FORT LAUDERDALE TRANSIT

"Keeping Our Community Connected"

Transit Master Plan

Executive Summary

March 2017

CITY OF FORT LAUDERDALE

Executive Summary

Introduction

Fort Lauderdale is the cultural and economic center of Broward County and the third largest city in South Florida. It is a nationally and internationally popular tourist destination and home to a major airport as well as a seaport that ranks among the top three cruise ports in the world. The city continues to grow, particularly in terms of residential opportunities and economic expansion.

In 2013, the City Commission adopted Fort Lauderdale's citywide vision plan, *Fast Forward Fort Lauderdale 2035*. This plan lays out the needs and desired improvements for the city over the next 20 years, including necessary transportation service and infrastructure enhancements. Figure ES-1 shows the three key pillars of this plan and clearly reflects the strong desire among the city's residents, visitors, and leaders for a more connected and walkable Downtown that is both pedestrian- and bicycle-friendly and uses convenient and easily-accessible public transit services.

Figure ES-1:
2035 Vision: Fast Forward Fort Lauderdale

To help support these walkability and accessibility goals, Fort Lauderdale currently is served by three types of transit services. The City, in partnership with key organizations such as the Downtown Fort Lauderdale Transportation Management Association (DFLTMA), Riverwalk Fort Lauderdale, the Florida Department of Transportation (FDOT), the South Florida Regional Transportation Authority (SFRTA), and the Town of Lauderdale-By-The-Sea, provides Sun Trolley service to enable access to, from, and within Downtown and the surrounding areas. Since its beginning in 1992, the yellow and red heritage trolley buses used by Sun Trolley have served primarily the Downtown core and the beaches while also connecting to the surrounding areas of the city. The system includes a total of eight trolley routes and one water ferry route that operate seven days a week from approximately 6:20 AM to 11:00 PM and with varying frequencies.

In addition, the city is served by 44 Broward County Transit (BCT) routes, 17 of which provide service within the city or connecting it to other areas of the county and the South Florida region. Tri-Rail, a regional commuter rail service provided by SFRTA, also makes two stops within the City limits, connecting the city and its residents and visitors to the three-county region.

Among these three transit services, Sun Trolley service, which focuses primarily on connectivity within the city, has fast become a critical part of mobility for Fort Lauderdale, especially within Downtown.

Study Development

The City initiated this study, funded by a grant from the Federal Transit Administration (FTA) through SFTRA, to enhance mobility options by increasing the accessibility and connectivity of the city's existing transit services and its connection to regional transit services as well as the upcoming Wave Streetcar, the Tri-Rail Coastal Link, and All Aboard Florida's Brightline services. The service and infrastructure recommendations included herein were developed based on input received during the public involvement and plans review processes and through operational analysis results and an assessment of the City's needs, opportunities, and vision. Engagement with the public and stakeholders was a key component of the public involvement process so city residents, workers, and visitors would have ample avenues to reflect on and present their needs.

The recommendations consist of improvements to enhance the efficiency of existing Sun Trolley services and additional improvements that expand transit services to new areas. The recommendations were developed to address the transit needs of the immediate future as well as the longer-term, based on information gathered through the following methods:

- ***Public and Stakeholder Engagement*** – Numerous methods of public involvement activities and techniques were used by the City and DFLTMA staffs to gather public/stakeholder input and ensure active participation of residents and visitors in the city and surrounding

communities. The public engagement strategies used in the outreach efforts included stakeholder interviews, web-based transit needs surveys for Sun Trolley riders and the general public (non-users), paper-based surveys targeting input from specific areas (YMCA and Galt), a bus operator survey and interviews, DFLTMA Board input, and other outreach through the project website, email campaigns, and the use of social media (Facebook and Nextdoor).

- ***Transit Market Assessments*** – Findings from a number of travel market analyses that were conducted for this study effort also were used, including:
    - ***Traditional and Discretionary Markets*** – Assessments of transit demand in various transit markets, including traditional transit users (transit-dependent riders such as low-income or zero-vehicle households, older adults, and youth) and discretionary transit users (people who can drive but decide to take transit) were reviewed. Findings on demand for transit using these GIS-based technical analysis tools were used.
    - ***Activity Center Connectivity Analysis*** – Findings from a connectivity analysis of key activity centers/trip generators in the city were reviewed. Analysis of these key locations was conducted to assess the varying degrees of walk access connectivity to the Sun Trolley network at these prime locations.
    - ***Travel Flow Analysis*** – This was conducted using the regional travel demand forecasting model data as part of the needs assessment and was used to identify the extent of desired lines of travel between the key activity centers in the city.
- ***Efficiency Assessment/Review*** – Findings from the systemwide and route-level efficiency review conducted and summarized. It includes a detailed efficiency/operational assessment of Sun Trolley's current services on a segment-by-segment basis and at the stop-level. Also reviewed were detailed socioeconomic and land use market analyses that included the population and employment distributions and person trips by land use along each Sun Trolley route.
- ***Plans/Policy Review*** – Summary findings from the review of relevant plans and policies were summarized and used. These plans, developed by the City and Broward County and relevant to the City's vision to improve walkability and connectivity, were reviewed with an emphasis on issues that may have implications for future Sun Trolley services in the city.

A vision for Sun Trolley also was drafted to support the overall vision of the City of Fort Lauderdale, which calls for a connected city by 2035 to "move seamlessly and easily through a safe transportation system where the pedestrian is first." The vision projects a walkable city with pedestrian- and bicycle-friendly transportation options, population growth, new transportation, and infrastructure

improvements in Fort Lauderdale by providing convenient, accessible, and reliable transportation in the advancement of economic vitality, a clean environment, and support of our community.

Vision

Develop a fast, connected, visible, and safe transit network that has a sustainable funding strategy to promote the City of Fort Lauderdale's vision of becoming a truly connected city by 2035.

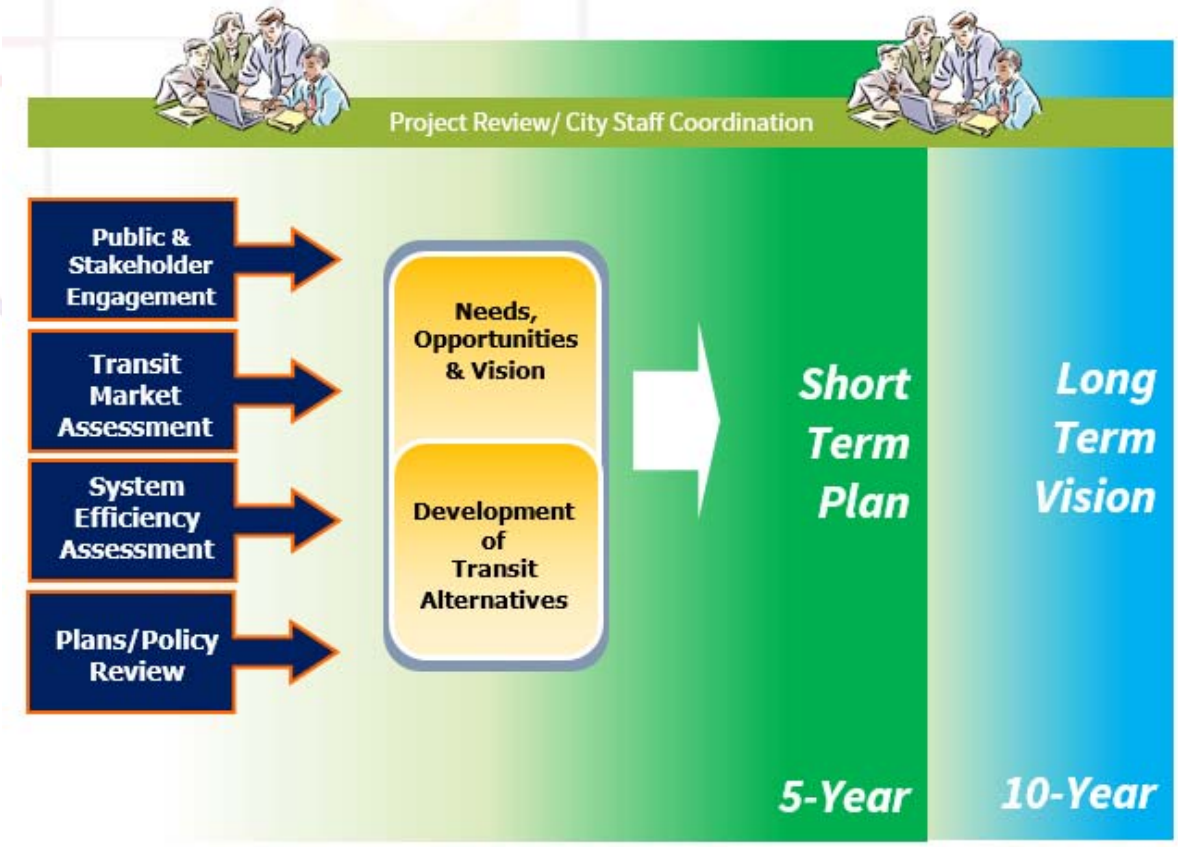
Implementation of this vision for Sun Trolley will be for a transit system that is:

- ***Fast*** – Trolley services that run every 10–20 minutes, providing fast and convenient transit service to residents, visitors, and workers within the city.
- ***Connected*** – Fast connections to key activity centers and other transit modes within the city.
- ***Visible*** – Make the City's fast and well-connected transit service a clean, attractive mode of travel that is highly visible to its residents and workers on-site, on-screen, and in-vehicle through enhanced bus stop infrastructure and electronic media.
- ***Safe*** – Safe, accessible, and visible bus stops and associated transit infrastructure to make access to and at bus stops a safe, pleasant experience.
- ***Sustainable*** – Aggressive pursuit of a sustainable funding mechanism that includes private and local sources and helps leverage state and federal funds while improving operational efficiencies to lower system costs.

The needs and opportunities, synthesized based on the overarching themes identified from the analyses and the resulting vision for Sun Trolley, were used to guide the development of recommendations.

Figure ES-2 illustrates the process used for developing the recommendations for Sun Trolley for the next 10 years. These recommendations are aimed at making transit service more efficient for existing and potential future riders by providing fast and direct services to key destinations.

Figure ES-2:
Development of Sun Trolley Recommendations



Short-Term Plan Recommendations

Short-term plan recommendations include service improvements for the next five years, from 2018–2022, when the Wave streetcar is assumed to be fully implemented. These recommendations should be considered for immediate implementation when additional financial resources become available, if it is currently infeasible to implement them using existing resources. These recommendations were designed primarily to enhance the efficiency of Sun Trolley's current fixed-route network to help move it toward its vision of providing faster and safer connections to key locations in the city.

Another key goal of the recommended short-term network is to help the City build the ridership base for the upcoming Wave streetcar. The realignments and service characteristics recommended also are based on this consideration to help the Wave achieve initial ridership thresholds that were set for qualifying Section 5309 Small Starts federal funding.

In the short term, the following routes are recommended for realignment to provide faster connections to the City's residents, workers, and visitors by 2022:

- ***Northwest Community Link*** – Realigned to remove inefficient segments and/or areas already served adequately by BCT.
- ***Galt A and B Links*** – Realigned and expanded to serve new areas.
- ***Neighborhood Link*** – Realigned to provide a faster and more direct connection to Downtown; add service on key commercial corridors, including Sunrise Boulevard and SR 7.
- ***Downtown Link*** – Realigned, but only until the Wave streetcar is in operation, at which time the Downtown Link will become a feeder service to the Wave with a more complementary alignment.
- ***Las Olas Link*** – Realigned to provide a direct connection to the BCT Central Terminal and Brightline station.
- ***Airport and Beach Links and Riverwalk Water Trolley*** – No realignments/changes to current alignments; routes should continue covering the same corridors/areas.

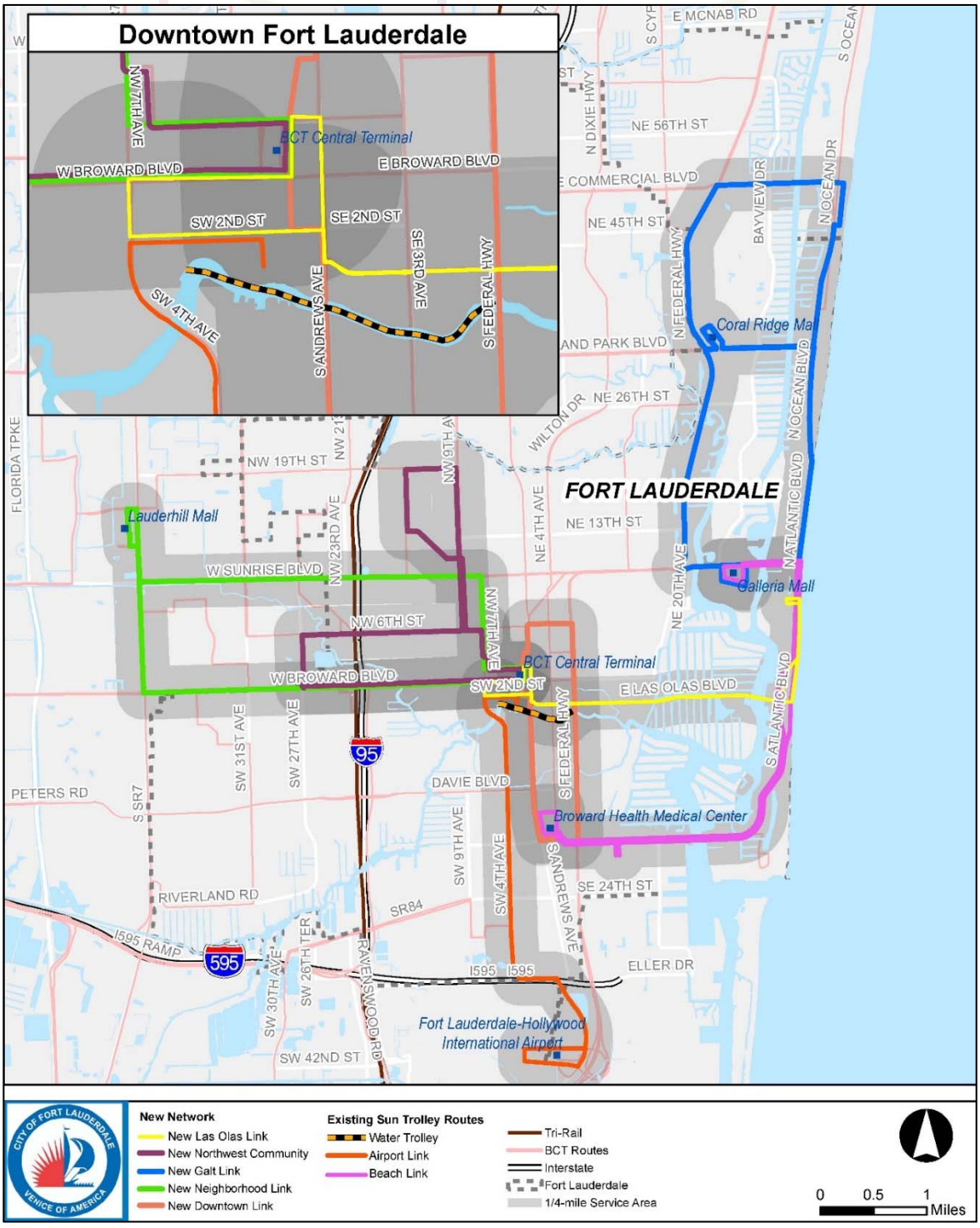
Map ES-1 depicts the proposed short-term Sun Trolley network and its ¼-mile service area representing the walk access buffer. As indicated previously, short-term service recommendations include the Sun Trolley network that should be implemented prior to implementation of the Wave streetcar. For this network, some of the already efficient/productive Sun Trolley routes, such as the Airport, Beach, and the Riverwalk Water Trolley, remain as-is; the remaining routes are realigned to improve efficiency and ridership potential. The realigned routes include the Downtown, Galt A, Galt B, Neighborhood, and Northwest Community links. The Uptown Link, which was eliminated at the end of FY 2016, is not included. Table ES-1 lists the operating characteristics of the recommended short-term Sun Trolley network.

Table ES-1: Short-Term (Pre-Wave) Network Operating Characteristics

Route Name	2016 (Existing)			2018–2022 (Pre-Wave)		
	Headway	*Hours per Day*	*Days of Service*	*Frequency*	*Hours per Day*	*Days of Service*
Northwest Community (realigned)	30-85 min.	10.5	Mon–Fri	25 min.	10.5	M–F
Galt Link (realigned)	60 min.	8	M, T, W, F, Sa	35 min.	8	M, T, W, F, Sa
Neighborhood Link (realigned)	45 min.	5.5	M–F	25 min.	5.5	M–F
Downtown Link (realigned)	15-20 min.	10.5	M–F	15 min.	10.5	M–F
Airport Link	60 min.	8	Sa & Su	25 min.	8	Sa & Su
Beach Link	30-40 min.	9	M-Su	20 min.	9	M–Su
Las Olas Link (realigned)	30 min.	9	F, Sa, Su, M	20 min.	9	F, Sa, Su, M
Water Trolley	20-30 min.	10	M-Su	20-30 min.	10	M–Su

Map ES-1:

Short-Term (Pre-Wave) Sun Trolley Network



Long-Term Vision Recommendations

This section summarizes the service improvements for Sun Trolley that are recommended beyond the next five years—from 2023 through 2027. The recommended service improvements assume that the Wave streetcar is implemented and fully operational by the end of 2022.

The scope of Sun Trolley's services is envisioned to expand with these recommendations, serving as a feeder network for the Wave streetcar in addition to being the Downtown-based transit network that connects the city's residents, workers, and visitors to key commercial and residential hubs. As a feeder network, Sun Trolley would connect current and potential riders to the streetcar as a first-mile/last-mile service, expanding the reach of the streetcar in the city.

The following revisions are recommended to develop this network in the next 5–10 year time frame:

- ***Downtown Link*** – Split into two circulators that operate on the north and south ends of the Wave streetcar, connecting adjacent communities to the streetcar and other connecting routes.
- ***Southwest Circulator*** – New route recommended to serve the Lauderdale West, Melrose Park, and Riverland areas currently not covered by Sun Trolley.
- ***Other routes*** – The realigned Northwest Community, Galt, and Neighborhood links potentially implemented in the first five years would continue in the second five years of this plan. In addition, the Airport, Beach, and Las Olas links and the Riverwalk Water Trolley routes would continue to operate with minor adjustments as needed at that time.

Map ES-2 depicts the recommended long-term Sun Trolley route network and the ¼-mile service area, representing the walk access buffers for each route.

The route network is similar to the recommended short-term network with the key exception of a split Downtown Link, which would feed the northern and southern parts of the new streetcar route, replacing the need for the current Downtown Link. In addition, the long-term network includes a circulator to serve potential riders currently not served by Sun Trolley in the Lauderdale West and Riverland areas. Other routes in the recommended short-term network would continue in the long term.

Table ES-2 lists the characteristics of the recommended, post-Wave Sun Trolley route network.

Map ES-2:

Long-Term (Post-Wave) Sun Trolley Network

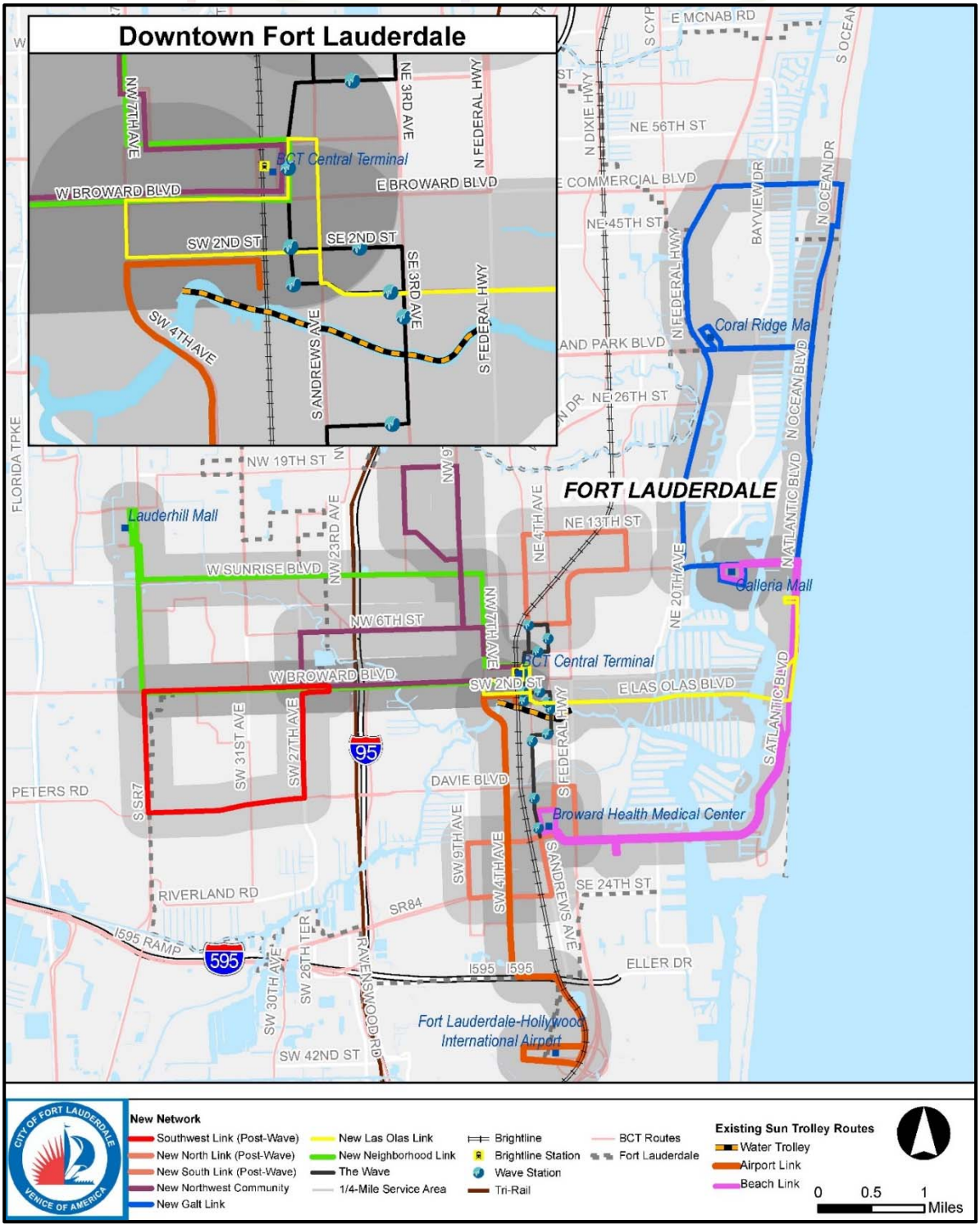


Table ES-2: Long-Term (Post-Wave) Network Operating Characteristics

Route Name	2016 (Existing)			2022–2026 (Post-Wave)		
	Headway	*Hours per Day*	*Days of Service*	*Frequency*	*Hours per Day*	*Days of Service*
Northwest Community (realigned)	30-85 min.	10.5	M–F	20 min.	12	M–Su
Galt Link (realigned)	60 min.	8	M, T, W, F, Sa	30 min.	12	M–Su
Neighborhood Link (realigned)	45 min.	5.5	M–F	20 min.	12	M–Su
North Link (new)	15-20 min.*	10.5*	M–F*	20 min.	16	M–Su
South Link (new)				20 min.	16	M–Su
Airport Link	60 min.	8	Sa & Su	25 min.	12	M–Su
Beach Link	30-40 min.	9	M-Su	20 min.	16	M–Su
Las Olas Link (realigned)	30 min.	9	F, Sa, Su, M	20 min.	12	M–Su
Southwest Link (new)	n/a	n/a	n/a	35 min.	12	M–Su
Water Trolley	20-30 min.	10	M-Su	20-30 min.	10	M–Su

**Current route will be split and serve north and south ends of future Wave streetcar.*

Capital and Policy Recommendations

In addition to service recommendations in the short and long terms, a number of capital and policy recommendations were developed to accommodate implementation of the previously-discussed service improvements in the next 10 years, as summarized below.

Transit Infrastructure

Implementing fixed bus stop infrastructure for Sun Trolley is recommended within the next 10 years. As the city moves towards becoming a walkable and "pedestrian first" city, implementing fixed bus stop locations would be necessary to provide safe and convenient locations for passengers to board and alight Sun Trolley vehicles. In addition, fixed bus stops also provide increased visibility for Sun Trolley, a key component of its vision for the future.

However, shifting from the current "wave and ride" flag stop policy to a fixed bus stop infrastructure will require significant financial resources, support, and coordination among the City's Transportation Mobility Department and other relevant agencies in the city and Broward County. This section includes recommendations on the types and locations of this infrastructure.

Figure ES-3a: *New bus stop signs recently installed in Downtown Minneapolis make transit more visible to local users and out-of-town visitors.*

Figure ES-3b: *To make it easier to ride the Philly Phlash downtown circulator, the Central Philadelphia Transportation Management Association installed simple new route maps and information panels at bus stops. Each map identifies the bus route and shows nearby major destinations and connections to other routes.*

Recommended Bus Stop Types

Three types of bus stops are identified for Sun Trolley for establishing a network of fixed transit infrastructure that includes bus stop signs, shelters, benches, bike racks, etc. These are recommended with the goal of making Sun Trolley a more safe, accessible, and visible alternative mode of transportation to the city's residents, workers, and visitors.

Basic Stop

This type of stop includes the most basic requirements for an Americans with Disabilities Act (ADA) accessible bus stop, including a bus stop sign and a boarding and alighting area that provides a well-drained, non-slippery surface with adequate space for rider movement on and off Sun Trolley vehicles. The minimum size for a boarding and alighting area, per ADA standards, must be 8 ft (perpendicular to roadway) by 5 ft (parallel to roadway). If the boarding and alighting area at the selected location is not paved, installation of a concrete pad is recommended to ensure a firm, stable, and slip-resistant surface to accommodate safer boardings and alightings at the stop.

Bus stop signs with unique Sun Trolley branding are recommended at all bus stops, making them the single most important element of Sun Trolley bus stops in the city. The branded bus stop sign would not only mark the area where riders should stand while waiting for the trolleys, but would also enhance the visibly of the service significantly to all travelers on roadways with Sun Trolley services.

Bus stops outside of the core Downtown area may include only the branded Sun Trolley sign, and stops within the core Downtown and in areas with a heavy presence of visitors also should include route maps with major attractions along the routes. In addition to bus stop signs with the Sun Trolley brand logo at a minimum, these stops may also include bus benches, bike racks, landscaping, etc.

Shelter Stop

In addition to the minimum ADA requirements for a bus stop, shelter stops include a covered and comfortable waiting area for Sun Trolley riders, protecting them from exposure to the sun, rain, and heavy winds. A shelter would further enhance the visibility and increase attractiveness of Sun Trolley services.

Figure ES-4:
Example of shelter stop with seating

Per FDOT's *Accessing Transit: Design Handbook for Florida Bus Passenger Facilities, Version III,* a shelter in Florida may be erected only at bus stops designated by a public transit agency and identified as having service a minimum number of 10 times in a 5-day period, excluding weekends and holidays. All potential Sun Trolley stop locations may meet or exceed this requirement, making all potential Sun Trolley bus stop locations eligible for shelters. However, shelters are relatively expensive to install, need additional space at bus stops, and may become challenging to maintain. Therefore, shelters are recommended only for locations that may show regularly high levels of Sun Trolley ridership.

As with the basic bus stops, shelter stops should reflect the unique Sun Trolley branding, making them highly visible and easily identifiable as Sun Trolley stops.

Shared Stop

Sun Trolley currently operates on many roadways that are also served by BCT routes. Although Sun Trolley has a flag-down stop policy, its current riders also use BCT stops to board and alight the trolleys traveling on same roadways as BCT routes. Shared stops may include these BCT stops that are on Sun Trolley routes, with added Sun Trolley signage to clearly indicate that it can also be used to board and alight Sun Trolley in addition to BCT.

Figure ES-5:
Shared bus stop in Downtown Orlando

However, this shared stop concept needs approval and support from BCT and Broward County, as Sun Trolley bus stop signs need to be added to the existing BCT bus stop infrastructure; however, adding Sun Trolley signs may not be needed at all BCT bus stops, even if they are on the same roadways as Sun Trolley. A closer review of the overlapping routes and ridership activity/demand points for Sun Trolley in relation to BCT stop locations should be conducted prior to coordinating with BCT on designating BCT stops as shared stops.

Although the shared stop concept would primarily benefit Sun Trolley, BCT riders may also find the fast and frequent Sun Trolley (as recommended in the next 10 years) a convenient way to travel the first-mile and last-mile of their trips, making the shared stop concept also beneficial to BCT.

Other Factors to Consider When Implementing Fixed Bus Stops

In general, bus stops located within areas with good lighting and visibility from surrounding property elements enhance the safety of the stop. Therefore, if not already available, conventional or solar (recommended) lighting should be considered at potential bus stops identified for Sun Trolley. In addition, locating stops closer to trees can provide Sun Trolley riders with shelter from sun and rain. Adding other such landscaping elements also can make a bus stop more inviting, both visually and physically.

If shelters are implemented, shelter design should have the same branding components as a basic stop so a common and consistent look across the city is maintained for Sun Trolley. Whether adapting an already-manufactured shelter or using a custom design, Sun Trolley's shelter stops should, where applicable and feasible, include amenities such as bike racks and trash receptacles.

Challenges in Implementing Fixed Stops for Sun Trolley

Even if the funding is available, securing fixed bus stops at locations in and around the city, especially in the core Downtown, would pose a number of issues for DFLTMA and the City. Typical issues that can be expected include the following:

- Businesses opposing locating bus stops near their storefront due to transit infrastructure blocking the business access and view and/or having bus riders congregating at their storefronts.
- Issues related to securing/converting revenue-generating on-street parking areas/curb spaces for bus stop infrastructure.
- Frequently-stopped traffic and resulting traffic backups due to passenger activity (boarding/alighting) at new curbside bus stops in addition to those already existing (for BCT routes).

These challenges remain in addition to the challenge of securing capital funding for new transit infrastructure, but fixed bus stops would still be a key improvement needed for a better and safely connected "pedestrian first" city that Fort Lauderdale has envisioned for its future. Fixed bus stops eliminate the need for trolley stops at unsafe locations, provide the driving public and bus riders with predictability on where the trolleys will stop, and minimize multiple (flag-down) stops in the same general area while significantly enhancing the visibility of Sun Trolley for visitors, workers, and residents.

In addition, many bus stops actually may not be needed. Transit industry data show that walk-shed areas (areas in which people are willing to walk to board a transit bus) for high-frequency transit are larger than even the typical ¼-mile walk-shed. Transit users in other US cities have been known to walk as far as ½ mile for faster transit services. With recommended Sun Trolley routes operating mostly every 15–20 minutes, average spacing needed for new bus stops may be wider than the typical ⅛-mile for the city core, requiring fewer bus stops along high frequency Sun Trolley routes.

Fare Policy

Implementing fares on all routes, in addition to the Beach and Las Olas links currently charging a fare, is recommended. This would provide Sun Trolley with an additional source of revenue that, while not significant, would be stable and flexible to use. A nominal one-way fare between $0.25 and $1 is recommended to keep Sun Trolley service attractive to commuters, visitors, and the community. This is also consistent with the current fare charged on the Beach and Las Olas links, which have shown high ridership over the years.

As Sun Trolley would use existing and newly-purchased vehicles that are already equipped with fare collection equipment, no new costs would be incurred with the expanded fare collection. However, as adding a fare on routes that run free-of-charge would impact low-income riders, new program funding for Sun Trolley such as a federal Community Development Block Grant (CDBG) or similar programs should be considered to indirectly charge low-income riders who ride primarily the Northwest Community and Neighborhood links to reach work, services, shopping, and other destinations. This may include using some form of rider identification system to allow eligible low-income riders to continue using Sun Trolley at no or minimal out-of-pocket cost.

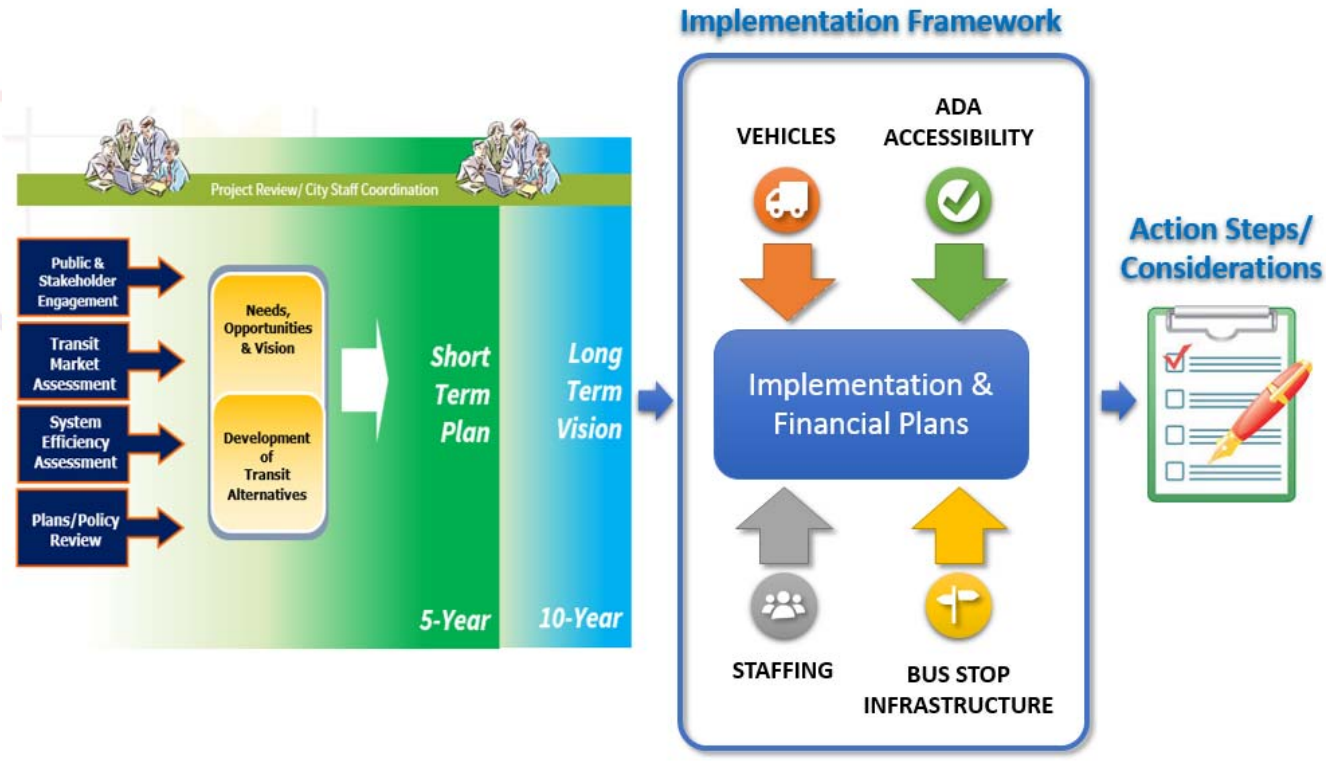
Implementation Plan

This section presents the overall implementation plan for the City's Sun Trolley fixed-route service, including the short- and long-term financial plans and other associated components such as the 10-year vehicle replacement plan, bus stop accessibility considerations, and the 10-year staffing plan. The section concludes with a list of key implementation considerations and actions steps for the potential path forward for the City of Fort Lauderdale Master Plan process, as illustrated in Figure ES-6.

The implementation plan analyzes funding constraints and opportunities to provide a potential timeline to carry out the operating and capital recommendations, which were based on an assessment of the City's needs, opportunities, and vision; engagement with the public and stakeholders, and input from the City and DFLTMA staffs. As discussed previously, engagement with the public and stakeholders was a key component of the process, allowing city residents, workers, and visitors to have ample avenues to reflect on and present their needs.

Figure ES-6

Fort Lauderdale Transit Master Plan Process



Short-Term Implementation

As presented previously, short-term plan recommendations include service improvements for the next five years, from 2018 to 2022, which is when the Wave streetcar is assumed to be fully implemented. The recommendations, discussed in detail in the preceding section, are designed primarily to enhance the efficiency of Sun Trolley's current fixed-route network and to help move it toward its vision of providing faster and safer connections to key locations in the city.

Although most Sun Trolley routes are tied to their own funding sources such as Community Redevelopment Authorities (CRAs), identifying route improvements that should be a priority can be helpful. Using the findings from the technical analyses and public outreach for this study, three evaluation categories—Funding Feasibility, Community/Stakeholder Support, and Ridership Potential—were used to rank the short-term network recommended for Sun Trolley for the next five years.

Table ES-3 summarizes the implementation plan for the next five years, including the priorities, key operating characteristics, estimated annual operating cost, estimated total capital cost, and

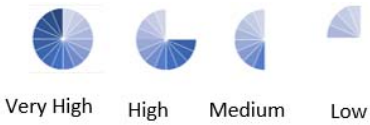
proposed implementation year for each of the route improvements recommended for the short-term network.

It is important to emphasize that the schedule shown does not preclude the opportunity to delay or advance any projects. As priorities change, funding assumptions do not materialize, or more funding becomes available, this implementation schedule should be adjusted.

Table ES-3

Short-Term Network Implementation Plan

Route	Priority	Headway	Hours per Day/Days	Annual Operating Cost (2017$)	Total Capital Cost (2017$)	Improvement Year
Northwest Community Link		25 mins	10.5 hours Mon-Fri	$364,025	None	**2019**
Downtown Link		15 mins	10.5 hours Mon-Fri	$364,025	None	**2019**
Beach Link		20 mins	9 hours Sun-Sat	$873,659	$260,000	**2020**
Water Trolley		20-30 mins	11 hours Sun-Sat	$290,942	None	**2018**
Airport Link		30 mins	8 hours Sat-Sun	$110,941	$248,000	**2021**
Neighborhood Link		25 mins	6 hours Mon-Fri	$189,293	None	**2019**
Las Olas Link		20 mins	9 hours Thurs-Sun	$374,425	$260,000	**2022**
Galt Link		35 mins	8 hours Mon, Tues, Wed, Fri, Sat	$277,352	None	**2019**



Short-Term Financial Plan

A detailed financial plan was prepared to identify costs and potential revenues for the five fiscal years of the short-term plan. This section details costs and funding assumptions followed by the cost projections and anticipated funding levels from current sources that are reasonably expected to be available for the next five years. This projection also identifies any potential new funding sources and

the extent of any resulting annual shortfall, which can be managed by either an introduction of additional new revenues or a reduction in services.

Operating and Capital Cost Assumptions

Numerous cost assumptions were developed to forecast transit costs for FYs 2018–2022. The assumptions for developing operating and capital costs are based on a variety of factors, including Sun Trolley service performance data from DFLTMA, information from other recent Florida transit plans, and discussions with City and DFLTMA staffs. These assumptions are summarized as follows.

An operating cost of $66.67 per revenue hour (2017$) was used to project annual operating costs for the recommended Sun Trolley services over the next five years. This unit cost was based on total annual operating costs from the recently adopted 2017 Sun Trolley budget and the system's existing annual revenues hours. This per-hour unit cost rate indicates a fully-allocated cost, which includes the rate paid to the contracted bus service provider, insurance, gas, etc., thereby reflecting a more true total cost of providing Sun Trolley service.

In addition, based on the Consumer Price Index (CPI) data for the last 10 years (2005–2015), a CPI-based average annual inflation rate of 2.1% was applied for FYs 2018–2022 to project all Sun Trolley operating costs. The CPI-based annual growth is assumed to cover any possible annual hourly rate increases that may occur during this period due to contract renegotiations, as the three-year contract with the current provider, First Transit, is set to expire on August 30, 2017.

Other cost assumptions that were used for FYs 2018–2022 include the following:

- Trolley vehicle unit costs were assumed based on the Sun Trolley Capital Budget. No inflation was assumed.
    - $259,602 for Hometown Trolley Mainstreet/Streetcar vehicle.
    - $248,340 for Glaval Apollo 34-ft bus, including farebox equipment.
    - Data collection costs assumed at $25,000 per year based on Sun Trolley budget.
    - Additional hiring of full-time planner (discussed later in this section) assumed to be $50,000 in 2020 and adjusted annually to reflect average 3% salary increase per year.
    - Additional marketing costs assumed to be $20,000 annually.
    - No additional spare vehicles assumed.
    - Implementation of Bus Stop Plan assumed to begin in 2019. Details on bus stop assumptions discussed later in Bus Stop Plan section.

Operating and Capital Revenue Assumptions

In projecting the revenue streams over the next five years, the following revenue assumptions were used:

Local Funding

- The Beach CRA will sunset on September 30, 2019, with the current funding allocation of $220,000 per year expected to continue until then.
- The Northwest-Progresso-Flagler Heights (NPF) CRA will sunset in 2024. It is assumed that the $261,612 currently allocated per year will remain until then.
- The City of Fort Lauderdale's local gas tax revenue is assumed to be constant through the five-year period.
- City park-and-ride revenue is assumed to be constant through the five-year period.
- Revenue from the Riverwalk Water Trolley is $200,000 for FY 2018 and is assumed to continue at that amount throughout the five-year period.
- Average funding from FYs 2015–2017 was used to project Broward County's Community Bus funding for FY 2018. This funding is reduced to $70,000 starting in FY 2019, reflecting the portion of funding related to the population share of the Federal Section 5307 grants received by Broward County. (More details on potential federal Section 5307 funding assumptions for the City are discussed later in this section.)
- FDOT Joint Participation Agreement (JPA) administration in the amount of $25,000 is allocated through the five-year period, consistent with the FDOT Work Program.
- Sponsorships and mall contributions:
    - Total allocated amount for sponsorships from Coral Ridge Mall expected to remain constant at $10,000, in keeping with prior budgeted years.
    - With new service to Lauderhill Mall, Mall is expected to contribute $10,000 annually once New Neighborhood Link begins service in 2019.
    - Lauderdale-By-The-Sea service and revenue expected to end in 2019 because new Galt Link will no longer serve that area.
    - Downtown Development Authority (DDA) contribution expected to remain constant, in keeping with prior budgeted years.
    - Contribution of Galleria at Fort Lauderdale assumed to remain constant at $15,000 annually, in keeping with prior budgeted years.
    - There is room to grow for new sponsorships, especially with the hire of a Sponsorship and Development Manager for Sun Trolley in FY 2016; expected that sponsorship

revenues will grow at annual rate of 15% through FY 2021 based on DFLTMA Business Plan. Revenue then assumed to stay constant at $55,988 after FY 2021.

- Assumed that commission fee for Sponsorship and Development Manager of DFLTMA will also grow with estimated additional sponsorships received from DFLTMA. Annual growth for the commission fee was based on the projected additional sponsorships calculated at 20% commission on new sponsorships and retained sponsorships calculated at 10% commission over the five-year period.

- Farebox revenues from the Beach and Las Olas routes are based on projected FY 2017 fare proceeds at $140,000. A 4% annual growth factor was used to grow fare revenues thereafter to account for expected ridership increases; the growth rate is based on historical ridership growth from FY 2013 to FY 2016.
- Revenues from private charters are projected to remain constant at $40,000 annually. The constraint on vehicles available for charter service will no longer be the case with the new trolley added to the fleet in FY 2018.
- Based on a recent Transit Cooperative Research Program (TCRP) report, transit advertising is a small but important contributor to operating budgets of public transit agencies and typically represents no more than 6% of operating budgets for transit agencies.[1] Advertising revenues for DFLTMA currently are approximately 4% (at $75,000) of the operating costs and are assumed to remain at that level in the short term. These revenues are expected to remain constant for the five-year period.
- A new funding stream from employers with employees using a new Unlimited Access Program to ride Sun Trolley is assumed. In this program, employers pay DFLTMA a contribution for their employees' Sun Trolley fares for the year. Currently, the number of employers who might use such a program or the expected usage is not estimated, but it is assumed that the program would bring in a minimum of $20,000 annually.
- It is assumed that the new farebox structure at $0. 25 per single ride for the Airport, Downtown, and Galt links (routes that currently do not charge fares) will bring in an additional $21,179 in annual revenue starting in FY 2019. This revenue was estimated based on historical ridership data and using fare elasticity data. The revenue is inflated 4% annually after the fares are implemented in FY 2019.

[1] "Practical Measures to Increase Transit Advertising Revenues," Transit Cooperative Research Program (TCRP) Report 133, 2009.

FDOT Funding

- This plan assumes the City receiving State block grant funds starting in FY 2019. The expected funding is calculated at approximately $500,000 per year and is expected to continue for the remaining plan years. This key funding assumption was made assuming that the City negotiates with Broward County to receive at least 50% of the State block grant that it currently receives when it reports Sun Trolley performance data to FDOT for its calculation of County proceeds. More details of this funding scenario and actions steps needed to make it feasible are presented at the end of this section.
- With the expansion of the Beach Link, it is assumed that it could be eligible for a three-year Service Development Grant to cover 50% of the operating costs for the route, starting in the FY 2020. The City should begin preparing this grant application in FY 2017 to ensure that these funds are approved and available for the Beach Route expansion in FY 2020.
- An increase of the current FDOT Urban Corridor Grant for the Downtown Link (at $177,000 in FY 2018) is expected from FY 2019 through FY 2022. This source currently funds less than 50% of the route operating costs. This plan assumes that the City will work with FDOT to increase this to cover 100% of the route starting in FY 2019, when service for Downtown is realigned and increased. The Downtown Link continues to be a prime candidate for an FDOT Urban Corridor Grant, designed primarily to assist with the provision of transit on congested corridors. The program provides funding up to 100% of the total route operating cost.
- The City should work with the FDOT Commuter Assistance Program to cover the costs of marketing new Sun Trolley services, which could cover $20,000 in marketing costs annually.

Federal Funding

- The allocation of Federal Section 5307 funds for the City is assumed to be maintained at $12,000 annually until FY 2018 and then increase to $273,000 by FY 2020 and $446,000 by FY 2020. This is due to FTA using Sun Trolley's complete NTD data (used to calculate Section 5307) for the first time in 2019. Currently, FTA uses partial NTD data from Sun Trolley, and the increases in FY 2019 and FY 2020 are due to the City reporting all data and the system operating more revenue miles, which is used by FTA's formula to calculate funding allocations. (More in-depth discussion of FTA Section 5307 funding scenarios and actions steps needed to make them feasible is presented at the end of this section.)
- The Enhanced Mobility for Seniors/Persons with Disabilities grant program (Section 5310) is assumed to fund the salary of one transit planner for DFLTMA starting in FY 2020. Although this program is designed to improve mobility for older adults and individuals with disabilities, it also funds mobility management programs. It is assumed that the City will secure funding

from this source to expand the staff capabilities of DFLTMA that may be necessary to support the expansion of Sun Trolley.

- The Community Development Block Grant primarily allows local governments to use Federal funds to assist with the development low-income communities. It is assumed that the City will use this program to cover the cost of the free fares for riders using the Northwest and Neighborhood link, two routes that service low-income areas in the NPF CRA. The assumption uses historical ridership data and a $0.25 one-way fare to calculate the potential fare revenue for the year FY 2019 and then is inflated 4% annually for subsequent years.
- Based on information from City staff, the City has already secured funding from the Surface Transportation Program to purchase 12 new trolley buses for FY 2019.
- It is assumed that Federal funding will not decline during this planning period.

Tables ES-4 and ES-5 list the operating costs/revenues and capital costs/revenues for the short-term network, respectively, and the resulting budget impact for the next five years. A surplus of $332,943 for operations and a capital shortfall of $1,367,062 are projected for the short-term plan.

The operating surplus reflects a new stream of revenues, and the capital shortfall is primarily due to the assumption that no new capital revenues will be introduced (other than the Surface Transportation Program funds for 10 new trolley buses) to fund bus stop and other new vehicle needs. A more in-depth discussion of the fleet and bus stops and ADA accessibility considerations associated with the short- and long-term plans occurs later in this section.

Table ES-4: Short-Term (Pre-Wave) Operating Cost and Revenue Summary

	2018	2019	2020	2021	2022	Total
Operating Costs						
Short-Term Service Plan	$2,457,153	$2,549,915	$2,838,045	$2,957,865	$3,155,741	**$13,958,719**
Hire New Planner	$0	$0	$50,000	$51,500	$53,045	**$154,545**
Additional Marketing	$0	$20,000	$20,000	$20,000	$20,000	**$80,000**
Total Operating Costs	**$2,457,153**	**$2,569,915**	**$2,908,045**	**$3,029,365**	**$3,228,786**	**$14,193,264**
Operating Revenues						
City – Beach CRA	$220,000	$220,000	$0	$0	$0	**$440,000**
City – Local Gas Tax	$225,330	$225,330	$225,330	$225,330	$225,330	**$1,126,650**
City – NPF CRA	$261,612	$261,612	$261,612	$261,612	$261,612	**$1,308,060**
City – Park-and-Ride	$200,000	$200,000	$200,000	$200,000	$200,000	**$1,000,000**
City – Riverwalk Trolley	$200,000	$200,000	$200,000	$200,000	$200,000	**$1,000,000**
County Community Bus	$323,746	$70,000	$70,000	$70,000	$70,000	**$603,746**
FDOT Beach Link	$0	$0	$0	$0	$0	**$0**
FDOT Downtown Link	$177,119	$0	$0	$0	$0	**$177,119**
FDOT JPA	$25,000	$25,000	$25,000	$25,000	$25,000	**$125,000**
Coral Ridge Mall	$10,000	$10,000	$10,000	$10,000	$10,000	**$50,000**
Lauderhill Mall	$0	$10,000	$10,000	$10,000	$10,000	**$40,000**
Lauderdale-By-The-Sea	$25,750	$0	$0	$0	$0	**$25,750**
DDA	$24,000	$24,000	$24,000	$24,000	$24,000	**$120,000**
Galleria Mall	$15,000	$15,000	$15,000	$15,000	$15,000	**$75,000**
Additional Sponsorship	$11,213	$24,107	$38,935	$55,988	$55,988	**$186,231**
Farebox (Beach and Las Olas)	$145,600	$151,424	$157,481	$163,780	$170,331	**$788,616**
Private Charters	$40,000	$40,000	$40,000	$40,000	$40,000	**$200,000**
Advertising	$75,000	$75,000	$75,000	$75,000	$75,000	**$375,000**
New Federal 5307	$11,689	$273,296	$445,778	$445,778	$445,778	**$1,622,319**
Commission (Sponsorship)	($9,718)	($11,175)	($12,851)	($14,779)	($16,996)	**($65,519)**
FDOT State Block Grant	$0	$502,626	$512,109	$521,876	$531,937	**$2,068,548**
New FDOT Service Dev. (Beach Link)	$0	$0	$464,895	$474,645	$484,599	**$1,424,139**
New FDOT Urban Corridor for Downtown Link	$0	$379,454	$387,412	$395,537	$403,833	**$1,566,236**
Unlimited Access Program Employer Contributions	$0	$20,000	$20,000	$20,000	$20,000	**$80,000**
New Farebox (fares on Airport, Downtown, Galt)	$0	$21,179	$22,026	$22,907	$23,823	**$89,936**
Community Development Block Grant (NW and Neigh. Fare subsidy)	$0	$20,762	$21,592	$22,456	$23,354	**$88,165**
Section 5310	$0	$0	$50,000	$51,500	$53,045	**$154,545**
FDOT Commuter Assist. Program		$20,000	$20,000	$20,000	$20,000	**$80,000**
Total Revenues	**$1,981,341**	**$2,777,615**	**$3,283,319**	**$3,335,631**	**$3,371,635**	**$14,749,541**
Annual Surplus/Shortfall	**($475,813)**	**$207,700**	**$375,275**	**$306,266**	**$142,849**	**$556,277**
Rollover from Prev. Year	**$0**	**($475,813)**	**($268,112)**	**$107,162**	**$413,429**	**($223,334)**
Surplus/Shortfall	**($475,813)**	**($268,112)**	**$107,162**	**$413,429**	**$556,277**	**$332,943**

Table ES-5: Short-Term (Pre-Wave) Capital Cost and Revenue Summary

	2018	2019	2020	2021	2022	Total
Capital Costs						
Replacement Buses - Maintain Existing Service	$3,800,000	$0	$0	$0	$0	**$3,800,000**
New Vehicles to Expand Service	$0	$259,602	$248,340	$259,602	$0	**$767,544**
Bus Stop Infrastructure	$0	$716,108	$0	$0	$0	**$716,108**
Total Costs	$3,800,000	$975,710	$248,340	$259,602	$0	**$5,283,652**
Capital Revenues						
Surface Transportation Program	$4,560,000	$0	$0	$0	$0	**$4,560,000**
Total Revenue	$4,560,000	$0	$0	$0	$0	**$4,560,000**
Revenue Minus Cost	**$760,000**	**($975,710)**	**($248,340)**	**($259,602)**	**$0**	**($723,652)**
Rollover from Prev. Year	**$0**	**$760,000**	**($215,710)**	**($464,050)**	**($723,652)**	**($643,411)**
Surplus/Shortfall	**$760,000**	**($215,710)**	**($464,050)**	**($723,652)**	**($723,652)**	**($1,367,062)**

Long-Term Vision Implementation

An implementation plan and corresponding financial plan were prepared for the long-term service vision for Sun Trolley; these recommendations follow the next five years, from FYs 2023–2027. The recommended service improvements assume that the Wave streetcar is implemented and fully operational by the end of 2022 (beginning of FY 2023).

As discussed previously, the purpose of Sun Trolley's services beginning in FY 2023 would be to serve as a feeder network for the Wave streetcar in addition to being a Downtown-based transit network that connects the city's residents, workers, and visitors to key commercial and residential hubs. As a feeder, it would connect current and potential riders to the streetcar as a first-mile/ last-mile service, expanding the reach of the streetcar into the Downtown area.

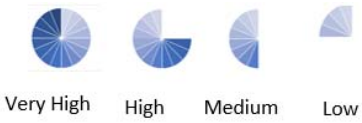
Similar to the prior cursory evaluation of the short-term network, funding feasibility, community/ stakeholder support, and ridership potential were used again to evaluate the proposed routes for the long-term network. However, network connectivity also was introduced as a new criterion to account for the need of connecting the streetcar to the long-term network.

Table ES-6 summarizes the implementation plan for the second five years, from FY 2023 to FY 2027, including the priorities, operating characteristics, annual operating cost, estimated total capital cost, and proposed implementation year for each of the route improvements in the long-term network.

Table ES-6 summarizes the implementation plan for the second five years, from FY 2023 to FY 2027, including the priorities, operating characteristics, annual operating cost, estimated total capital cost, and proposed implementation year for each of the route improvements in the long-term network.

Table ES-6: Long-Term Network Implementation Plan

Route	Priority	Headway	Hours per Day/Days	Annual Operating Cost (2017$)	Total Capital Cost (2017$)	Improvement Year
Northwest Community Link		25 mins	12 hours Sun-Sat	$582,440	None	**2023**
Beach Link		20 mins	16 hours Sun-Sat	$1,553,172	None	**2023**
Water Trolley		20-30 mins	11 hours Sun-Sat	$290,942	None	**2023**
North Link		20 mins	16 hours Sun-Sat	$388,293	None	**2023**
South Link		20 mins	16 hours Sun-Sat	$388,293	None	**2023**
Neighborhood Link		25 mins	12 hours Sun-Sat	$582,440	None	**2023**
Las Olas Link		20 mins	12 hours Sun-Sat	$873,659	None	**2023**
Airport Link		25 mins	12 hours Sun-Sat	$582,440	None	**2023**
Southwest Link		25 mins	12 hours Sun-Sat	$291,220	$259,602	**2026**
Galt Link		35 mins	12 hours Sun-Sat	$582,440	None	**2023**



Long-Term Financial Plan

A financial plan was prepared to help implement the long-term vision for Sun Trolley. It should be noted, however, that while it identifies increased costs and some additional new revenues, the long-term plan is intended to be more of a vision for Sun Trolley than a cost feasible plan. While significantly increased costs due to expanded service hours and service days will bring challenges to implementation, the recommended characteristics are necessary if the service is truly intended to become a feeder to the Wave streetcar.

The remainder of this section presents the operating and capital cost assumptions used to develop the long term visions costs and revenues, followed by a summary of costs and revenues.

Operating and Capital Cost Assumptions

Most of the operating and capital costs assumptions for the short-term network were assumed for the long-term plan, with the following exceptions:

- Additional marketing costs will increase from $20,000 to $40,000 annually beginning in FY 2023.
- Implementation of the long-term bus stop plan will begin in FY 2023. Details on the long-term bus stop cost assumptions are discussed in the Bus Stop Infrastructure section.
- The purchase of one additional vehicle for the New Southwest Link will take place in FY 2025, one year before the proposed implementation.
- Hiring of two new staff for DFLTMA is assumed, including a Transit Planner ($50,000) in FY 2020 and a Transit Operations Planner ($40,000) in FY 2024.

Operating and Capital Revenue Assumptions

Most revenue assumptions also will continue from the short-term plan to the long-term plan. However, as enhanced service levels will increase operating costs, reasonable increases in additional revenues are also assumed. The key noteworthy changes in revenue assumptions for implementing the long-term plan include the following:

Local Funding

- Coral Ridge Mall contribution will increase from $10,000 annually to $20,000 annually beginning in FY 2023.
- Lauderhill Mall contribution will increase from $10,000 annually to $15,000 annually beginning in FY 2023.
- Galleria at Fort Lauderdale annual contribution will increase from $15,000 to $20,000 beginning in FY 2023.

- Downtown Development Authority annual contribution will increase from $24,000 to $50,000 beginning in FY 2023.
- With additional efforts from DFLTMA, advertising revenue expected to increase to approximately 6% of operating costs by FY 2023, amounting to $100,000 annually.
- Sponsorship levels will continue at $55,988 annually. Commission fees for obtaining sponsorship funds assumed to stay constant at $17,000.
- Private charters will increase from $40,000 annually to $60,000 annually beginning in FY 2023.

FDOT Funding

- State block grant fund assumed to continue, but at a higher level due to DFLTMA reporting increased revenues miles and trips from expanded services beginning in FY 2023.
- Assumed that FDOT Service Development Grant will fund 50% of operating cost of Southwest Link, starting in FY 2026.
- Since the Downtown Link will be realigned as North and South links, assumed that City will request that FDOT continue its Urban Corridor funding, but at 50% of operating cost of North and South links. This scenario would be more feasible and attainable than any attempt to ask for funding for both realigned routes.
- With increased efforts by DFLTMA, Unlimited Access Program employer contributions assumed to double to $40,000 annually beginning in FY 2023.
- FDOT Commuter Assistance Program support for marketing will increase to $40,000 annually to cover cost of expanded marketing efforts.

Federal Funding

- With increase in annual revenue miles from enhanced services beginning in FY 2023, FTA 5307 funds are assumed to increase from $445,779 to $820,000 annually.

Tables ES-7 and ES-8 list the operating costs/revenues and capital costs/revenues for the long-term network, respectively. In summary, an operating deficit of $46,363,503 and a capital shortfall of $15,673,322 are projected for this more conceptual long-term vision.

Table ES-7: Long-Term (Post-Wave) Operating Costs and Revenues

	2023	2024	2025	2026	2027	Total
Operating Costs						
Long Term Service Plan	$6,596,522	$6,734,869	$6,876,117	$7,371,361	$7,525,959	**$35,104,828**
Hire New Planners	$54,636	$94,636	$97,475	$100,400	$103,412	**$450,560**
Additional Marketing	$40,000	$40,000	$40,000	$40,000	$40,000	**$200,000**
Total Operating Costs	$6,691,158	$6,831,144	$6,974,081	$7,471,064	$7,627,453	**$35,755,387**
Operating Revenues						
City – Local Gas Tax	$225,330	$225,330	$225,330	$225,330	$225,330	**$1,126,650**
City – NW CRA	$261,612	$261,612	$261,612	$261,612	$261,612	**$1,308,060**
City – Park-and-Ride	$200,000	$200,000	$200,000	$200,000	$200,000	**$1,000,000**
City – Riverwalk Trolley	$200,000	$200,000	$200,000	$200,000	$200,000	**$1,000,000**
County Community Bus	$70,000	$70,000	$70,000	$70,000	$70,000	**$350,000**
FDOT JPA	$25,000	$25,000	$25,000	$25,000	$25,000	**$125,000**
Coral Ridge Mall	$20,000	$20,000	$20,000	$20,000	$20,000	**$100,000**
Lauderhill Mall	$15,000	$15,000	$15,000	$15,000	$15,000	**$75,000**
DDA	$50,000	$50,000	$50,000	$50,000	$50,000	**$250,000**
Galleria Mall	$20,000	$20,000	$20,000	$20,000	$20,000	**$100,000**
Additional Sponsorship	$55,988	$55,988	$55,988	$55,988	$55,988	**$279,940**
Farebox (Beach and Las Olas)	$177,144	$184,230	$191,599	$199,263	$207,234	**$959,471**
Private Charters	$60,000	$60,000	$60,000	$60,000	$60,000	**$300,000**
Advertising	$100,000	$100,000	$100,000	$100,000	$100,000	**$500,000**
New Federal 5307	$820,000	$820,000	$820,000	$820,000	$820,000	**$4,100,000**
Commission (Sponsorship)	($19,545)	($22,477)	($25,849)	($29,726)	($34,185)	**($131,781)**
FDOT State Block Grant	$698,446	$709,118	$720,112	$731,434	$743,097	**$3,602,207**
New FDOT Service Development for SW Link	$0	$0	$0	$175,517	$179,198	**$354,714**
New FDOT Urban Corridor for Downtown Link	$439,789	$449,013	$458,430	$468,044	$477,860	**$2,293,136**
Unlimited Access Program Employer Contributions	$40,000	$40,000	$40,000	$40,000	$40,000	**$200,000**
New Farebox (fares on Airport, Downtown, Galt)	$24,776	$25,767	$26,798	$27,870	$28,985	**$134,197**
Community Development Block Grant (fare subsidy)	$24,289	$25,260	$26,271	$27,321	$28,414	**$131,555**
Section 5310	$54,636	$94,636	$97,475	$100,400	$103,412	**$450,560**
FDOT Commuter Assistance Program for Marketing	$40,000	$40,000	$40,000	$40,000	$40,000	**$200,000**
Total Revenues	**$3,602,465**	**$3,668,478**	**$3,697,766**	**$3,903,054**	**$3,936,945**	**$18,808,709**
Revenues Minus Costs	**($3,088,693)**	**($3,201,027)**	**($3,315,826)**	**($3,608,707)**	**($3,732,426)**	**($16,946,678)**
Rollover from Prev. Year	**$556,277**	**($2,532,416)**	**($5,733,442)**	**($9,049,269)**	**($12,657,976)**	**($29,416,825)**
Surplus/Shortfall	**($2,532,416)**	**($5,733,442)**	**($9,049,269)**	**($12,657,976)**	**($16,390,401)**	**($46,363,503)**

Table ES-8: Long-Term (Post-Wave) Capital Costs and Revenues

	2023	2024	2025	2026	2027	Total
Capital Costs						
New Vehicles to Expand Existing Services	$0	$0	$259,602	$0	$0	**$259,602**
Replacement Buses	$0	$519,204	$2,584,758	$259,602	$248,340	**$3,611,904**
Bus Stop Infrastructure	$135,525	$0	$0	$0	$0	**$135,525**
Total Costs	**$135,525**	**$519,204**	**$2,844,360**	**$259,602**	**$248,340**	**$4,007,031**
Capital Revenues						
Total Revenue	$0	$0	$0	$0	$0	**$0**
Revenue Minus Cost	**($135,525)**	**($519,204)**	**($2,844,360)**	**($259,602)**	**($248,340)**	**($4,007,031)**
Rollover from Prev. Year	**($723,652)**	**($859,176)**	**($1,378,380)**	**($4,222,740)**	**($4,482,342)**	**($11,666,291)**
Surplus/Shortfall	**($859,176)**	**($1,378,380)**	**($4,222,740)**	**($4,482,342)**	**($4,730,682)**	**($15,673,322)**

10-Year Vehicle Plan

This section presents the vehicle replacement and acquisition program developed to support the implementation plan and is reflected in the capital component of the financial plan.

The Sun Trolley system currently operates with 17 buses, many of which are not desirable operationally or aesthetically as they have exceeded their useful life. A total of 10 of those buses are scheduled to be replaced in FY 2018. In addition, three new buses will be required to implement the improved frequencies for the Airport, Beach, and Las Olas links in the short term. The Downtown Link currently has two buses and will be split into the North and South links, with one bus each in the long-term, therefore, requiring no new vehicles.

The vehicle replacement and expansion program is provided in Table ES-9. The buses are assumed to be purchased the year prior to the implementation of service enhancements to permit sufficient time for build and delivery. For the purposes of this plan, no replacement vehicles were assumed after FY 2018.

Table ES-9: Ten-Year Vehicle Replacement/Acquisition Plan

Route	# Vehicles Currently Operating in Maximum Service	Improvement Type	Replacement/Expansion Vehicles									
			Short-Term Network					Long-Term Network				
			2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Northwest Community Link	2	Realignment Increase span	2	-	-	-	-	-	-	2	-	-
Galt Link	2	Realignment Increase span		-	-	-	-	-	2	-	-	-
Neighborhood Link	2	Realignment Increase span	2	-	-	-	-	-	-	2	-	-
Downtown Link	2	Realignment	2	-	-	-	-					
Airport Link	1	Increase frequency	1	-	1**	-	-	-	-	1**	-	1**
Beach Link	3	Increase frequency	1	1*	-		-	-	-	1	1	
Las Olas Link	2	Increase frequency Increase span	2	-	-	1*	-	-	-	2	-	-
North Link	1	Realignment, increase span and days of service						-	-	1	-	-
South Link	1	Realignment, increase span and days of service						-	-	1	-	-
Southwest Link	n/a	New route								1*	-	-
Total Vehicles			**10**	**1**	**1**	**1**			**2**	**11**	**1**	**1**

** New Vehicle: Hometown Trolley Mainstreet/Streetcar Vehicle*
***New Vehicle: Glaval Apollo 34-ft Bus*

Bus Stop Infrastructure Plan

One of the key plan recommendations for Sun Trolley towards becoming a system with established bus stops instead of the current wave-and-ride policy. The installation of permanent bus stops to reflect Sun Trolley's brand will double as an additional advertising element. The plan to implement the bus stop infrastructure, including adding the three types of bus stops (as described previously) with shelters, benches, signs, etc., is assumed to cost $788,500 over the next 10 years. The estimated cost also assumes any additional cost for ADA compliance.

As indicated previously, implementing fixed bus stop locations would be necessary to provide safe and convenient locations for passengers to board and alight Sun Trolley vehicles. In addition, such infrastructure can play an integral role as the city moves towards becoming a walkable and "pedestrian first" city. However, as the capital portion of the financial plan has also shown, shifting from the current wave-and-ride policy to a fixed bus stop infrastructure will require significant financial resources in addition to support and coordination among the City's agencies and with Broward County.

Placement Criteria

This plan assumes an average bus stop spacing of ⅛-mile. In addition, it also assumes the placement of more expensive stop types (shelter stops) for key locations proposed for shelter stops previously in this report. It should also be noted that every attempt has been made to minimize the cost of this bus stop plan by assuming sharing of any BCT bus stops along the planned networks to minimize costs.

Placement Schedule and Costs

Table ES-10 lists the assumed capital costs by bus stop type. As indicated previously, these unit costs also includes the cost of any ADA compliance needs for the bus stops. In addition, Table ES-11 lists the number of proposed bus stops by stop and implementation period as well as the estimated current-day cost for implementation. It should be noted that only the basic stop type is recommended in the short-term for the segments on US 1 that will eventually lose service due to the realigned Downtown Link after the first five years. This makes it convenient for the City/DFLTMA to remove the bus stops when no service is offered, as moving shelters and other significant infrastructure is costly.

Table ES-10: Estimated Bus Stop Program Unit Costs

Bus Stop Type	Estimated Cost*
Shared Stop	$500
Basic Stop	$2,000
Shelter Stop	$25,000

**Based on industry and ADA bus stop accessibility data. Costs include ADA compliant bus stops for all types recommended.*

Table ES-11: Bus Stop Infrastructure Plan

Route	Number of Bus Stops			Implementation Period	Cost
	Basic	Shared	Sheltered		
Northwest Community Link	20	41	4	2019 - 2027	$160,500
Galt Link	10	106	2	2019 - 2027	$123,000
Neighborhood Link	8	83	0	2019 - 2027	$57,500
Downtown Link	22	25	3	2019 - 2022	$131,500
Airport Link	0	20	2	2019 - 2027	$60,000
Beach Link	0	30	1	2019 - 2027	$40,000
Las Olas Link	4	39	3	2019 - 2027	$102,500
Southwest Link	12	30	0	2023 - 2027	$39,000
North Link	7	12	0	2023 - 2027	$20,000
South Link	26	5	0	2023 - 2027	$54,500
Total	**109**	**391**	**15**		**$788,500**

Bus Stop Accessibility Considerations

When proceeding with the implementation of fixed bus stops, Sun Trolley will have to ensure that all stops comply with minimum ADA requirements at the selected locations. These requirements will vary depending on the bus stop type (basic, shelter, and shared stops) and full details about compliant bus stop placement and design. Maximizing the experience for passengers can be found in FDOT's *Accessing Transit: Design Handbook for Florida Bus Passenger Facilities, Version III*. Some details are discussed in the "Capital and Policy Recommendations" section of this document, but the primary considerations are outlined in the following section.

General Requirements and Guidance

Bus stops of all types must be located such that they provide the maximum level of safety for transit passengers as well as vehicular and pedestrian traffic. Additionally, the ADA mentions that transit agencies should choose bus stop sites that afford the greatest accessibility practicable. Ideally, bus stop locations should avoid bridges, driveways, and areas with limited right-of-way. The general preference for bus stop placement in urban areas or on major roads is for curbside stops so that passengers do not have to leave safe, established pedestrian areas to board or to enter the roadway

to alight a transit vehicle. In circumstances in which a bus stop is sited within the boundaries of a state right-of-way, FDOT reserves the final determination on whether the stop can be deemed safe.

According to *Accessing Transit*, the minimum requirements for bus stop placement dictate that the bus stop:

- Must be on an accessible route.
- Must have an accessible approach to the stop.
- Must meet running slope/cross slope criteria.
- Must have a firm, stable, and slip-resistant surface.
- May be on a sidewalk or paved shoulder.

Additionally, bus stops that are located adjacent to canals, fire hydrants, disability parking spaces, or near guardrails have specific required considerations. Other noteworthy, yet not compulsory, guidance set forth in *Accessing Transit* covers bus stop placement with respect to right-turn-only lanes, railroad crossings, and unsignalized intersections as well as the drainage conditions of potential sites. The City/DFLTMA also should refer to FDOT guidance on stop spacing and illumination by proposing and weighing alternatives that can help determine the ideal way of locating a potential stop within its surroundings.

Prior to implementation the bus stop plan, the City/DFLTMA also should refer to the bus stop guidance covered in *Accessing Transit* to review the advantages and disadvantages of stop placement with respect to intersections, specifically how bus stops can be placed on the near- or far-side (upstream or downstream direction) of an intersection or mid-block between intersections. Certain conditions warrant each stop placement location relative to an intersection to be considered the best type. Although the bus stop plan presented previously assumes general locations to calculate the total stops needed, the final decision on the exact location of each stop will depend on existing pedestrian facilities, street width, number of lanes, cross-street traffic flows (e.g., if a cross street is one-way right to left), if a bus is required to turn at an intersection, visibility, lighting, and existence of on-street parking. As a rule of thumb, most roadway conditions result in a far-side stop being the preferred stop placement and near-side stops succeeding in preference. Mid-block stops are generally considered the most problematic stop placement unless there are conditions that necessitate the use of this stop type that do not cause undue conflict or hazards.

10-Year Staffing Plan

To address the staffing needs at DFLTMA to support the short- and long-term plans, a staffing plan was prepared. This plan summarizes the recommended changes to the existing staffing structure that may be necessary to implement and maintain these plans. This section also identifies the potential roles and responsibilities to the extent applicable to this effort. However, it should be noted that staffing needs of any contracted service providers (e.g., First Transit for bus service and Riverfront Cruises for waterborne transportation) to help implement these plans are not identified. It is the responsibility of the contracted service providers to sufficiently staff the operations paid for by the City.

Existing DFLTMA Staffing Structure

Under this structure, the primary functions of management, administration, and operations are contracted, with the Executive Director overseeing all aspects of management and operations. In addition to contracted service providers, DFLTMA currently contracts out vehicle technology systems, information technology, sponsorship and development, finance and bookkeeping services, and marketing and public relations in addition to the operations of its waterborne and bus transit services. Call center services are also provided by the City at no cost to DFLTMA to streamline customer calls and feedback.

With the existing staffing structure, DFLTMA:

- Has authority to contract for services and operations and manages operational policy for all contractors and consultants.
- Pays for all services and operations by contractors and consultants.
- Retains consultants for specialized services.

Although DFLTMA controls the management and service functions that operate the Sun Trolley system, consultants and service contractors are used fill the gaps in administrative functions and for operation of transit services. The existing staffing framework shows delegation of many administrative and management functions to contractors and consultants, and DFLTMA retains responsibility for budgets, management, oversight, performance, and administration.

The inherent problems with the current framework are:

- Heavy reliance on consultants/contractors to support operations and administration.
- Oversight of contracted operations, which can be time-consuming to manage.

Recommended DFLTMA Staffing Structure

Under the proposed conceptual organization framework, DFLTMA will retain nearly all of the functions internally for operations under a phased approach. This new structure seeks to streamline operations and services, with more control over management of administrative functions. However, it is recommended that DFLTMA continue contracting out transit service/operations, vehicle technology systems, and information technology services and keep using the City call center, as those may be more cost-effective with vendors due to their expertise and economies of scale

The recommended staffing framework includes the hiring of one Transit Planner in the short-term in FY 2020 and adding a transit Operations Planner in the long-term, potentially in FY 2024, to help as the system continues to grow.

The key management and operational benefits of the recommended staffing framework include:

- DFLTMA has more direct control of functions affecting costs, administrative functions and management.
    - The contracted administration functions of finance, sponsorship and development, and marketing will be retained in-house, allowing more control over those functions, and potential cost reductions.
- Consolidation of part-time positions to full-time positions.
    - The outreach and marketing tasks currently performed by part-time staff will be consolidated into the full-time Transit Planner staff position, along with the previously contracted administration functions in FY 2020.
    - The part-time Reporting and Compliance Manager position will be consolidated into the transit Operations Planner position, who will also oversee operations in subsequent years, as feasible, as the system continues to grow.

Implementation Considerations/Action Steps

A number of considerations and action items/steps that may be necessary to ensure successful implementation of the previously-presented short- and long-term plans are summarized below. It should be noted that this list is not exhaustive and is intended to cover only the most critical and/or applicable steps that may be needed to make way for the implementation of this Transit Master Plan.

The key action steps related to funding, services, staffing, and bus stop infrastructure are summarized.

Coordinate with Broward County to increase the City's share of Federal Section 5307 funding while continuing as a Small System NTD reporter.

As indicated previously, this program is available for direct and designated recipients of FTA Section 5307 program funds that operate public transit services in urban areas. It provides funding for public transportation services serving the urbanized areas where allocated. The formula elements used to allocate funding are gathered through annual reports submitted into the NTD system established by FTA.

Within the Miami Urbanized Area, the Direct Recipient is the Palm Beach MPO and through cooperative agreements with local MPOs, transit agencies, FDOT, and FTA, designated recipients receiving funding include SFRTA, Miami-Dade Transit, BCT, and PalmTran. Additionally, smaller systems and services typically provide operating information to appropriate designated recipients to include in their annual NTD reports and receive credit for the formula elements and in return get "pass-through" funding from the recipient. If desired, the Direct Recipient can approve these smaller systems to report directly into the NTD system and have those systems listed specifically in the allocation tables for the funding that they will receive as pass-through. This is the case with the City of Fort Lauderdale within the Miami Urbanized Area.

The City has now become a small reporter in the NTD system and is listed by the Palm Beach MPO annually for a share of the funding in their request to FTA. As mentioned, the City would still receive funding through a designated recipient (BCT). Until FY 2016, the City has provided only limited data in its NTD reports and, beginning in FY 2016, the City has started reporting data on all services provided by the City/DFLTMA. This should increase the annual allocation for the City by getting credit for all of the services operated.

The City should coordinate with Broward County to increase its share of FTA Section 5307 funds to reflect credit for the additional data being reported to NTD. **The financial plan presented previously uses approximate estimates based on new NTD data for Sun Trolley, but a more careful evaluation of the City's funding potential should be completed prior to these external discussions. Such an effort may put City staff in a strong position to make the argument to BCT for a funding increase. It will also help the City to make the case locally to financially strengthen a system that currently produces over half a million trips annually.**

Evaluate the possibility of becoming a Direct Recipient of FTA Section 5307 funding.

While coordinating with Broward County to increase the FTA Section 5307 allocation as a Small System Reporter, the City should also explore petitioning the Direct Recipient about becoming a Designated Recipient. The benefit would be receiving funding directly from FTA and some level of increase in funding, as the formula will be adjusted to include elements limited only for designated recipients. An added benefit would also be the eligibility for Florida Public Transit Block Grant funding (discussed later). However, there are several drawbacks to being a designated recipient. To begin with, the process is exhaustive and requires approval of each MPO and transit system in the Miami Urbanized Area (UZA), FDOT, and FTA. Once recipient status is obtained, the City would then be solely responsible to comply with all FTA and federal requirements, which are extensive and should be appropriately vetted before deciding to move forward with the request. Consideration by the City to become an FTA Section 5307 Direct Recipient should start with a request and follow-up coordination with FDOT. The project team's initial discussions with the State Transit Office at FDOT has shown its openness to meet or conference with the City to initiate such a decision process

The City should evaluate this consideration prior to proceeding with any related actions. **As with the previous option, this option also warrants an evaluation of this opportunity and the associated reporting burdens prior to the City embarking on this option to secure more federal funding.**

Coordinate with Broward County to significantly increase the City's share of State Block Grant allocation.

The Florida Public Transit Block Grant program was established in 1990 to provide State funding to eligible public transportation providers. Funding from this program is administered by FDOT and provides funding for transit operations, capital investment, service development, and corridor improvement projects. Eligible recipients include recipients of FTA Section 5307 funds. Eligible recipients must complete and submit a Transit Development Plan (TDP) detailing the transit improvement recommendations for the next 10 years as a pre-condition for funding, provide NTD and operating budget reports to FDOT annually, and publish performance measures in a local newspaper annually.

The City should coordinate with Broward County regarding receiving a portion of the Public Transit Block Grants, as the revenue miles and passenger trips reported in Sun Trolley's NTD report are used to annually calculate the Block Grant distribution to Broward County. **Since the City/DFLTMA has been providing data**

for the BCT NTD report and is now a Small Reporter submitting its own NTD report, there is a measurable impact on the annual allocation of Block Grant to BCT from FDOT. Much like the FTA Section 5307 program, the City should request Broward County to review and sub-allocate an appropriate amount to the City for transit operations.

Explore possibilities for becoming an eligible Florida Pubic Transit Block Grant Recipient.

Should it be decided to move ahead with requesting and securing designated recipient status for federal transit funding purposes, consideration should then be given to requesting and becoming an eligible Florida Pubic Transit Block Grant recipient as well. If the City becomes an FTA Section 5307 Designated Recipient, the City should coordinate with FDOT to explore the possibility of using this 10-year Transit Master Plan in lieu of a full TDP to receive State Block Grant funding.

Rule Chapter 14-73 of the Florida Administrative Code details the requirements of a TDP and, based on the efforts already completed with this study, only a relatively small effort may be needed to add any missing elements that would be required.

As with any stable source of funding, there are several hurdles to clear before the City could receive Block Grant funding directly, and it would be at least FY 2020 before the first allocation as an eligible recipient would be available. As with the Federal process, coordination and approvals would be required, including those of the Broward MPO, BCT, and FDOT.

The City should work with FDOT on securing this eligibility, as the Public Transit Block Grant program has been the most stable and secure source of State funding for transit in Florida for many years. As the City continues to grow, the need for city-based transit would increase, and securing the status as an eligible recipient would help meet those needs and may also improve access to reliable streams of local revenues. Again, as the unknowns are high and the players involved are numerous, the City should first evaluate its long-term needs and role as well as the estimated difference in funding that this would provide prior to embarking on this path.

Consider necessary service and capital cost reductions to meet funding constraints,

One of the most critical considerations for the City/DFLTMA is sustaining a transit service that provides freedom of mobility to people. Although the City is also served by BCT, Sun Trolley service has continued to be an important travel alternative, as the data have shown repeatedly.

However, as presented in the short-term financial plan, funding shortfalls continue to be the major issue to sustain current services. However, the short-term plan has identified a toolbox of funding options to remedy the deficits in the near future, but those new funding estimates are based on reasonable but not necessarily easy-to-achieve assumptions about the funding totals or timeframes.

Therefore, the following action items are recommended for careful consideration by the City/DFLTMA for moving forward:

- ***Evaluate and eliminate low performing routes – Initiate service monitoring and reduction process to assess the system carefully for possible reductions of routes to more efficiently utilize available financial resources. Based on the data analyzed as part of this study effort, the following are recommended for evaluation and potential elimination.***
  - *Galt Links (A and B) – Despite, receiving Section 5307 funding for Galt Link buses in 2017, as one of the lowest performers in terms of ridership productivity (riders per service hour), this route should be evaluated for possible elimination (impacts on any capital grant agreements used to procure vehicles should be reviewed prior to elimination). This route costs the City/DFLTMA approximately $270,000 per year. In addition, the funds directly associated with the route, originating at regional malls and other cities served, amount to only a fraction of the annual cost at $50,000. As no Sun Trolley route is fully funded by direct beneficiaries, productivity of the route rather than direct funding should be the focus in any decision for elimination. Another reason for a closer review would be that the route is the farthest from the city, whereas other routes are connected to each other and to the Downtown core.*
  - *Las Olas Link – Another low performer on ridership productivity, this route should also be closely evaluated for possible elimination. The route costs approximately $375,000 per year and provides a connection to the beaches, which are already connected by the high-performing Beach Link.*
- ***Review staffing/consultant structure for DFLTMA – Both the short- and long-term plans presented have recommended adding new staff to assist the City/DFLTMA provide a better and more efficient trolley service. However, although it may be necessary and will pay-off in the long run, adding full-time staff is an expensive and longer-term commitment. Therefore, prior to such a decision, a careful evaluation of the current process should be reviewed. If the City/DFTMA finds ways to continue the current process (with outsourcing) in a more financially-efficient manner, the***

schedule of hiring the new Transit Planner (as recommended for FY 2020) should be reevaluated. However, once the new streetcar is implemented in the city, the need for a permanent planner for Sun Trolley will be more justifiable and meaningful, even with outside consultants helping to address any increased demands/needs for transit in the city.

- ***Delay establishing fixed bus stops – As identified in the bus stop infrastructure plan, adding permanent bus stops, even at a basic level, requires significant financial resources and staff time, both of which are in short supply at the City/DFLTMA. In addition, some of the routes will be realigned with the Wave streetcar start-up, and some may be eliminated well before that due to cost reduction processes. For these reasons, without any capital funding identified, the fixed bus stop program should be delayed as needed. However, this should be considered only after a careful review of any possible revenue streams, as fixed bus stops help promote transit usage and can be a key piece of an array of infrastructure elements that can help make the City a true "pedestrian first" city in the near future.***