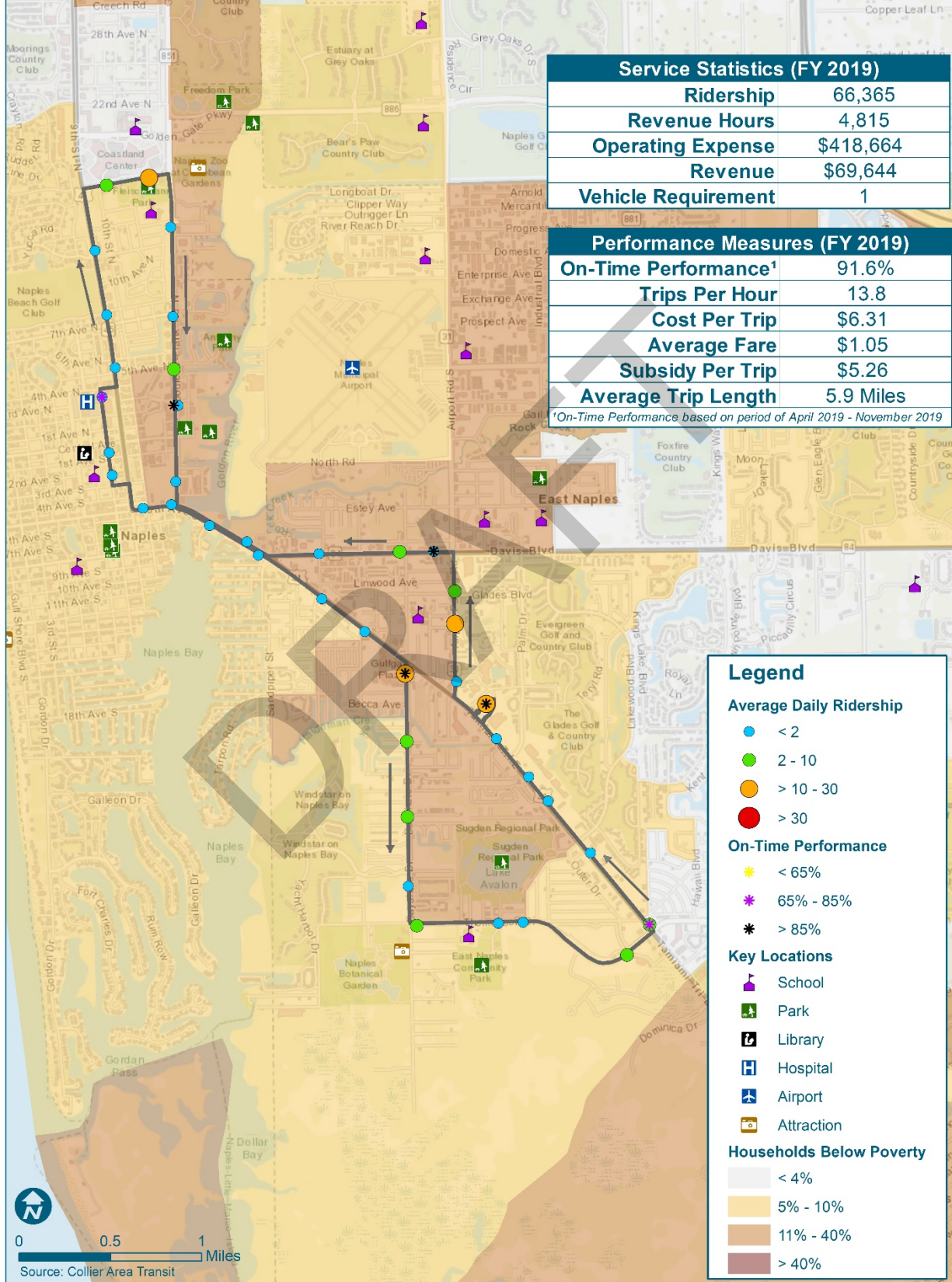


Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
6:05 AM - 8:10 PM	60 - 75 Min	6:05 AM - 8:10 PM	60 - 75 Min	7:05 AM - 5:52 PM	60 - 75 Min

Service Statistics (FY 2019)	
Ridership	66,365
Revenue Hours	4,815
Operating Expense	\$418,664
Revenue	\$69,644
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance ¹	91.6%
Trips Per Hour	13.8
Cost Per Trip	\$6.31
Average Fare	\$1.05
Subsidy Per Trip	\$5.26
Average Trip Length	5.9 Miles

¹On-Time Performance based on period of April 2019 - November 2019



0 0.5 1 Miles
Source: Collier Area Transit

Legend

Average Daily Ridership

- < 2
- 2 - 10
- > 10 - 30
- > 30

On-Time Performance

- ★ < 65%
- ★ 65% - 85%
- ★ > 85%

Key Locations

- School
- Park
- Library
- Hospital
- Airport
- Attraction

Households Below Poverty

- < 4%
- 5% - 10%
- 11% - 40%
- > 40%



Collier Area Transit COA

Route 14: Bayshore Drive - Coastland Mall

Service Type: Circulator

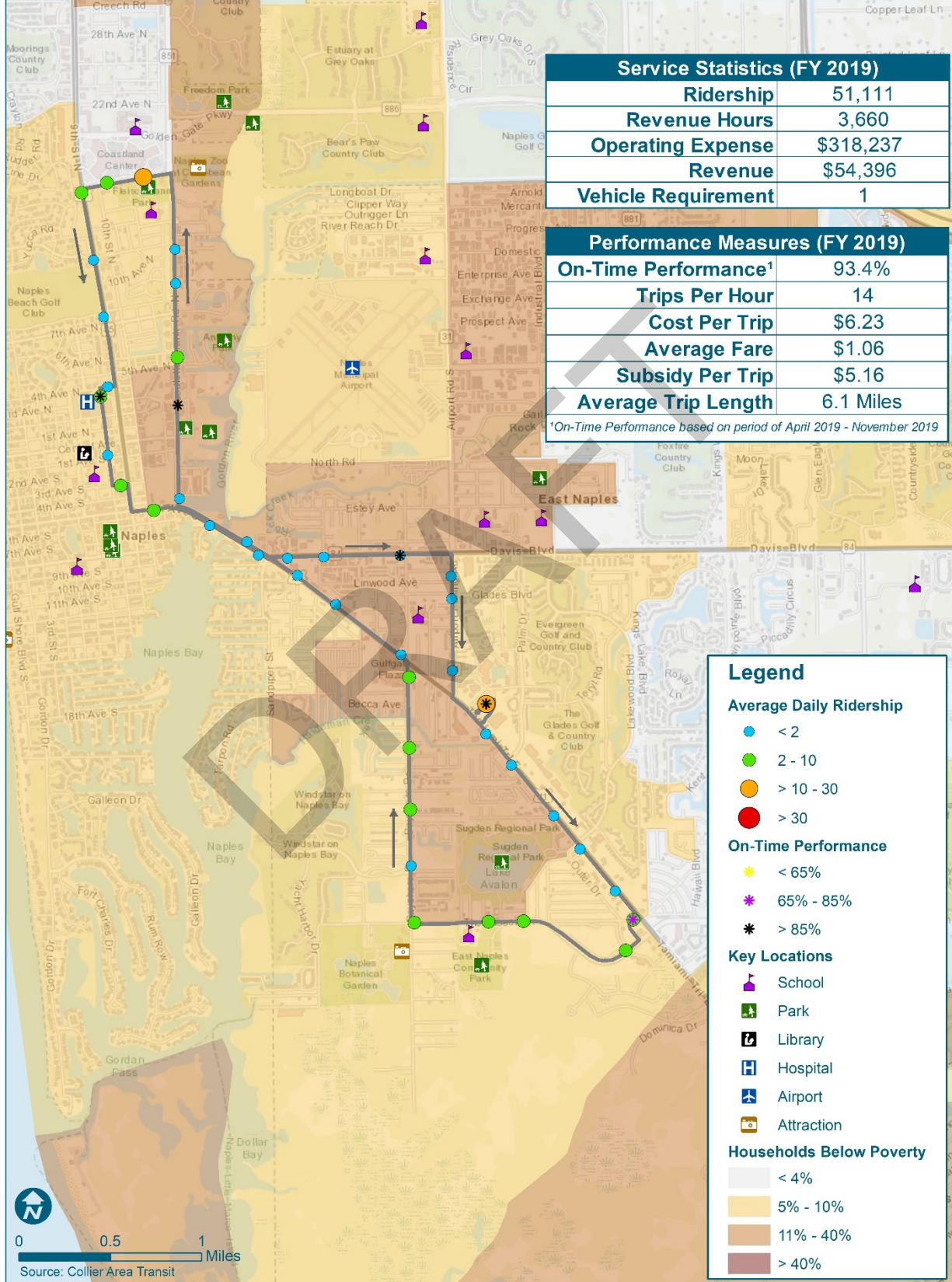


Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
6:35 AM - 6:32 PM	60 - 70 Min	6:35 AM - 6:32 PM	60 - 70 Min	--	--

Service Statistics (FY 2019)	
Ridership	51,111
Revenue Hours	3,660
Operating Expense	\$318,237
Revenue	\$54,396
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance ¹	93.4%
Trips Per Hour	14
Cost Per Trip	\$6.23
Average Fare	\$1.06
Subsidy Per Trip	\$5.16
Average Trip Length	6.1 Miles

¹On-Time Performance based on period of April 2019 - November 2019



Legend

Average Daily Ridership

- < 2
- 2 - 10
- > 10 - 30
- > 30

On-Time Performance

- ★ < 65%
- ★ 65% - 85%
- ★ > 85%

Key Locations

- School
- Park
- Library
- Hospital
- Airport
- Attraction

Households Below Poverty

- < 4%
- 5% - 10%
- 11% - 40%
- > 40%

0 0.5 1 Miles
Source: Collier Area Transit



Collier Area Transit COA

Route 15: Golden Gate City

Service Type: Circulator

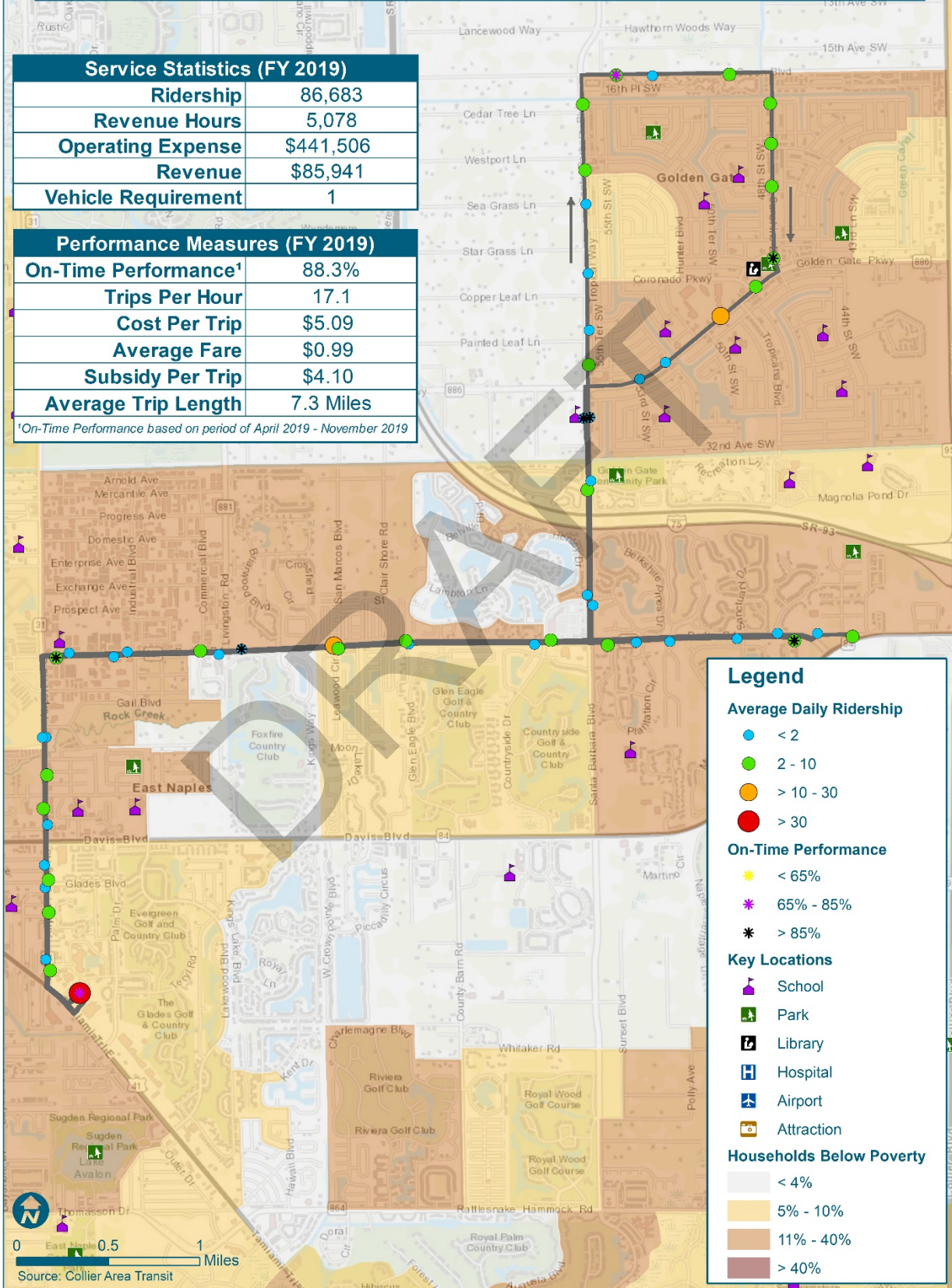


Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
5:35 AM - 8:26 PM	90 - 105 Min	5:35 AM - 8:26 PM	90 - 105 Min	6:58 AM - 5:58 PM	90 - 105 Min

Service Statistics (FY 2019)	
Ridership	86,683
Revenue Hours	5,078
Operating Expense	\$441,506
Revenue	\$85,941
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance ¹	88.3%
Trips Per Hour	17.1
Cost Per Trip	\$5.09
Average Fare	\$0.99
Subsidy Per Trip	\$4.10
Average Trip Length	7.3 Miles

¹On-Time Performance based on period of April 2019 - November 2019



Source: Collier Area Transit



Collier Area Transit COA

Route 16: Golden Gate City

Service Type: Circulator

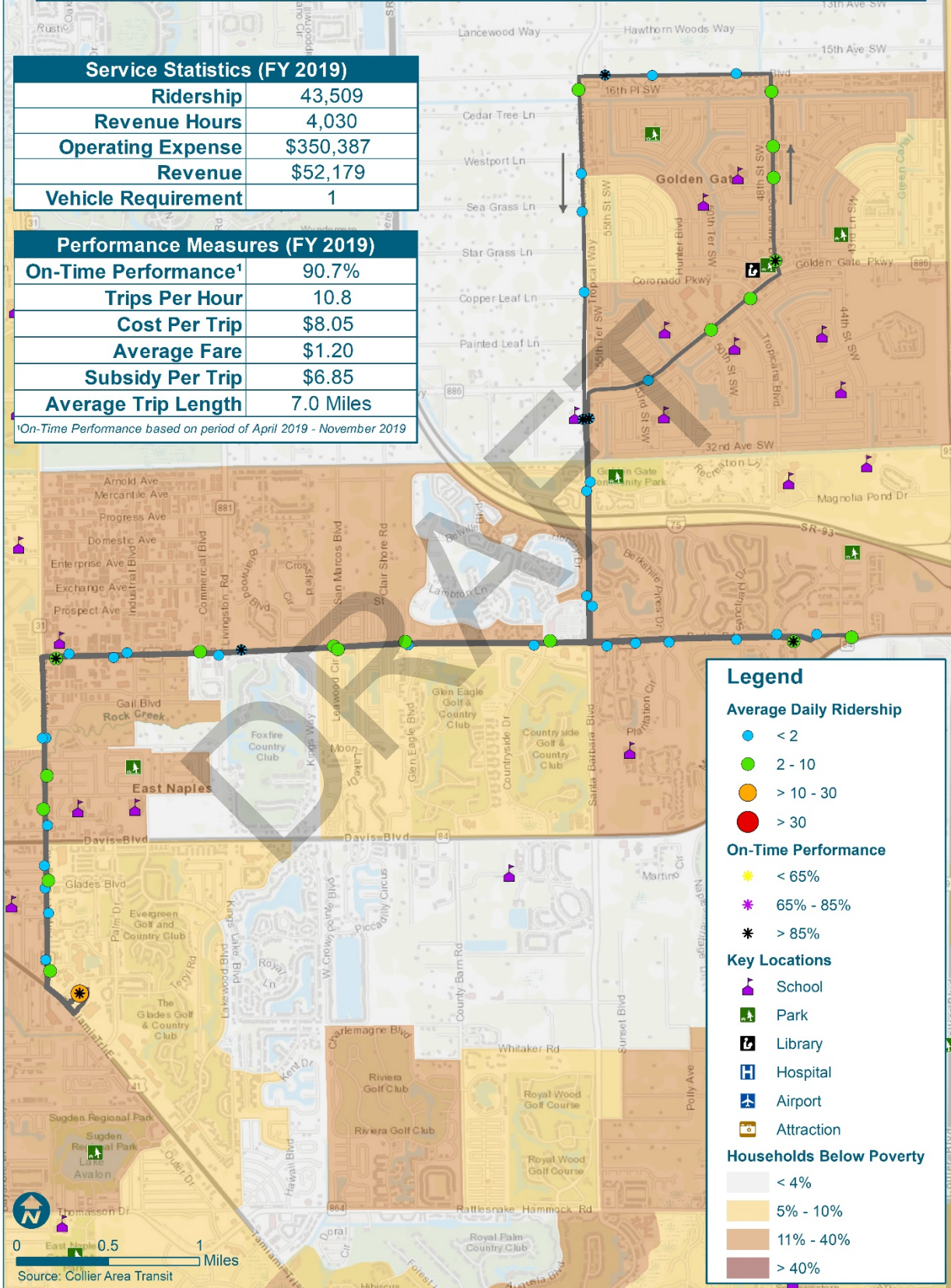


Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
4:35 AM - 5:26 PM	90 - 105 Min	4:35 AM - 5:26 PM	90 - 105 Min	--	--

Service Statistics (FY 2019)	
Ridership	43,509
Revenue Hours	4,030
Operating Expense	\$350,387
Revenue	\$52,179
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance ¹	90.7%
Trips Per Hour	10.8
Cost Per Trip	\$8.05
Average Fare	\$1.20
Subsidy Per Trip	\$6.85
Average Trip Length	7.0 Miles

¹On-Time Performance based on period of April 2019 - November 2019



Legend

Average Daily Ridership

- < 2
- 2 - 10
- > 10 - 30
- > 30

On-Time Performance

- ★ < 65%
- ★ 65% - 85%
- ★ > 85%

Key Locations

- 🏫 School
- 🌳 Park
- 📖 Library
- 🏥 Hospital
- ✈️ Airport
- 🎪 Attraction

Households Below Poverty

- ☐ < 4%
- ☐ 5% - 10%
- ☐ 11% - 40%
- ☐ > 40%



Collier Area Transit COA

Route 17: Rattlesnake - FSW

Service Type: Circulator

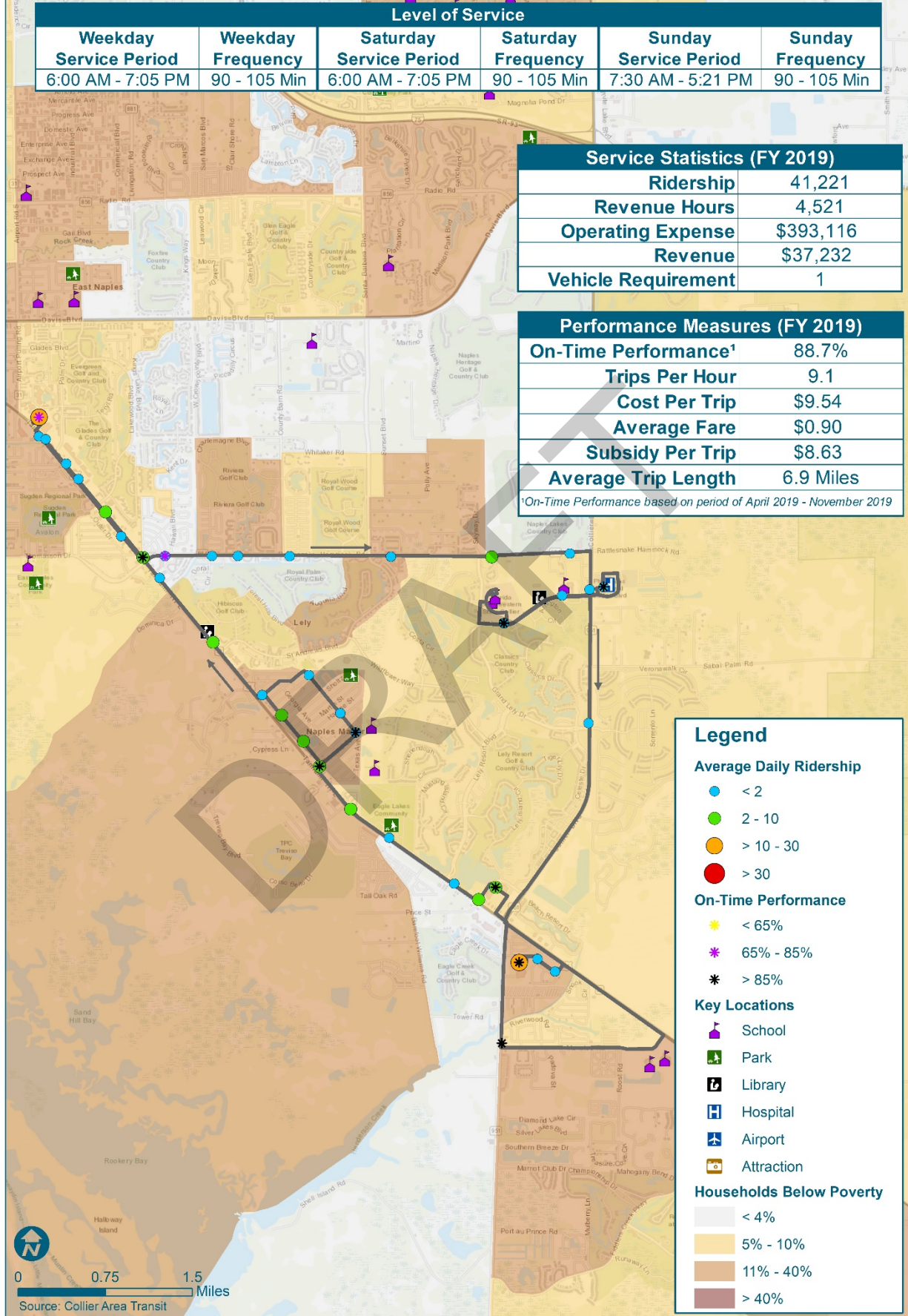


Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
6:00 AM - 7:05 PM	90 - 105 Min	6:00 AM - 7:05 PM	90 - 105 Min	7:30 AM - 5:21 PM	90 - 105 Min

Service Statistics (FY 2019)	
Ridership	41,221
Revenue Hours	4,521
Operating Expense	\$393,116
Revenue	\$37,232
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance ¹	88.7%
Trips Per Hour	9.1
Cost Per Trip	\$9.54
Average Fare	\$0.90
Subsidy Per Trip	\$8.63
Average Trip Length	6.9 Miles

¹On-Time Performance based on period of April 2019 - November 2019



Legend

Average Daily Ridership

- Blue circle: < 2
- Green circle: 2 - 10
- Yellow circle: > 10 - 30
- Red circle: > 30

On-Time Performance

- Yellow star: < 65%
- Purple star: 65% - 85%
- Black star: > 85%

Key Locations

- Purple flag: School
- Green tree: Park
- Black book: Library
- Blue hospital: Hospital
- Blue plane: Airport
- Orange building: Attraction

Households Below Poverty

- Lightest yellow: < 4%
- Yellow: 5% - 10%
- Orange: 11% - 40%
- Dark orange: > 40%

0 0.75 1.5 Miles
Source: Collier Area Transit



Collier Area Transit COA

Route 18: US 41 East - Naples Manor

Service Type: Circulator

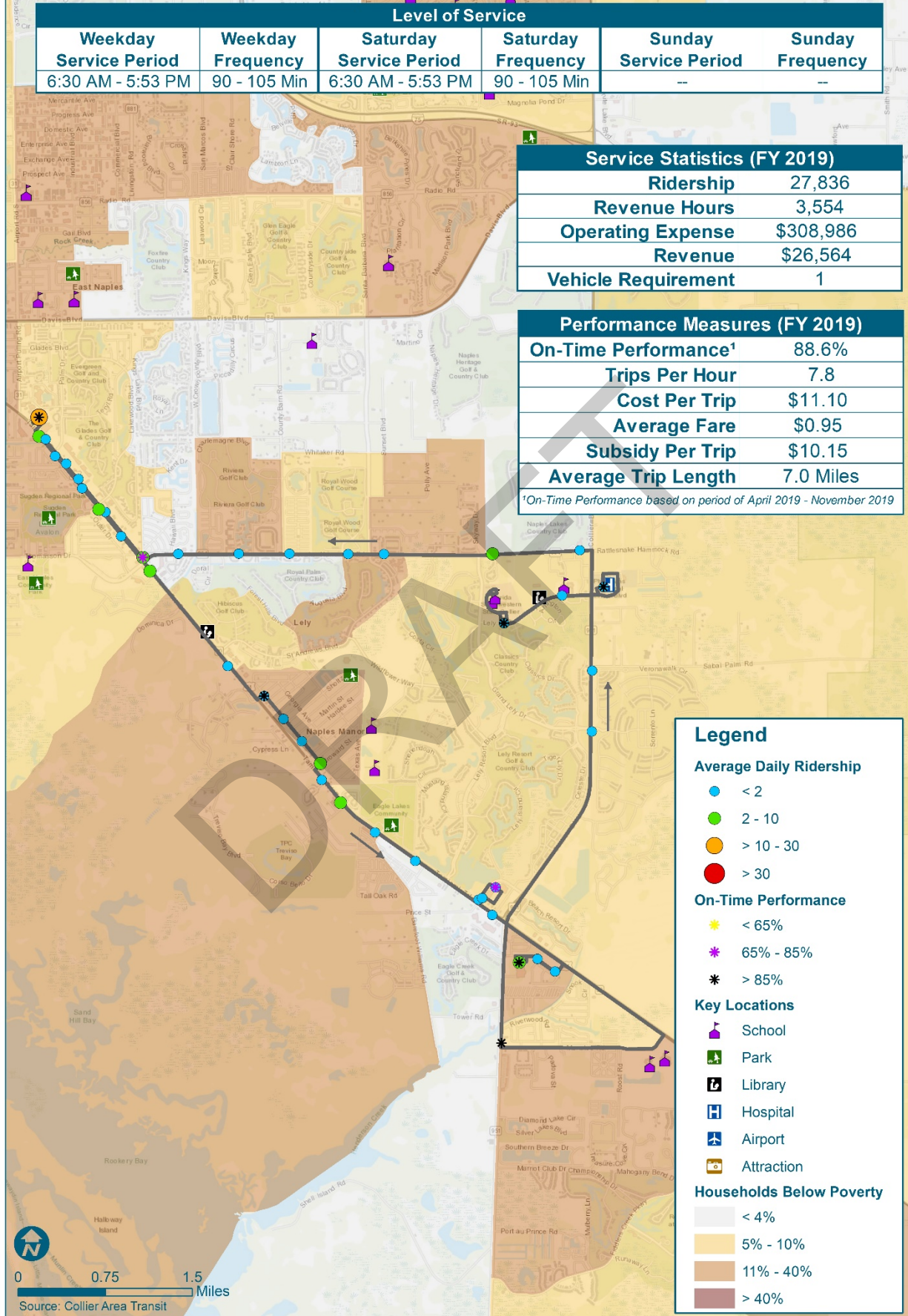


Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
6:30 AM - 5:53 PM	90 - 105 Min	6:30 AM - 5:53 PM	90 - 105 Min	--	--

Service Statistics (FY 2019)	
Ridership	27,836
Revenue Hours	3,554
Operating Expense	\$308,986
Revenue	\$26,564
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance¹	88.6%
Trips Per Hour	7.8
Cost Per Trip	\$11.10
Average Fare	\$0.95
Subsidy Per Trip	\$10.15
Average Trip Length	7.0 Miles

¹On-Time Performance based on period of April 2019 - November 2019



Legend

Average Daily Ridership

- < 2
- 2 - 10
- > 10 - 30
- > 30

On-Time Performance

- ★ < 65%
- ★ 65% - 85%
- ★ > 85%

Key Locations

- 🏫 School
- 🌳 Park
- 📖 Library
- 🏥 Hospital
- ✈️ Airport
- 🏰 Attraction

Households Below Poverty

- < 4%
- 5% - 10%
- 11% - 40%
- > 40%

Source: Collier Area Transit

Collier Area Transit COA

Route 19: Golden Gate Estates - Immokalee

Service Type: Core Network

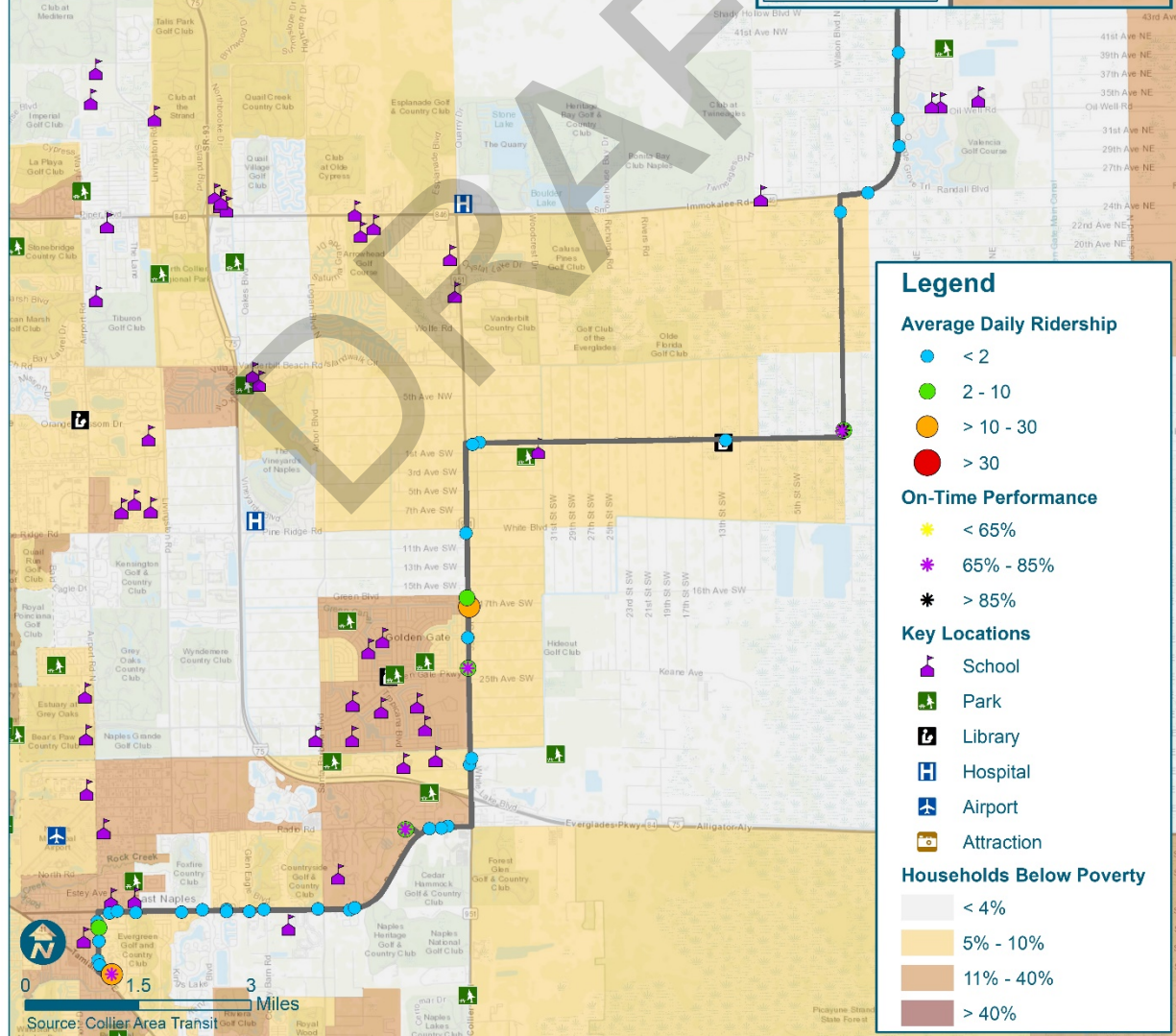
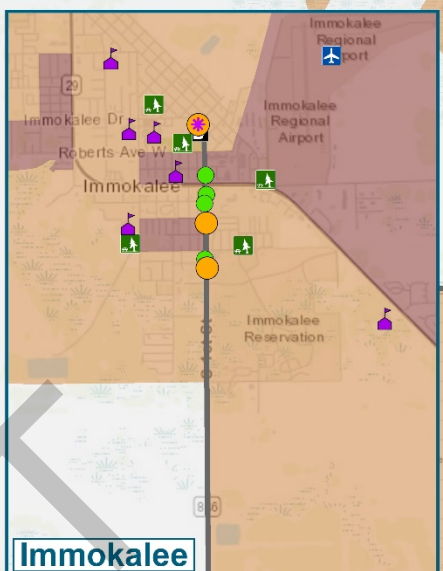


Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
4:25 AM - 8:29 PM	162 - 170 Min	4:25 AM - 8:27 PM	162 - 170 Min	6:51 AM - 9:25 AM	1 Daily Trip

Service Statistics (FY 2019)	
Ridership	64,392
Revenue Hours	5,046
Operating Expense	\$438,713
Revenue	\$88,167
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance ¹	75.5%
Trips Per Hour	12.8
Cost Per Trip	\$6.81
Average Fare	\$1.37
Subsidy Per Trip	\$5.44
Average Trip Length	24.1 Miles

¹On-Time Performance based on period of April 2019 - November 2019



Legend

Average Daily Ridership

- < 2 (Blue dot)
- 2 - 10 (Green dot)
- > 10 - 30 (Yellow dot)
- > 30 (Red dot)

On-Time Performance

- < 65% (Yellow star)
- 65% - 85% (Purple star)
- > 85% (Black star)

Key Locations

- School (Purple flag icon)
- Park (Green tree icon)
- Library (Black book icon)
- Hospital (Blue H icon)
- Airport (Blue plane icon)
- Attraction (Orange camera icon)

Households Below Poverty

- < 4% (Lightest yellow)
- 5% - 10% (Light yellow)
- 11% - 40% (Orange)
- > 40% (Dark orange)

Source: Collier Area Transit



Collier Area Transit COA

Route 20: Pine Ridge Road

Service Type: Limited



Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
6:00 AM - 6:00 PM	3 Daily Trips	6:00 AM - 6:00 PM	3 Daily Trips	7:30 AM - 6:00 PM	2 Daily Trips

Service Statistics (FY 2019)	
Ridership	6,545
Revenue Hours	1,448
Operating Expense	\$125,941
Revenue	\$7,279
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance ¹	86.8%
Trips Per Hour	4.5
Cost Per Trip	\$19.24
Average Fare	\$1.11
Subsidy Per Trip	\$18.13
Average Trip Length	6.6 Miles

¹On-Time Performance based on period of April 2019 - November 2019

Legend

Average Daily Ridership

- < 2
- 2 - 10
- > 10 - 30
- > 30

On-Time Performance

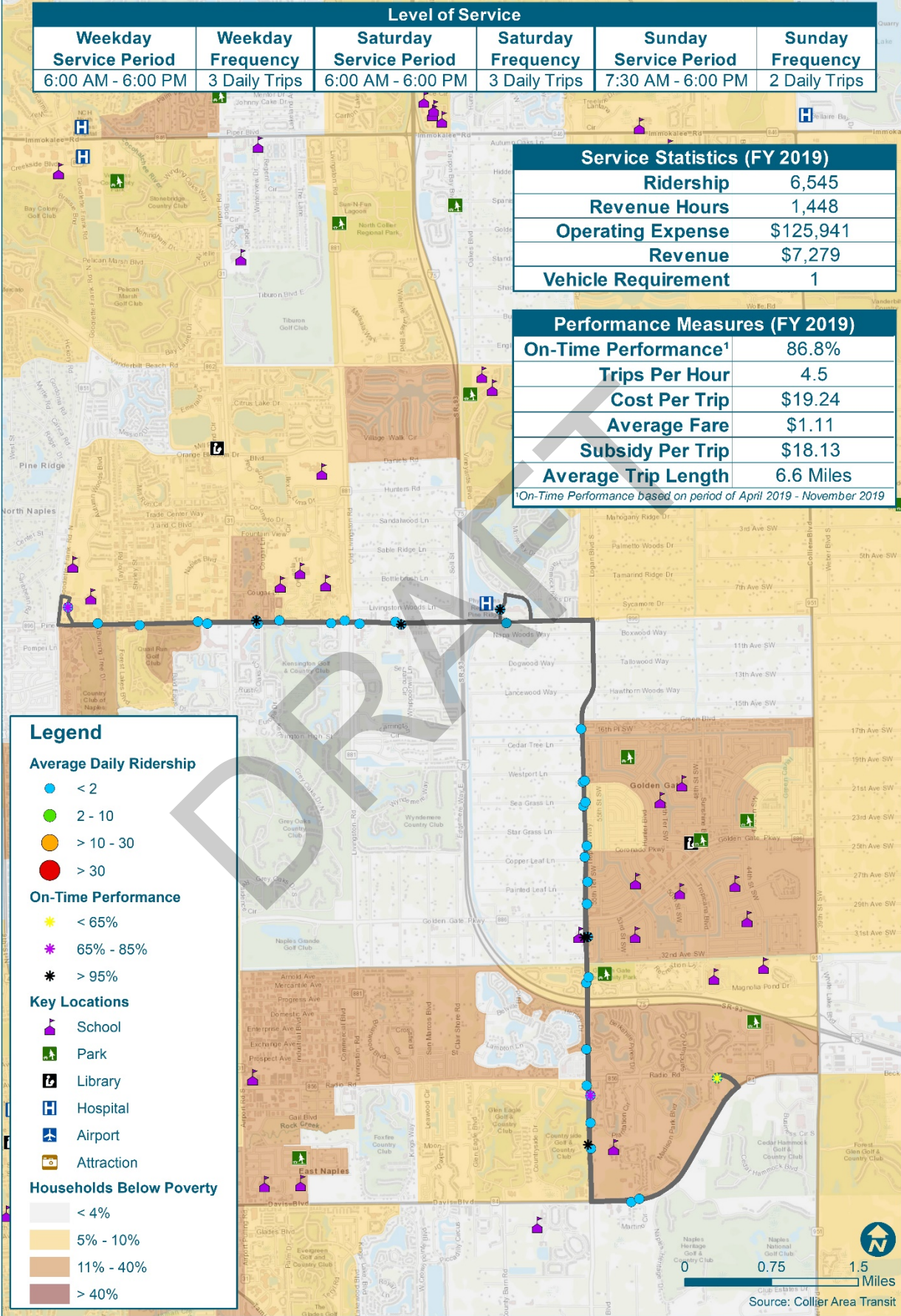
- < 65%
- 65% - 85%
- > 95%

Key Locations

- School
- Park
- Library
- Hospital
- Airport
- Attraction

Households Below Poverty

- < 4%
- 5% - 10%
- 11% - 40%
- > 40%



Source: Collier Area Transit



Collier Area Transit COA

Route 21: Marco Island Circulator

Service Type: Circulator

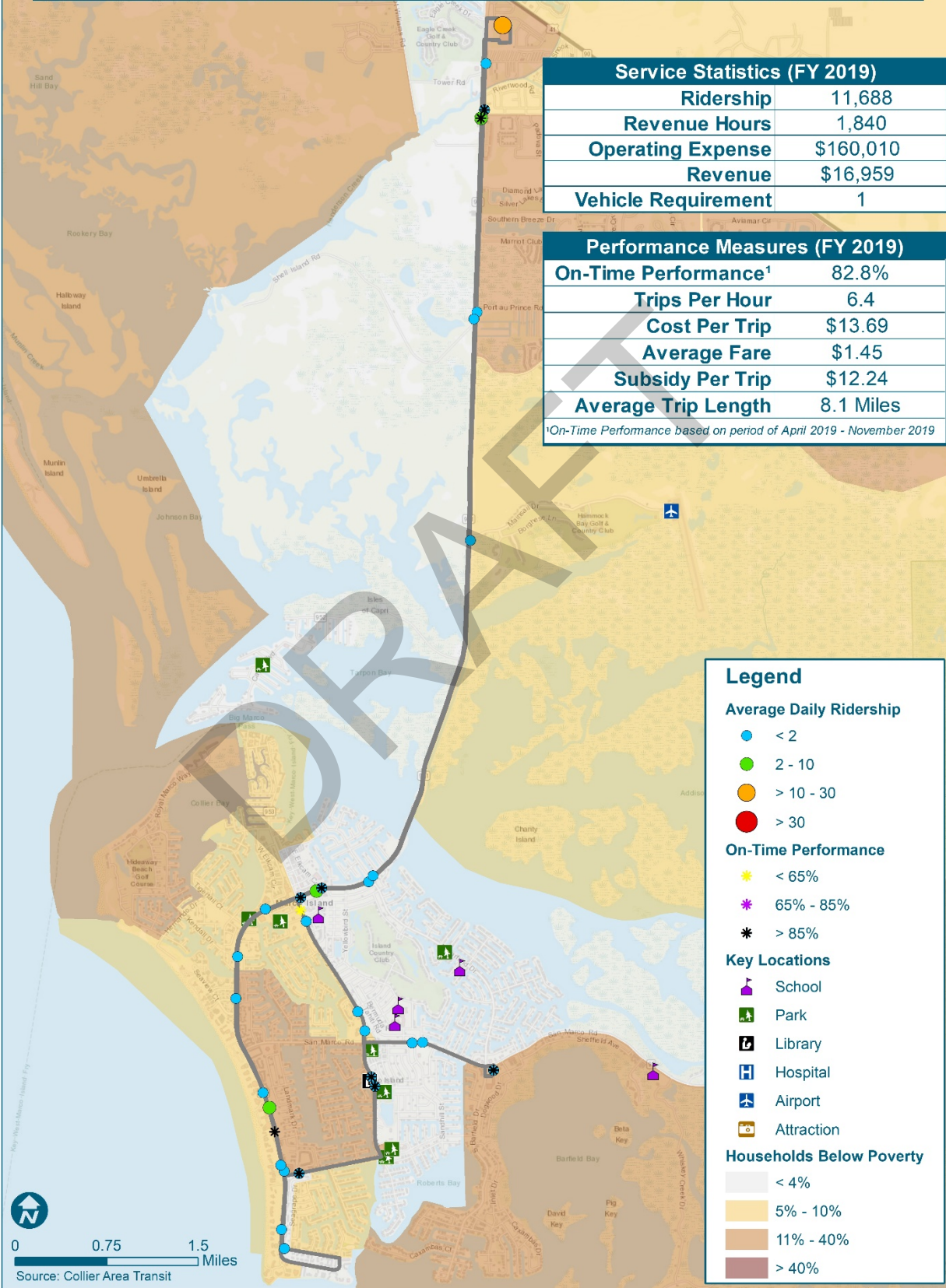


Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
7:40 AM - 4:50 PM	5 Daily Trips	7:40 AM - 4:50 PM	5 Daily Trips	7:40 AM - 4:50 PM	5 Daily Trips

Service Statistics (FY 2019)	
Ridership	11,688
Revenue Hours	1,840
Operating Expense	\$160,010
Revenue	\$16,959
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance¹	82.8%
Trips Per Hour	6.4
Cost Per Trip	\$13.69
Average Fare	\$1.45
Subsidy Per Trip	\$12.24
Average Trip Length	8.1 Miles

¹On-Time Performance based on period of April 2019 - November 2019



Legend

Average Daily Ridership

- < 2
- 2 - 10
- > 10 - 30
- > 30

On-Time Performance

- ★ < 65%
- ★ 65% - 85%
- ★ > 85%

Key Locations

- 🏫 School
- 🌳 Park
- 📖 Library
- 🏥 Hospital
- ✈️ Airport
- 🎡 Attraction

Households Below Poverty

- < 4%
- 5% - 10%
- 11% - 40%
- > 40%

0 0.75 1.5 Miles
Source: Collier Area Transit



Collier Area Transit COA

Route 22: Immokalee Circulator (Commerce)

Service Type: Circulator

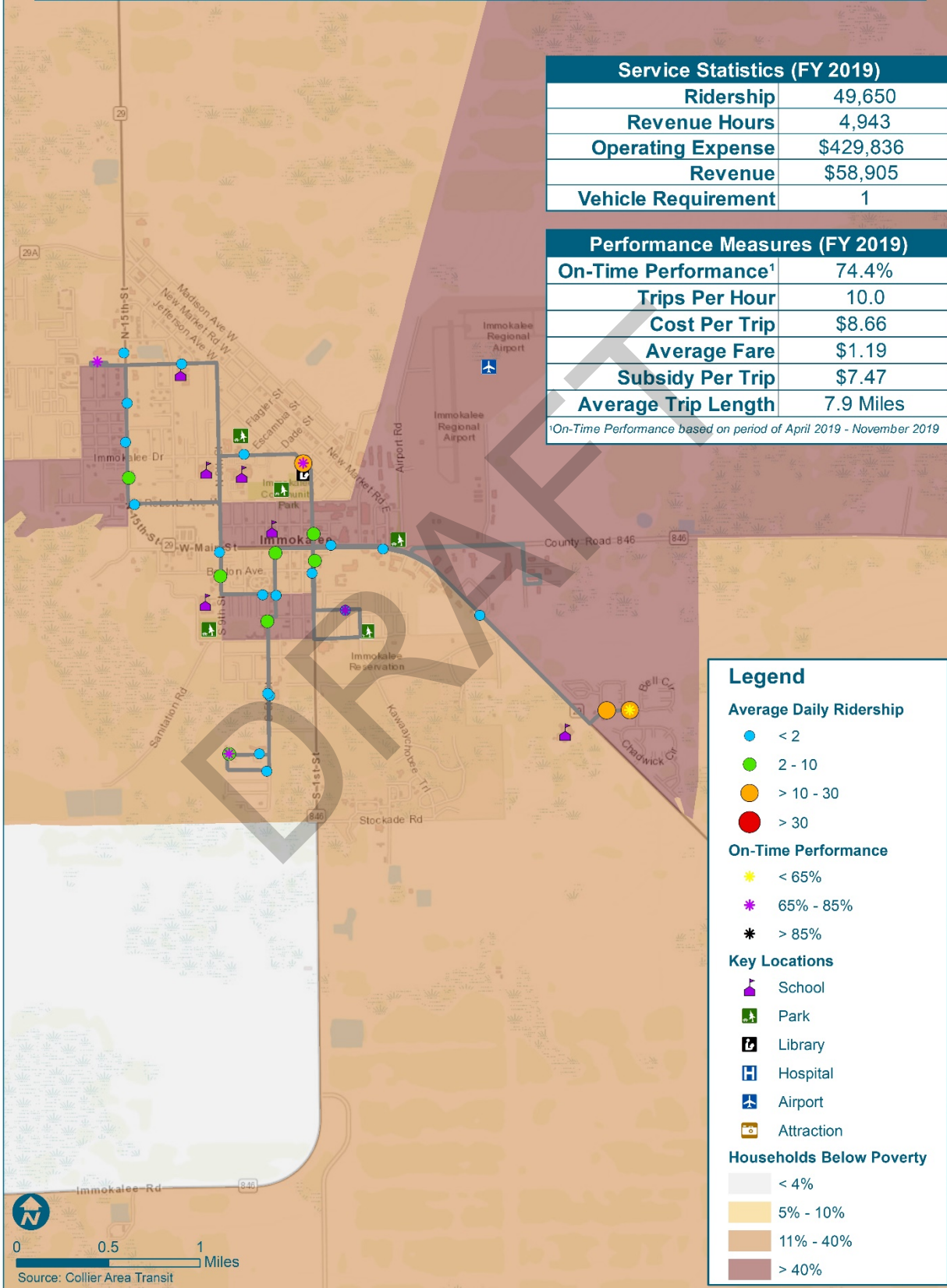


Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
5:45 AM - 8:52 PM	60 Min	5:45 AM - 8:52 PM	60 Min	7:00 AM - 8:00 PM	120 Min

Service Statistics (FY 2019)	
Ridership	49,650
Revenue Hours	4,943
Operating Expense	\$429,836
Revenue	\$58,905
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance ¹	74.4%
Trips Per Hour	10.0
Cost Per Trip	\$8.66
Average Fare	\$1.19
Subsidy Per Trip	\$7.47
Average Trip Length	7.9 Miles

¹On-Time Performance based on period of April 2019 - November 2019



Legend

Average Daily Ridership

- Blue circle: < 2
- Green circle: 2 - 10
- Orange circle: > 10 - 30
- Red circle: > 30

On-Time Performance

- Yellow star: < 65%
- Purple star: 65% - 85%
- Black star: > 85%

Key Locations

- Purple house icon: School
- Green tree icon: Park
- Black book icon: Library
- Blue hospital icon: Hospital
- Blue airplane icon: Airport
- Brown building icon: Attraction

Households Below Poverty

- Light yellow: < 4%
- Yellow: 5% - 10%
- Orange: 11% - 40%
- Dark orange: > 40%

0 0.5 1 Miles
Source: Collier Area Transit



Collier Area Transit COA

Route 23: Immokalee Circulator

Service Type: Circulator

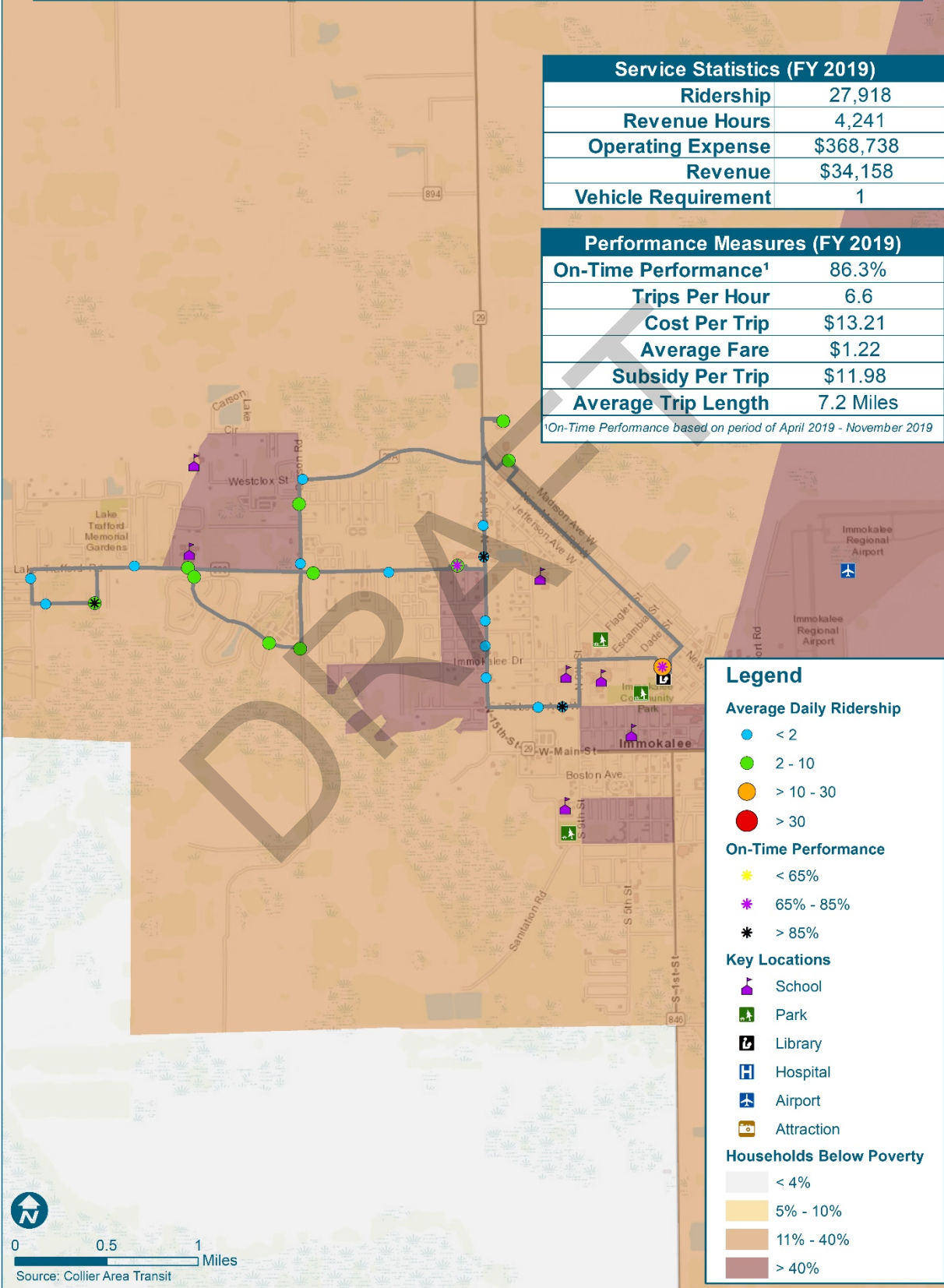


Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
7:00 AM - 7:50 PM	60 Min	7:00 AM - 7:50 PM	60 Min	8:00 AM - 7:00 PM	120 Min

Service Statistics (FY 2019)	
Ridership	27,918
Revenue Hours	4,241
Operating Expense	\$368,738
Revenue	\$34,158
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance ¹	86.3%
Trips Per Hour	6.6
Cost Per Trip	\$13.21
Average Fare	\$1.22
Subsidy Per Trip	\$11.98
Average Trip Length	7.2 Miles

¹On-Time Performance based on period of April 2019 - November 2019



0 0.5 1 Miles
Source: Collier Area Transit

Legend

Average Daily Ridership

- < 2
- 2 - 10
- > 10 - 30
- > 30

On-Time Performance

- ★ < 65%
- ★ 65% - 85%
- ★ > 85%

Key Locations

- School
- Park
- Library
- Hospital
- Airport
- Attraction

Households Below Poverty

- < 4%
- 5% - 10%
- 11% - 40%
- > 40%

Collier Area Transit COA

Route 24: Government Center - Charlee Estates

Service Type: Core Network

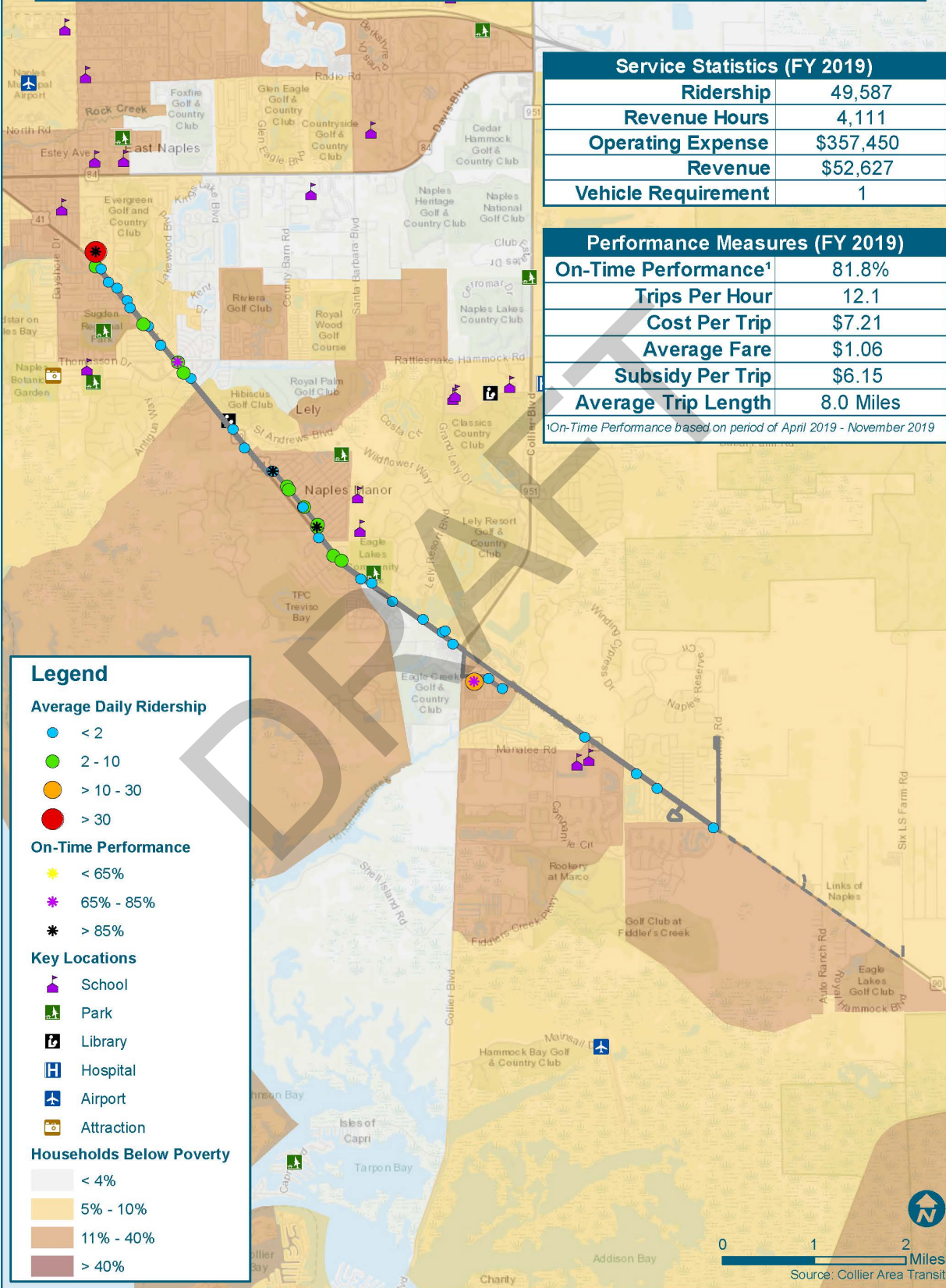


Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
6:40 AM - 6:08 PM	85 Min	6:45 AM - 6:45 PM	85 Min	8:51 AM - 4:47 PM	85 Min

Service Statistics (FY 2019)	
Ridership	49,587
Revenue Hours	4,111
Operating Expense	\$357,450
Revenue	\$52,627
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance ¹	81.8%
Trips Per Hour	12.1
Cost Per Trip	\$7.21
Average Fare	\$1.06
Subsidy Per Trip	\$6.15
Average Trip Length	8.0 Miles

¹On-Time Performance based on period of April 2019 - November 2019



Legend

Average Daily Ridership

- < 2
- 2 - 10
- > 10 - 30
- > 30

On-Time Performance

- ★ < 65%
- ★ 65% - 85%
- ★ > 85%

Key Locations

- School
- Park
- Library
- Hospital
- Airport
- Attraction

Households Below Poverty

- < 4%
- 5% - 10%
- 11% - 40%
- > 40%





Collier Area Transit COA

Route 25: Golden Gate Pkwy - Goodlette Frank

Service Type: Circulator



Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
6:00 AM - 6:00 PM	90 - 95 Min	6:00 AM - 6:00 PM	90 - 95 Min	12:05 PM - 4:29 PM	2 Daily Trips

Service Statistics (FY 2019)	
Ridership	15,986
Revenue Hours	2,858
Operating Expense	\$248,540
Revenue	\$19,069
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance ¹	89.8%
Trips Per Hour	5.6
Cost Per Trip	\$15.55
Average Fare	\$1.19
Subsidy Per Trip	\$14.35
Average Trip Length	7.2 Miles

¹On-Time Performance based on period of April 2019 - November 2019

Legend

Average Daily Ridership

- < 2
- 2 - 10
- > 10 - 30
- > 30

On-Time Performance

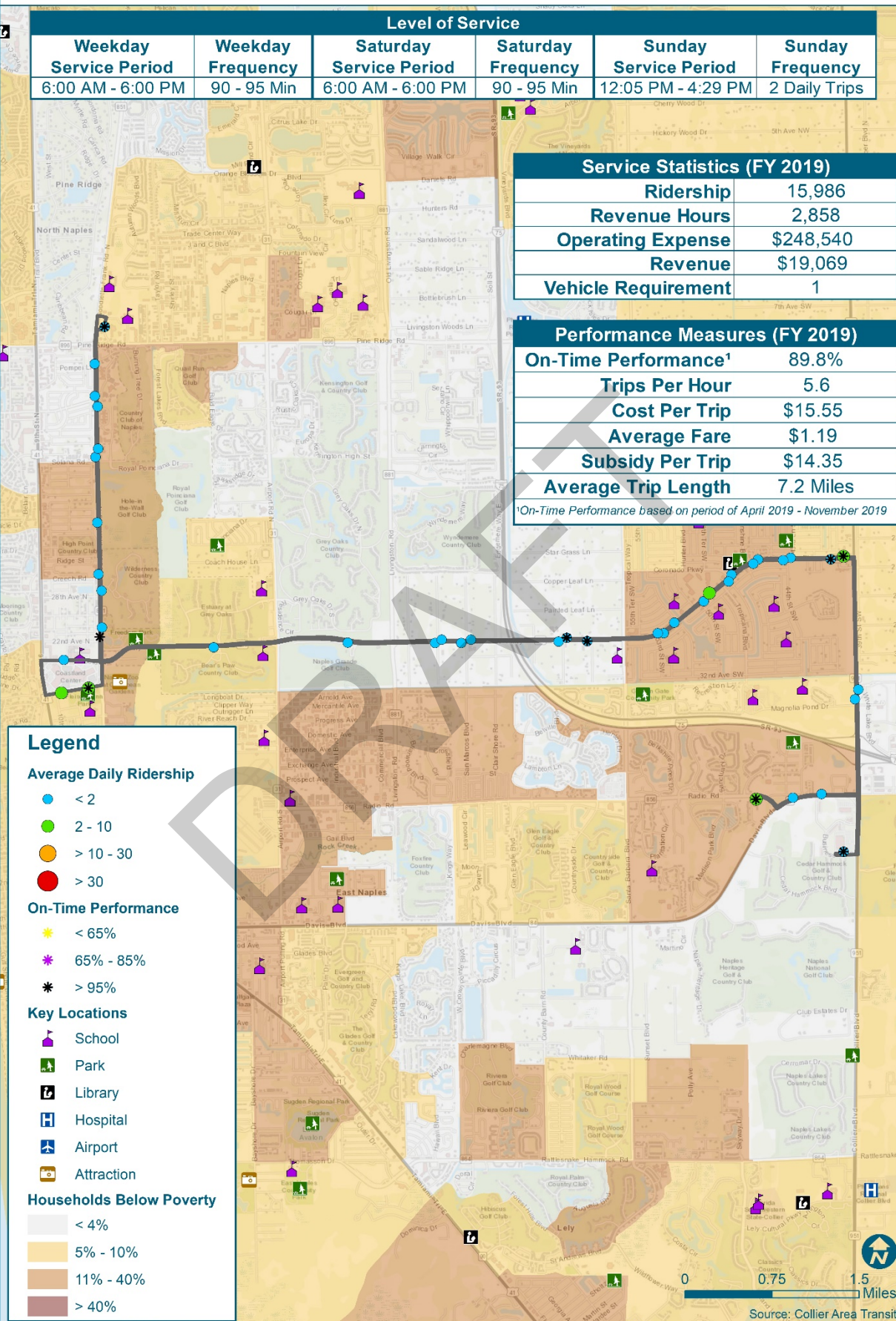
- ★ < 65%
- ★ 65% - 85%
- ★ > 95%

Key Locations

- School
- Park
- Library
- Hospital
- Airport
- Attraction

Households Below Poverty

- < 4%
- 5% - 10%
- 11% - 40%
- > 40%





Collier Area Transit COA

Route 26: Pine Ridge Rd - Clam Pass

Service Type: Limited



Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
9:05 AM - 4:27 PM	3 Daily Trips	9:05 AM - 4:27 PM	3 Daily Trips	9:05 AM - 4:27 PM	3 Daily Trips

Service Statistics (FY 2019)	
Ridership	5,730
Revenue Hours	1,511
Operating Expense	\$131,353
Revenue	\$7,137
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance¹	88.0%
Trips Per Hour	3.8
Cost Per Trip	\$22.92
Average Fare	\$1.25
Subsidy Per Trip	\$21.68
Average Trip Length	7.6 Miles

¹On-Time Performance based on period of April 2019 - November 2019

Legend

Average Daily Ridership

- < 2
- 2 - 10
- > 10 - 30
- > 30

On-Time Performance

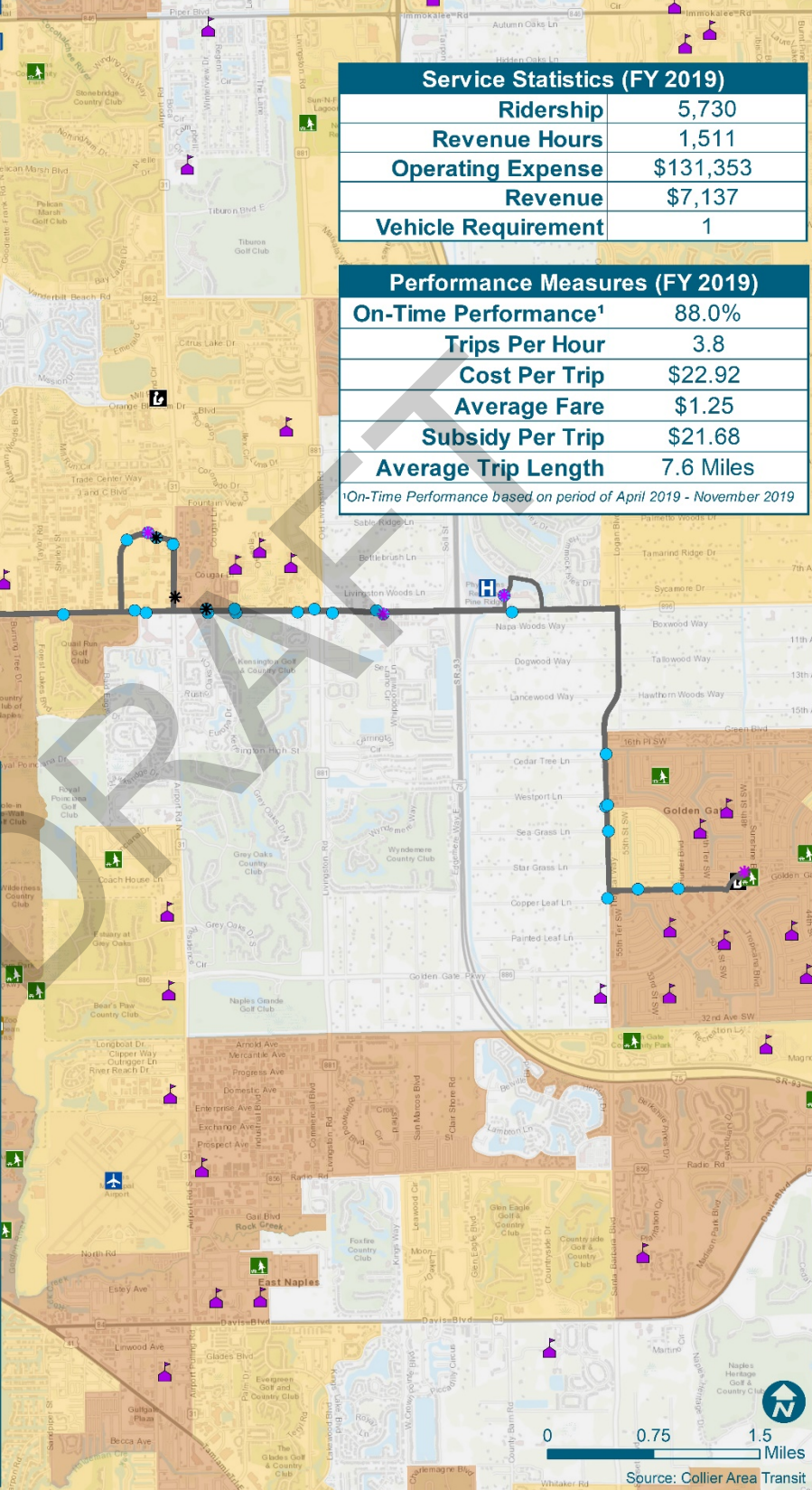
- ★ < 65%
- ★ 65% - 85%
- ★ > 85%

Key Locations

- School
- Park
- Library
- Hospital
- Airport
- Attraction

Households Below Poverty

- < 4%
- 5% - 10%
- 11% - 40%
- > 40%



Source: Collier Area Transit



Collier Area Transit COA

Route 27: Immokalee Road

Service Type: Core Network



Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
6:00 AM - 7:03 PM	90 - 105 Min	6:00 AM - 7:03 PM	90 - 105 Min	7:30 AM - 5:17 PM	90 - 105 Min

Service Statistics (FY 2019)	
Ridership	29,874
Revenue Hours	4,654
Operating Expense	\$404,699
Revenue	\$32,435
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance ¹	86.2%
Trips Per Hour	6.4
Cost Per Trip	\$13.55
Average Fare	\$1.09
Subsidy Per Trip	\$12.46
Average Trip Length	9.4 Miles

¹On-Time Performance based on period of April 2019 - November 2019

Legend

Average Daily Ridership

- < 2
- 2 - 10
- > 10 - 30
- > 30

On-Time Performance

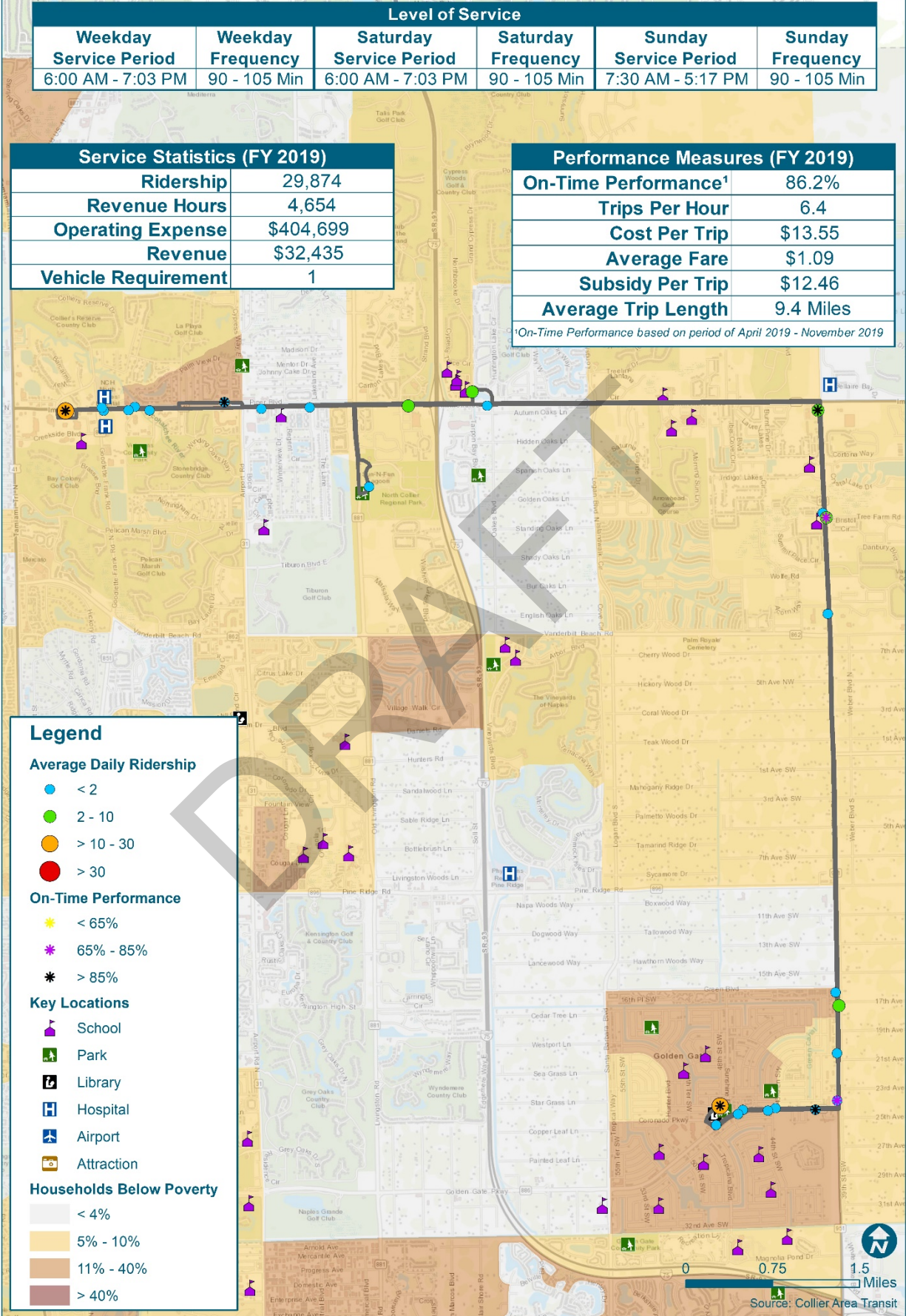
- ★ < 65%
- ★ 65% - 85%
- ★ > 85%

Key Locations

- School
- Park
- Library
- Hospital
- Airport
- Attraction

Households Below Poverty

- < 4%
- 5% - 10%
- 11% - 40%
- > 40%





Collier Area Transit COA

Route 28: Golden Gate Estates - Immokalee

Service Type: Limited

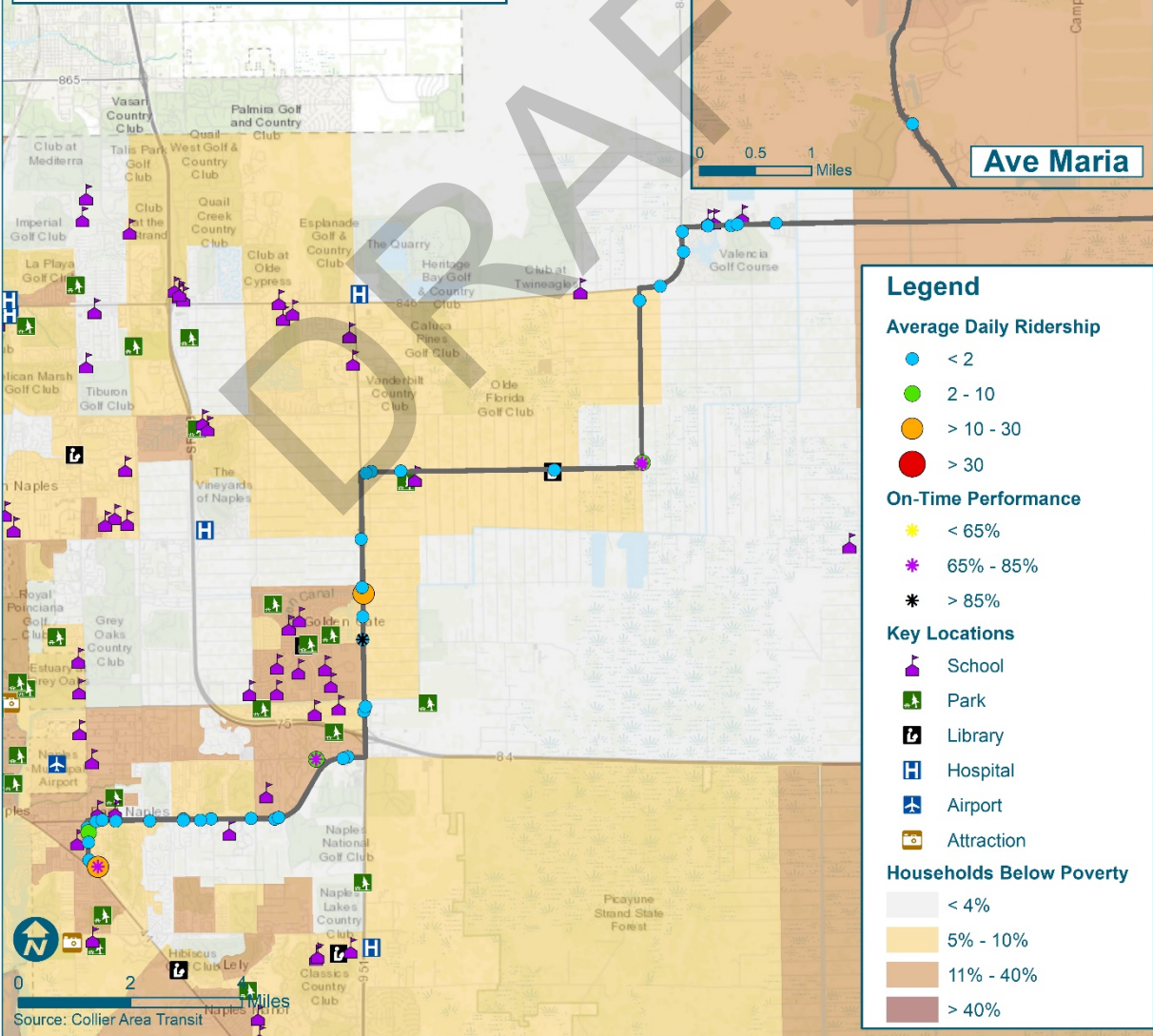
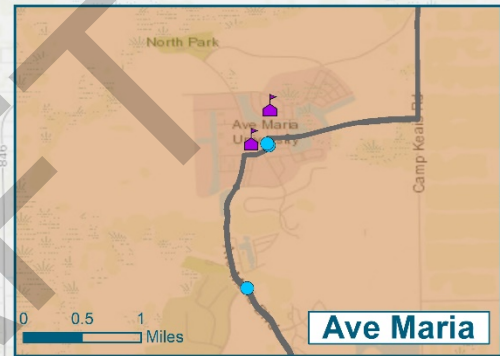
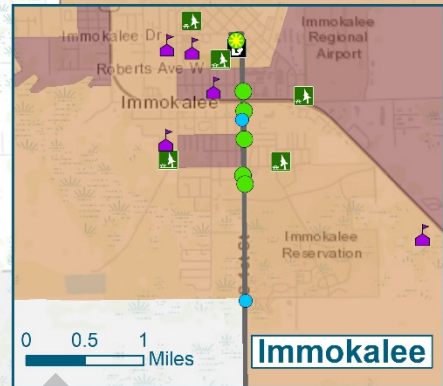


Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
3:35 AM - 7:55 PM	3 Daily Trips	3:35 AM - 7:55 PM	3 Daily Trips	5:05 AM - 7:55 PM	1 Daily Trip

Service Statistics (FY 2019)	
Ridership	27,697
Revenue Hours	2,626
Operating Expense	\$228,328
Revenue	\$39,142
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance ¹	74.5%
Trips Per Hour	10.5
Cost Per Trip	\$8.24
Average Fare	\$1.41
Subsidy Per Trip	\$6.83
Average Trip Length	25.7 Miles

¹On-Time Performance based on period of April 2019 - November 2019



Legend

Average Daily Ridership

- < 2
- 2 - 10
- > 10 - 30
- > 30

On-Time Performance

- ★ < 65%
- ★ 65% - 85%
- ★ > 85%

Key Locations

- School
- Park
- Library
- Hospital
- Airport
- Attraction

Households Below Poverty

- < 4%
- 5% - 10%
- 11% - 40%
- > 40%

Source: Collier Area Transit

Collier Area Transit COA

Route 121: Immokalee - Marco Island

Service Type: Express

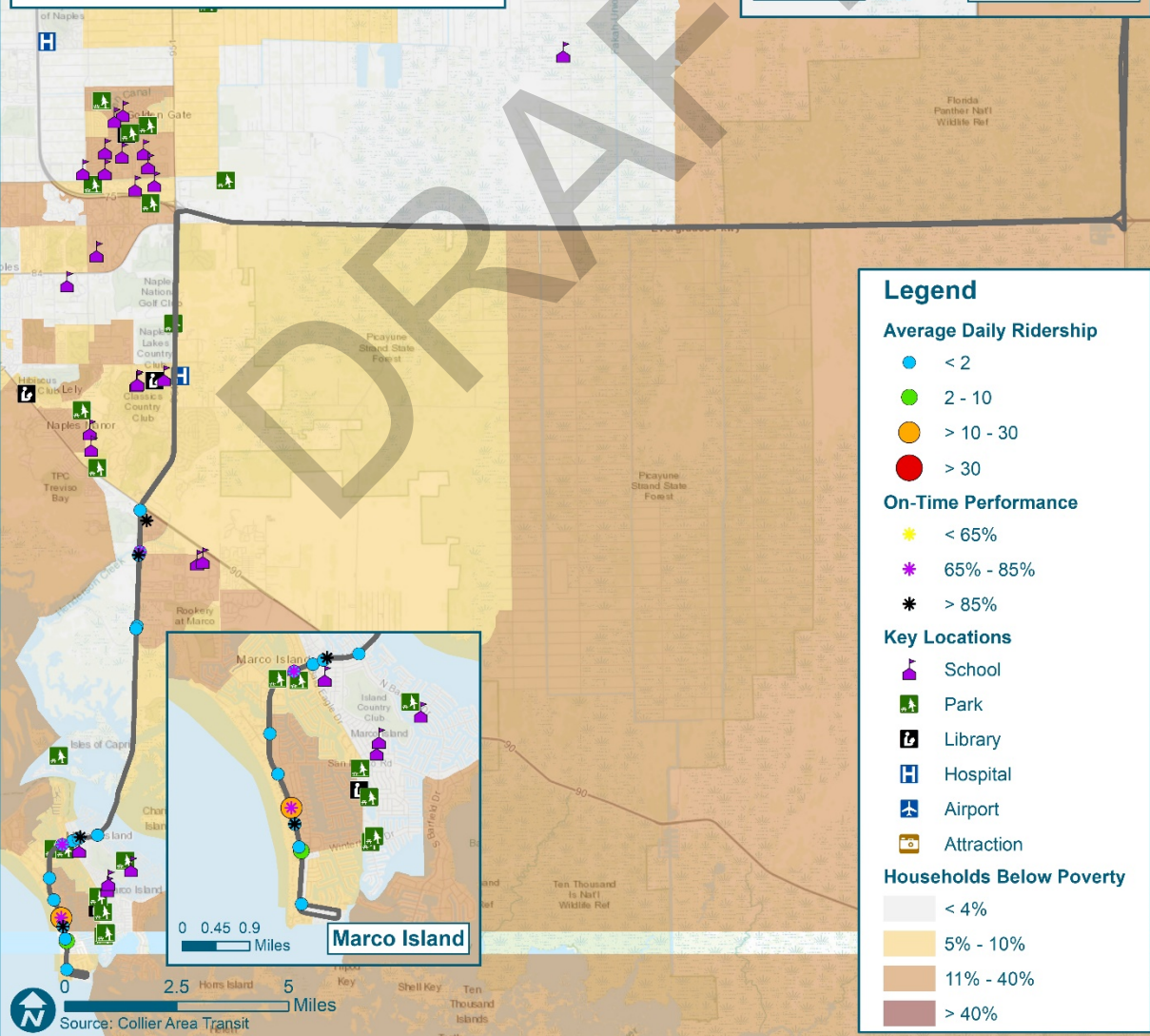
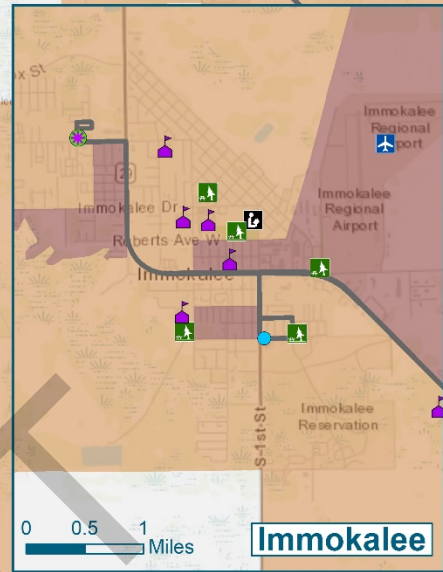


Level of Service					
Weekday Service Period	Weekday Frequency	Saturday Service Period	Saturday Frequency	Sunday Service Period	Sunday Frequency
5:30 AM - 6:52 PM	2 Daily Trips	5:30 AM - 6:52 PM	2 Daily Trips	5:30 AM - 6:52 PM	2 Daily Trips

Service Statistics (FY 2019)	
Ridership	22,229
Revenue Hours	1,326
Operating Expense	\$115,311
Revenue	\$34,142
Vehicle Requirement	1

Performance Measures (FY 2019)	
On-Time Performance ¹	72.8%
Trips Per Hour	16.8
Cost Per Trip	\$5.19
Average Fare	\$1.54
Subsidy Per Trip	\$3.65
Average Trip Length	40.2 Miles

¹On-Time Performance based on period of April 2019 - November 2019



Legend

Average Daily Ridership

- Blue circle: < 2
- Green circle: 2 - 10
- Yellow circle: > 10 - 30
- Red circle: > 30

On-Time Performance

- Yellow star: < 65%
- Purple star: 65% - 85%
- Black star: > 85%

Key Locations

- Purple flag: School
- Green tree: Park
- Black book: Library
- Blue hospital: Hospital
- Blue plane: Airport
- Orange building: Attraction

Households Below Poverty

- Lightest yellow: < 4%
- Yellow: 5% - 10%
- Orange: 11% - 40%
- Dark orange: > 40%

Source: Collier Area Transit

Site Visit and Field Review

An important component of the COA was a site visit conducted in February 2021. The site visit consisted of several activities that provided further insight into CAT’s fixed-route service operation. Additionally, the site visit allows for field review of specific locations and facilitates observation of operational details that cannot be gleaned from the review and/or analysis of service and performance data. Site visit and field review activities included the following and are summarized in further detail below:

- ◆ Operator Interviews
- ◆ Transfer Surveys
- ◆ Meetings with CAT Staff
- ◆ Other Field Observations

Operator Interviews

As front-line employees, bus operators often provide acute insight into the day-to-day operation. That insight is inclusive of a host of daily service matters such as the real-world application and impact of service policies and procedures, identification of safety hazards, and detailed information on ridership patterns.

Interviews with CAT fixed-route operators were concurrently scheduled with other site visit activities and operators for each fixed-route was interviewed with the exception of Route 29 Beach Bus. An operator for Route 29 was not interviewed because service on Route 29 is seasonal. A total of 15 operators were interviewed where several were able to provide information on multiple routes. Through these interviews, operators provided critical perspectives on a variety of topics which provided useful input on the COA. General topic areas include, but were not limited to, the following:

Route Performance

- ◆ Low productivity bus segments and stops that should be considered for service discontinuation
- ◆ High productivity areas where more service should be directed
- ◆ Passenger travel patterns including high ridership bus trips (i.e., inbound and outbound bus trips)
- ◆ Validation or opposition to proposed service changes
- ◆ Potential service rerouting and modification

Challenges and Constraints

- ◆ Identification of critical safety hazards
- ◆ Access and egress to key stop locations



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Transfer Surveys

A transfer survey was conducted at the Collier County Government Center Transfer Station on February 10, 2021. The transfer survey at Government Center was conducted to gather insight on transfer activity on a typical CAT weekday of service. Surveyors arrived at 6:30 AM to observe the transfer activity of Route 11, 12, 14, 16, and 18 and collected transfer information until 5:15 PM to observe the activity from Route 11, 12, 14, 15, and 17.

The project team spoke with and identified riders who transferred from one bus route to another. In total, 187 transfer pairs were documented. Specific transfer totals between CAT routes that meet at the Government Center are shown in Table 5. Conclusions from the transfer survey include the following:

- ◆ The highest observed levels of transfer activity occurred in the morning. This could be an indication that bus riders either travel back using another mode of travel and/or that return trips are more evenly distributed throughout the course of the day.
- ◆ Transfer activity to the Route 11 was the highest, with the largest share coming from Routes 15, 17, and 24. Transfers from Route 15 made up 40% of the recorded transfer activity. Importantly, when summed together, the transfer activity to Route 11 from Routes 17 and 24 amounts to about a third of the transfers to Route 11. Important conclusions can be drawn from this relationship:
 - Transfer activity between routes that operate on the East and North Tamiami Trail is significant.
 - Bus riders using the core network of services operating on the US 41 corridor would benefit from timed transfers at Government Center.
- ◆ Transfers to Route 18 were observed to be higher than average, with the largest share coming from Route 16. This transfer pattern may be indicative of trip destinations along US 41/Tamiami Trail.
- ◆ Transfers from the two (2) Golden Gate routes, Routes 15 and 16, equal to approximately 33 percent of the observed transfer activity. Two (2) observations can be drawn from this activity:
 - Golden Gate serves as a major source of bus ridership activity and those passengers are being distributed throughout the urbanized area, most heavily along US 41/Tamiami Trail.
 - Golden Gate bus riders stand to benefit from timed transfer connections with core network services operating on the US 41 corridor.



COLLIER COUNTY AREA TRANSIT COMPREHENSIVE OPERATIONS ANALYSIS

Table 5: Government Center Transfer Station Passenger Survey Results

From: To:	Route 11	Route 12	Route 13	Route 14	Route 15	Route 16	Route 17	Route 18	Route 19	Route 24	Route 28	Total
Route 11		2	4	1	27	6	14	3	2	8	0	67
Route 12	2		3	2	0	1	1	2	1	6	0	18
Route 13	0	1		1	1	3	1	0	2	2	0	11
Route 14	0	0	0		0	0	1	0	0	1	0	2
Route 15	2	7	2	2		2	7	2	2	4	0	30
Route 16	2	0	0	1	0		0	0	0	0	0	3
Route 17	6	3	0	0	6	0		0	0	0	0	15
Route 18	3	0	0	4	1	10	0		1	0	0	19
Route 19	0	0	3	1	1	0	0	0		0	0	5
Route 24	5	1	2	5	3	0	0	0	1		0	17
Route 28	0	0	0	0	0	0	0	0	0	0		0*
Total	20	14	14	17	39	22	24	7	9	21	0	187

* Surveyor staff did not observe transfer activity to and from the Route 28 during the 6:30 a.m. to 5:15 p.m. time period. The transfer survey activity represents one day of observations and is not representative of all transfer activity.

Other Field Observations

Riding of bus routes and location-specific route observations were performed with the following objectives:

- ◆ To identify challenges and opportunities not readily apparent through data review and analysis
- ◆ To identify any issues that require further investigation
- ◆ To validate concerns drawn from discussions with staff, operators, and the data review.

Specifically, riding several bus routes allowed for recording actual travel time to and from the Government Center Transfer Station. This was particularly important for Routes 24 and 13 which had TDP service proposals that were considered a challenge in terms of travel time. Other benefits from riding bus routes included observation of access and layover points at specific businesses, use of newly implemented mobile ticketing, and the observation of ADA compliance activities such as wheelchair ramp deployments and stop announcements.

Location specific observations occurred throughout the entire County and included locations with and without fixed route bus service. The areas reviewed, along with some key observations, are listed below:

Ave Maria

- ◆ Ave Maria consists largely of low-density development in a seemingly removed area of the County. Little commercial activity of any kind was evident in the town center during a weekday, mid-morning visit.

Bayshore Drive

- ◆ The Bayshore Drive context was reviewed to better understand the scale of residential and commercial development in the area. Bayshore Drive is a 4-lane divided roadway with a posted speed limit of 35 mph and it was observed that the northern end of the corridor contains small pockets of low-density commercial activity.



Bayshore Boulevard

Coastland Mall

- ◆ The Coastland Mall transfer location was reviewed to observe transfer activity and stop infrastructure and amenities. The Coastland Mall transfer location is considered a safe location for passengers to transfer between buses and for buses to dwell, if needed, in the westbound direction along Fleishmann Boulevard.



Coastland Mall Pedestrian Crossing

COLLIER COUNTY AREA TRANSIT COMPREHENSIVE OPERATIONS ANALYSIS

Collier Boulevard

- Collier Boulevard is a six-lane divided arterial flanked on the east by long stretches of guardrail, utilities, and a canal. Those features preclude the construction of ADA accessible bus stop infrastructure. This area was visited to review the accessibility of specific stop locations, including the Green Boulevard bus stop. Vehicles were observed traveling along Collier Boulevard at high speeds. This roadway does not offer a safe, accessible path for transit access without a high level of investment.



Limited access bus stop on Collier Boulevard

Florida South Western State College

- Access to FSW Collier campus was observed at Lely Cultural Parkway and the parking lot south of the campus. A bus was observed to bypass the parking lot loop and make a stop west of the existing stop, a more easily accessed location. The bus traveled to the Health Service Hall stop and dwelled north of the stop.



Bus traveling through parking lot at Freedom Square

Freedom Square

- The Freedom Square shopping center is anchored by a Publix Super Market with commercial outparcels making it a high employment and visitor generator. During the day of observations, the existing alignments were routed more south of the vacant shopping building due to construction in front of the store. Because the bus traveled within the parking lot, the buses were delayed by traffic queues and the high pedestrian activity at the shopping center.

Golden Gate

- Access to the Golden Gate Community Center and stops along Golden Gate Parkway were observed. During the mid-day observation, a mobile farmer's market was occupying the parking lot in front of the community center bus stop. The farmer's market also generated a traffic queue along the adjacent roads within the Golden Gate community.



Collier County Health Department - Immokalee

Immokalee

- Multiple locations were visited in Immokalee including transfer points, medical facilities, and various neighborhoods. Relative to the western, coastal area of the County, Immokalee consists of a more transit-dependent population.

Government Center Transfer Station

- ◆ The Government Center Transfer Station was visited to observe passenger transfer activity, review passenger information materials (i.e., printed material, bus bay assignments and signage, real-time dynamic messaging, etc.), and also to observe bus activity and movement in and out of the facility. Aside from the operational observations, the facility was noted to be clean and well-maintained.



Government Center Transfer Center

Naples

- ◆ Downtown Naples/Naples Boulevard was reviewed to better understand the context for the proposed MOD service in the area. The Naples Zoo was visited to identify a safe bus turnaround point. Based upon observations, there is space at the Zoo property to accommodate a safe turnaround location.



Bus stop at Visitor Access of PRMC – Collier Boulevard

Physician’s Regional Medical Centers

- ◆ Physician’s Regional Medical Center (PRMC) – Pine Ridge was reviewed to determine the feasibility of providing bus service and a stop closer to the hospital, similar to what is currently provided at PRMC – Collier Boulevard. The hospital’s internal roadways are wide enough for emergency vehicle access and may be able to accommodate a transit vehicle.
- ◆ PRMC – Collier Boulevard was reviewed to identify similar Visitor Entrance access for the Pine Ridge location. The existing alignment looping around the medical center was observed to be the only viable egress due to low trees in the parking lot.

Radio Road Transfer Center

- ◆ The Radio Road Transfer Center was visited to observe passenger transfer activity, review passenger information materials (i.e., printed material, bus bay assignments and signage, real-time dynamic messaging, etc.), and also to observe bus activity and movement in and out of the facility. Very little passenger activity was observed at the Transfer Center.



Radio Road Transfer Center



Radio Road/Radio Lane

- ◆ The Radio Road/Radio Lane turnaround was visited to better understand the purpose of stop placement and the turnaround at Radio Lane. This review confirmed the need to travel on Radio Lane given there are no safe left turn options onto Radio Road when exiting the CAT Radio Road facility.



Radio Lane Bus Stop

Six L's Farm Road

- ◆ Six L's Farm Road was visited as part of a ride along on Route 24. Six L's Farm Road is at the fringe of the urbanized area and surrounding neighborhoods and commercial activity are sparse and setback from the main thoroughfare, US 41/Tamiami Trail.

Shirley Street Industrial Area

- ◆ The Shirley Street Industrial Area was identified as a candidate location for fixed route services in the 2020 TDP. The broad presence of heavy vehicles and lack of sidewalks on Shirley Street hinders safe operation of transit vehicles and does not provide safe access for potential riders.

UF/IFAS Immokalee Campus

- ◆ The UF/IFAS campus is removed from north Immokalee and without enough space to provide for a bus turnaround. Travelling further north to the roundabout construction at FL-82 would add a considerable amount of distance and time for any service deviation.

Walmart

- ◆ The Walmart Supercenter on Collier Boulevard was observed for access and connectivity from Tamiami Trail and Manatee Road. The stop locations on Pasedo Drive provide limited access to the isolated community behind the Walmart. Manatee Road was observed to have low activity with a bus dwelling for an extended period of time (i.e., approximately 15 minutes) south of the RaceTrac before traveling north on Collier Boulevard.



Heavy vehicle traveling on Shirley Street

Waterside Shops / Clam Pass Park

- ◆ The roadways around and within Waterside Shops and Clam Pass Park were reviewed for potential bus turn-around locations. No new potential turn-around locations were identified as a result of the observations.

III. Performance Standards

The development and application of performance standards by service mode facilitates the decision to modify, expand, and/or discontinue public transportation services. Steps in the development of standards and key performance indicators generally consist of the following:

1. Data Collection and Analysis
2. Identification of Key Performance Indicators (KPI)
3. Development of KPI Benchmarks, Standards, and Policies

By following these steps, a set of unique standards are developed for CAT and can be applied to the host of service offerings provided by the agency. One additional step is included for CAT in this process which includes the definition of service types. This step precedes the performance standards development process and is described below.

Service Types

Distinguishing between service types is important in terms of the application of standards. Not all services are designed to fulfill the same purpose and there are unique instances where service design fulfills a policy directive that cannot be enumerated into a standard metric or be applied to all. For example, commuter express services provide limited access (e.g., less bus stops served) in order to improve bus travel times. This is distinguished from traditional fixed-route service which typically stops at all designated stops along a service route.

Fixed routes within the CAT service network are organized into six (6) types and the organization of existing fixed routes into the various types is shown in Table 6. A summary of each service type along with operating characteristics are provided below. The service types by route are depicted in Figure 22. Proposed Mobility on Demand services are also included within the set of services presented so that a benchmark standard can be developed by which to gauge satisfactory performance of newly deployed services.

Core Network

- ♦ All stop, local bus service operating largely on a significant major transit thoroughfare
- ♦ Routes that experience high ridership levels throughout a broad service span (i.e., days of the week and daily service hours)
- ♦ Facilitate longer distance trips for users of public transportation via connections at major transfer centers to and from circulator routes

Circulator

- ♦ All stop, local bus service with improved access onto collector or local roads, penetrating directly into neighborhoods and commercial areas, and sometimes operating within a specific service area or operating environment (e.g., college campus or specific neighborhood)
- ♦ Provide improved access to lower volume enclaves throughout the service network
- ♦ Deliver passengers to core network services at major transfer points and this facilitates longer distance trips for travelers using public transportation services

Limited

- ◆ Service characterized by a limited number of daily service hours
- ◆ Typically focused on a target travel market
- ◆ Distinguished from commuter express services by way of access to more bus stops and connections to more, dispersed activity points and destinations

Commuter Express

- ◆ Limited stop, peak hour service utilized by commuters for employment purposes
- ◆ Express services are characterized by their direct service between key collection points and employment hubs
- ◆ Sometimes consists of highway operations in order to improve travel times

Seasonal

- ◆ Peak season service targeting a specific travel market or local destination
- ◆ “Season” is considered the peak visitor season and when a specific visitor season occurs can vary depending on the function, nature, or purpose of the seasonal activity

Mobility on Demand (MOD)

- ◆ Same day, on-demand service provided within a defined service area or zone
- ◆ MOD services use technology to offer users trip planning, trip scheduling, and estimated arrival time information directly via their mobile device

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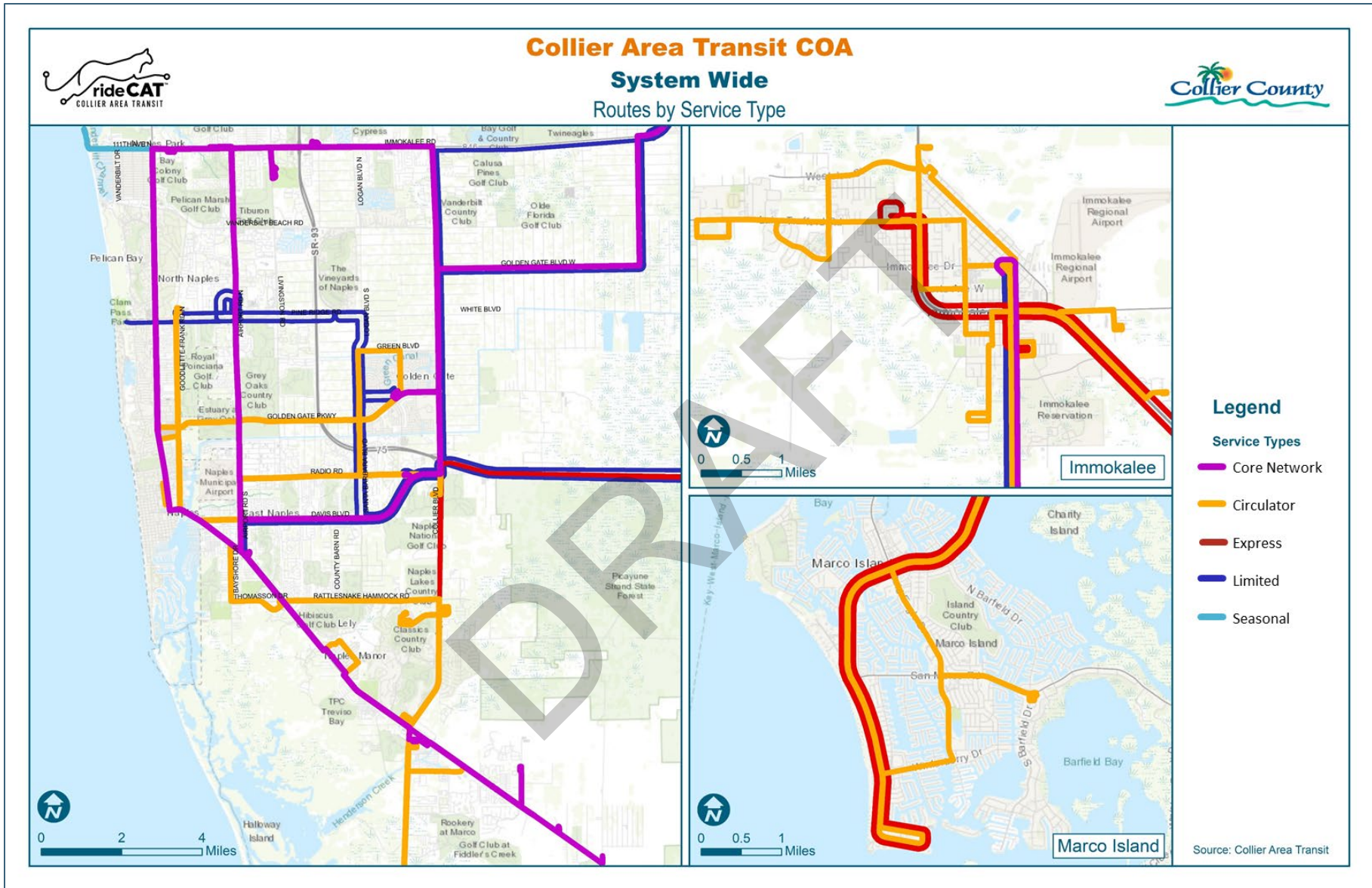


Figure 22: Routes by Service Type

Performance Standards

Data reviewed consists of FY 2019 annual ridership, annual revenue hours, and annual operating expense for each CAT fixed route. Using these metrics, standard performance evaluation ratios are developed that reflect the ridership productivity and cost effectiveness of a route:

- ◆ Ridership Productivity (Trips Per Hour) = Ridership Per Revenue Service Hour
- ◆ Cost Effectiveness (Cost Per Trip) = Operating Cost Per Passenger Trip

The two ratios are identified as the key performance indicators (KPI) for the CAT service and are calculated for each CAT fixed route using the FY 2019 data. An average is calculated for each KPI, for each grouping of routes to provide a relative comparison between routes within the same type. In this manner, routes that fall above or below the average within a given type can be quickly defined. It is important to note that not all routes that fall above or below the KPI average require closer evaluation. An average, or arithmetic mean, represents only a central value within a set of data and quickly asserting that anything below the average is poorly performing is misleading. This is particularly true for any bus routes that fall near one of the KPI averages. Consequently, it is recommended that only routes that do not meet a percentage of the average for either KPI be included for further evaluation in any performance monitoring program.

Percentage thresholds are defined for each KPI that support identification of routes for potential service enhancements as well as for potential service reductions. The threshold standards are defined as the following:

- ◆ Routes that fall below the 75 percent threshold for ridership productivity or above the 125 percent threshold for cost effectiveness are identified for potential service reductions (i.e., shorter service span, route realignment, reduction in service days).
- ◆ Routes that fall above the 150 percent threshold for ridership productivity or below the 50 percent threshold for cost effectiveness are identified for potential service enhancement (i.e., later service, enhanced frequency, additional weekend service).

Error! Reference source not found. illustrates the evaluation framework and Table 6 includes the supporting data, KPI averages, and thresholds for each service type.

It is important to note that not all new or modified services should be immediately evaluated against set standards. A period of service maturity, equal to three years, should allow for new service or enhanced service to develop. That three-year period is consistent with service development standards set forth by FDOT discretionary funding programs for public transportation services.

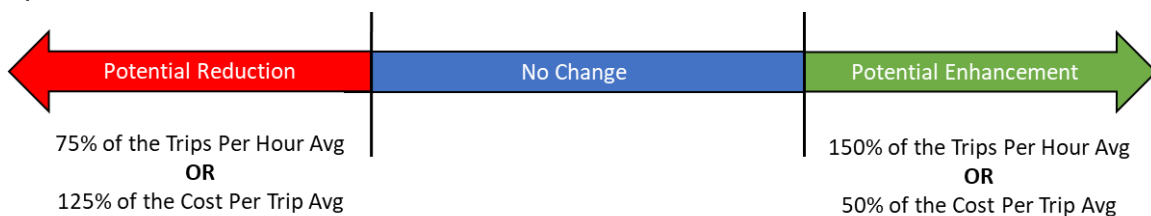


Figure 23: Performance Evaluation Framework

As shown in Table 6, Route 121 and Route 29 have no peers within their service type as they offer service to a specific user market. Some discretion should be applied in these circumstances where a bus route is designed to serve a unique purpose, need, or policy directive. Additionally, there is no existing comparable service for proposed Mobility-on-Demand services. Performance standards for Routes 121 and 29 are defined below. Important policy and operational considerations for MOD deployment are described in Section IV of this report.

- ◆ **Route 121/Immokalee – Marco Island Express** – Service between the two (2) communities has been a long-standing service initiative for CAT and the express service has always performed above the average in terms of ridership productivity. Above all, the route meets economic development objectives by connecting residents in Immokalee to leisure and hospitality employment opportunities on Marco Island. As a result of the need that service meets and the level of ridership productivity, the performance standard for Core Network services is recommended to be applied to Route 121.
- ◆ **Route 29/Beach Bus** – The Beach Bus is a unique seasonal service funded via an agreement with Delnor-Wiggins Pass State Park that only operates during the peak visitor season. The service was implemented to facilitate access to the State park, reduce traffic congestion along the two-lane approach to the park, and reduce parking infractions and parking spillover into adjacent neighborhoods. Because of its very specific use and application, there will be no other peers within the CAT system by which to benchmark its performance and its closest approximation from among the service types identified is Limited. The performance standard for Limited services is recommended to be applied to Route 29.

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Table 6: Collier Area Transit (CAT) Route Performance Evaluation

Route Description		Ridership	Revenue Hours	Operating Expense	Trips Per Hour	Cost Per Trip		
Core Network								
11	US 41 - Creekside Commerce Park	96,554	6,614	\$575,087	14.6		\$5.96	
12	Airport Rd - Creekside	74,053	4,866	\$423,099	15.2		\$5.71	
19	Golden Gate Estates - Immokalee	64,392	5,046	\$438,713	12.8		\$6.81	
24	Government Center - Charlee Estates	49,587	4,111	\$357,450	12.1		\$7.21	
27	951 - Immokalee Rd	29,874	4,654	\$404,699	6.4		\$13.55	
Service Enhancement Threshold					150%	18.3	50%	\$3.92
					<i>Average</i>	12.2	<i>Average</i>	\$7.85
Service Reduction Threshold					75%	9.2	125%	\$9.81
Circulator								
13	NCH - Coastland Mall	66,365	4,815	\$418,664	13.8		\$6.31	
14	Bayshore Dr - Coastland Mall	51,111	3,660	\$318,237	14.0		\$6.23	
15	Golden Gate City	86,683	5,078	\$441,506	17.1		\$5.09	
16	Golden Gate City	43,509	4,030	\$350,387	10.8		\$8.05	
17	Rattlesnake - FSW	41,221	4,521	\$393,116	9.1		\$9.54	
18	US 41 East - Naples Manor	27,836	3,554	\$308,986	7.8		\$11.10	
21	Marco Circulator	11,688	1,840	\$160,010	6.4		\$13.69	
22	Immokalee Circulator (Commerce)	49,650	4,943	\$429,836	10.0		\$8.66	
23	Immokalee Circulator (Eustis)	27,918	4,241	\$368,738	6.6		\$13.21	
25	Golden Gate Pkwy - Goodlette Frank Rd	15,986	2,858	\$248,540	5.6		\$15.55	
Service Enhancement Threshold					150%	15.2	50%	\$4.87
					<i>Average</i>	10.1	<i>Average</i>	\$9.74
Service Reduction Threshold					75%	7.6	125%	\$12.18
Limited								
20	Pine Ridge Road	6,545	1,448	\$125,941	4.5		\$19.24	
26	Pine Ridge Rd - Clam Pass	5,730	1,511	\$131,353	3.8		\$22.92	
28	Golden Gate Estates - Ave Maria - Immokalee	27,697	2,626	\$228,328	10.5		\$8.24	
Service Enhancement Threshold					150%	9.4	50%	\$8.40
					<i>Average</i>	6.3	<i>Average</i>	\$16.80
Service Reduction Threshold					75%	4.7	125%	\$21.00
Express								
121	Immokalee - Marco Island	22,229	1,326	\$115,311	16.8		\$5.19	
Seasonal								
29	Beach Bus	6,738	1,755	\$152,597	3.8		\$22.65	

IV. Service Alternatives and Evaluation

COA service alternatives were developed following the review of the existing system-wide service, including the route profiles, site observations, transfer surveys, and key performance indicator evaluation. In addition, the service changes identified in the 2021-2030 Transit Development Plan (TDP) were evaluated for potential implementation within the planning horizon of the COA.

The service alternatives focus on the operational efficiencies that require minimal investment and translate to a net-zero change in system-wide service hours and annual operating cost.

Service alternatives were developed in coordination with CAT Planning and Operations staff and shared with the public for feedback. COA service alternatives are presented in this section along with a summary of outreach activities and public feedback collected.

Staff Workshop

A service alternatives workshop was facilitated with CAT Planning and Operations staff on March 24, 2021. The alternatives workshop was held prior to finalizing the set of alternatives to be shared with the public. This was an important aspect of the COA project as coordination with the CAT team helped to validate and modify service proposals based on their experience. The experience of CAT Operations staff was particularly relevant given their understanding of immediate operational needs and conditions on the road.

Recommended Service Alternatives

Service alternatives are organized into three (3) categories based on the defining operational change: Frequency Enhancements, Route Consolidation, and Realignment. The service alternatives are described in tabular and graphic form on the following pages.

The estimated change in annual operating cost and annual revenue hours for each service alternative is provided in Table 10, found at the end of this section.

Frequency Enhancements

Frequency enhancements are recommended to increase the level of service for routes that have high productivity. The routes with the highest productivity either meet the service enhancement threshold for their service type or perform better than the average service standard for their service type.

Frequency enhancements are recommended for Routes 11, 12, 15, and 24. Some realignments are recommended along with the frequency enhancements and are detailed for each alternative. With the enhancement in frequency to Route 15, a modification would be made to move the Route 16's current operation from Radio Road to Davis Boulevard to reduce duplication in service on Radio Road. A description of the service alternatives is included in Table 7 and shown in Figure 24.

COLLIER COUNTY AREA TRANSIT COMPREHENSIVE OPERATIONS ANALYSIS

Table 7: Service Alternatives – Frequency Enhancements

Route	Service Description
Route 11	<ul style="list-style-type: none"> All day, 1-hour frequency Maintain service on US 41 between Government Center to Creekside Add deviation to Coastland Center Mall transfer point on Fleischmann Boulevard Discontinue 11B service
Route 12	<ul style="list-style-type: none"> All day, 1-hour frequency Maintain service on Airport Pulling Road between Government Center to Creekside Access Creekside via Arthrex Boulevard and Creekside Boulevard roundabout Discontinue 12B service
Route 15	<ul style="list-style-type: none"> All day, 1-hour frequency Maintain service on Radio Road to Golden Gate Community Center
Route 16	<ul style="list-style-type: none"> All day, 105-minute frequency Remove service on Radio Road from Airport Pulling Road to Santa Barbara Boulevard and realign to Davis Boulevard (in combination with 1-hour frequency on Route 15)
Route 24*	Alternative 1 <ul style="list-style-type: none"> All day, 30-minute frequency Service on US 41 between Government Center and Wal-Mart, removing service on US 41 between Collier Boulevard and Six L's Farm Road, with select trips to Six L Farm's Road
	Alternative 2 <ul style="list-style-type: none"> All day, 45-minute frequency Service on US 41 between Government Center and Six L's Farm Road

* Only one alternative for Route 24 would be implemented.

COLLIER COUNTY AREA TRANSIT COMPREHENSIVE OPERATIONS ANALYSIS

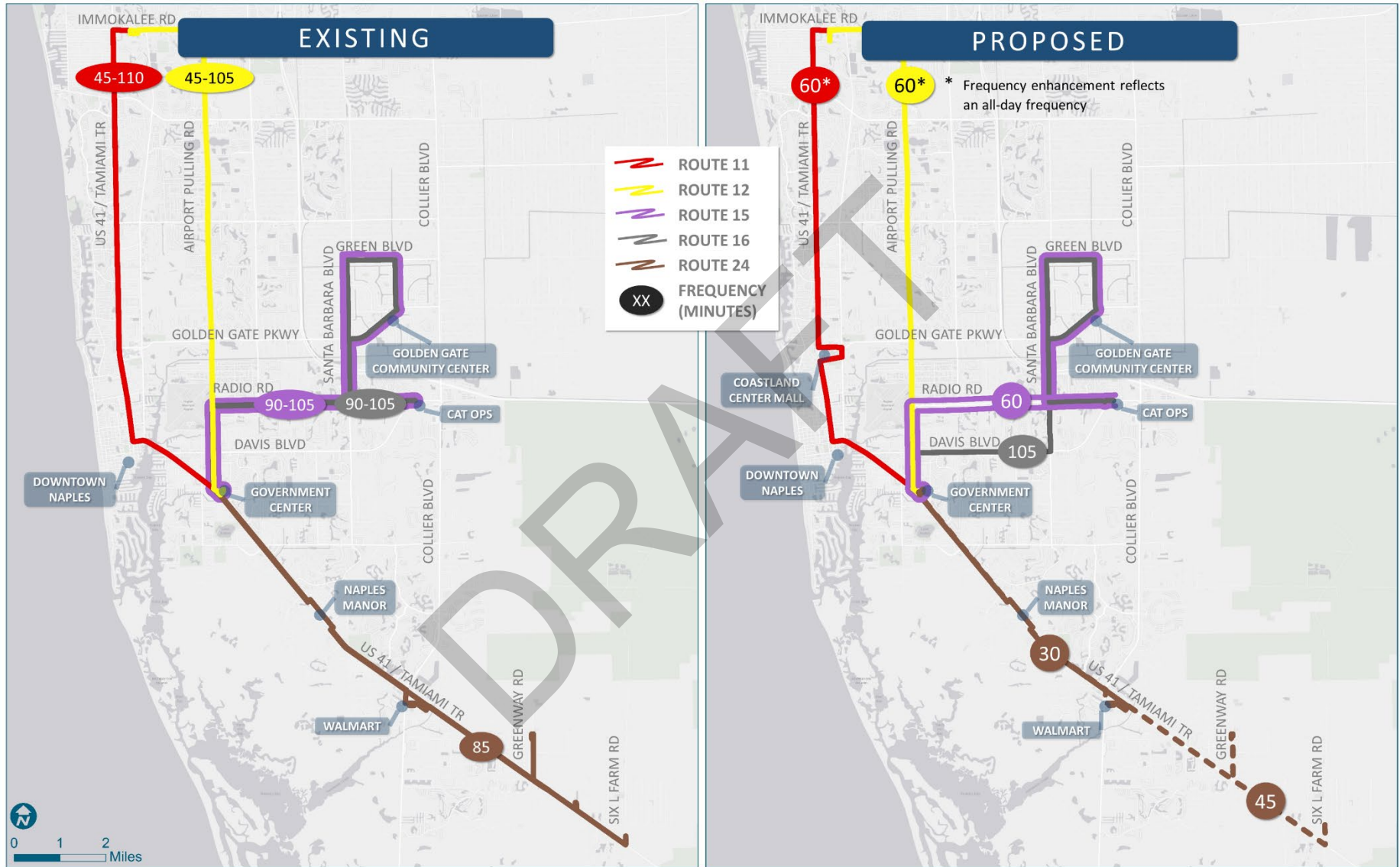


Figure 24: Service Alternatives – Frequency Enhancements

Route Consolidation

The routes recommended for consolidation are currently operating as single direction loops or are traveling on a similar alignment with offset schedules. It is recommended to consolidate or combine these routes to simplify the schedules and have more direct service to specific destinations. Route consolidation includes Routes 17/18, Routes 19/28, and Routes 20/26. A description of the service alternatives is included in Table 8 and shown in Figure 25.

Table 8: Service Alternatives - Route Consolidation

Route	Service Description
Route 17/18	<ul style="list-style-type: none"> • All day, 90-minute frequency • Maintain bi-directional service on Collier Boulevard and Rattlesnake Hammock Road • Remove service on US 41 between Collier Boulevard and Rattlesnake Hammock Road that would be maintained with improved frequency on Route 24
Route 19/28	<ul style="list-style-type: none"> • All day service with 80-minute peak frequency and 170-minute off-peak frequency • Maintain service on Collier Boulevard and Immokalee Road with select trips to Ave Maria via Oil Well Road • Recommendation includes scheduling outbound trips from Immokalee to be offset with Route 22, Route 121 and Route 19 Express Trips
Route 20/26	<ul style="list-style-type: none"> • All day, 90-minute frequency • Maintain service on Pine Ridge Road between Clam Pass and extension to Collier Boulevard, with select trips to Naples Boulevard shopping center and PRMC (105-minute frequency) • Discontinue Sunday service. Routes 20 and 26 are the two lowest performing routes in terms of passenger trips per revenue hour. • Remove service on Santa Barbara Boulevard between Pine Ridge Road and Davis Boulevard due to low productivity and to maintain all-day 90-minute frequency

COLLIER COUNTY AREA TRANSIT COMPREHENSIVE OPERATIONS ANALYSIS

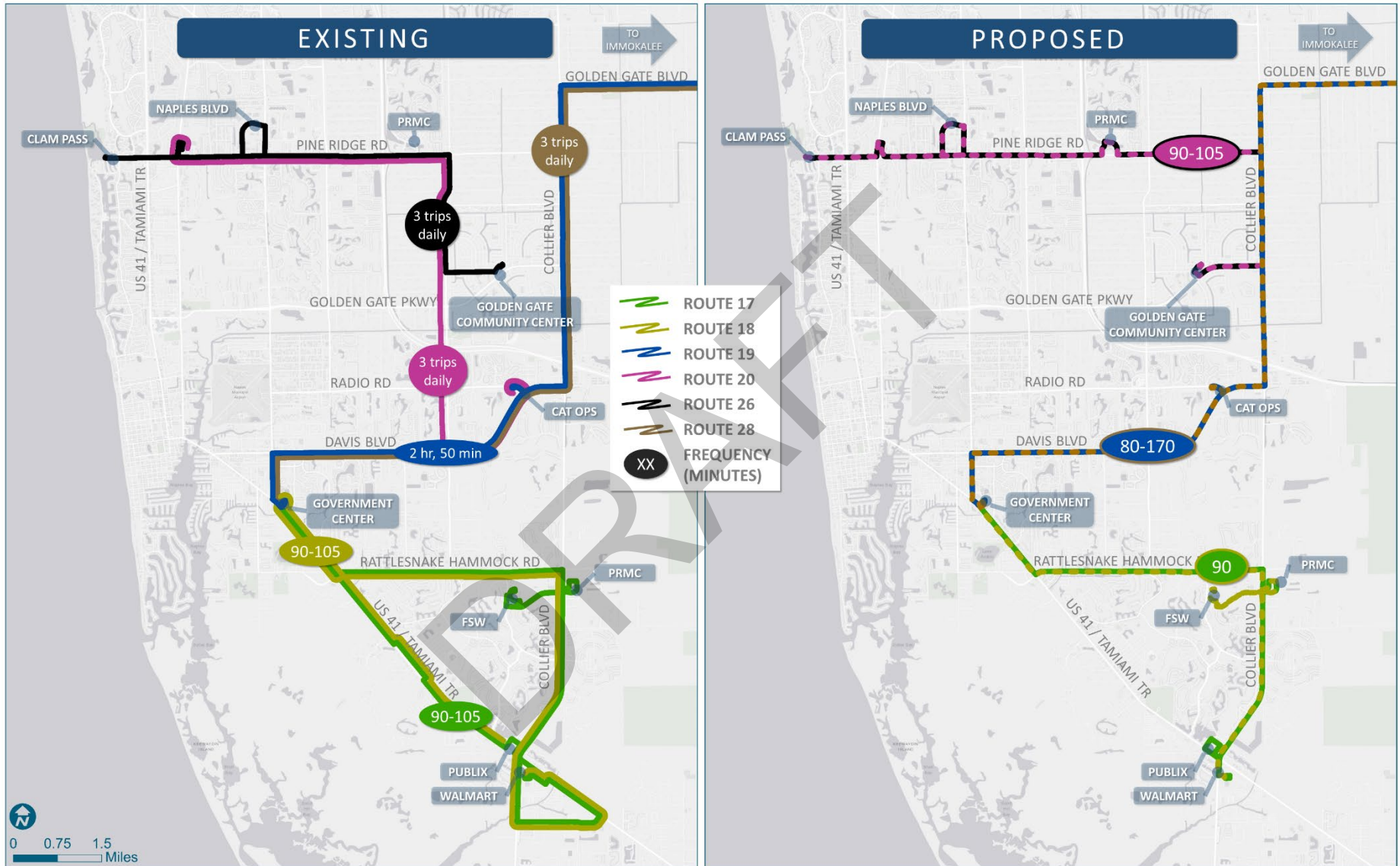


Figure 25: Service Alternatives – Route Consolidation

COLLIER COUNTY AREA TRANSIT COMPREHENSIVE OPERATIONS ANALYSIS

Realignment

Routes are recommended for realignment to provide increased access, improve the level of service in high productivity areas, and remove service in areas with low productivity. Routes recommended for realignment include Route 21, Routes 22 and 23, Route 25, and Route 27. A description of the service alternatives is included in Table 9 and shown in Figure 26 and Figure 27.

Table 9: Service Alternatives – Realignment

Route	Service Description
Route 21	<ul style="list-style-type: none"> • Add mid-day service, 2-hour frequency • Maintain service on Collier Boulevard between Marco Island and Wal-Mart • Remove service on San Marco Road due to low productivity • Add service on Collier Boulevard to Radio Road transfer station to improve connections at the transfer location to Route 19/28 Immokalee service
Route 22 and Route 23	<ul style="list-style-type: none"> • All day, 90-minute frequency • Realign routes to be a bi-directional loop on the same alignment • Add service deviation to Esperanza Way on Immokalee Drive • Remove service on N 9th St from Roberts Avenue and Lake Trafford Road, Lake Trafford Road between N 9th St and N 15th St, and to the Salvation Army • Recommendation includes scheduling outbound trips from Immokalee to be offset with Route 19/28, Route 121 and Route 19 Express Trips
Route 25	<ul style="list-style-type: none"> • All day, 75-minute frequency • Realign route to travel on US 41 between Pine Ridge Road and Golden Gate Parkway, access at Coastland Center Mall, and Golden Gate Community Center • Discontinue Sunday service. Route 25 is a low ridership route. • Remove service on Collier Boulevard and Goodlette Frank Rd
Route 27	<ul style="list-style-type: none"> • All day, 105-minute frequency • Realign route to travel on Immokalee Road between Creekside and the Collier County Fairgrounds • Discontinue Sunday service. Route 27 is a low ridership route. • Remove service on Collier Boulevard and Livingston Road due to low productivity

COLLIER COUNTY AREA TRANSIT COMPREHENSIVE OPERATIONS ANALYSIS

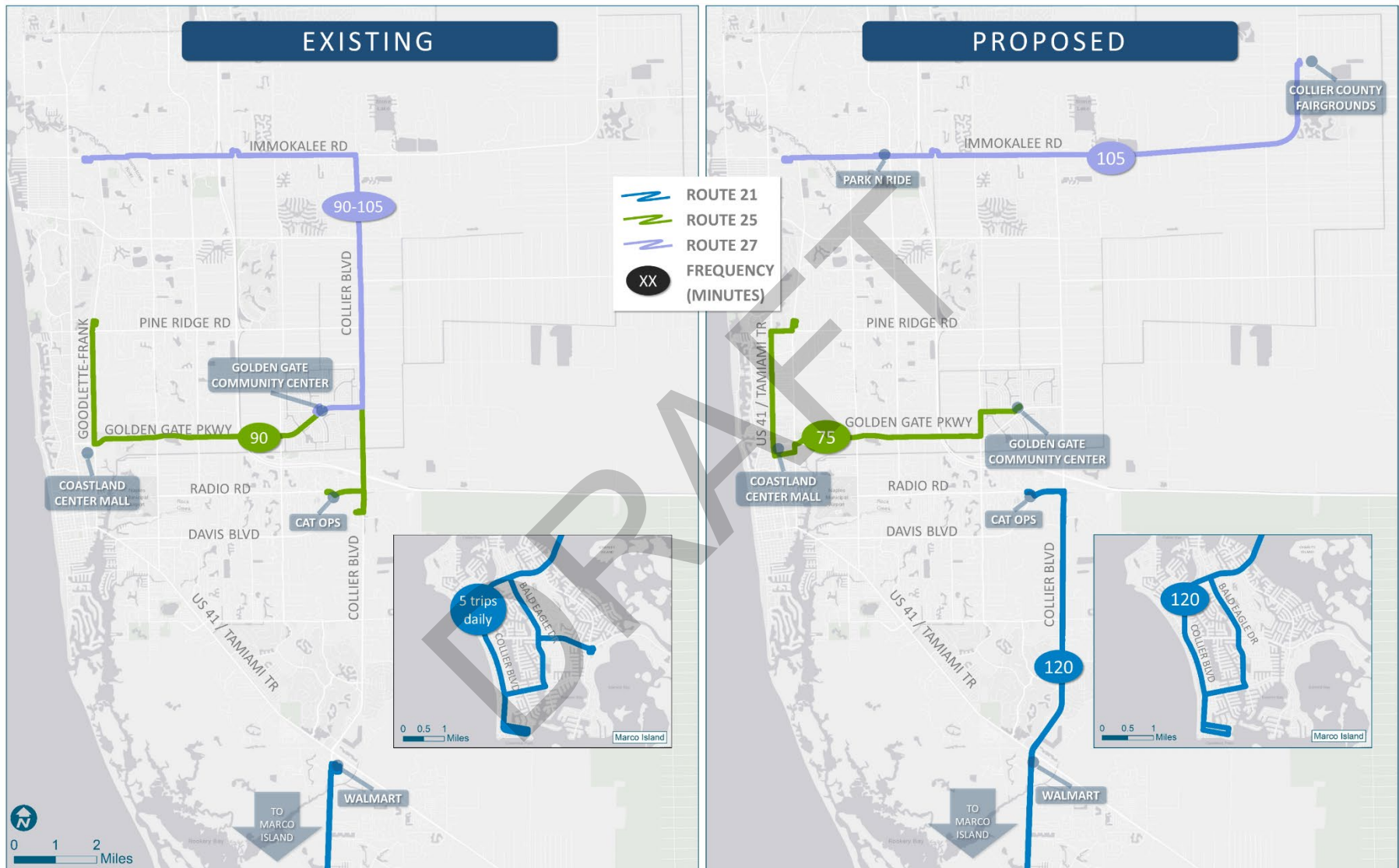


Figure 26: Service Alternatives – Realignment

COLLIER COUNTY AREA TRANSIT COMPREHENSIVE OPERATIONS ANALYSIS

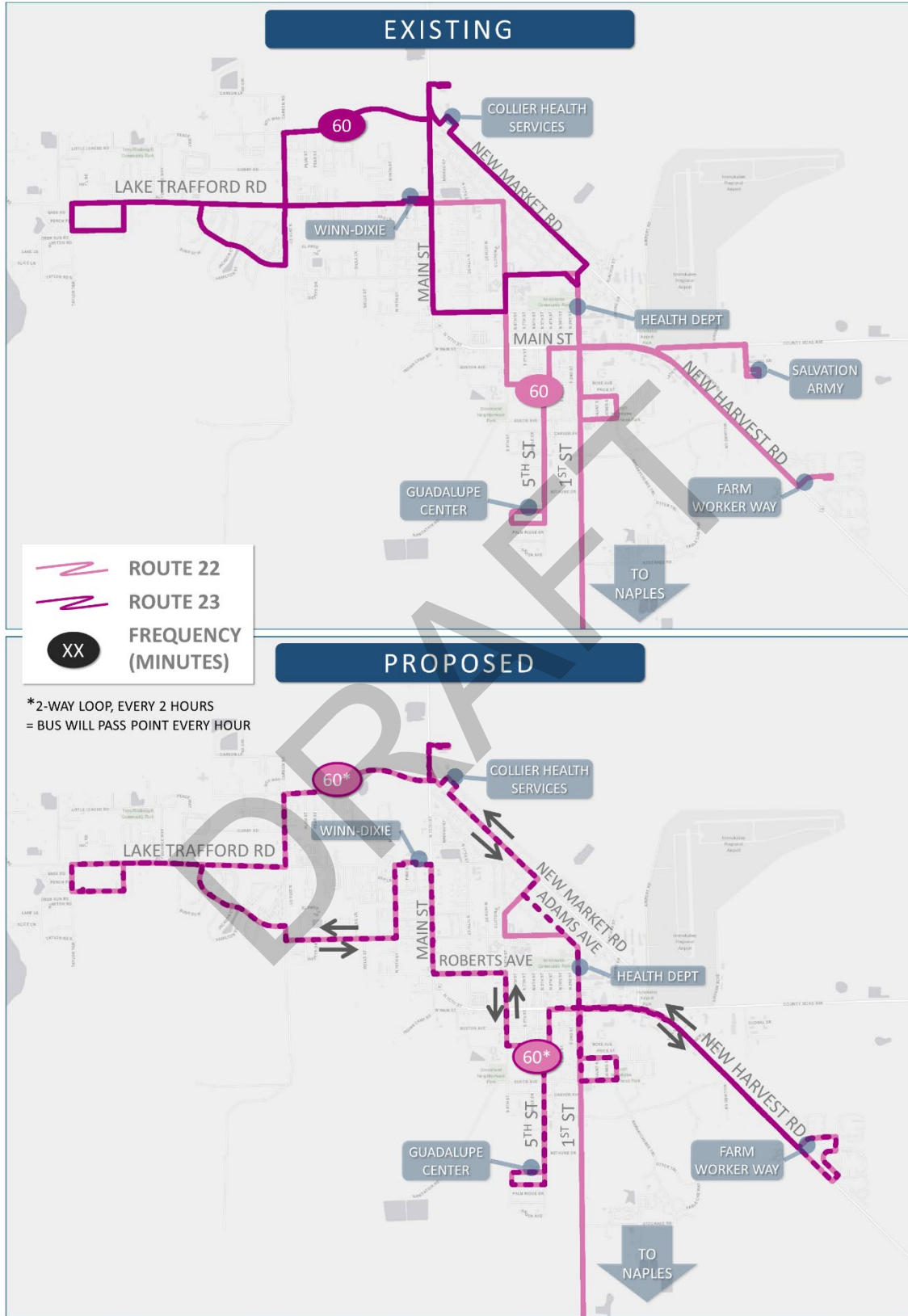


Figure 27: Service Alternatives – Immokalee Realignment

Service Alternatives Evaluation

The evaluation of service changes consists of two (2) parts, assessment of the impact of proposed service changes on the existing level of service and public input. Each evaluation component is described below.

Public Outreach

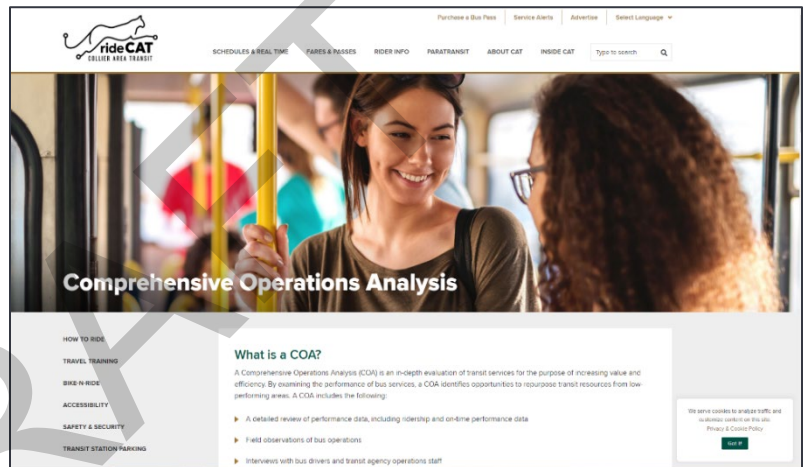
Several public outreach activities were performed throughout the duration of the project. Those efforts were undertaken to achieve two (2) key objectives:

- Educate the public and stakeholders about the COA process
- Gather feedback on proposed service alternatives

Public outreach activities are summarized in this section and included development of a project website, two (2) public workshops, and a survey that gauged the level of support for proposed service change.

Project Website

At the onset of the project, a project specific website was developed which consisted of information about the COA and how interested persons could provide feedback. The COA project website was maintained throughout the course of the project and was one of the ways used to advertise the workshops and post survey links.



Public Workshops

Two (2) public workshops were held to gather feedback on COA service alternatives. The dates and locations for each workshop is as follows:

- ◆ Thursday, April 22nd, 2021
Government Center – Human Services Building
2:00 PM to 4:00 PM
- ◆ Saturday, April 24th, 2021
Immokalee Library
10:00 AM to 12:00 PM

The format for both workshops consisted of a hybrid of in-person and virtual participation opportunities.

- ◆ **In-Person Participants** – An open house style format was afforded to participants who attended the workshop in-person. Stations were set up with supporting service proposal graphics and project team members were available to answer questions and address comments as needed. Additionally, in-person participants had the opportunity to complete printed surveys or link to a website version of the survey using QR codes posted throughout the workshop venue.

- ♦ **Virtual Participants** – A live viewing of workshop activities was posted on the Collier County YouTube channel including intermittent, scheduled presentations. The presentation consisted of a brief description of the COA process and the proposed service alternatives.

Importantly, communicating service changes and project details in other prevalent languages assists in reaching an otherwise hard-to-reach community. CAT ridership consists of many non-English speakers. To meet the needs of non-English speakers, workshop materials were made available in Spanish language formats and Spanish speaking facilitators were present at both workshops. A Creole speaking CAT staff person was also available at the Immokalee workshop. The virtual presentations were given in Spanish at scheduled intervals. These efforts facilitated the gathering of feedback from persons with limited proficiency in English.

Lastly, as an extension of the each workshop, the opportunity was taken to speak directly to bus riders at the CAT Government Center Transfer Station for the Naples workshop and to riders at the Collier County Health Department for the Immokalee workshop. Passengers were asked for interest and feedback on the proposed service changes and were encouraged to complete the survey.

Alternatives Survey

A survey was developed to gauge the level of support for each service change proposal. The survey instrument was designed in an easy-to-follow format with consistent color themes that matched the graphical depictions of each proposed service change. The color schemes remained consistent with the route color schemes used by CAT distinguish the different fixed-routes in their printed materials and on the CAT website.

Participants were able to review supporting graphics and informational descriptions of each service proposal, match it to the color icon on their survey instrument, and then indicate their level of support using a Likert scale, where five (5) indicated a high level of support or agreement with the corresponding service change and one (1) indicated a low level of support or agreement. This same format was used for the online version of the tool. A copy of the survey instrument is included in the Appendix.

Total written and online surveys completed summed to 55 responses. A summary of the overall level of support for each service change alternative is shown in Figures 28 through 30. The scoring range for all of the COA alternatives is between 3.5 and 4 which indicates broad support for all of the proposed service changes.

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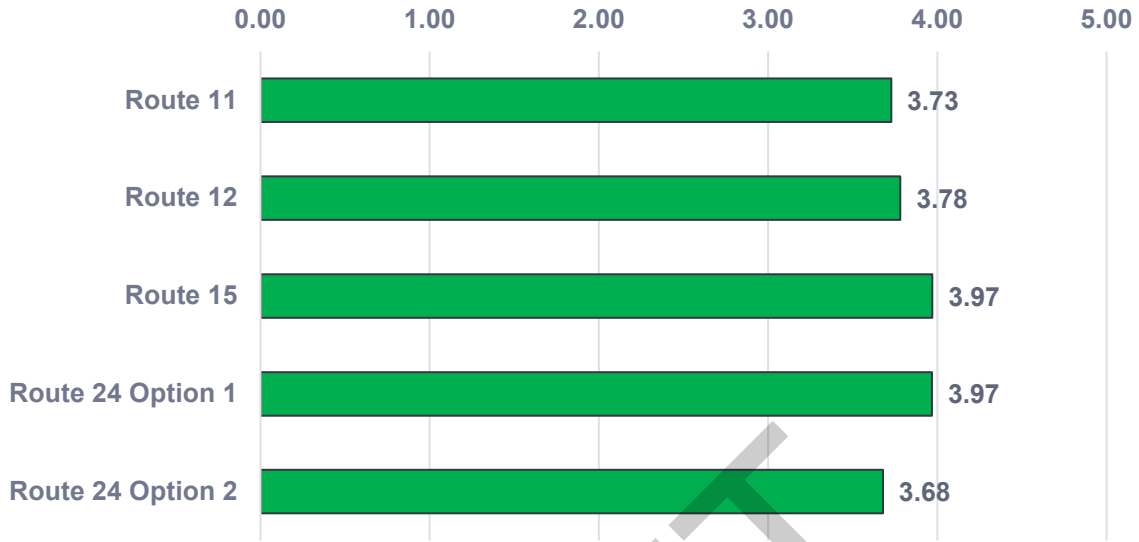


Figure 28: Alternatives Survey Results – Frequency Enhancements

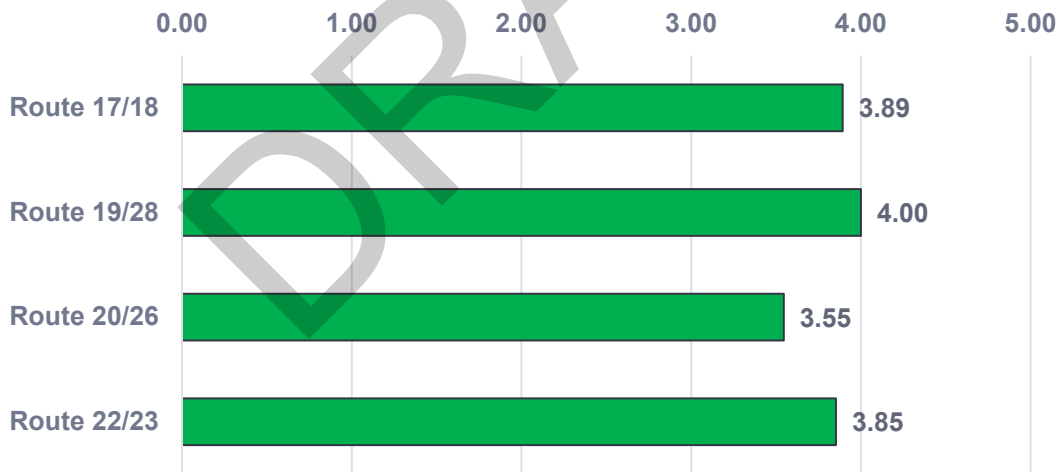


Figure 29: Alternatives Survey Results – Route Consolidation

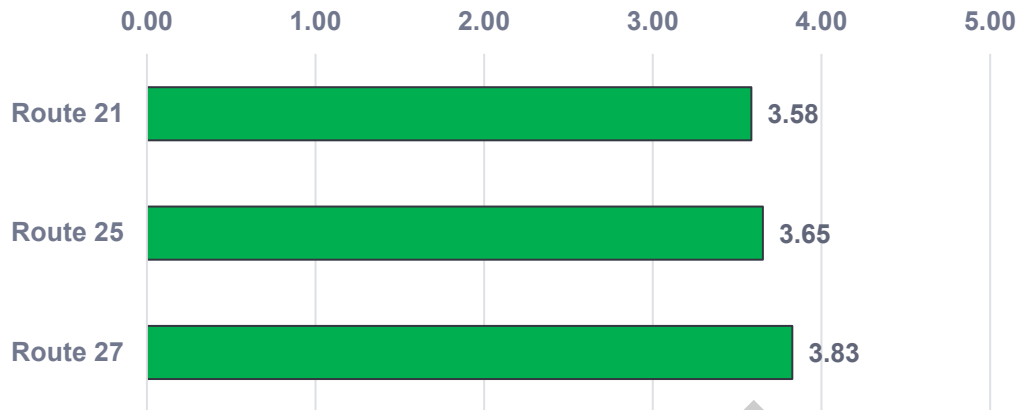


Figure 30: Alternatives Survey Results – Route Realignment

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Service Change Impact

Table 10 describes each alternative in terms of the impact to service hours and estimated cost. The net change in revenue hours and operating cost is an estimation based on assumed schedule changes. The development of a defined operating schedule reflecting the alternatives will be established prior to implementation.

As shown, the COA alternatives amount to an increase in annual revenue service hours and overall fixed-route operating costs. As a result, alternatives will need to be organized in the near-term implementation phase to reflect a cost neutral result. A cost neutral approach to service changes in the near-term is consistent with the objectives of the COA. The organization of improvements into near-term, short-term, and mid-term implementation phases, including impacts on operating expenses from each, is included in Section VI of this COA report.

Table 10: Service Change in Revenue Hours and Operation Cost

Service Alternative	Change in Revenue Hours	Change in Operating Cost
Route 11	2,200	\$191,290
Route 12	3,000	\$260,850
Route 15	3,800	\$330,410
Route 16	-	\$ -
Route 17/18	(3,500)	(\$304,325)
Route 19/28	-	\$ -
Route 20/26	700	\$60,865
Route 21	1,500	\$130,425
Route 22/23	-	\$ -
Route 24	2,900	\$252,155
Route 25	800	\$69,560
Route 27	(600)	(\$52,170)
Total	10,800	\$935,000

V. Service Policies

The analysis of transit service operations allows for a close examination of several of CAT's operating practices and policies. This is important as meeting day-to-day service level requirements and customer service demands are at the forefront of any transit agency's responsibilities. Consequently, operations staff is regularly pressured to make prompt and assured decisions to keep service moving and to address customer issues in the field. The combined pressure between agency functions stress the day-to-day operation and result in immediate and practical solutions. These decisions over time serve as the basis for operational practices and policies, written or unwritten, that may create conflict with other agency objectives. For CAT, there were no outstanding or egregious practices observed through this review and CAT should be commended for operating a sound transit system, operationally and administratively. Several service policy changes and infrastructure needs do stand out and have been identified through this effort and that serve to enhance what CAT is already doing. These policy changes and needs are organized into two (2) categories: service policies and infrastructure.

Service Policies

On Time Performance

CAT places a strong emphasis on on-time performance. In addition to meeting customer service goals, the focus on on-time performance also supports requirements set forth in the contract with the service operator, MV Transportation. Liquidated damages are assessed to the operations contractor whenever OTP standards are not met and OTP tracking is closely monitored on a daily basis, for every bus route and timepoint as per the published schedules.

Over time, as service changes are made or as travel patterns change, travel times on select routes also change. This occurs at specific times of the day and/or on a segment-by-segment basis. A regular practice employed by CAT is to modify schedules to meet changing traffic conditions and that practice supports efforts to meet OTP standards. In addition to providing more accurate arrival times for passengers, this effort also supports the contractors goal to limit the assessment of liquidated damages. Conversely, the impact to riders is reflected in the printed schedules where many fixed-routes operate on inconsistent headways throughout the course of the day. Sometimes schedule changes occur in the middle of the bid period and consist of small adjustments (i.e., less than five minutes) initiated by the contractor and these adjustments bear a further impact on service reliability.

Key considerations related to the OTP policy include the following:

- ◆ Regular and small adjustments to the schedule in the middle of the bid period preclude development of consistent clock-phased headways.
- ◆ On-time performance is an indicator of service reliability. Frequent changes to the same fixed bus route work against transit service reliability and detract from the passenger experience.
- ◆ The adjustments to scheduled bus departure times indicate that the OTP target is constantly moving and could potentially be interpreted as an inadvertent "lowering of the bar" in order to meet a contract requirement.
- ◆ Further understanding of the application and measurement of OTP revealed impacts to stop placement policies. This demonstrates that the effort to adhere to the OTP

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standard has permeated into other aspects of the operation which could affect future service enhancements. Specific guidance on how to address related infrastructure issues is provided later in this section.

Several options are offered for consideration to limit the instances of these schedule modifications and still maintain a high standard for the contractor. It is important to note that some of these changes can be applied in concert.

- ◆ Consider modifying the contract requirements to include on-time performance at key timepoint locations only, instead of at all timepoint locations. Key timepoint locations would include trip-by-trip endpoints, transfer locations, or off-street stops where the bus can safely layover and recover time over the course of a trip. On-street timepoints would be excluded from OTP monitoring but would remain on the printed schedules available to the public.
- ◆ Modify the OTP standard window (i.e., < one (1) minute early to six (6) minutes late instead of 0 minutes to five (5) minutes late).
- ◆ Assess liquidated damages only for running early.
- ◆ Limit all service and schedule changes to be consistent with the two (2) annual bid periods. It is understood that over the course of a bid period, there may be a need to adjust or modify a route for other unforeseen circumstances and these instances should be addressed on a case-by-case basis.

Several benefits are afforded through the incorporation of the OTP policy modifications indicated above.

- ◆ Implementation of consistent, reliable headways throughout the course of the day (i.e., every 30 minutes all day, every 60 minutes all day). This creates a daily schedule that passengers can easily remember and that staff can easily communicate.
- ◆ Improved transfer connections at major hubs. Efficient transfers are critical for passengers given the level of service (e.g., frequency) in the CAT fixed-route system.
- ◆ Predictable and efficient mid-day relief/shift change locations and schedules. Grouping reliefs and shift changes could be facilitated by having more, or better, timed connections at key transfer points throughout the service area.
- ◆ A shift in staff time and resources dedicated to OTP monitoring, tabulating, reporting, and determining schedule changes to other customer service related activities.

Fare Integration

Cross-county transit ridership has grown as development in southwest Florida continues to expand. This is evident given the average number of daily boardings (e.g., 60 in each direction) between LeeTran's 600LinC and CAT's Route 11 and Route 12 services. Timely connections are also a focus for both transit operators and emphasis on coordination is emphasized as a priority within each agency's respective TDP.

One area where both agencies can further facilitate passenger movement is in fare policy. Fare integration and interoperability can be coordinated on an operational level in a way that improves access and passenger convenience between the different transit systems and, in turn, improves mobility for users of public transportation between the two (2) counties.

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A pilot project proposal is presented that can be deployed using newly implemented mobile ticketing solutions. Both agencies now offer mobile ticketing as a fare payment option and by utilizing those existing platforms, a narrowly focused pilot can be implemented without the need of a major capital expense. The proposed pilot project will allow the two (2) agencies to do the following:

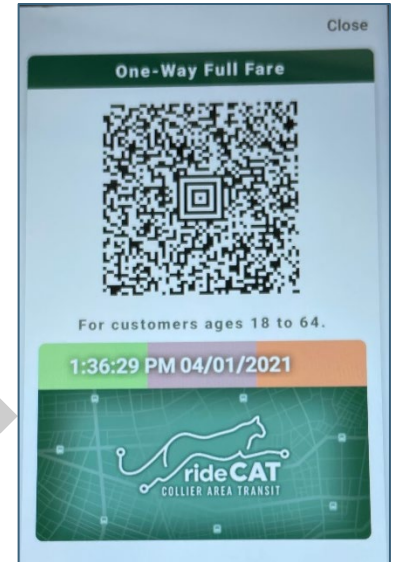
- ◆ Gauge the need for a broader program or investment that is inclusive of other fare types.
- ◆ Assess the effectiveness of operational policies. This includes mobile ticket validation and the prevalence, and handling of, fare evasion or fraud issues.
- ◆ Integration of mobile ticket boarding and revenue activity into existing reporting systems.
- ◆ Determine adoption rate and level of customer satisfaction among passengers.

The pilot will be defined as a Regional Bus Pass pilot project and will use one of the mobile ticket platforms currently in use by the transit agencies. Two (2) new regional bus passes will be offered:

- ◆ Unlimited Daily Regional Pass – \$5.00
- ◆ Unlimited 31-Day Regional Pass - \$50.00

The following operational features are proposed for the pilot program.

- ◆ Regional bus passes purchased through the mobile ticketing platform will allow passengers to board all CAT and LeeTran fixed-route services.
- ◆ CAT and LeeTran operators will visually validate mobile tickets as passengers board their respective fixed-route vehicles.
- ◆ An activated mobile ticket will display a combination of discrete visual features and animation that will allow an operator to identify a valid ticket. The regional bus passes will be further distinguished from other mobile tickets through the display of a banner that reads “Regional” across the activated mobile ticket.
- ◆ To facilitate testing and implementation of the proposed pilot project, all revenue from regional pass purchases will be retained by the agency whose mobile ticket technology is used for the pilot.
- ◆ Alternatively, each agency can make available the proposed regional bus pass via their respective mobile ticket application. In this way, each agency can retain regional pass revenue collected through their corresponding agency mobile ticket interface.
- ◆ The pilot program will run for one (1) full year. Each agency will track mobile ticket sales, mobile ticket activations, and mobile ticket boarding activity. At the end of the pilot project, performance data will be compiled to gauge the level of demand and interest among bus riders.



As proposed, the pilot could be deployed quickly and efficiently, with little required training for operations staff. Revenue collection procedures are currently in place and require no modification. Visual validation also absolves the need to purchase, install, or maintain expensive hardware and this is critical for pilot program or prototype testing.

Mobility on Demand

The Federal Transit Administration (FTA) provides a library of shared mobility definitions on their website: <https://www.transit.dot.gov/regulations-and-guidance/shared-mobility-definitions>

To ensure consistency with the MOD concept identified in the CAT TDP, the FTA definition for microtransit services will apply to proposed MOD services being considered by CAT. That FTA microtransit definition is as follows:

“IT-enabled multi-passenger transportation services ... that serve passengers using dynamically generated routes, and may expect passengers to make their way to and from common pick-up or drop-off points. Vehicles can range from large SUVs to vans to shuttle buses. Because they provide transit-like service but on a smaller, more flexible scale, these new services have been referred to as microtransit.”

The decision to implement any MOD service should include careful consideration of several policy and operational issues. The impacts to transit agencies extend beyond service-related duties and functions and include ensuring compliance and implementation of new technology, among others. Table 11 lists out each policy or operational issue, provides a brief description, and defines a preferred action to address each issue. The result is a policy framework to guide implementation of new MOD services.

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Table 11: MOD Implementation Framework

Policy/Operational Area	Description	Preferred Action/Approach
Service Area	A defined geographic service zone	Define a service zone for each MOD service where all MOD trips will begin and end.
Technology	Mobile applications that allow users to request trips, track real-time vehicle location, see estimated arrival time information, and process bank card transactions.	<p>A call center is required to schedule trips those with no access to the technology platform.</p> <p>Develop a procedure for handling cash transactions for those with no access to the technology platform.</p>
FTA and FDOT Compliance	Compliance with FTA and FDOT requirements for public transit operators.	Any contracted operation will ensure compliance with applicable requirements for transit operators (i.e., ADA, Drug and Alcohol Program, Vehicle Maintenance, etc.).
Service Integration	Connectivity and interoperability between different service modes.	<p>Ensure connectivity to the larger CAT fixed-route network via the capture of a major transfer center within each MOD zone.</p> <p>Develop a fare interoperability policy to facilitate passenger access and movement between different service modes.</p>
Pilot Projects	Demonstration projects designed to test new service models.	Implement a pilot test prior to wholesale implementation of MOD services in multiple areas.
Training	Staff training including new operational procedures associated with dispatch, customer service, and supervisory functions.	<p>Integrate training content and standards related to MOD services into operator refresher training or at regularly scheduled safety meetings.</p> <p>Develop new operational procedures as needed and based on pilot project results and testing.</p>
Performance Standards	Measurable targets used to assess if a service is meeting expectations.	Develop MOD-specific trips per hour and cost per trip measures of effectiveness (MOE) based on pilot project results and testing.

Infrastructure

Satellite Operations Facility

Every day CAT operates vehicles to Immokalee from its administrative and operations headquarters located on Radio Road. The one-way distance between the Health Department transfer location in Immokalee and the Radio Road facility is approximately 35 miles.

Five (5) fixed bus routes operate either within or to Immokalee. Over the last year, two (2) additional buses, not shown on the published schedule, have been added to supplement early AM demand for service between Immokalee and Government Center. This brings the total number of vehicles to seven (7) which amounts to 33 percent of the daily peak vehicle requirement. Revenue service hours amounted to approximately 25 percent of total revenue service hours for the entire fixed-route network in FY 2019. In terms of productivity, the AM express bus services connecting Immokalee to Marco Island and Government Center are some of the most productive services in the CAT system. The demand for public transportation demonstrates that Immokalee has effectively become workforce housing for the communities to the west and the demand for transportation to connect to those jobs continues to grow. Immokalee is situated just beyond a growing eastward expansion of the County, positioning the community in a location that is too close for limited transit operations, but also too far to serve efficiently.

A cost/benefit assessment should be considered to determine the return on investment of a satellite operations facility located in Immokalee. Some of those benefits include reductions in vehicle maintenance and fueling costs and retainment and retention of operations staff, many of which travel from Lee County to report to Radio Road. For customers, a significant benefit is afforded to those unable to use the mobile ticket application as they could now be able to purchase bus passes in Immokalee without having to travel to Radio Road or Government Center.

Operating facility alternatives reflecting various scales of development could be determined for the assessment. At a minimum, a small-scale operation would include the following features and transit agency functions:

- ◆ **Vehicle parking and storage.** Parking and storage would include the ability to refuel and clean buses and handle farebox cash collections. New procedures would need to be instituted for cash handling and reconciliation with daily system-wide revenue collections.
- ◆ **Dispatch and Supervisor Offices.** Operations oversight will be a critical element for any new facility and having a designated location within the new housing to conduct related office activities will be necessary.
- ◆ **Communications.** Radio and WiFi communications should be enabled to maximize communications between the new facility, headquarters, and operations staff on the road.
- ◆ **Staff Parking Area.** Operators would report directly to this facility instead of the Radio Road facility and this reduces the possibility for late pullouts.

Off-Street Transfer Facilities

Off-street transfer facilities provide a safe place for bus passengers to move between bus routes, eliminating the need to cross busy streets and navigate other hazards. This is particularly critical for persons with disabilities, children, and non-ambulatory passengers. Additionally, off-street facilities serve as a turnaround and layover point for bus operations. Observations of major roadways in Collier County revealed that much of the major road network has been designed primarily for traffic movement and not for other modes of transportation. This equates to an environment that is not transit-supportive and in some instances, unsafe for pedestrians and bicyclists.

At its current size and level of service, the CAT system is not robust enough to provide frequent, widespread service coverage. Frequent and widespread coverage would provide for more one-seat rides. As a result, many bus users must use at least two (2) routes to complete their trips. Coupled with the roadway environment as described, it would be advantageous to facilitate transfers using more off-street transfer facilities. Such facilities do not have to be large scale projects but could mirror the transfer location at Coastland Mall, which is conveniently located off a feeder road with easy access to and from US 41. This location also benefits from a bus bay and pedestrian crossing signal. Timed transfers could be encouraged with wait times built into the schedule to accommodate late or early arrivals. An initial step includes a more detailed review of potential off-street transfer locations in and around the Golden Gate Community Center and at Creekside.



Coastland Mall Transfer Location

Bus Stops in Right Hand Turn Lanes

One of the most significant issues raised by operators during the operator interviews was the practice of locating bus stops in right turn lanes. Based on their feedback, the COA team took a closer look at several locations and determined that there are operational challenges resulting from this practice.

CAT prioritizes placement of bus stops in right hand turn lanes for several reasons. Two (2) of these reasons include the following:

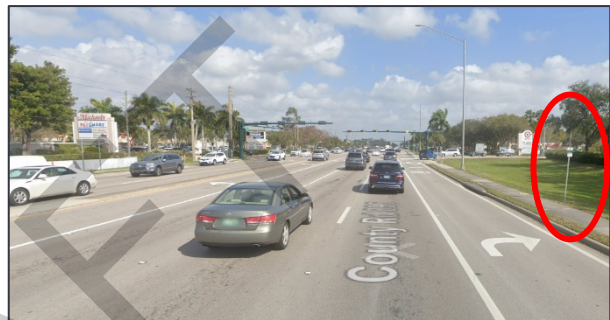
- ◆ Moving the bus out of the way of traffic reduces the chances of rear-end collisions.
- ◆ Right hand turn lanes serve as de facto layover points for any buses running early. Buses can idle in the right-hand turn lane until a departure time that aligns with the published schedule.

This practice, instituted primarily for safety reasons, creates spillover effects into aspects of the service that are apparent only after a closer examination. Some of these spillover effects are

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experienced directly by operators and others have impacts to other areas of the operation. Several are described below.

- ◆ Operators indicate difficulty merging back into traffic. Despite rear blinking light “Yield for Bus” indicators on every bus, other vehicular traffic sometimes fails to yield to buses and are focused on moving ahead of buses attempting to merge.
- ◆ Merging is further aggravated at some locations where operators must cross multiple through lanes to enter a left-hand turn lane. Multiple operators raised this particular concern and posed it as a serious safety issue. Several specific locations include the following:
 - Westbound Stop #90 on Immokalee Road and Goodlette-Frank Road
 - Eastbound Stop #494 at Pine Ridge Road Crossing Shopping Center
 - Southbound Stop #182 on Santa Barbara Boulevard and Devonshire Boulevard
- ◆ Over time, the stop placement policy has become a tool for meeting OTP standards, as OTP measurement includes on-street timepoints.
- ◆ Near-side bus stop locations circumvent opportunities to cross signalized intersections during a green light signal phase. The result is two (2) delays in bus travel time at the same location; once to pick up passengers prior to crossing the intersection and a second to wait for a red light signal to change to green. Far-side stops allow the bus the opportunity, when possible, to travel through the intersection and pick up passengers on the far-side of the intersection rather than get stuck behind a red light signal after passengers have boarded.
- ◆ Near-side bus stops preclude the opportunity for Transit Signal Priority (TSP). If TSP is implemented in the future, the gains offered by such a system will be limited if the policy for bus stop placement in right hand turn lanes remains.



Pine Ridge Road Crossing Shopping Center

Over the last several years, CAT has made significant progress in improving bus stops and bringing them into ADA compliance. Given that effort and outlay of funds, it would not be prudent to initiate a wholesale change to the investments that have already been made. A reasonable approach would be to initially address the operator safety concerns and then transition to far-side stops, over time, beginning with those stops which are currently unimproved. Other stop modifications could be addressed as part of new system improvements and service expansions.

VI. Implementation Plan

Implementation of the service modifications identified in the COA are organized into three (3) phases: near-term, short-term, and mid-term. As presented, the near-term service network results in a cost neutral implementation which is consistent with the objectives established for the COA at the onset of the project. The short-term network requires new investment as a result of an increase in frequency to several critical routes. The mid-term implementation phase requires a higher level of investment and is designed to build on COA and TDP service enhancement recommendations.

Each implementation phase is presented in this section along with a supporting graphic and a summary of the estimated change in revenue service hours and cost.

Near-Term (1 to 2 Years)

Near-term service enhancements are shown in Table 12 and the near-term service network is illustrated in Figure 32. As shown, the near-term service network consists of most of the service frequency, consolidation, and realignment modifications prepared through the COA process plus several additional modifications needed to approximate a cost neutral implementation in the near-term phase. Additional modifications include the following:

- ♦ **Elimination of Route 12B** – This daily AM “tripper” is proposed for discontinuation. It is considered a low productive bus trip and requires an additional bus for pullout. Concurrence for its discontinuation was received from Operation staff.
- ♦ **Addition of Route 24B** – The Route 24 operation will consist of a variation of COA Route 24 Alternative 1. Specifically, the modified Route 24 will operate between Government Center and the Walmart at Collier Boulevard, every 60 minutes using one bus add day. As a result, new service will be required to connect to Six L’s Farm. Route 24B will operate two trips daily, one AM trip and one PM trip, Monday through Saturday, between Government Center to Six L’s Farm Road.
- ♦ **Route 20/26 and Route 25 Weekday Service** – Service would be provided Monday through Friday only. The three routes are the lowest performing routes from among all of CAT’s fixed bus routes. Eliminating Saturday service from the COA alternatives proposals further eliminates approximately 1,500 annual service hours.

In addition to the frequency improvements on key routes and the elimination of unproductive service in other areas, the near-term network offers the following operational advantages:

- ♦ Timed transfers (i.e., every 60 minutes) at the CAT Government Transfer Center between core network service routes, Routes 11 and 24.
- ♦ Safer transfer connections at the Coastland Center Mall for bus riders connecting to and from the Route 11.
- ♦ East-West connectivity in the north County between Creekside and the Collier Fairgrounds via Immokalee Road.
- ♦ Mid-day connectivity between Marco Island and Immokalee.
- ♦ All day service on several routes; Routes 21, 25, and Routes 20/26.

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- ◆ Elimination of duplicative routes by way of service consolidation (i.e., Routes 20 and 26, Routes 19 and 28)
- ◆ Facilitation of “one seat-rides” throughout Immokalee.
- ◆ Service scaled to demand at Six L’s Farm.

Several actions will need to be performed prior to implementation of these service changes. Each of these actions along with a status is described below.

- ◆ **Title VI Analysis** – Under FTA’s Title VI requirements for grant fund recipients, transit agencies must establish a policy that defines a major service change. Additionally, grant fund recipients must also define an adverse impact created by a major service change. The CAT Title VI Program defines a major service change as the following:

“Proposed service expansions and reductions including all routing and timetable changes remaining in effect after 12 months that exceed 25 percent of the current configurations.”

A review of the COA near-term and short-term service changes was performed to determine if the 25 percent threshold had been reached. The results of the review indicate that only four (4) percent of the existing network will experience a discontinuation in service as a result of implementation of the near-term and short-term service networks. The directional miles of existing service were used as the basis of the review. Figure 31 illustrates segments of the existing route network that will no longer have any fixed-route service.

- ◆ **Public Outreach** – It is recommended that CAT take on a broad public education and outreach campaign to inform existing bus riders regarding the new service changes. Lead time for many of these changes should consist of 60 to 90 days in order to reach the most critical riders. In addition to the traditional methods of communication (i.e., website, posting of notifications at bus stops and stations, etc.), effort should include placing CAT staff on buses and at stations in the weeks prior to service implementation in order to disseminate information regarding the service changes.
- ◆ **Coordination w/ LeeTran** – Over the course of the COA development, LeeTran staff indicated the desire to modify the operation of the US 41/Tamiami Trail service that currently connects the two counties, the Route 600/LinC. Timed connections at the Creekside Transfer Center would facilitate movement between the two counties for bus riders. Ideally, at least one (1) early AM and one (1) PM connection should be developed to support work trips for commuters.

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Table 12: Near-Term Service Changes

Service Alternative	Change in Revenue Hours	Change in Operating Cost
Route 11	2,200	\$191,290
Route 12B	(350)	(\$30,670)
Route 17/18	(3,500)	(\$304,325)
Route 19/28	-	\$ -
Route 20/26	-	\$ -
Route 21	1,500	\$130,425
Route 22/23	-	\$ -
Route 24	-	\$ -
Route 24B	900	\$80,100
Route 25	-	\$ -
Route 27	(600)	(\$52,170)
<i>Net Change</i>	150	\$14,650

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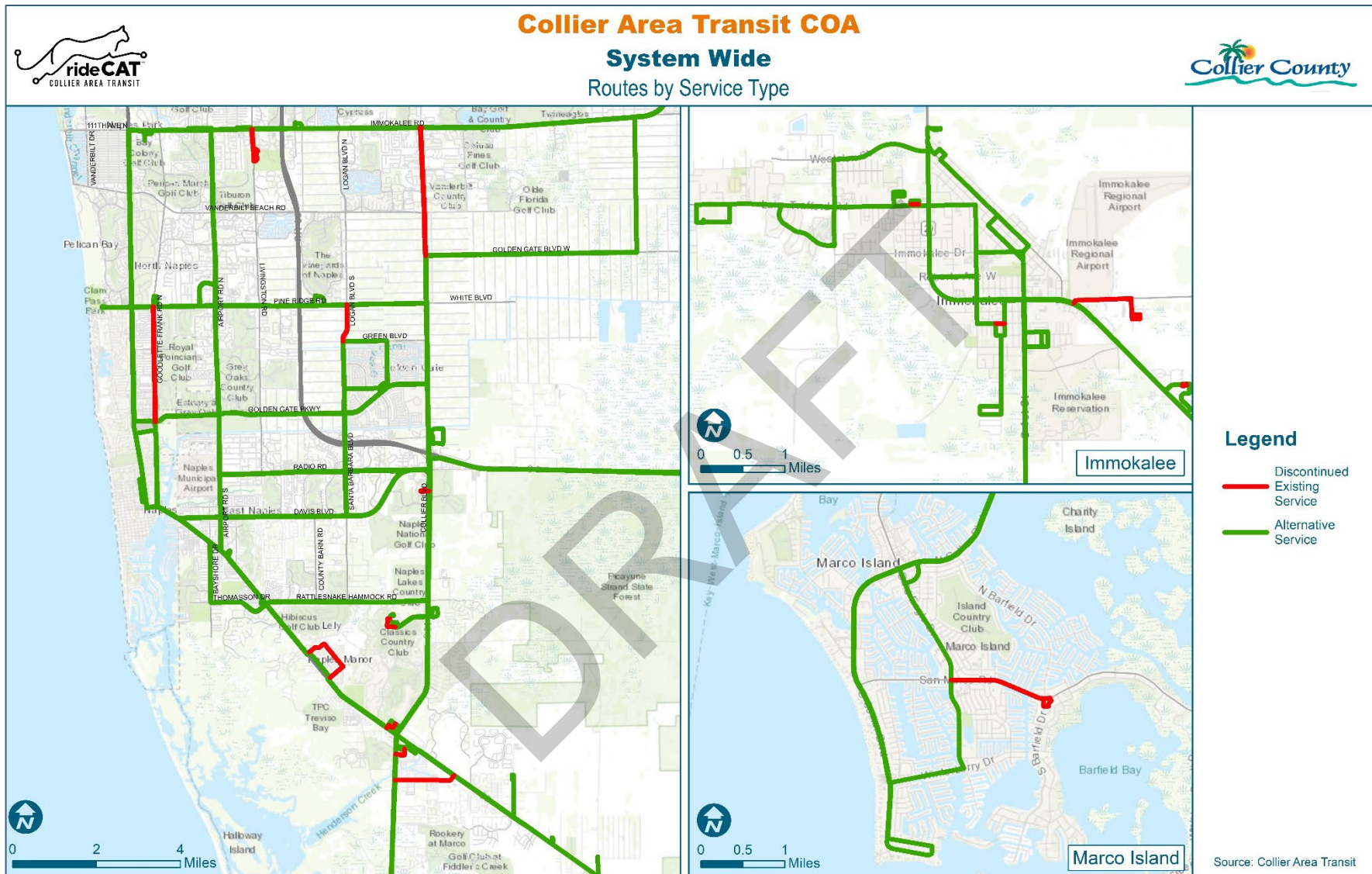


Figure 31: Service Change Review

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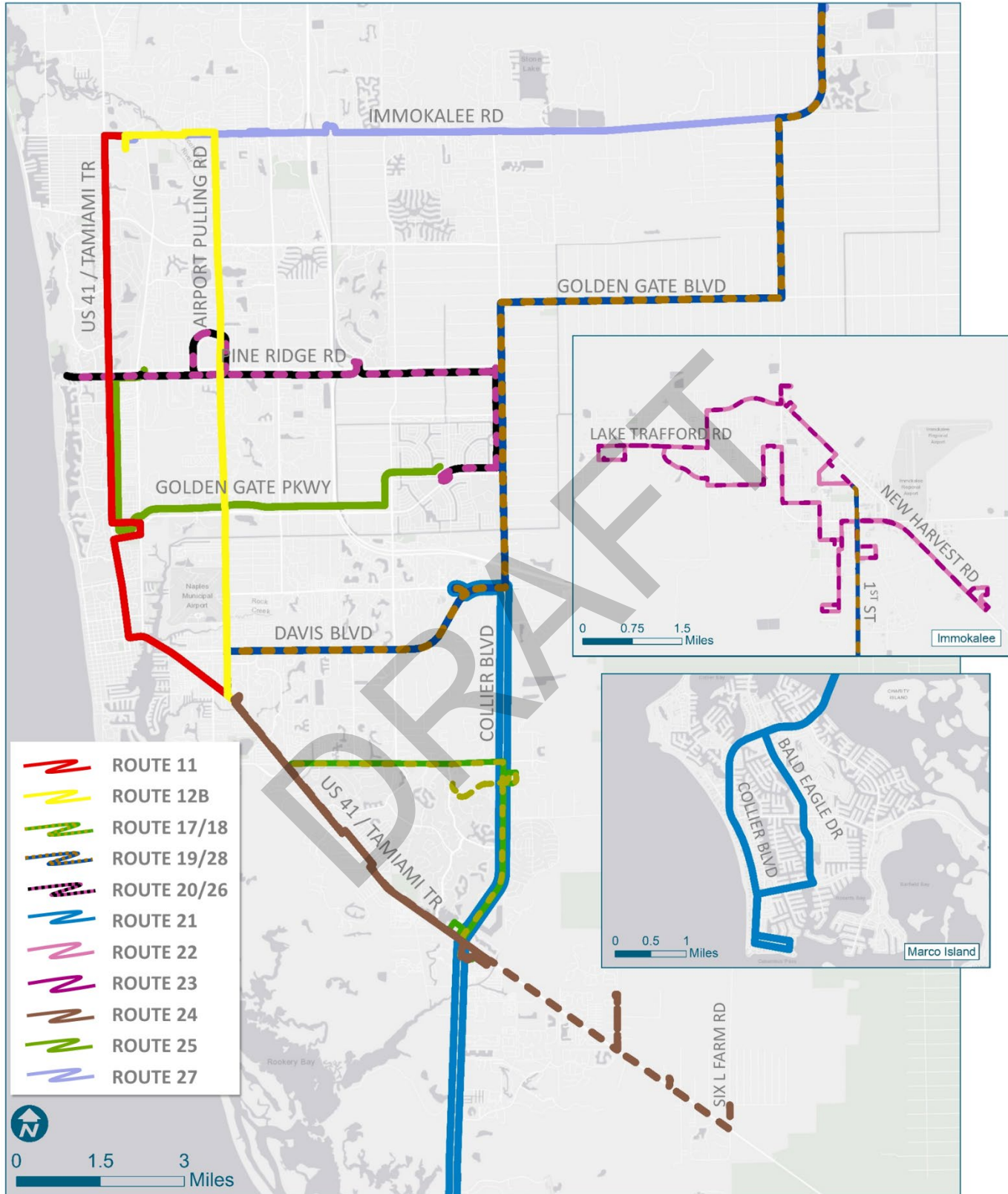


Figure 32: Near-Term Service Enhancements

Short-Term (3 to 4 Years)

Short-term service enhancements are shown in Table 13 and the short-term service network is illustrated in Figure 33. Two of the COA alternatives not included in the near-term recommendations are included in the short-term and they include the service frequency enhancement to Route 15 and the realignment of Route 16 to Davis Boulevard. These two alternatives are implemented together as the Route 15 service frequency enhancement results in an improved service on Radio Road. To eliminate duplication in service on Radio Road by the Route 16, the Route 16 is modified to operate on Davis Boulevard. The frequency enhancement requires additional investment and an additional vehicle in peak operation for the Route 15.

Peak service operations between Immokalee and Government Center are also added to the short-term phase and are reflected in Table 13 as Route 19/28 Express. These services mirror current COVID-related express bus trips being offered by CAT and consist of two AM peak service trips and one PM peak service trip, Monday through Friday. Additionally, one AM peak service trip is added to Saturday. CAT added these bus trips to support social distancing efforts during the pandemic, but instead the service is satisfying a previous and substantial unmet demand and the vehicles now operate at almost full capacity. This improvement has been added to the short-term phase because the Federal CARES Act funding currently being used to fund the express services is anticipated to run out within the short-term timeframe, 3 to 4 years.

Key advantages offered by this service change:

- ♦ Timed transfers (i.e., every 60 minutes) between the major circulator route connecting Golden Gate City to the CAT Government Center Transfer Terminal. This would ensure seamless connections with core network routes, Routes 11 and 24, throughout the entire day.
- ♦ Additional service on Davis Boulevard will supplement operations via the Route 19/28 consolidation.
- ♦ Enhanced commuter and express service connections between Title VI communities in Immokalee and work, medical, and education related activities in Naples.

No new Title VI review will need to occur as the Route 15 and 16 changes were included in the Title VI review summarized under the near-term service changes description.

Table 13: Short-Term Service Changes

Service Alternative	Change in Revenue Hours	Change in Operating Cost
Route 15	3,800	\$330,410
Route 16	-	\$ -
Route 19/28 Express	1,500	\$130,990
<i>Net Change</i>	<i>5,300</i>	<i>\$461,400</i>

COLLIER COUNTY AREA TRANSIT COMPREHENSIVE OPERATIONS ANALYSIS

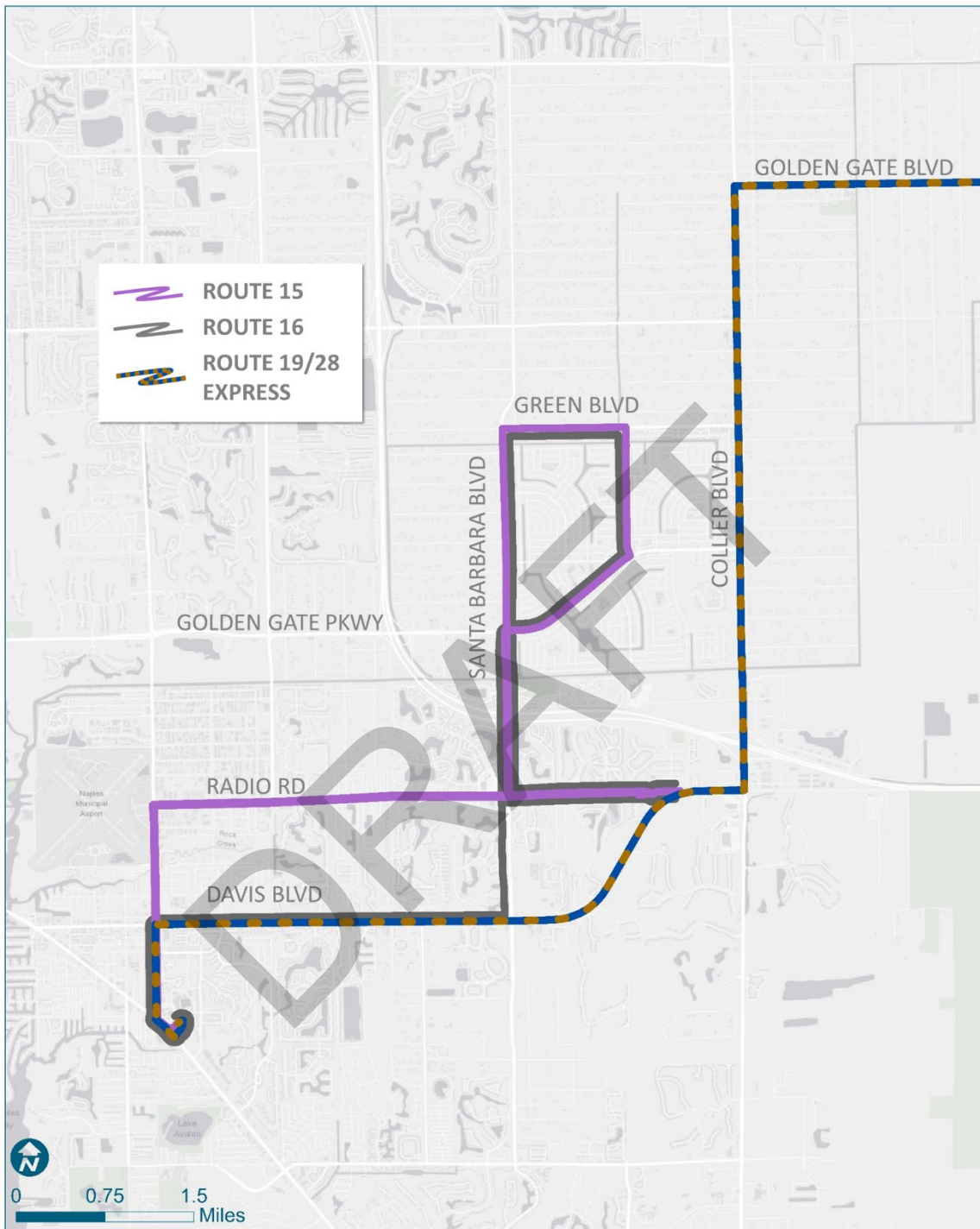


Figure 33: Short-Term Service Enhancements

Mid-Term (5+ Years)

Table 14 identifies level of service improvements for the COA mid-term phase. The enhancements shown include the final COA frequency enhancement alternative, Route 12 to every 60 minutes, and one level of service enhancement that is consistent with TDP recommendations, additional peak hour trips for Route 121.

Route 121 is added to the mid-term as the route operates as the second most productive route in the CAT fixed-route network based on passenger trips per revenue hour. No changes to service alignments are proposed for the mid-term network.

Level of service enhancements such as what are included in the mid-term phase are often the most expensive service enhancements to implement and sometimes require expansion of the fleet. Consequently, **frequency enhancements in the mid-term phase should be determined upon review of productivity as defined in Section III, Performance Standards.** By following those performance evaluation guidelines, it will be possible to identify other fixed-route services, or previously improved services, that are eligible for enhancement. Justifications for specific level of service improvements identified in the TDP can also be developed. Those TDP level of service improvements include improving Routes 11, 13, and 14 to every 30 minutes, among others. Furthermore, periodic reassessment of service is a routine practice for transit agencies that will support informed decisions about the reallocation of resources to more ridership productive areas of the County.

Table 14: Mid-Term Service Changes

Route	Improvement	Change in Revenue Hours	Change in Operating Cost
Route 12	Enhance frequency to every 60 minutes all day	3,000	\$260,850
Route 121	Add two (2) AM and two (2) PM commuter express trips, Monday through Sunday	2,800	\$243,100
<i>Net Change</i>		5,800	\$603,950

COLLIER COUNTY AREA TRANSIT COMPREHENSIVE OPERATIONS ANALYSIS

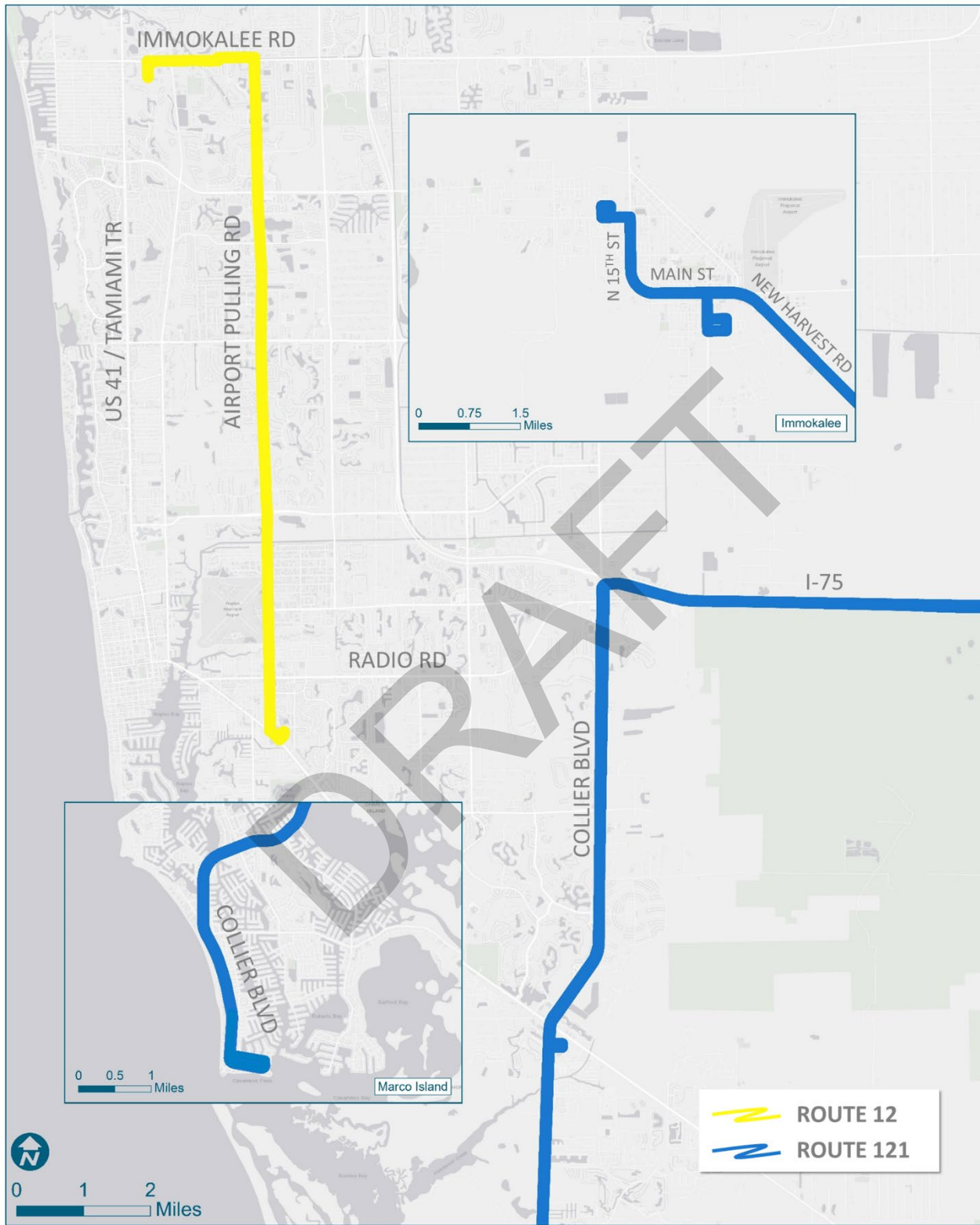


Figure 34: Mid-Term Frequency Enhancements

COLLIER COUNTY AREA TRANSIT COMPREHENSIVE OPERATIONS ANALYSIS

Conclusion

Regularly performed COA's allow transit agencies to "reset" and evaluate long-standing service operations. This is important given the priority of the day-to-day operation. Additionally, the ability to adapt to a changing operating environment is important as the community grows and as rider demographics change. While the nuts and bolts service enhancements in the COA may not sound glamorous, they are meaningful to the everyday user and serve as the foundation on which transit dependent users base their employment decisions, school choices, and daily habits.

This COA accomplishes the objectives set forth at the onset of the project, a focus on the short-term and a minimal impact on the operating budget. It is the result of a concerted effort between CAT staff, the COA consultant team, and feedback from bus riders, including the PTAC. The result is an actionable and phased implementation plan that is inclusive of both service and policy changes.





COLLIER COUNTY AREA TRANSIT COMPREHENSIVE OPERATIONS ANALYSIS

Collier County Area Transit Comprehensive Operations Analysis

Appendix

DRAFT













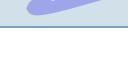




COMPREHENSIVE OPERATIONS ANALYSIS (COA) STUDY

We need your input!

CAT is looking for input on the following service changes. **Match the recommended changes on the list below to the illustrations on the maps.** Use the number ranges to let us know if you support the service changes.

Service Recommendation		Strongly in Favor	Neutral	Not at all in Favor	
Route 11	 Improved Frequency on US 41 between Government Center to Creekside, every 1 hour	5	4	3	2 1
Route 12	 Improved Frequency on Airport Pulling Road between Government Center to Creekside, every 1 hour	5	4	3	2 1
Route 15	 Improved Frequency on Radio Road to Golden Gate, every 1 hour	5	4	3	2 1
Route 16	 New Service on Davis Boulevard to Golden Gate, every 105 minutes	5	4	3	2 1
Route 17/18	 Combine Routes. Service in both directions on Rattlesnake Hammock Road and Collier Boulevard, every 90 minutes	5	4	3	2 1
Route 19/28	 Combine Routes. All day service between Government Center and Immokalee	5	4	3	2 1
Route 20/26	 Combine Routes. Service on Pine Ridge Road and Collier Blvd, every 90 minutes	5	4	3	2 1
Route 21	 Realignment to transit station at Radio Rd, every 2 hours	5	4	3	2 1
Route 22/23	 Two-Way Loop around Immokalee, every 1 hour	5	4	3	2 1
Route 24	 Improved Frequency service on US 41 between Government Center and Wal-Mart, every 30 minutes	5	4	3	2 1
Route 24	 Improved Frequency service on US 41 between Government Center and Six L Farm Rd, every 45 minutes	5	4	3	2 1
Route 25	 Realignment to US 41 via Golden Gate Parkway, every 75 minutes	5	4	3	2 1
Route 27	 Realignment to Immokalee Rd between Creekside and County Fairgrounds, every 105 minutes	5	4	3	2 1

