Bay Town Trolley Comprehensive Operations Analysis

Executive Summary

September 2021

CHART OUR COURSE
BAY COUNTY TRANSIT SURVEY

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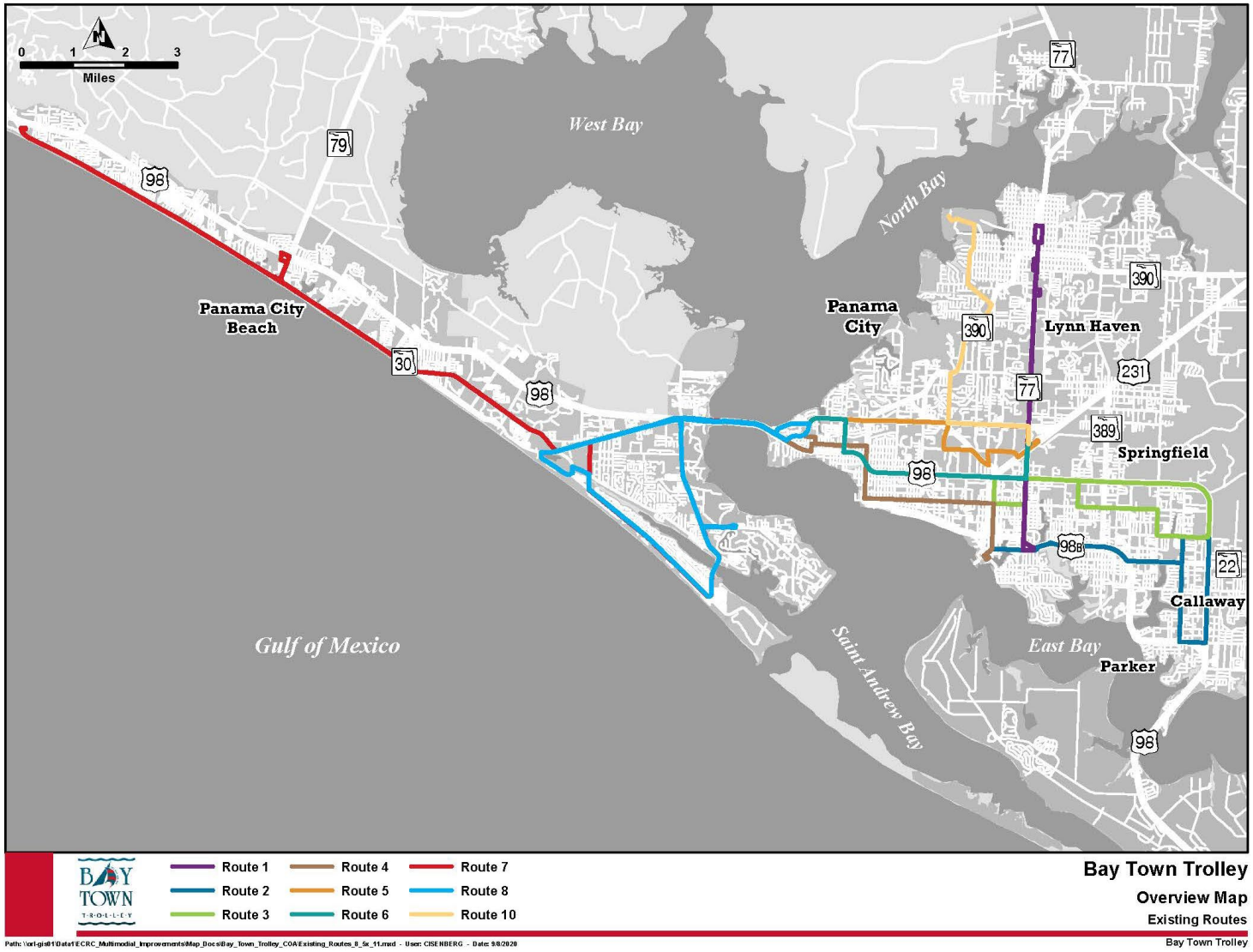
1 INTRODUCTION

In late 2019, the Bay County Transportation Planning Organization (TPO) initiated a Comprehensive Operations Analysis (COA) and Transit Development Plan (TDP) Major Update. The purpose of this joint report was to analyze the current Bay Town Trolley system (Figure 1) to determine whether Bay Town Trolley has the resources it needs to meet its mission, identify changes and/or additional resources, and propose a plan for the future. In addition, the Florida Department of Transportation (FDOT) requires transit agencies, such as Bay Town Trolley, adopt a TDP Major Update every five years to receive operating assistance from the State Transit Block Grant.

"BAY TOWN TROLLEY IS HERE TO PROVIDE YOU WITH AN AFFORDABLE, RELIABLE, AND SAFE WAY TO TRAVEL IN BAY COUNTY."

The COA portion of this project started in January 2020 and concluded September 2020. The analysis and recommendations from the COA fed into the development of the TDP. The TDP was completed in June 2021. The purpose of this Executive Summary is to summarize COA portion of the report for discussion. It recommends changes to the Bay Town Trolley routes to improve on-time performance, decrease travel time, improve access to key destinations, and provide the foundation for the expansion of the system through the TDP. The recommended launch date for the new route structure is **January 2022**.

Figure 1: Current Bay Town Trolley System



2 COA DEVELOPMENT

2.1 SYSTEM ANALYSIS

To get an understanding of the Bay Town Trolley system and see where potential issues reside, the COA began with thorough analysis of each route. This review consisted of riding every route, assessing the performance, and mapping the population and employment centers served. The ride-alongs focused on looking at where on each route the bus was experiencing delay (congestion, high ridership areas, unprotected left turns, etc.) that would affect its performance and where potential safety issues exist for the customers. Since the ride-alongs only covered one trip, the findings were shared with the operators to confirm and to identify areas of concern missed by the collection team. Ridership at each bus stop was also analyzed as part of the route profiles. **Figure 2** and **Table 1** provides an example of the information collected.

Figure 2: Sample Route Profile

ROUTE 1: LYNN HAVEN & PANAMA CITY MALL

Characteristics[1]	Weekday	Saturday
Span of Service	6:00 am – 8:00 pm	7:00 am – 8:00 pm
Frequency	Once every hour	Once every 2 hours
Cycle Time	60 min	60 min
Route Distance	14.5 miles	14.5 miles
Avg Operating Speed	14.5 mph	14.5 mph
Number of Buses	1	1

Operating Statistics	Weekday	Saturday
Round Trips per Day	14	7
Annual Revenue-Miles	47,088	4,878
Annual Revenue-Hours	3,514	364
Annual Deadhead Hours	125.5	13
Annual Deadhead %	3.4%	3.4%

Demographic Data[3]	Within ¼-mile of stops		
Population	6,616	Seniors	1,155
Jobs	9,508	Youth	1,428
Poverty	1,321	W/ Disabilities	3,821
Minority	2,459	No Vehicles	282

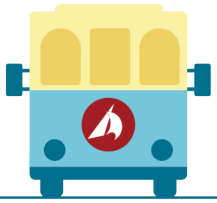
Service Productivity	Weekday	Saturday
Avg Daily Ridership	170	57
Riders/Revenue-Hour	12.12	8.10
Riders/Revenue-Mile	0.90	0.60
Riders/Round Trip	12.12	8.10

Financial Performance	Overall	Weekday	Saturday
Avg Daily Revenue	$137.4	$164.9	$55.3
Subsidy/Revenue-Hour	$68.1	$67.6	$69.2
Subsidy/Revenue-Mile	$5.1	$5.0	$5.2
Subsidy/Round Trip	$66.6	$65.3	$69.2
Daily Operating Cost	$894.7	$1,078.7	$539.4
Cost/Rider	$7.1	$6.3	$9.5
Farebox Recovery Ratio	14.0%	15.3%	10.3%
Subsidy/Rider	$6.2	$5.4	$8.5

On-Time Performance[4]	Overall			Weekday			Saturday		
Time Period	*Early*	*On-Time*	*Late*	*Early*	*On-Time*	*Late*	*Early*	*On-Time*	*Late*
Overall	4.4%	42.2%	53.5%	4.3%	42.0%	53.7%	4.6%	43.9%	51.5%
AM Peak	5.2%	50.9%	43.9%	4.8%	58.2%	36.9%	9.0%	75.4%	15.7%
Midday	2.2%	33.3%	64.5%	2.1%	41.7%	56.2%	3.3%	31.2%	65.5%
PM Peak	4.3%	45.4%	50.3%	4.2%	53.4%	42.4%	6.3%	46.8%	46.8%

TOP 10 STOPS	Avg Weekday Boardings[2]
MLK & 9th St. (#250)	17
Hwy. 77/Ohio Ave. & Walmart (#290)	14
MLK & 7th St. (#283)	11
Florida Ave. & 9th St. (#112)	8
Florida Ave. & 16th St. (#131)	8
Hwy. 77/Ohio Ave. & 24th St. (#153)	8
MLK & 9th St. (#286)	8
Hwy. 77 & Baldwin Rd. (#298)	8
Hwy. 77 & 25th St. (#287)	6
Hwy. 77/Ohio Ave. & 17th St. (#342)	6

[1] Most characteristics are printed directly on the website of Bay Town Trolley. Cycle time is simply the time from the start of the first round trip to the start of the next (including interlines). Route distance was computed in the Optibus scheduling tool, and the speed then was calculated based on cycle time.
[2] Stop-level ridership data is based on random sampling in 2018/2019, calibrated to 2017 annual route-level weekday ridership volumes.
[3] Jobs information is from the Northwest Florida Regional Planning Model (NWFRPM), in which 2010 data is projected to 2017. All other demographics are from the 2017 American Community Survey (ACS) administered by the United States Census Bureau.
[4] On-time is defined as less than 1 minute early to less than 4 minutes late.

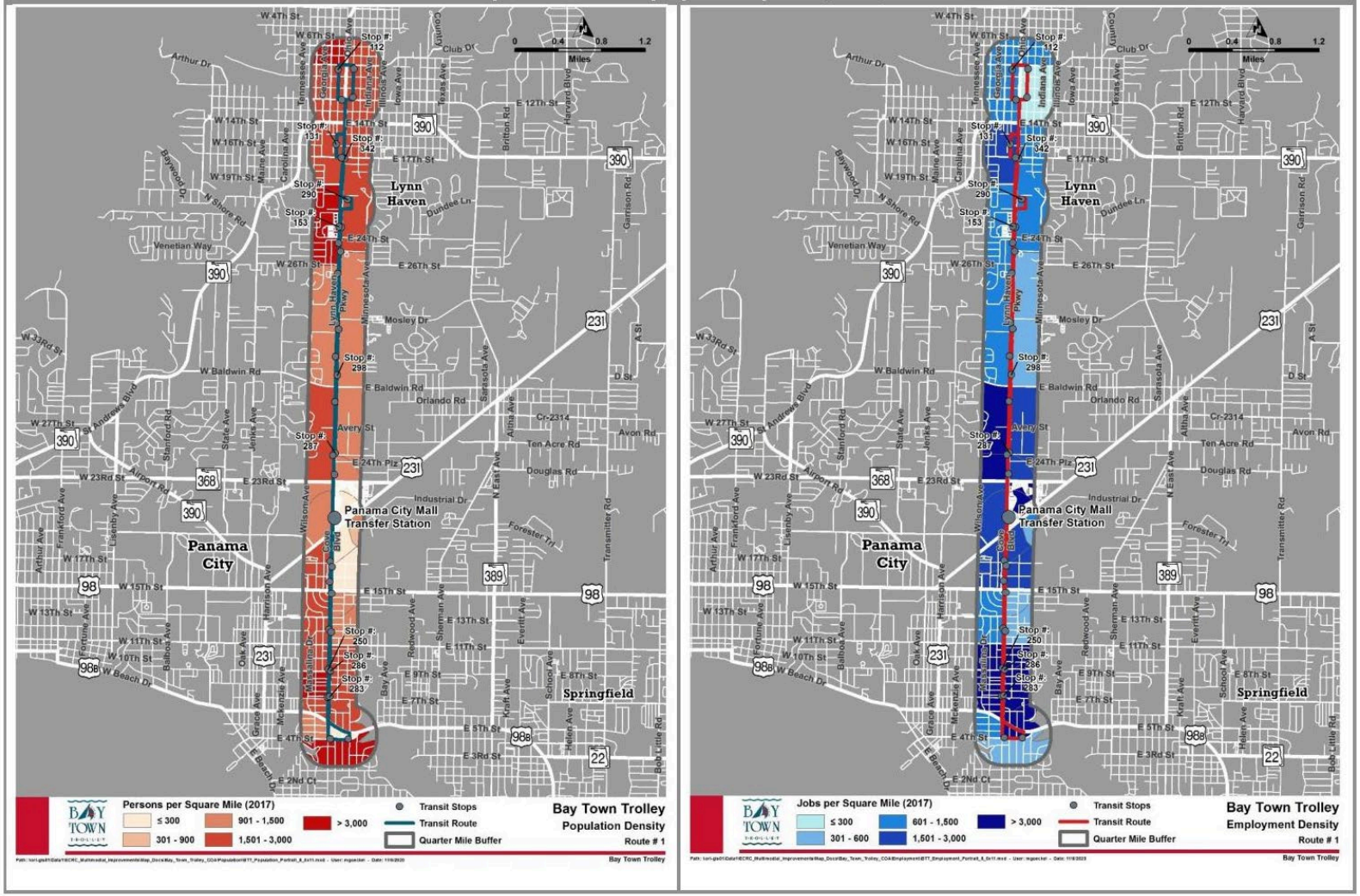


ROUTE 1 (LYNN HAVEN & PANAMA CITY MALL) RIDERSHIP[5]

[5] Stop-level ridership data is based on random sampling in 2018/2019, calibrated to 2017 annual route-level weekday ridership volumes.

ROUTE 1: LYNN HAVEN & PANAMA CITY MALL

Population and Employment by TAZ (2017)[6]



[6] Population and employment are from the transportation analysis zones (TAZ's) of the NWFRPM, projected from 2010 to 2017.

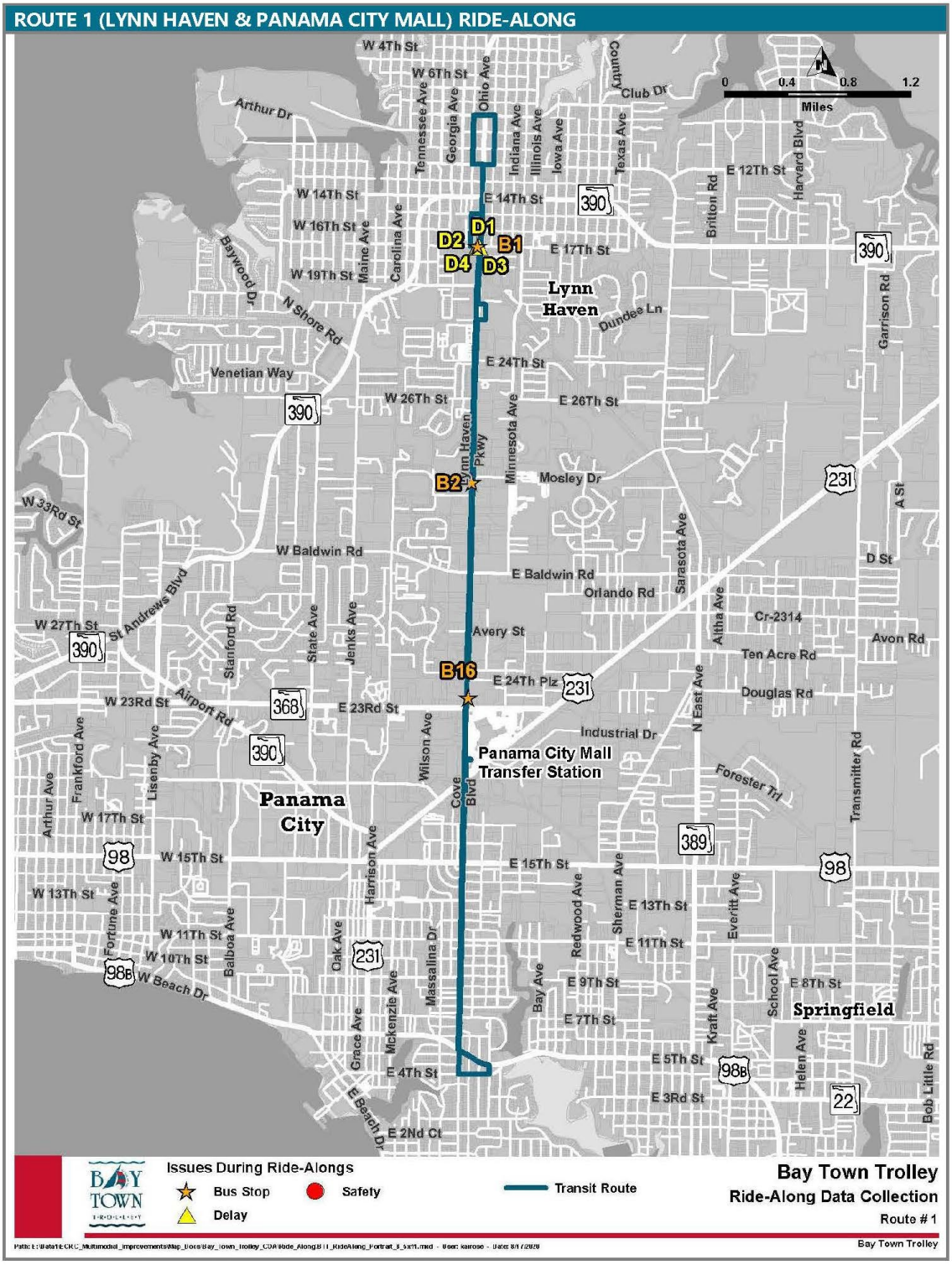

ROUTE 1 (LYNN HAVEN & PANAMA CITY MALL) RIDE-ALONG
W 4Th St
W 6Th St
Arthur Dr
Ohio Ave
Tennessee Ave
Georgia Ave
Indiana Ave
Illinois Ave
Iowa Ave
Texas Ave
Country Club Dr
0 0.4 0.8 1.2
Miles
E 12Th St
Harvard Blvd
Britton Rd
W 14Th St
E 14Th St
390
W 16Th St
Carolina Ave
Maine Ave
Baywood Dr
W 19Th St
N Shore Rd
D1
D2
B1
D4
D3
E 17Th St
Lynn Haven
Dundee Ln
Garrison Rd
Venetian Way
E 24Th St
W 26Th St
E 26Th St
Minnesota Ave
Lynn Haven Pkwy
B2
Mosley Dr
231
W 33Rd St
A St
W Baldwin Rd
E Baldwin Rd
Orlando Rd
Sarasota Ave
D St
St Andrews Blvd
W 27Th St
Stanford Rd
State Ave
Jenks Ave
Avery St
Altha Ave
Cr-2314
Ten Acre Rd
Avon Rd
B16
E 24Th Plz
W 23Rd St
Airport Rd
368
E 23Rd St
Douglas Rd
N East Ave
Industrial Dr
Wilson Ave
Panama City Mall
Transfer Station
Forester Trl
Transmitter Rd
Frankford Ave
Lisenby Ave
Arthur Ave
Panama City
Cove Blvd
W 17Th St
98
W 15Th St
E 15Th St
389
W 13Th St
Harrison Ave
Sherman Ave
Redwood Ave
E 13Th St
Everitt Ave
Fortune Ave
W 11Th St
Balboa Ave
E 11Th St
W 10Th St
98B
W Beach Dr
Oak Ave
Massalina Dr
Bay Ave
E 9Th St
E 8Th St
School Ave
Springfield
Mckenzie Ave
E 7Th St
Kraft Ave
Grace Ave
E 5Th St
Helen Ave
E 4Th St
E 3Rd St
22
Bob Little Rd
E Beach Dr
E 2Nd Ct
Issues During Ride-Alongs
Bus Stop
Safety
Delay
Transit Route
Bay Town Trolley
Ride-Along Data Collection
Route # 1
Bay Town Trolley

Table 1: Sample Ride-Along Data Collected

ROUTE 1 (LYNN HAVEN & PANAMA CITY MALL) RIDE-ALONG ISSUES		
Issue #	**Issue Type**	Issue Description
B1	Bus Stop	Bus driver was early
B2	Bus Stop	Two benches, with one not facing the street
B16	Bus Stop	Bus needed to divert from route to drop off wheelchair rider, as nearest bus stop was not ADA compliant
D1	Delay	Bicycle loading/unloading
D2	Delay	Bicycle loading/unloading. Congestion delay
D3	Delay	Traffic signal delay
D4	Delay	Traffic signal delay. Congestion delay
ROUTE 1 OPERATOR FEEDBACK		
	Delay	Intersection of 7th and Ohio
	Delay	Intersection of 12th and Ohio
	Delay	Lynn Haven Stops
	Delay	15th Street
	Safety	Low Stop Visibility

Table 2 presents the weekday ridership by route for comparison. This data was collected from on-board surveys and adjusted to pre-Hurricane Michael & COVID-19 levels.

Table 2: Weekday Ridership by Route Ranking

Weekday Ridership by Route		
Rank	**Route**	**Weekday Ridership**
1	7	723
2	3	321
3	5	267
4	4	249
5	2	249
6	6	214
7	1	170
8	8	43

2.2 INITIAL PUBLIC ENGAGEMENT

The Initial public engagement for the COA focused on surveying existing riders and talking to stakeholders to ascertain how well the current transit system met their needs or the needs of their respective municipalities/organizations. The results of engagement are described below.

2.2.1 RIDER SURVEY

To obtain feedback on the current system, the team launched rider-focused activities aimed at gathering feedback about existing conditions of the system. To supplement one-on-one interactions and onboard rider surveys, a website landing page was created with a digital survey component. To promote the digital survey, various tactics were deployed, including organic social media, paid online media, and public relations tactics. The ridership survey was live online for eight weeks from May 18th to July 20th, 2020. In-person surveys were distributed July 6th through July 8th, 2020. Overall, these rider-focused efforts were successful in garnering:

Total Phase 1 Impressions across Platforms: 150,708

Total Visits to the Campaign Website: 834

Total Rider-Survey Button Clicks: 160

Total Rider-Survey Responses Received: 123

Figure 3 through **Figure 7** present those results that indicated important trends and observations of the current system.

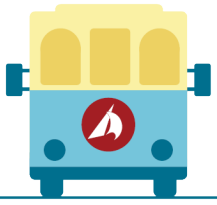


Figure 3: How often do you ride?

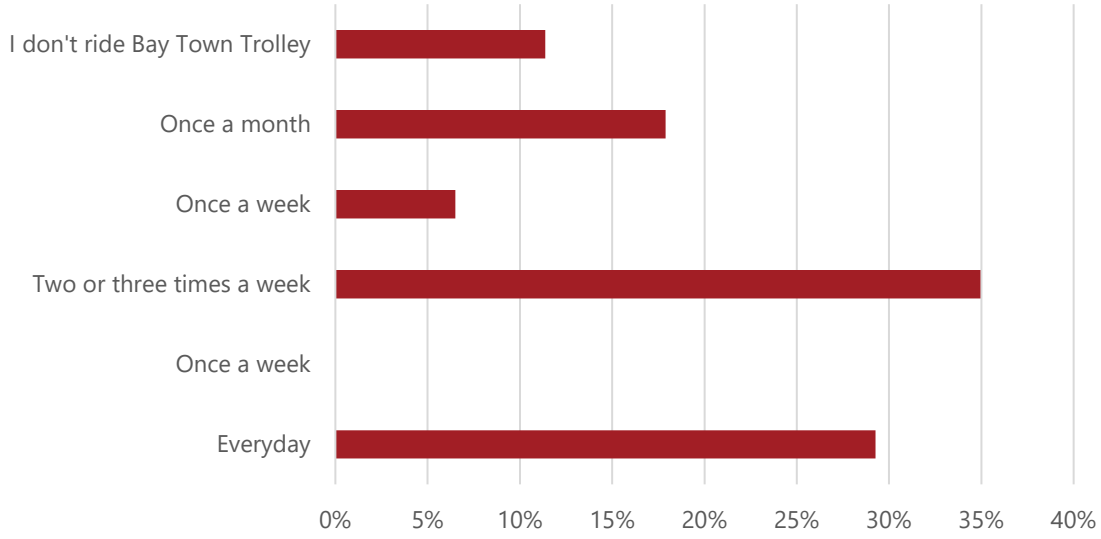


Figure 4: What route do you use most frequently?

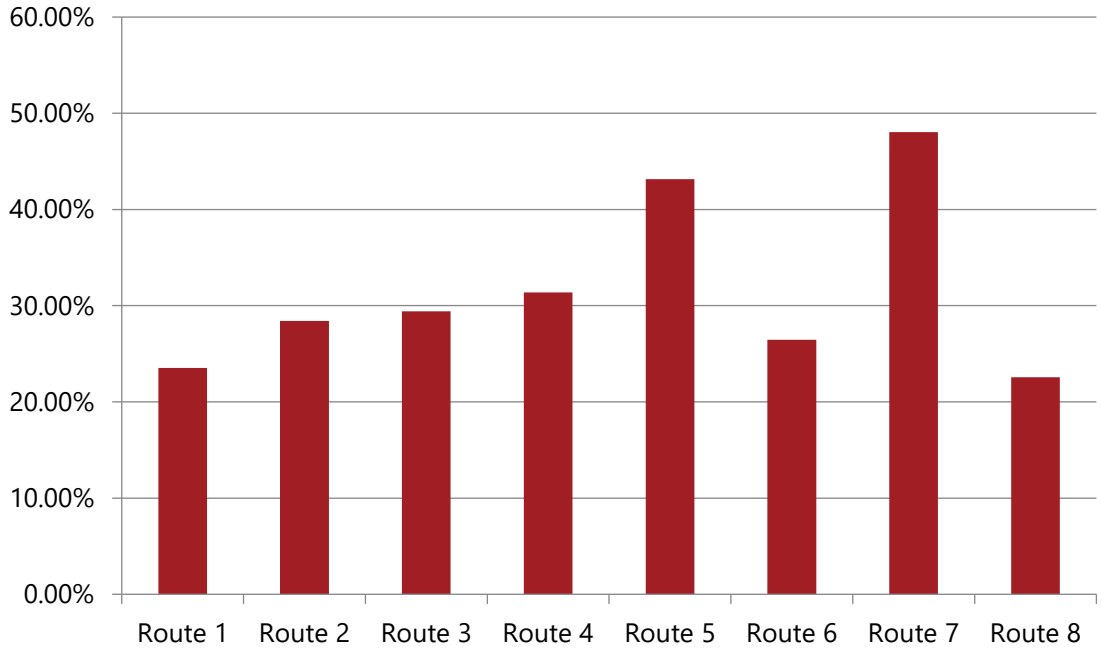


Figure 5: What is your most common origin/destination?

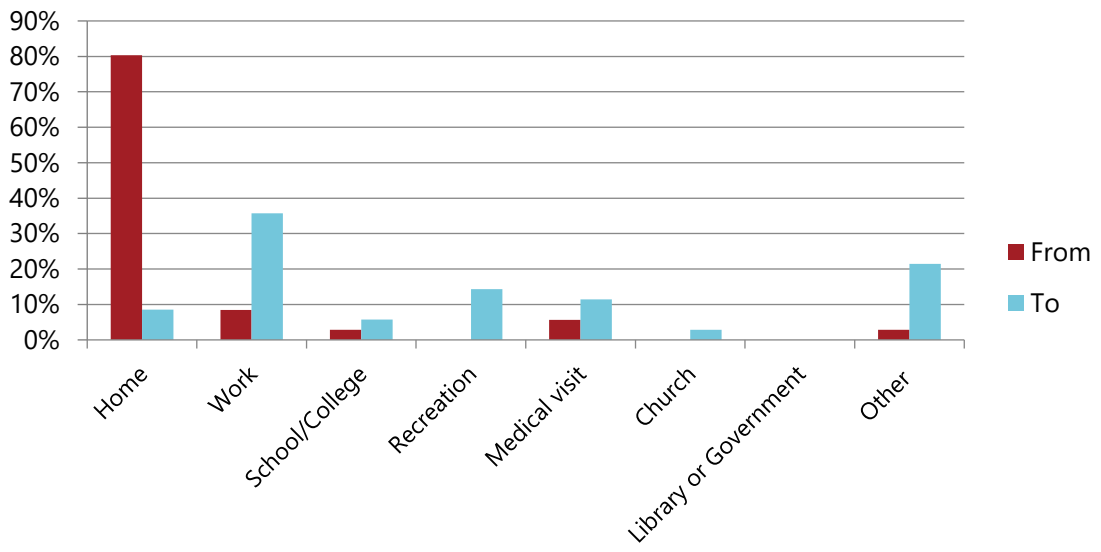


Figure 6: Why do you ride the bus?

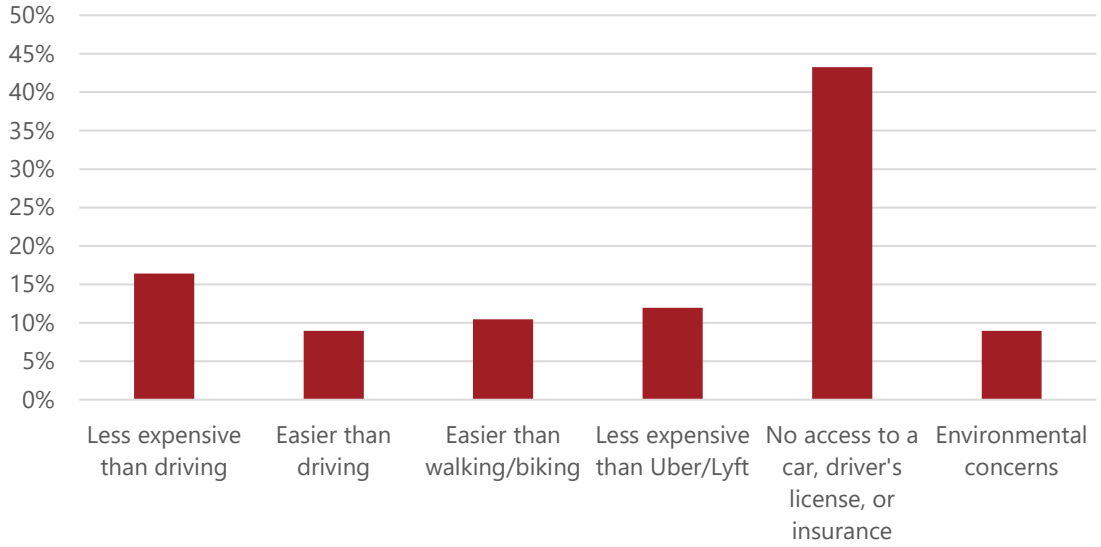
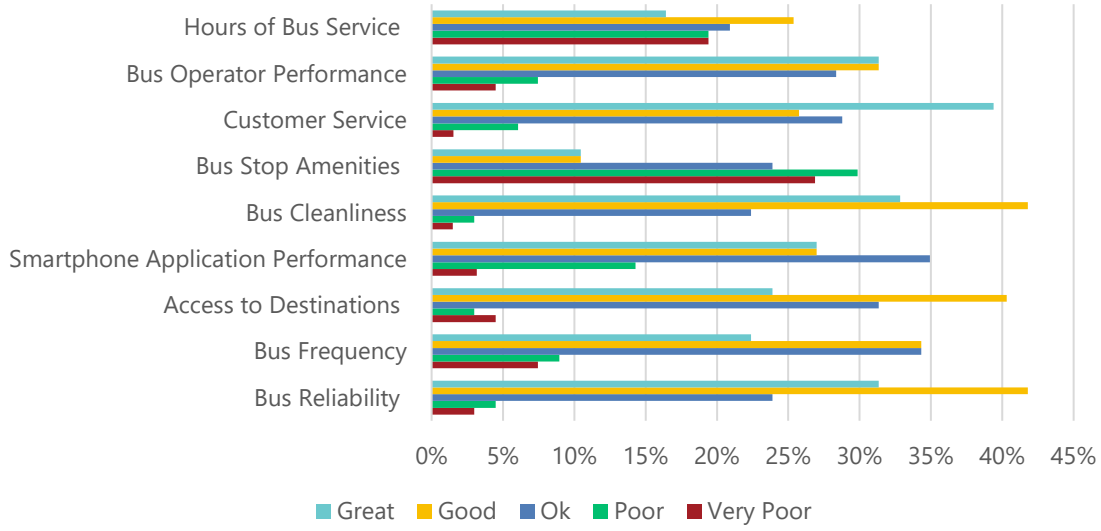


Figure 7: What is your satisfaction level?



2.2.2 STAKEHOLDER OUTREACH

Interviews were conducted with stakeholders in the service area and included representatives from both the public and private sectors. The Interviews focused on current perception of Baytown Trolley within the community. The stakeholders interviewed included the following representatives

- Mayor Ralph Hammond, Springfield
- Mayor Pamn Henderson, Callaway
- Mayor Rich Musgrave, Parker
- Ben Janke, Economic Development Director, City of Lynn Haven
- David Campbell, Community Redevelopment Agency Manager, The City of Panama City Beach
- Kelly Jenkins, Public Works Director, The City of Panama City Beach
- Keith Bryant, Traffic Engineering Manager, Bay County Public Works
- Melissa Lavender, Vice President of Student Affairs, Gulf Coast State College
- Chief Barry Roberts, Springfield Police Department
- Beverly Bond, Nurse Practitioner
- Toni Shamplain, President, Florida Redevelopment Association

2.2.2.1 STAKEHOLDER QUESTIONS

1. What is the perception of transit's role in/for your community?
2. How much awareness of and support for transit is there in the community? Have those levels changed in the last few years?

3. What do you believe are the top three benefits of the Bay Town Trolley? How can we capitalize on those benefits to improve ridership/public support of the system?
4. Do you think Bay Town Trolley is effectively servicing the residents of your community? Why or why not?
5. What would you say are the major challenges for Bay Town Trolley when it comes to supporting residents, employment base, and the visiting public?
6. Should Bay Town Trolley be looking at new areas for transit service or should it concentrate on areas with existing service?
7. How should Bay Town Trolley be involved in the growth and development of your community/organization?

2.2.2.2 RESULTS

- There are concerns about the safety of Sherman Avenue.
- The perception among stakeholders is that there is room for improvement regarding on-time performance, reliability, and frequency.
- There are funding concerns for those who do not feel their areas have high levels of ridership.
- Stakeholders agree that one of the greatest benefits of Bay Town Trolley is affordability. Other benefits included cleanliness, access, and hours of operations. To capitalize on these benefits and improve public support, advertising and rejuvenation should take place.
- Increased frequencies and service reliability were deemed as a greater importance than expanding the current system.

3 SCENARIO ANALYSIS

Once the route analysis and the feedback from the public was complete, an analysis of route changes to improve efficiency measures was performed. This analysis ran various scenarios through a transit scheduling tool to forecast the outcomes, benefits, and drawbacks of each of the eight possible alternatives. Changes are proposed for all existing routes in the Bay Town Trolley system. The changes are based on a review of on-time performance, existing demand, opportunities to streamline service, and opportunities to increase connections with existing service levels. For Routes 1 and 7, which are consistently late, shortening the route is proposed. Parts of these routes losing service would instead be served by a rerouting of other routes. Routes that often run early, such as the 3, 4, and 6, would be lengthened. The existing system treats the Marina Civic Center as a transfer hub. However, considering the reduction of activity in that area after Hurricane Michael, it may make more sense simply to have service stop be a spur or to discontinue service entirely. Both options were explored. The results were presented to the Bay Town Trolley staff for consideration. The recommended route design is provided in **Figures 8 (Weekday)** and **9 (Saturday).**

Figure 8: Recommended Route Structure - Weekday

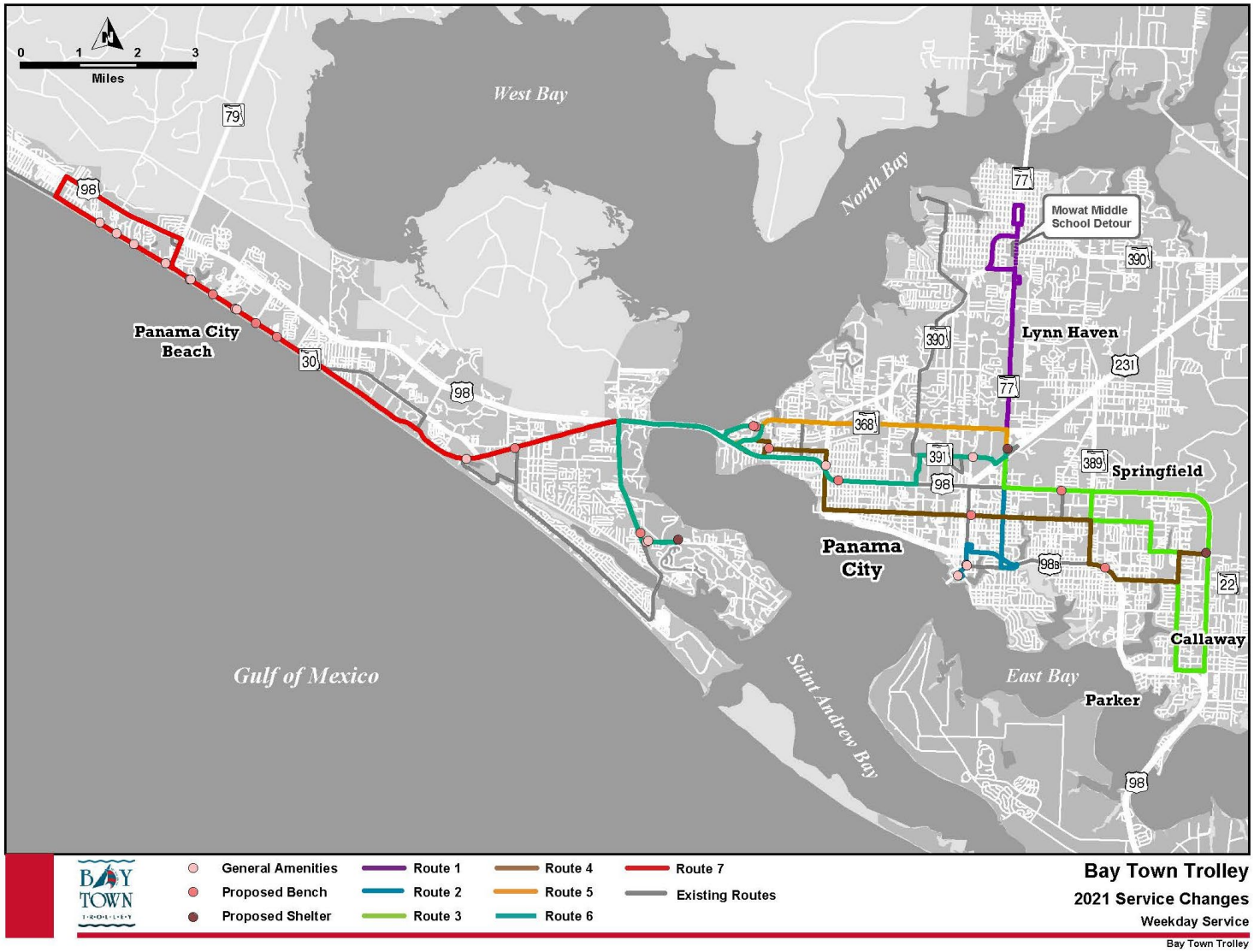
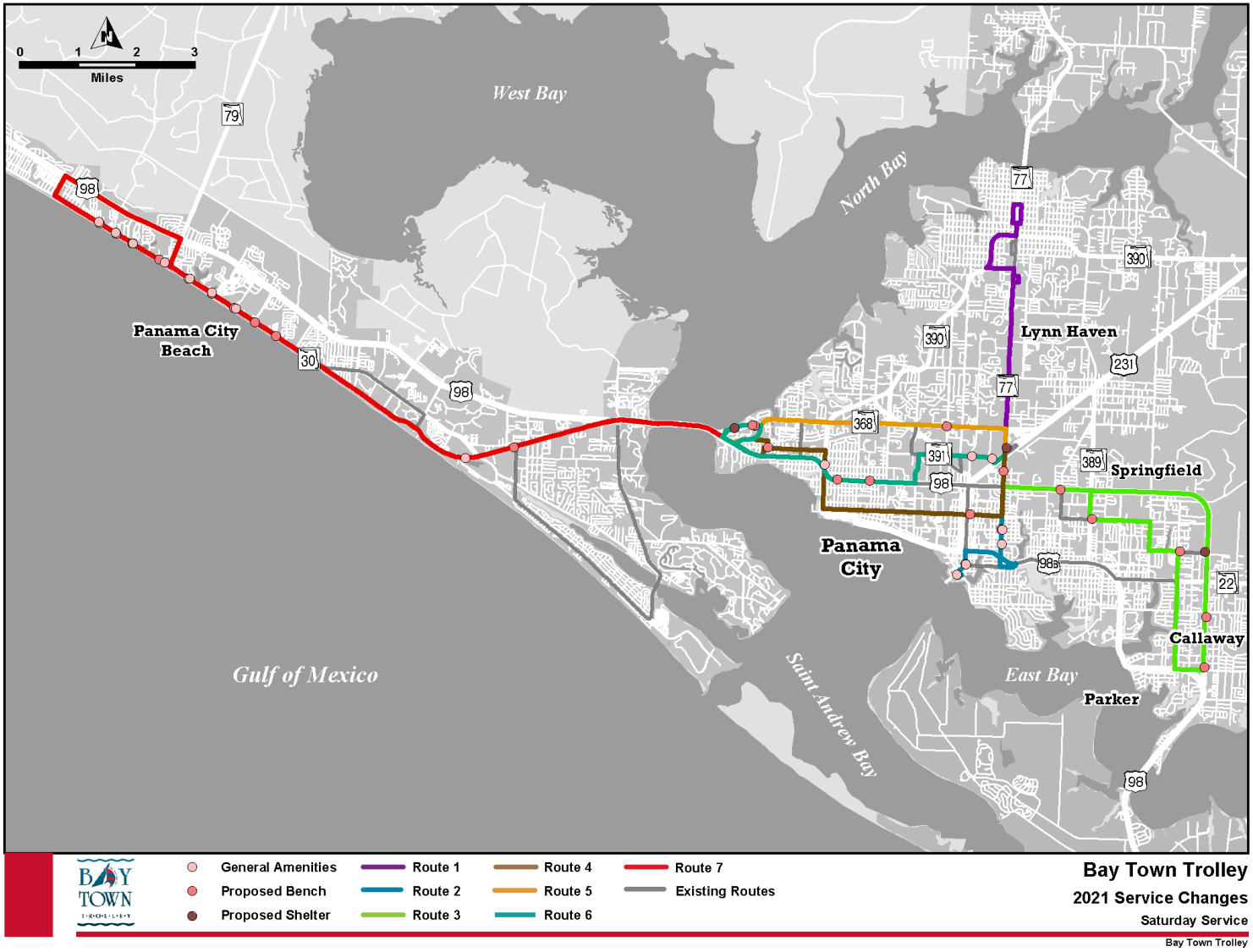


Figure 9: Recommended Route Structure - Saturday



The proposed redesign provides a more efficient and effective way to serve the riders, offering the most coverage to serve the greatest number of residents and visitors to Bay County. This includes new service on 11th Street east of Martin Luther King Boulevard (Highway 77), Jenks Avenue, and Mowat School Road. To achieve these efficiency improvements, service is proposed to be discontinued to the western portions of Front Beach Road, Thomas Drive, and Business 98 east of Downtown Panama City. Ridership reports and feedback from the operators indicated no to little active at the stops along these corridors. **Table 3** summarizes the changes to all the routes.

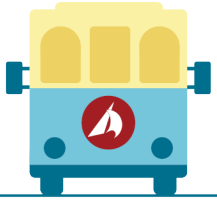


Table 3: Route Specific Changes

Route	What We Changed.	What it Means.
1	Discontinue the portion of the route south of Panama City Mall.	Shortening the route to improve on-time performance. Route 2 will cover the portion traveling south to downtown Panama City.
	Designate the Lynn Haven Walmart stop as a timepoint.	Creating timepoints provides customers a set time when the bus should arrive and a means for operators to gauge their travel time. If they are running early, it's a place to wait. If they are late, they can notify their supervisor for direction.
	Designate the stop on Florida Avenue between 9th Street & 10th Street in Lynn Haven as the endpoint for northbound trip.	This creates a second timepoint on Route 1.
2	Reroute the route to serve the southern/downtown Panama City portion of Route 1.	Sections of Route 2 have low or no ridership with the corridors covered could be served by Route 3 and 4, respectively.
3	Discontinue the small loop portion of the route that is comprised of segments of Highway 77, 11th Street, Harrison Avenue, and 15th Street.	This is redundant service, with these sections by portions of the new Route 2 and Route 4.
	Have Route 3 cover the portion of Tyndall Parkway, Boat Race Road, and Highway 22a that is currently served by Route 2.	This extension would directly connect more residents of Callaway to the Panama City Mall Transfer Station.
	Use East Avenue instead of Sherman Avenue to reconnect with 15th Street.	East Avenue has a dedicated left turn lane, making it easier for the bus to turn on to 15th Street. This saves time and minimizes conflicts with other vehicles, such as the bus blocking traffic.
4	Extend Route 4 along 11th Street and East Avenue to the Callaway Walmart, instead of serving downtown Panama City.	Covers the portion of Route 2 discontinued by its proposed change, serves additional social services located on 11th Street, and provides a direct trip for Callaway and Parker residents to Gulf Coast State College.

Route	What We Changed.	What it Means.
5	Reroute the route off 19th Street to remain on W. 23rd Street.	This rerouting would allow Route 5 to be more direct and attractive to college students. 19th Street would be served by Route 6.
6	Reroute the route off 15th Street between Harrison Avenue and Balboa Avenue to serve 19th Street.	Covers the portion of 19th Street that was served by Route 5. In addition, this section of Route 6 has low ridership and will be impacted by the upcoming reconstruction of the Highway 231 and US 98 intersection.
	Extend Route 6 west over the Hathaway Bridge to the VA Clinic, via Thomas Drive.	Extending Route 6 to the VA Clinic would allow it to continue to be served despite discontinuing Route 8.
7	Discontinue the Thomas Drive portion of Route 7.	The route is consistently running late. This change would help improve reliability. The part of Thomas Drive north of Magnolia Beach Road would be covered by Route 6. The rest of Thomas Drive has relatively low ridership.
	Discontinue the portion of Route 7, west of Carousel Supermarket (W. Toledo Place).	Additional changes to help with the on-time performance/reliability of the route. The ridership of the discontinued segment is low.
	Have the route continually run on Front Beach Road, instead of using Hutchinson Boulevard.	Transit lanes are built/planned for Front Beach Road from Thomas Drive area west to Pier Park/Arnold Drive. This would reduce congestion-based delays.
8	Discontinue service	The VA Clinic on Magnolia Beach Road as well as the northern portion of Thomas Drive would be served by Route 6. The ridership on the rest of the route does not justify continuing the service.

4 COA IMPLEMENTATION

In order to implement the new routes, the Federal Transit Administration (FTA) requires transit agencies to analyze the impacts of the routes on minority and low-income population groups (Title VI analysis) and to provide an opportunity for the public to comment on the proposed changes. The Title VI analysis was conducted during the work on the COA. Public comments were solicited during May 2021. The results of both are discussed in greater detail.

4.1 TITLE VI ANALYSIS

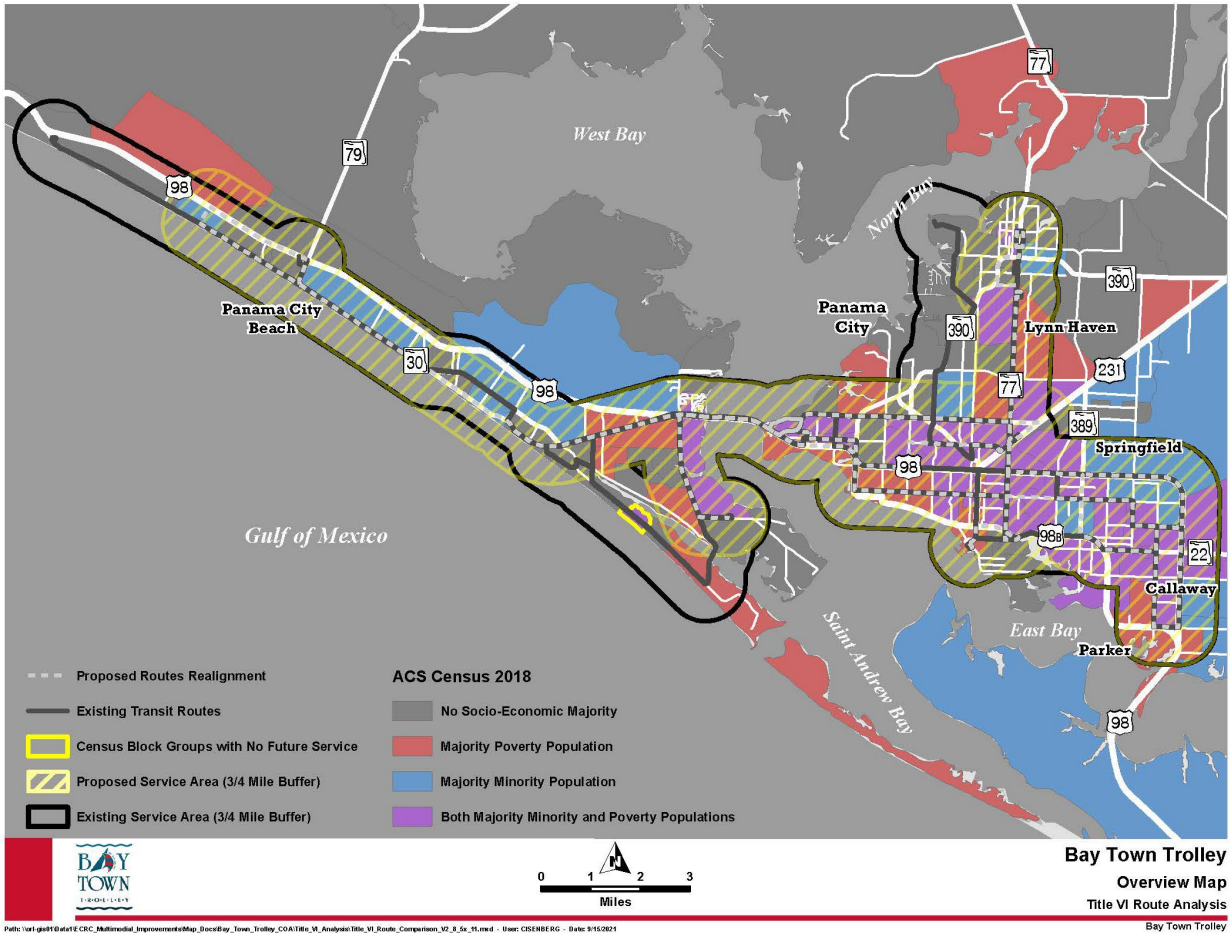
The recommended route structure was analyzed for its potential impact on minority and low-income communities. **Table 4** compares the degree to which such populations are served comparing the existing system and new system. This assessment was based on Census block groups located within three quarters of a mile from a transit route. Data on populations within Census block groups comes from the 2018 American Community Survey (ACS). The new system provides access to a slightly smaller population in total and to low income and minority groups. However, the low-income and minority groups represent a slightly larger share of the new system indicating that there is not a disproportionate burden or disparate impact placed on these groups.

Table 4: Low Income and Minority Populations Served

Measure	Existing System	New System	Absolute Difference	Percent Difference
Total Population	145,444	143,404	-2,040	-1.40%
Population Below Poverty Line	22,018	22,008	-10	-0.05%
Percent Impoverished	15.14%	15.35%	0.21%	1.38%
Minority Population	38,275	37,947	-328	-0.86%
Percent Minority	26.32%	26.46%	0.15%	0.55%

Figure 10 provides a closer examination of Census block groups served with existing service and the proposed service. Census block groups were marked if most of their populations were minority, low income, or both. For this analysis, such block groups are considered disadvantaged. Most disadvantaged block groups would continue to receive transit service under the new system. There is one disadvantaged block group, though, that would completely lose service. This is along South Thomas Drive in Lower Grand Lagoon, which is currently served by Route 8 and a deviation of Route 7, which would be discontinued. Ridership data shows little activity, with no more than five boarding's per stop per day.

Figure 10: Minority and Low-Income Block Groups Served



4.2 PUBLIC COMMENT

Public comment for the proposed route changes occurred in May 2021 with three public meetings scheduled. The public meetings were held on:

- May 24, 2021 at the Lyndell Conference Center;
- May 25, 2021 at the Gulf Coast State College; and
- May 26, 2021 at the Center for the Arts.

Each of the locations were accessible by the Bay Town Trolley system and scheduled during the hours of operation of the system. In addition, the project team met with customers at the Gulf Coast State College and Panama City Mall transfer hubs. All meetings including the time at the transfer hubs were advertised in the News Herald (paper of local record), on the bus, with social media, and through press releases. Local press also interviewed the project team and Bay Town

Trolley staff. No members of the public attending the meetings, and comments received from customers at the transfer hubs were supportive of the proposed changes.

5 NEXT STEPS

Upon approval of the COA and the recommended route changes, Bay Town Trolley will start the implementation process. This includes the following tasks:

- Refining the route structure and creating operator bid sheets (*currently underway*);
- Inform and train the operators of the changes;
- Create new ride guides and update website;
- Move/remove bus stops and amenities; and
- Informing and educating the public of the changes.

The proposed launch date of the new system is **January 2022**.