



Miami Beach Intermodal Hubs Feasibility Study

Prepared for

City of Miami Beach
Transportation Department

Prepared by

ATKINS

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Final Report

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1.0 Introduction

The City of Miami Beach has been pursuing the development of intermodal hubs in each of its three districts: North Beach, Middle Beach, and South Beach. This report contains two main elements. The first is to summarize the evolution of concepts and locations for intermodal hubs, or centers, in each of the three City districts through a series of studies and plans spanning over 18 years. The second element is to examine the requirements and potential locations for a North Beach intermodal center, as this type of work has been performed in greater detail over the years for the Middle Beach and South Beach districts.

Through this study, the City of Miami Beach is exploring the feasibility of developing an intermodal hub, identified herein as the North Beach District Intermodal Center, in the vicinity of the 72nd Street municipal parking lot, where passengers could access the north/south bus routes to travel to South Beach, Downtown Miami, Bal Harbor, Aventura or other destinations in the county.

Like the South Beach and Middle Beach Intermodal Center, the proposed North Beach Intermodal Center represents an important opportunity to truly coordinate transportation with land use to integrate a regional and local transit center into the surrounding neighborhood. The proposed intermodal center will also:

1. Provide convenient transfers for passengers connecting between transit services, including Miami-Dade Transit (MDT) Metrobus service operated by Miami-Dade County's Department of Transportation and Public Works (DTPW), existing and future Miami Beach Trolley routes, potential future rail service, and other potential first and last mile transit solutions.
2. Create strong intermodal connections to and from surrounding existing and future neighborhoods, whether passengers are arriving via foot, bicycle, transit, or auto.
3. Design as a facility that is seamlessly integrated into the surrounding community.
4. Reduce vehicle miles traveled and greenhouse gas emissions by facilitating mode shift from single occupant vehicles to alternative modes of transportation.

This report focuses on the outcome of the study and presents the site requirements as well as a conceptual site plan that can form the basis for future detailed design work on the intermodal center.

1.1 Overview of Intermodal Transit Centers

Intermodal transit facilities are hubs where interfaces and interconnections occur among transportation systems and modes of travel. Generally, passengers arrive at these transportation hubs via one mode and leave by another (e.g., airplane; regional, light or commuter rail; public bus transit; private intercity bus; charter bus; limousine service; private automobile; taxi; rental car; car share; bicycle; or on foot).

Intermodal transit facilities are strategically located. They most often are in major metropolitan areas in proximity or convenient access to central business districts, major centers of employment, public transit, and activity-oriented destinations. Successful intermodal transit facilities support and enhance transit usage, promote seamless transfers among modes, provide clear access to transportation networks, maximize transportation options, and create efficiencies of shared costs and transportation infrastructure.

In addition to providing transportation benefits, intermodal transportation facilities are being reinvigorated as hubs of economic, commercial, and mixed-used development activity. Financing strategies and development techniques, such as public-private partnerships, have catalyzed reinvestment in public infrastructure and adjacent property. The older “legacy” or iconic “union stations” are being revitalized to serve as destinations and targeted to support economic and transit-oriented development.

1.2 Study Area

The North Beach District is one of three districts in the City of Miami Beach along with Middle Beach and South Beach. It is the northernmost section of the City, roughly bounded by 63rd Street and Indian Creek Drive to the south and 87th Terrace to the north (**Figure 1**). The study area is characterized by a mix of single-family, multi-family, low- and high-rise condominiums, as well as a mix of neighborhood parks, hotels, a golf course, the North Shore Park and Youth Center, and access to Biscayne Bay. It collectively refers to the neighborhoods known as Normandy Shores, Normandy Isles, Biscayne Point, Stillwater Drive, Biscayne Beach, North Shore, Altos del Mar, Parkview Island, and Atlantic Heights.

Figure 1: North Beach District Study Area



The City of Miami Beach street network is composed of arterials, collectors, and local streets. It has two major North-South arterial roadways, one of which is Collins Avenue providing connectivity throughout the City’s entirety. The other is Alton Road, which provides access to much of the City. Other major arterials include four East-West roadways within the City and which continue the four causeways that connect the City to the mainland. These roadways are SR A1A/5th Street, Dade Boulevard, SR 112/Arthur Godfrey Road/W 41st Street, and SR 934/ 71st Street. The rest of the major roadways within Miami Beach are collectors. The major north-south arterials: Collins Avenue and Harding Avenue (SR A1A), and Alton Road (SR-934) serve as connections between causeways and the barrier island communities north of the Miami Beach City limits.

Originally, both Collins Avenue and Harding Avenue, designated as SR A1A, were two-way roadways. Currently, SR A1A is divided into two one-way pairs, Collins Avenue (northbound) and Harding Avenue (southbound). Each roadway consists of three lanes, with parallel parking along both sides. With the current one-way pair configuration, peak hour congestion is experienced, causing some commuters to redirect their routes into the surrounding neighborhood streets. Traffic with local origins or destinations within the North Beach district generally must use the one-way pair and is frequently forced to make many unnecessary turns to access businesses, particularly on Harding Avenue. This results in greater vehicular delay along with an unfriendly pedestrian environment. However, while the vehicle delay is significant at the intersections because of the large number of left-turns, speeding is a concern at many of the stretches along the one-way pair and on the neighborhood streets.

The design charrette for the *North Beach Town Center Plan, 2007*, identified the opportunity to explore reverting from the current one-way pairs of Collins Avenue and Harding Avenue to their original two-way configuration. The charrette recommended that Collins Avenue be converted to a four-lane divided roadway with two sidewalks and no parking while Harding Avenue is converted to a two-lane roadway with two sidewalks. Additionally, bike lanes would be added along both sides of Harding Avenue south of 93rd Street. The conversion of Collins Avenue may allow the roadway to become an upscale boulevard with a beautifully landscaped median which is more in tune with the surrounding multi-story buildings. Similarly, the conversion of Harding Avenue may allow the street to become more in scale with the surrounding single-family homes and townhomes.

There are several more benefits of the two-way configuration other than just the aesthetic appeal. Safer pedestrian crossing on the two-way streets may occur with more narrow lanes and middle islands, further increasing public safety. The reduction in turns may be more convenient and safer for local drivers and pedestrians. The reduction in speeds could lead to less severe crashes.

The *North Beach Master Plan, 2016* also recommended that Collins Avenue and Harding Avenue be reverted to two-way traffic and a dedicated bus lane, which is consistent with the City of Miami Beach's established modal hierarchy for transportation. The mode hierarchy consists of pedestrians as the highest priority, transit, bicycles, and freight as the second priority, and private vehicles as the third priority. This modal prioritization was presented by the Administration during a Commission Workshop on Transportation held in March 2015 and was subsequently adopted by City Commission Resolution in July 2015. Miami Beach is the only City in Miami Dade County and one of only a few cities in the nation that has formally adopted this modal prioritization strategy. **Table 1** shows the mode share for 2015 and the mode share goal for 2035.

Table 1: Mode Share in 2015 and 2025

Mode	2015	2035	Difference
Private Vehicles	64%	43%	-21%
Public Transit	11%	20%	+9%
Walking	10%	17%	+7%
Bicycling	5%	10%	+5%
Other	10%	10%	0%

2.0 Purpose and Need

The project purpose and need outlines the reasons for proposing a project and the underlying needs for a project. The purpose and need is the foundation for the planning process. It provides the rationale and justification for undertaking the study and forms the basis for the range of alternatives to be studied. The purpose and need provides the basis for defining project criteria and evaluation factors, which should focus on project requirements and various considerations which relate to the functionality of an intermodal center situated in the North Beach district.

2.1 Project Purpose

The purpose of the proposed project is to provide the North Beach district of Miami Beach a reliable, safe, and convenient travel connection, to better serve existing transit riders, attract new transit patrons, improve connections to/from Miami Beach and the Miami Metropolitan Region. The project desirably would also help support established and emerging activity centers and other economic development opportunities by reinforcing the identity and presence of transit service as an alternative mobility choice. Importantly, it will serve to improve livability by increasing mobility and accessibility in the North Beach district of Miami Beach. The project purpose is envisioned to embrace these elements:

- Serve increased travel demand generated by new development in Miami Beach and the Miami Metropolitan Region.
- Provide greater mobility options and connectivity between bus and other transportation modes (e.g., automobile, bicycle, walking, future premium transit, etc.), park-and-ride, ridesharing, and possibly carpooling facilities.
- Provide high-quality transit service to and from key activity centers in Miami Beach by providing a time-efficient transit option connecting to and serving key destinations across Miami Beach and on the mainland.
- Better serve transit-dependent populations and improve opportunities for participation of the workforce in the local and regional economy.
- Improve the system operating efficiency of the transit network.
- Support local land use planning and design.
- Provide social benefits from transit investment that support economic opportunities by creating an activity center that attracts other development and that provides a focal point within the North Beach district.
- Help meet the sustainability goals and measures as contained in state, regional, and local plans.

2.2 Need for the Project

In recent years, Miami Beach has made a concerted effort to grow beyond its traditional tourism-based economy. Tourism is the largest sector of the City's economy with over \$1.6 billion in direct annual visitor spending on hotel, food, and beverage, and \$900 million in the retail marketplace. The City has worked diligently to become a multifaceted business center and regional leader for the information, health care, and arts and culture industries.

Such growth, however, requires supporting transportation infrastructure. Increasing development will increase work trips and non-work trips for shopping, medical services, and entertainment. Expanded transportation options will be especially important for workers to access employment opportunities both in Miami Beach and the greater Miami area.

The *Coastal Communities Transportation Master Plan Final Report* noted that 44% of the residents in the master plan study area work within the beach area while 56% of the study area workforce travels west using the causeways to reach major employment centers in Downtown Miami, Miami International Airport, Doral, and Kendall/Southwest Dade area. Improved public transit and increased transit usage will be an important part of any mobility solutions to address this growth.

The existing roadway network within Miami Beach currently experiences traffic congestion, particularly during peak periods. Without mitigation, the anticipated level of new development will further increase congestion within the corridor. Expanding roadway capacity is not viable option because of constraints with the available right-of-way and environmental impact concerns. There is also concern that highway investments are not a sustainable, long-term solution and that they do not encourage mixed-use, compact development—all goals of the regional and local plans. Similarly, parking supply is constrained, particularly in downtown Miami Beach, and it is unlikely as well as undesirable that new parking will accommodate projected employment increases.

Additionally, access to automobiles is not available to all demographic groups. Thus, there is a need for new investments to provide a high-quality transit services and connectivity in Miami Beach to mitigate the growth of traffic and congestion, to enable and support more sustainable development patterns, and to preserve roadway capacity. Accessibility and connectivity are critical to the success of any transit investment.

In turn, as the study area continues to develop and redevelop, providing increased transit service and improving accessibility and connectivity would help to shape and support future planned mixed-use development. Such development patterns would support more sustainable growth, possibly leveraging additional economic development and employment opportunities, while minimizing needs to expand roadway and parking capacity.

The North Beach Master Plan was developed in concert with these citywide issues and initiatives in mind, to shape a stronger and more robust economic platform for the North Beach district, one that would support more localized destinations and trip-making, and less use of the auto for even short trips. The concept of a North Beach Intermodal Center would support the objectives of the North Beach Master Plan and provide a mobility center within the district core that would complement the district vision. In summary, the needs supporting the advancement of a North Beach Intermodal Center include these:

- There are a substantial number of boardings, alightings, and transfers occurring within the North Beach core area. These figures are expected to grow as the area evolves and transit ridership increases as the City executes its mode priority framework for transportation.
- Existing transit shelters are minimalist in their accommodations, especially in view of the region's daily sun and rain environment. Better facilities would attract users and provide a higher level of comfort and convenience.
- Transit has a low-profile and identity as a major mobility service. An improved intermodal facility would provide a stronger visibility and identify for the transit service.
- The intermodal center would enhance connectivity between the various transit routes currently serving the North Beach district, facilitating transfers between routes and offering other mobility services. This would enhance the comfort and convenience of transit to users.

- The correct intermodal facility site could serve as a mobility center, providing a location for all manner of transportation services, such as shared ride/taxi, bicycle rental, kiss-and-ride, and other services.
- The center would complement the future Route 79 express route as well as the contemplated transit exclusive travel lanes proposed in the North Beach master plan.
- As congestion grows on Miami Beach streets over time, and as the City implements transit exclusive lanes to facilitate transit vehicle movement, transit ridership should expand, and an intermodal center would support these transit investments and service strategies by providing a connection node between these corridors.
- The presence of an intermodal center would be viewed by development interests as a marketing asset for properties as it represents expanded mobility choices for tenants and visitors of mixed-use activity centers.
- The intermodal center would reinforce the development/redevelopment objectives of the North Beach master plan.
- The intermodal center would be expected to enhance land uses in its vicinity by creating a focal point for transit and increasing foot traffic in its vicinity.

3.0 Study Background

The need for intermodal transit facilities in each of the City's three districts has been well documented at various times in prior transportation studies sponsored by the City of Miami Beach, including the studies highlighted below. The common theme that runs through these studies is that intermodal transit facilities will centralize transportation access, mitigate congestion, facilitate intermodal connectivity, and enhance the potential for economic development.

This section summarizes prior plans and studies pertinent to the North Beach district transit service, and summarizes the relevance of the studies and reports to planning for intermodal centers across the North Beach, Middle Beach, and South Beach districts of the City, and profiles existing transit services in the North Beach district.

3.1 Relevant Studies

This section summarizes several studies relevant to transportation planning, transit planning, and intermodal center planning across Miami Beach. The studies are listed in **Table 2**.

Table 2: Summary of Prior Planning for Miami Beach Intermodal Centers

Study/Report/Plan	North Beach	Middle Beach	South Beach
<i>City of Miami Beach Municipal Mobility Plan, 1999</i>	---	Proposed an intermodal center on Normandy Isle	Proposed an intermodal center near 5 th Street and Alton Road
<i>Miami Beach Intermodal Feasibility Study, 2000</i>	---	---	Of 11 sites across the City, study recommended 5 th /Alton, the Convention Center Parking Lot, and 17 th /Washington,
<i>Coastal Communities Transportation Master Plan Final Report, 2007</i>	Recommended study of intermodal center at east end of Kennedy Causeway	Recommended study of intermodal center at east end of Julia Tuttle Causeway	Recommended study of intermodal center at east end of MacArthur Causeway
<i>North Beach Town Center Plan, 2007</i>	Proposed a small-scale transit pull-off bay on north side of NW 72 nd Street between Collins and Harding Avenues	---	---
<i>Miami Beach Transportation Master Plan, 2016</i>	---	Facility recommended near Alton Road and North Bay Road	Temporary facility recommended at existing stops between 71st and 73rd Streets on Collins and Abbott Avenues; permanent site on city parking lot in this area
<i>North Beach Master Plan, 2016</i>	Recommended transit exclusive travel lanes on major roadways; no specific intermodal center site noted	---	---
<i>Middle Beach Intermodal Center, 2017</i>	---	Investigated intermodal center in southeast quadrant of Alton Road/I-195 interchange	---
<i>Miami-Dade Dept. of Transp. and Public Works Transit Development Plan, 2017</i>	---	---	---
<i>Miami-Dade 2040 Long Range Transportation Plan, 2014</i>	---	---	---
<i>Strategic Miami Area Rapid Transit (SMART) Plan, 2016</i>	---	---	Beach Connection PD&E Study to investigate interim/ultimate intermodal center sites in South Beach
<i>City of Miami Beach Bicycle Pedestrian Master Plan, 2015</i>	---	---	---

Note: --- symbol denotes that no mention of an intermodal center in this district was made.

3.1.1 City of Miami Beach Municipal Mobility Plan, 1999

The *Municipal Mobility Plan* identified transportation and mobility issues through a series of extensive public meetings. Among the most important transportation issues City-wide were:

- Roadway System Needs
- Neighborhood impacts
- Sense of Place
- Safety
- Hurricane Evacuation

A total of 44 projects were developed in response to these issues to comprise what the study called the Project Bank. This bank identifies specific projects or strategies, to improve mobility and enhance the quality of life in Miami Beach. Among the projects in the bank were two intermodal transit facilities, one located in Middle Beach and the other in South Beach.

Preliminary cost estimates were developed for each project to provide a rough-order-of-magnitude (ROM) cost estimate (based on comparisons with similar projects in the Miami-Dade County Fiscal Years 1999-2003 Transportation Improvement Program). No ROM cost estimate was developed for the Middle Beach Intermodal Transportation Facility since no site was identified at the time. It was estimated it would cost \$7.5 million to design and construct the South Beach Intermodal Transportation Facility.

3.1.2 Miami Beach Intermodal Feasibility Study, 2000

The City of Miami Beach conducted an intermodal transit center feasibility study to identify possible intermodal sites that could provide convenient transfers for passengers connecting between transit services, including MDT, Miami Beach Trolley, and a future rail line in Miami Beach. The ideal site would accommodate an intermodal center, a maintenance yard to store its fleet of electric shuttle buses, parking, and joint development opportunities. The *Miami Beach Intermodal Feasibility Study* identified eleven possible sites. The sites included:

- 5th Street and Michigan Avenue
- 5th Street and Alton Road
- West Avenue and Dade Boulevard
- Convention Center Lot
- City Hall Parking Lot
- Dade Boulevard and Pine Tree Avenue
- Indian Creek Drive and Collins Avenue
- 83rd Street and Collins Avenue North
- 83rd Street and Collins Avenue South
- 17th Street and Washington Avenue
- City Hall Lot East

Each site was analyzed based on the criteria noted below:

- Potential rail connection
- Minimum size requirements
- Potential rail connection
- Ability to serve historic district hotels
- Accommodate intermodal transfer

- Accommodate electric shuttle maintenance yard/vehicle storage
- Ability to accommodate parking
- Ability to facilitate joint development
- Potential negative environmental impacts
- Ability to serve convention center
- Proximity to shuttle routes
- Ability to serve DTPW
- Cost of land acquisition
- Impacts on residential areas
- Ability to facilitate service to Middle Beach
- Ability to serve high density development
- Effects on existing traffic congestion

A short list of appropriate sites that could accommodate a joint intermodal and maintenance yard was developed. The prime locations selected from this study were:

- 5th Street and Alton Road
- Convention Center Lot
- City Hall Parking Lot
- Dade Boulevard and Pine Tree Avenue
- Indian Creek and Collins Avenue
- 17th Street and Washington Avenue

It was recommended from this analysis that a separate intermodal center and maintenance facilities be developed, primarily due to the differing goals of each facility. The intermodal facility was conceptualized as a high profile, centrally located facility oriented to the public. It was to be a gateway and showpiece of Miami Beach, representing its support for public transit and mobility as well as its commitment to the quality of life of its citizens and visitors.

The maintenance yard would serve the more utilitarian functions of providing maintenance, repairs and storage of buses. Not serving the public in an active way, this facility would be separated from the intermodal center acting as a centerpiece.

Based on the evaluation criteria, the Convention Center Lot was selected as the most appropriate site for an intermodal center, parking garage, retail and office space due to its size and location. The surrounding area consists of commercial, governmental and cultural uses, offering the density necessary for transit. Negative impacts to the surrounding area would be minimal. While providing visitors and residents with access to alternative mobility and increasing the number of patrons to the area would be seen as having a positive impact.

The minimum space needed for an intermodal facility would be approximately 26,000 square feet. This would hold parking, battery storage, and associated administrative uses. An intermodal facility associated with a parking garage would require about 81,000 square feet. This would accommodate four levels of parking for 1,000 vehicles plus space for retail and joint development activities. A bus maintenance facility would minimally require about 67,000 square feet. This would contain parking for buses and passenger vehicles, maintenance and battery areas. Total space requirement of these separate facilities would be about 148,000 square feet.

Conversely, a combined intermodal facility with parking and maintenance area would require between 80,000 and 100,000 square feet. This is nearly 50,000 square feet less than the separate facilities.

The location was ideal for facilitating transfers to and from MDT bus routes. This location also supported the long-term concept for a regional light rail line connection from the mainland which prior planning demonstrated should be linked to the Convention Center for maximum effectiveness. This site also addressed the parking shortage in this area since it could accommodate a parking garage. As planned, trolley routes would provide connecting access between the Convention Center and other districts within the City, including Ocean Drive and South Beach.

The Public Works facility located at Dade Boulevard and Pine Tree Road was determined to be the best location for the maintenance yard. This location is already serving a similar function in 2017, is large enough, and is within proximity to the Convention Center lot. It is already owned by the city and would cause no disruption to the surrounding area.

Further development of the project was delayed until final plans for the Miami Beach Convention Center were finalized.

3.1.3 Coastal Communities Transportation Master Plan Final Report, 2007

The goal of the *Coastal Communities Transportation Master Plan Final Report* was to develop a transportation master plan that addresses the current traffic and transportation issues on the barrier islands in the northeastern Miami-Dade County. The study area included Miami Beach, Aventura, Sunny Isles Beach, Town of Bal Harbour Village, Town of Bay Harbor Islands, Town of Surfside, and North Bay Village.

One key objective of the study was to develop a list of multimodal projects designed to enhance regional mobility in a coordinated manner. To achieve this objective, an intermodal center feasibility study was recommended to examine the potential of intermodal centers adjacent to each end of each of the causeways (William Lehman Causeway, Broad Causeway, Kennedy Causeway, Julia Tuttle Causeway and MacArthur Causeway) within the study area. It was anticipated that these intermodal centers would provide a direct link to existing and any proposed transit service in the “Biscayne Boulevard Corridor, on the mainland, as well as provide a link to local circulator systems”.

The concept of developing intermodal centers along the causeways was supported by analysis of transit travel patterns in the study area:

- 12% of transit trips (final origin to destination, not for one bus route) are short trips that begin and end within the study area
- 14% of the transit trips are regional but beginning and ending within the study area, and are approximately north-south in direction
- 74% of transit trips cross Biscayne Bay

3.1.4 North Beach Town Center Plan, 2007

The North Beach Town Center initiative came about from an intensive collaboration between North Beach residents and the City of Miami Beach. The concept plan represents a vision and guide for the future development of the North Beach Town Center, which is bound by 73rd Street on the north, Collins Avenue on the east, 69th Street on the south and the Indian Creek waterway on the west.

The plan envisioned a mix of office, retail and residential uses in the North Beach Town Center, with the goal of creating a daytime, evening and weekend activity center that is easily identifiable, is pedestrian-oriented, and incorporates a mix of uses and activities. The plan recommended the creation of a pedestrian corridor with wide sidewalks, plazas, and other pedestrian amenities.

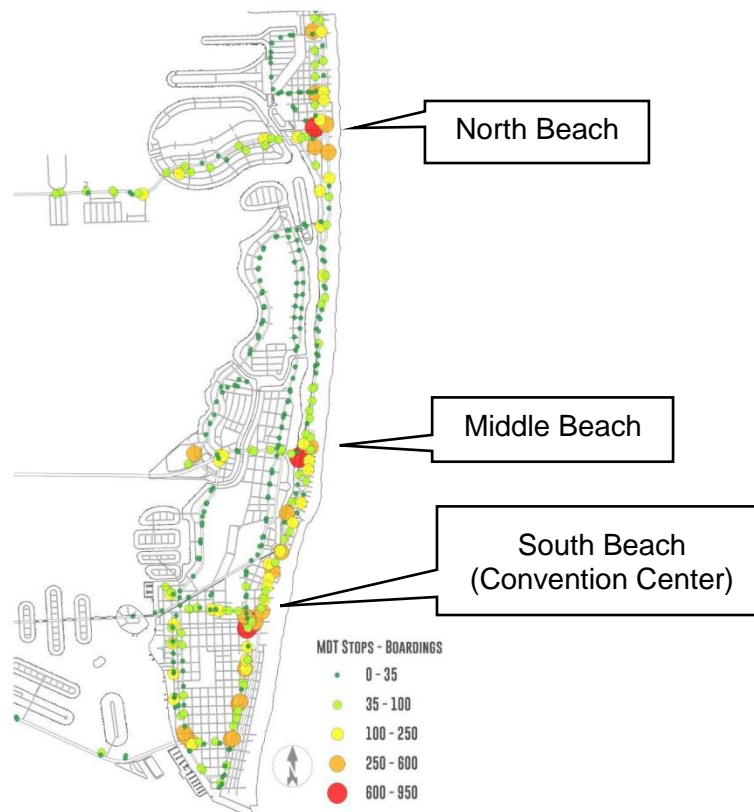
The plan also recommended a bus transfer terminal to be located in the Town Center development. Somewhere on the perimeter of the 72nd Street municipal parking lot was suggested. This location would allow access the north and south bus routes; accommodating travel to South Beach, Downtown Miami, Bal Harbour, Aventura or any other destination within the county.

The concept plan for the North Beach Town Center was adopted by the City of Miami Beach in 2007. This was followed by an amendment to the Comprehensive Plan and the adoption of three Town Center "TC" zoning districts in 2011.

3.1.5 Miami Beach Transportation Master Plan, 2016

The *Miami Beach Transportation Master Plan* (TMP) contains goals, policy guidance, and measurable objectives for operating and investing in Miami Beach's transportation system. It also includes an overview of the strategies and investment programs that the City of Miami Beach and the community intend to accomplish by the year 2035. The study identified that the North Beach, Middle Beach, and South Beach locales were focus points for transit ridership (boardings and alightings) per **Figure 2**.

Figure 2: Miami Beach Transit Activity



The TMP identified intermodal centers to increase connectivity among a variety of transportation modes and support Miami Beach's economic development goals. The study identified that intermodal centers would; provide a smooth transfer area between bus and other motorized and non-motorized transportation modes (e.g., rail, automobile, bicycle, walking, etc.); provide a range of passenger services that the existing Miami Beach transit stops do not provide; connect transportation modes to activity centers and will contribute to Miami Beach's economic health.

The TMP identified potential transit transfer sites in each of the City's districts:

- South Beach Bus Transfer Station – In the near term, it was recommended a temporary street bus transfer facility be located at 23rd Street between Collins and Park Avenue. The temporary site would be used until the City identified a permanent location that can accommodate up to seven buses and can load and unload passengers safely and easily.
- Middle Beach Park and Ride Station - The park and ride station should be near State Road 907/Alton Road and North Bay Road.
- North Beach Transfer Station – In the near term, the City should locate a transfer facility at existing bus stops between 71st Street and 73rd Street on Collins Avenue and Abbott Avenue. This site could be used until it constructed a bus transfer facility on City-owned property between 72nd Street and 73rd Street, Collins Avenue, and Abbott Avenue.

3.1.6 North Beach Master Plan, 2016

In October 2016, the Miami Beach City Commission approved a master plan for the city's North Beach neighborhood. The plan offers a set of specific proposals to revitalize the area which has lagged South Beach and Middle Beach areas of the city in terms of development.

The master plan calls for five big ideas to revitalize the area: the creation of a town center along 71st Street, more walkable streets, enhancing neighborhoods through the creation of local historic and local conservation districts, and the creation of more parks and upgrading construction to withstand the challenges of sea-level rise.

Many aspects of the plan will require ordinance changes and approval from the city commission. Commissioners have already given preliminary approval to raising height limits from 75 feet to 125 feet along 71st Street and parts of 72nd Street in a move to create a town center for North Beach. They have also created a new overlay district for the Ocean Terrace Historic District between 73rd Street and 75th Street where developers could build a new 235-foot high condominium or a hotel along Ocean Terrace.

Commissioners also approved the creation of a short-term or extended stay rental district along Harding Avenue from 87th Street south to 73rd Street. The ordinance (Sec. 142-1111 (d)) will allow for short-term rentals for weeklong periods in buildings that front Harding Avenue. Both developers and preservationists supported the measure, saying there were no incentives for owners of the 75 buildings covered by the ordinance to preserve them because they are not suitable for multiyear rentals and rental income derived from the buildings was not sufficient to cover the high costs of maintaining the aging structures – especially increasing insurance premiums related to the costs of sea-level rise.

The main transit recommendation to come from this report was to provide exclusive bus transit lanes along four of the main corridors: 79th Street, Normandy Drive, Collins Avenue, and Harding Avenue. One day those exclusive bus transit lanes could become light rail lanes and link North Beach to the City's light rail system.

3.1.7 Middle Beach Intermodal Center, 2017

The City of Miami Beach conducted a study to explore the prospects of constructing an intermodal center adjacent to Julia Tuttle Causeway (Interstate 195 [I-195]/State Road 112 [SR 112]) at Alton Road. The 4.8-acre site is currently owned by the State of Florida and is used by the Florida Department of Transportation (FDOT) as a debris management site. Miami Beach wishes to transform the site into a vibrant, central transportation hub for regional and local transit connections to enhance mobility and connectivity in the region. The following summarizes the principal elements of the proposed facility:

- Transit hub with 10 transit bays (6 for 60-foot articulated buses and 4 for standard buses) and a central passenger platform
- Covered passenger waiting area
- Driver comfort station
- Passenger comfort station
- Retail kiosks on the passenger platform
- Bicycle parking and lockers, with room for bike sharing operation
- Taxi/rideshare" parking area
- Kiss-and-Ride drop-off/waiting area
- Handicapped parking
- Surface parking spaces (75 minimum)
- Future 1,000 space parking garage
- Carshare spaces

The study generated a conceptual design plan and the Middle Beach Intermodal Center functional requirements but did not identify a preferred design because some factors, including FDOT's approval to use the site have not been finalized. This study represents consensus among the study's stakeholders about the required functionality of the intermodal center, but the implementing decisions will need to be carried forward by one or more stakeholders (e.g., FDOT, DTPW, Miami-Dade Transportation Planning Organization, etc.).

3.1.8 Miami-Dade Dept. of Transp. and Public Works Transit Development Plan, 2017

By Florida Statute, transit systems must submit an annual Transit Development Plan (TDP) to FDOT laying out, among other requirements, the agency's cost-feasible plan for transit service improvements over the upcoming 10-year period. The Miami-Dade TDP documents a wide range of planned transit improvements, including SMART Plan projects. Relative to the study area, there are no planned transit service projects affecting the North Beach district. In the current TDP, upgrades to the 79 Max transit route to create an express bus corridor have been deferred into the unfunded category.

3.1.9 Miami-Dade 2040 Long Range Transportation Plan (LRTP), 2014

The 2040 LRTP provides a long-term master plan for multimodal transportation investments across the entire county on a cost-feasible basis that requires all planned project be funded by expected revenues. The plan has identified the following projects in Miami Beach by implementation phases, as follows:

- Priority 1 (2015-2020):
 - West Avenue Connector Bridge
- Priority 2 (2021-2025):
 - County Transit Route 79 upgraded to Express Bus
 - Venetian Causeway bridge replacement
- Partially funded:
 - SMART Plan Beach Corridor transit
- Bicycle/Pedestrian Projects:
 - Several projects across several priority phases.

The Route 79 transit project passes through the study area and would be an enhancement of the current Route 79 Max corridor which would be served by a North Beach Intermodal Center.

3.1.10 SMART Plan, 2016

The Strategic Miami Area Rapid Transit (SMART) Plan was developed by Miami-Dade County and the Metropolitan Planning Organization (MPO) and adopted by the Miami-Dade Transportation Planning Organization Governing Board on April 21, 2016. The SMART Plan is a comprehensive plan which advances six rapid transit corridors to the Project Development and Environment (PD&E) study phase to determine the costs and potential sources of funding for the project. These studies are now underway in all six corridors.

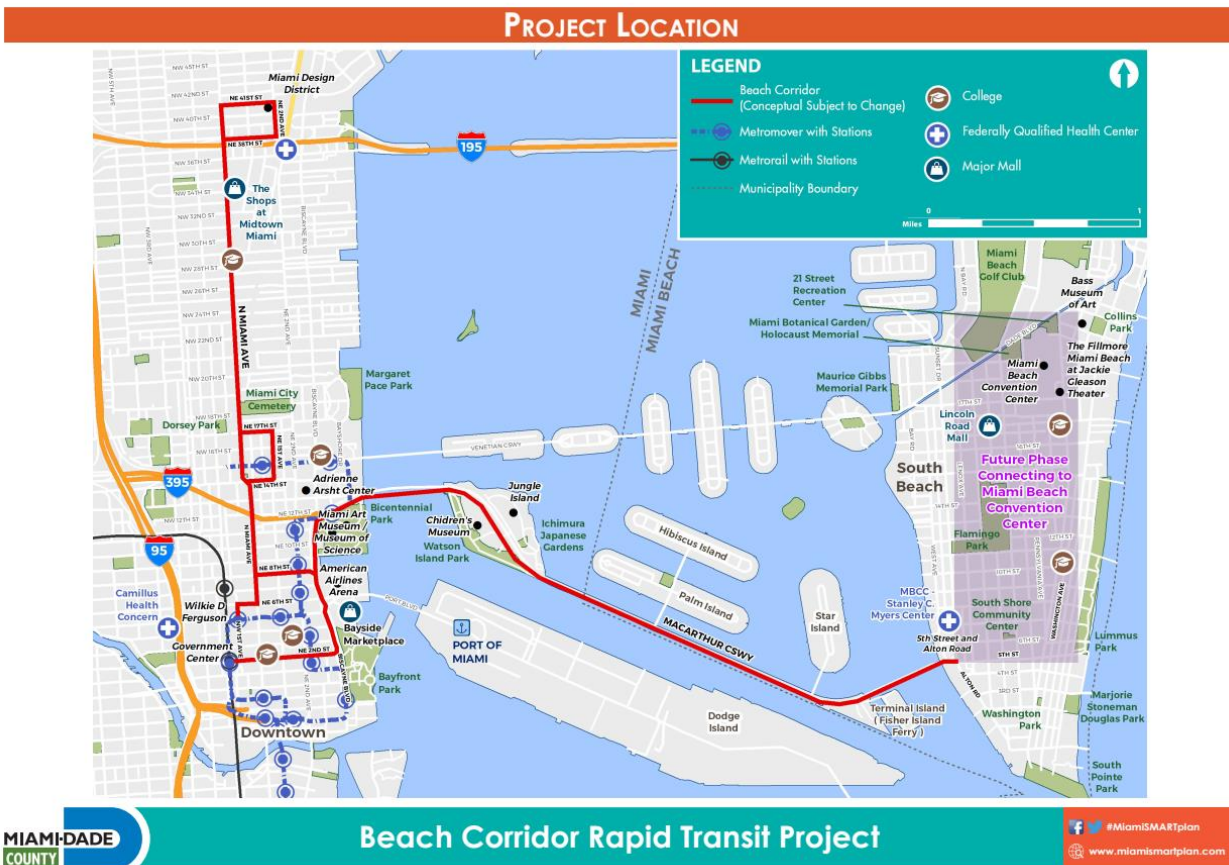
The City of Miami Beach would be served by the Beach Corridor element of the SMART Plan as shown in **Figure 3**. The Miami Beach terminus of the Beach Corridor will be reviewed again through the current study, with a potential interim terminus near 5th Street and Alton Road, and a future terminus likely near the Convention Center, although the study is to investigate these options in further detail and make a recommendation.

The SMART Plan also includes several Bus Express Rapid Transit (BERT) corridors. There are three such corridors serving Miami Beach – two via I-195/Julia Tuttle Causeway and one via I-395 and MacArthur Causeway:

- North - Miami Beach Convention Center via I-195/Julia Tuttle Causeway to Golden Glades via I-95
- Central - Miami Beach Convention Center to Civic Center via I-195/Julia Tuttle Causeway
- South - Miami Beach Convention Center to Downtown Miami via I-395 and MacArthur Causeway

The SMART Plan is intended to be developed collaboratively with the County, the municipalities, the transportation partners, the community and the private sector working to develop a funding strategy to implement the projects in the SMART Plan. The SMART Plan includes no transit projects that would pass through the North Beach district.

Figure 3: SMART Plan Beach Corridor



3.1.11 City of Miami Beach Bicycle Pedestrian Master Plan, 2015

This 20-year master plan envisions a network of protected bike lanes on major corridors, and a network of greenways on residential streets. The plan identifies specific infrastructure projects to achieve this goal and divides them into three categories:

Category 1 projects are near term improvements to the existing bicycle network over the next five years. Proposed Category 1 projects for North Beach include:

- Protected bike lanes on 72nd and 73rd Street, between Collins Avenue and Dickens Avenue between Atlantic Trail and Dickens Avenue
- Protected bike lane along Indian Creek Drive between Abbott Avenue and 63rd Street
- Medium to light greenway along 81st street from Atlantic Trail to Crespi Boulevard
- Greenway along 77th Street between the Atlantic Greenway and Dickens Avenue
- Greenway along Tatum Waterway Drive
- Shared path along the Parkview Island Park around Biscayne Elementary to Dickens Drive

Category 2 projects are improving the existing bicycle network to be undertaken beyond five years. Proposed Category 2 projects for North Beach include:

- Upgrade from sharrows to protected bike lanes from Atlantic Trail to Abbott Avenue
- Upgrade from sharrows to protected bike lanes on Normandy Drive from Biarritz Drive to Bay Drive
- Upgrade from sharrows to protected bike lanes on 71st Street from Biarritz Drive to Bay Drive
- Upgrade of Dickens Drive from bike lanes to protected bike lanes between 71st Street and Tatum Waterway Drive
- Protected bike lanes on 71st Street from Biarritz Drive to the City limits
- Protected bike lanes on Normandy Drive from Biarritz Drive to the City limits
- Upgrade from bike lane to protected bike lane on Indian Creek Drive between Abbott Avenue and Dickens Avenue

Category 3 projects require extensive infrastructure changes, financial resources, and/or further analysis. Proposed Category 3 projects for North Beach include:

- Protected bike lane on Harding Avenue from 73rd Street to the City limits and from 73rd Street to Indian Creek
- Protected bike lane on Collins Avenue from 73rd Street to the City limits
- Shared path on Fairway Drive along the golf course from Bay Drive East to Calais Drive
- Greenway on Bay Drive South
- Greenway on Byron Avenue from 81st Street to 73rd Street
- Greenway along 85th Street from the Atlantic Trail to Stillwater Drive
- Greenway along 69th Street from Indian Creek Drive to the Atlantic Trail
- Greenway on Hawthorne Avenue from 77th Street to Still Water Drive
- Greenway on along Crespi Boulevard between Hawthorne Avenue and 85th Street
- Greenway along 85th Street from Atlantic Trail to Still Water Drive

Critical regional connections at the MacArthur Causeway, the Venetian Causeway, the Julia Tuttle Causeway, and the John F. Kennedy Causeway all require investments in separate bicycle and pedestrian infrastructure to accommodate intercity regional travel between Miami Beach and the mainland.

3.2 Public Transit Network

Public transit is heavily used in Miami Beach and is a vital part of its urban character. DTWP's Metrobus connects to Downtown Miami and serves the North Beach district include routes H (108), S (119), L (112), 79, 115, 117, and 120. **Figure 4** shows County transit routes and City trolley routes in the North Beach district.

Figure 4: Existing North Beach Transit Routes



Per DTPW's *Ridership Technical Report, February 2017*, ridership is down in Miami Beach (**Table 3**) and throughout Miami-Dade County, with total Metrobus boardings off by nearly 10 percent for the year and Metrorail trailing 2016 results by 6 percent. The decline in ridership is attributed to a combination of a strong local labor market and lower gas prices, making it easier for would-be riders to use a private vehicle to travel instead of public transit. While City of Miami Beach trolley ridership is down year-to-year for the month of February for the North Beach Loop route, it has seen a recent surge in ridership, for both the North Beach Loop route and the Collins Link route which serve the North Beach area.

Table 3: Year Over Year Comparison of Average Weekday Ridership

Route	February 2017	February 2016	Percent Change
H (108)	1,556	1,636	-4.9%
S (119)	9,611	11,461	-16.1%
L (112)	8,115	8,954	-9.4%
79*	314	509	-38.5%
115*	229	373	-38.7%
117*	238	356	-33.2%
120	6,099	7,802	-21.3%
Collins Link	3,420**	0***	N/A
North Beach Loop	2,170	2,399	-9.6%
TOTAL	31,752	33,490	-5.2%

*Limited Weekday Service

**Data reported for March 2017

***No service provided

Sources: DTPW Technical Ridership Detailed Report – October 2016; City of Miami Beach Trolley Ridership Records

From the statistics in the table it is seen that the DTPW routes have seen substantial declines in ridership, reflective of a broader systemwide trend. These drops are variously attributed to an improved economy, more trips by auto or transportation network companies (Uber, Lyft), and slow bus travel times due to street congestion. As to City trolley routes, more recent data shows ridership growing at a relatively strong pace.

The City of Miami Beach also operates a network of citywide transit circulators as a complimentary service to DTPW's regional transit service. The City implemented the Alton-West Trolley Loop in February 2014, which began as a temporary circulator route during the reconstruction of SR 907/Alton Road between SR A1A/5th Street and 17th Street and Lincoln Road. This route, consisting of a one-way 6.6-mile counterclockwise loop, has been extremely successful, carrying over 2,500 daily transit passengers Monday-Saturday and over 1,800 daily transit passengers on Sundays. The North Beach Trolley Loop began operations in October 2014.

In 2016 the City of Miami Beach has implemented two additional trolley routes: The Middle Beach Loop (November 2016) and the Collins Link (December 2016). It also implemented the bi-directional South Beach Trolley service on November 1, 2017 to replace the existing South Beach Local service, enabling for trolley connectivity citywide. The South Beach Trolley route and service plan was adopted by the City Commission in January 2016.

As noted before, the North Beach area is one of the concentrated points of transit boardings and alightings. **Table 4** summarizes boardings and alightings between 72nd and 73rd Streets on Collins Avenue (northbound) and Harding/Abbott Avenue (southbound) for the month of October 2016. These two transit stops serve all the North District transit routes, and are the focus of transit ridership.

Table 4: Monthly Boardings and Alightings Between 72nd and 73rd Streets

Route*	North-bound Boardings	North-bound Alightings	North-bound Subtotal	South-bound Boardings	South-bound Alightings	South-bound Subtotal	Grand Total
H (108)	83	1	84	59	146	205	289
S (119)	139	145	285	127	165	292	576
L (112)	148	32	179	61	78	139	319
79**	0	21	21	46	2	48	69
115**	5	19	24	14	7	21	45
117**	10	22	32	12	6	18	50
120	80	142	222	120	103	225	445
Collins Link***	2,500	4,500	7,000	3,500	1,200	4,700	11,700
North Beach Loop	2,431	1,746	4,177	4,384	3,709	8,093	12,270
Total	5,396	6,770	12,024	8,323	5,416	13,739	25,763

*All data reported for October 2016

** Limited Weekday Service

***Estimated from data after service began

Sources: DTPW Technical Ridership Detailed Report
– October 2016; City of Miami Beach Trolley Ridership Records

From the table, several observations can be drawn:

- Collins Link ridership activity is high as this area is the northern terminus of the route.
- City staff indicates that there are many riders transferring between the Collins Link and North Beach Loop routes. Staff further indicates that transfer data is being reviewed and may lead to route revisions to provide more one-seat rides without transfers.
- As noted in the discussion of the *City Transportation Master Plan* report, the graphic provided shows that this area has indeed a concentration of boardings and alightings. This is a result of transfers between some transit routes, as well as the role of the North Beach core as a center for shopping, jobs, services, dining, parks, the beaches, and other resources.

Over the last few years the City of Miami Beach has embarked in efforts to plan unprecedented improvements to the existing transit system. Miami Beach Transportation Corridors have been included as priorities in the Miami-Dade County Smart Plan. Additionally, five major projects are included in the Miami-Dade Metropolitan Planning Transportation Planning Organization (TPO) 2040 Long Range Transportation Plan along with an additional set of two intercity trolley initiatives. Miami Beach has focused on multimodal transportation since transit has proven to enhance personal opportunities, reduce traffic congestion, reduce fuel consumption, reduce fuel

emissions, and increase the person capacity of roadways. Miami Beach faces numerous challenges in achieving its transportation and sustainability goals; however, these planned efforts and initiatives are effective steps in achieving a quality transportation system that supports growth and blossoms a vibrant community.

The following transit projects are planned for future implementation within the City of Miami Beach:

- 79th Street Causeway/John F. Kennedy Causeway enhanced bus service from the Northside Metrorail Station to the Miami Beach Convention Center
- Premium light rail/modern streetcar connection from a Miami Downtown Terminal to the Miami Beach Convention Center via the McArthur Causeway
- Central I-95 express enhanced bus service from the Miami Beach Convention Center to the Miami Intermodal Center at the Miami International Airport
- North I-95 express enhanced bus service from the Miami Beach Convention Center to the Golden Glades Interchange Terminal
- Miami Beach light rail/modern streetcar extension from the Miami Beach Convention Center to 71st Street/Normandy Drive

These projects are intended to provide greater mobility support the existing transit users within Miami Beach as well as to shift the mode-split from single-occupancy vehicles to public transportation vehicles by providing a variety of destinations and opportunities to travel in, out, and within the City of Miami Beach.

Since Miami Beach has a unique geography composed of multiple islands, opportunities for alternative transit mediums are available such as water taxis. Currently a private company provides this service from Bayside Market Place/Bayfront Park to the Miami Beach Marina with six daily trips and 90-minute headways. The City of Miami Beach *Blueways Master Plan*, March 2015 (BMP), has identified four potential stops throughout the Beach where docks and other amenities would create shared use spaces and routes for marine transit to and from mainland, Miami. The potential water taxi stops included: SoBe Street End Pocket, Monument Island, and Maurice Gibb Park. As of 2017, public water taxi service has been initiated at the Purdy Dock in Maurice Gibb Park.

4.0 Development Options

This section of the report focuses on the identification and evaluation of potential sites for a North Beach Intermodal Center. Discussion addresses the background and framework for the center's requirements and for comparing siting options as to their effectiveness. From this process, the leading site candidate to advance into implementation is identified.

4.1 Facility Concept Development

4.2.1 Facility Goals and Objectives

Based on review of the study area context and prior planning studies, the following goals and objectives were developed to guide the development and evaluation of alternatives:

Goal 1: Access and Mobility. Improve connectivity between transit services and land uses.

- **Objectives**
 - Support access to alternative access modes including bicycling and kiss-and-ride.
 - Maintain efficiency of transit operations (directness of access) while promoting connectivity between transit services.
 - Provide patron amenities and protection from weather.
 - Accommodate “enhanced” Miami Beach shelter configuration or alternate.
- **Measures**
 - Proximity to bicycling and kiss-and-ride facilities for modal interface.
 - Located on or very near to existing defined transit and trolley routes.
 - Compatibility with existing and planned street cross-sections.
 - Provision for new “enhanced” shelter design.

Goal 2: Land Use Compatibility. Leverage opportunities to reinforce community vitality and redevelopment.

- **Objective**
 - Maintain consistency with local land use plans.
- **Measure**
 - Qualitative assessment of compatibility with surrounding land uses for a given site.

Goal 3: Environment. Avoid, minimize, and mitigate adverse impacts on the natural, social, and cultural environments.

- **Objective**
 - Minimize adverse impacts to historic and natural resources.
- **Measure**
 - Qualitative assessment of possible environmental effects.

Goal 4: Economic Development. Support economic development by reinforcing proximity to activity centers.

- **Objective**
 - Serve areas with the most travel activity and potential for redevelopment.
- **Measure**
 - Relative proximity to prime activity centers and redevelopment sites.

Goal 5: Implementation. Identify a cost-effective transportation solution with good potential for implementation.

- **Objective**
 - Provide a cost-effective transportation solution.
- **Measure**
 - Relative implementation cost.

This set of goals, objectives, and measures are directly related to addressing the identified transportation needs of the study corridor.

4.2.2 Evaluation Framework

The evaluation framework for comparing the intermodal center site alternatives to be defined, and for identifying tradeoffs between options, will be structured around the set of measures identified for the project goals and objectives. Each of the proposed site alternative will be assessed against each measure with scores assigned on a scale from “0 to 4”, with “4” denoting strong performance by an alternative against a given measure, and “0” denoting weak performance. In addition, weights are assigned to each of the measures in line with their relative importance to each other. The score for a given alternative is then the summation of the score for each measure times the weight for that measure. The scores are intended as a guide to evaluate the overall performance of each alternative against the set of weighted measures.

The use of measures tied to the goals and objectives framework assures a direct linkage between the purpose and need for the intermodal center to how well each alternative addresses the set of measures.

4.2.3 Hierarchy of Transit Stations

In planning for an intermodal center facility, there are several key drivers in terms of identifying the scale and type of facility that is appropriate. The primary factors include the volume of boardings and alightings to be served, including interroute transfers, the number of bus routes being served, and their frequency of service (peak and offpeak).

From the prior study documentation, there are just over 25,000 monthly boardings and alightings in the Town Center district outside of the peak tourism season, with a large number of these associated with the Collins Express and the North Beach Loop routes operated by Miami Beach. Prior analysis also indicates that there are interroute transfers between patrons using the County transit and City trolley routes. Of course, there are many transit trips with origins and destinations within the Town Center district. **Table 5** summarizes that there are eight transit routes serving this area, with relatively frequent service on most of the routes.

Table 5: Transit Route Service Frequencies

Transit Route	Peak Frequency (minutes)	Offpeak Frequency (minutes)
H (108)	5	5
S (119)	12-15	25-30
L (112)	15-23	28-40
79 MAX*	24	---
115	50	50
120 MAX	11-15	12-30
Collins Express**	20	20
North Beach Loop	10-15	10-15

An intermodal center should be conceived to support the following functions, as applicable to specific settings:

- Provide a focal point for accessing available transit services in the vicinity of an activity center to serve origin and destination trips.
- Provide a convenient transfer point for patrons moving between transit routes.
- Provide mode transfer resources at the center or nearby for “first mile – last mile” connectivity.
- If appropriate, provide for the transfer between auto-based trips and transit, in the form of kiss-and-ride, ridesharing, and park-and-ride.
- Provide appropriate patron amenities to support the trip-making, and to make the trip-making more comfortable and convenient.

The American Public Transportation Association (APTA) provides guidance on the hierarchy of transit stops, stations, and centers. Conceivably, any level of transit facility could serve as an intermodal center, though centers tend to serve higher volumes of patrons and transit vehicles. An intermodal center is typically denoted by a higher level of transit patron activity and associated activities and features, but does not have to supply all features discussed in the next section of the report, does not have to have an enclosed structure, and does not have to be an off-street facility.

The following discussion recaps the hierarchy of transit facilities, ranging from small-scale stations to large-scale multifunction centers. **Figure 5** shows a family of transit stations for the MetroRapid bus service in Tampa, with basic, moderate, and higher-volume facilities, as conceptual renderings and as actually implemented on-street. The City of Miami Beach has designed a new family of transit stations similar to those shown in **Figure 5**; those new schematics are shown in **Figure 6**.

Figure 5. Transit Station Hierarchy

Neighborhood Station



Community Station



Activity Center Station



Figure 6. Proposed New Transit Stations

Designs under consideration by Miami Beach over the Winter 2017/2018.

Option 1



Option 2



Figure 7 shows larger modular stations which to some degree serve as intermodal centers. Some have repeatable elements to scale up the station size to the needed level.

Figure 7. Modular Stations



Figure 8 shows the existing Miami Beach station design.

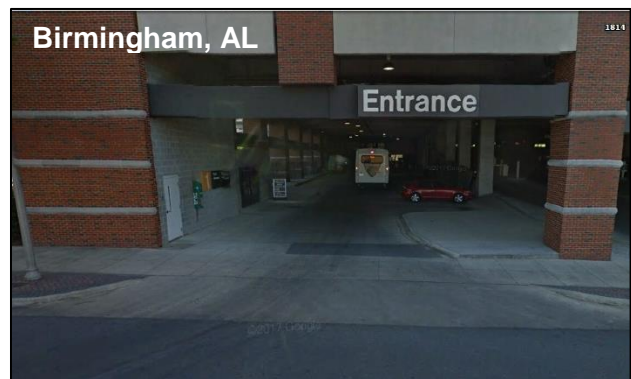
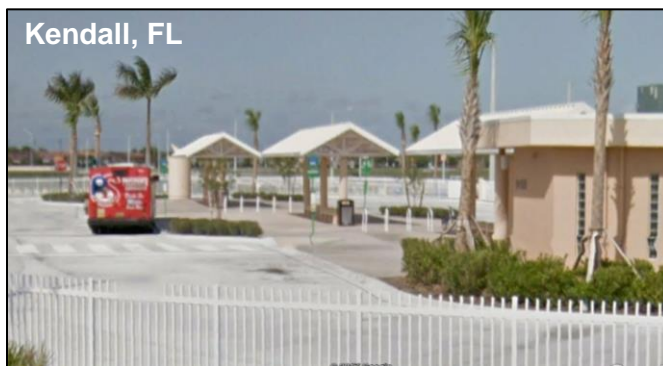
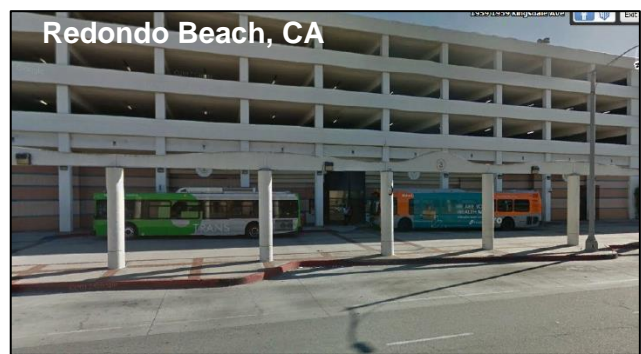
Figure 8. Existing Miami Beach Transit Station



Figure 9 shows several intermodal configurations, including:

- Adjacent to a parking deck (Collier County, FL and Redondo Beach, CA)
- Freestanding facility with additional retail and public spaces (Kissimmee, FL)
- Off-street hub with bus bays and canopies (Kendall, FL)
- On-street center with bus bays and canopies (Chicago, IL)
- Bus bays on first level of a parking deck (Fort Lauderdale, FL and Birmingham, AL)

Figure 9. Large Scale Intermodal Centers



4.2.4 Basic Features

There are a variety of features that can be provided as part of an intermodal center. There are those that are mandatory elements, those that are desirable, and those that are optional. Generally, the greater the patron volumes and supporting transit vehicle volumes, the larger the facility and the more of the desirable and optional elements that are provided. **Table 6** provides a summary listing of these items.

Table 6. Intermodal Center Features

Intermodal Center Feature	Comments	Required	Desirable	Optional
Platform Area	Sufficient in size for peak demand, seating, infrastructure and amenities	✓		
Canopy		✓		
Lighting	For patron safety and comfort; can be solar	✓		
Seating	At least one seat per five patrons, and wheelchair space	✓		
Trash receptacles		✓		
Bicycle rack		✓		
ADA Accessibility	Mandatory	✓		
System map and information		✓		
Security Camera			✓	
Station name/logo			✓	
Station locale map			✓	
Real-time information and audio system			✓	
Kiss-and-ride access			✓	
Taxi and rideshare access			✓	
Carsharing site			✓	
Bicycle repair/rental			✓	
Wi-Fi connection			✓	
Vending/kiosks				✓
Ticketing machine				✓
Background music				✓
USB charging ports				✓
Park-and-Ride spaces	Depending upon demand and ability to provide.			✓
Patron restroom				✓
Driver station	Depending on route structure.			✓
Bus layover spaces	Depending on route structure.			✓
Panic Button				✓

All intermodal facilities should include the required elements and as many desirable features as well. The optional elements could be included as conditions and funding permit.

As to the type of facility, it is considered that the size of the intermodal facility needs to be larger than the existing shelters shown in **Figure 8**, given the number of patrons being served, and the potential for growth in transit ridership due to increased land use density for the Town Center. The type of facility will be dependent upon the setting for each individual site alternative as discussed in Section 4.3 of the report. Preliminary discussion of site locations includes on-street and off-street sites so each configuration will need to be adaptive to the site conditions available.

The size of the potential intermodal center is based on the extent of transit service to be accommodated. For the existing peak transit route schedules, there are approximately 40 scheduled bus arrivals per hour in each direction of travel. Assuming an average stop length of 1 minute, there would be a demand of 40 bus bay dwell minutes per hour. While the routes serving the study area are not on a headway pulse system where they arrive at a meeting point multiple times per hour, there is still the possibility that 2 or 3 buses may arrive at the station location nearly simultaneously. The existing southbound bus bay on Abbott Avenue is 230 feet long while the northbound bus bay is 150 feet long.

Two bus bays in each direction would provide 120 minutes of dwell capacity per hour, versus the demand of 40 minutes of dwell time currently, for a 33% capacity. If the two bays were sized for the two larger bus types in operation – an articulated bus 60 feet in length and a standard bus of 40 feet in length, with 20 feet of separation, a minimum of 140-150 feet of bay length would be needed. Allowing for increased transit service suggests that 3 bays should be provided for each direction to meet future needs. Allowing for a third trolley-style vehicle at 35 feet in length, plus a buffer, would increase the required bus bay length to approximately 200 feet.

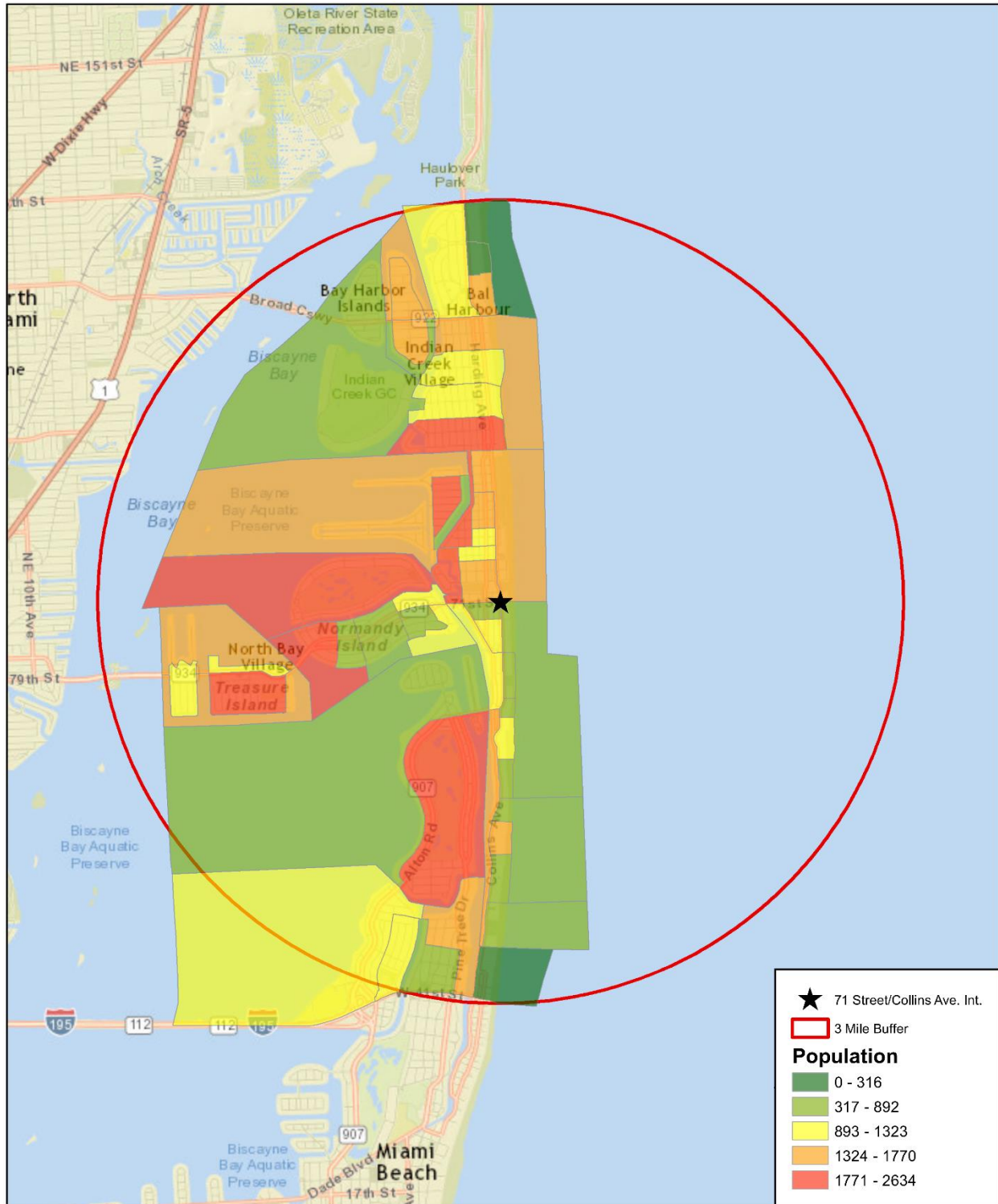
For planning purposes, the required bus dwell requirement is two bays or 150 feet at a minimum, and three bays, or 200 feet as the desirable target. The need for a bus layover bay would increase this requirement.

4.2.5 Study Area Context

Demographics

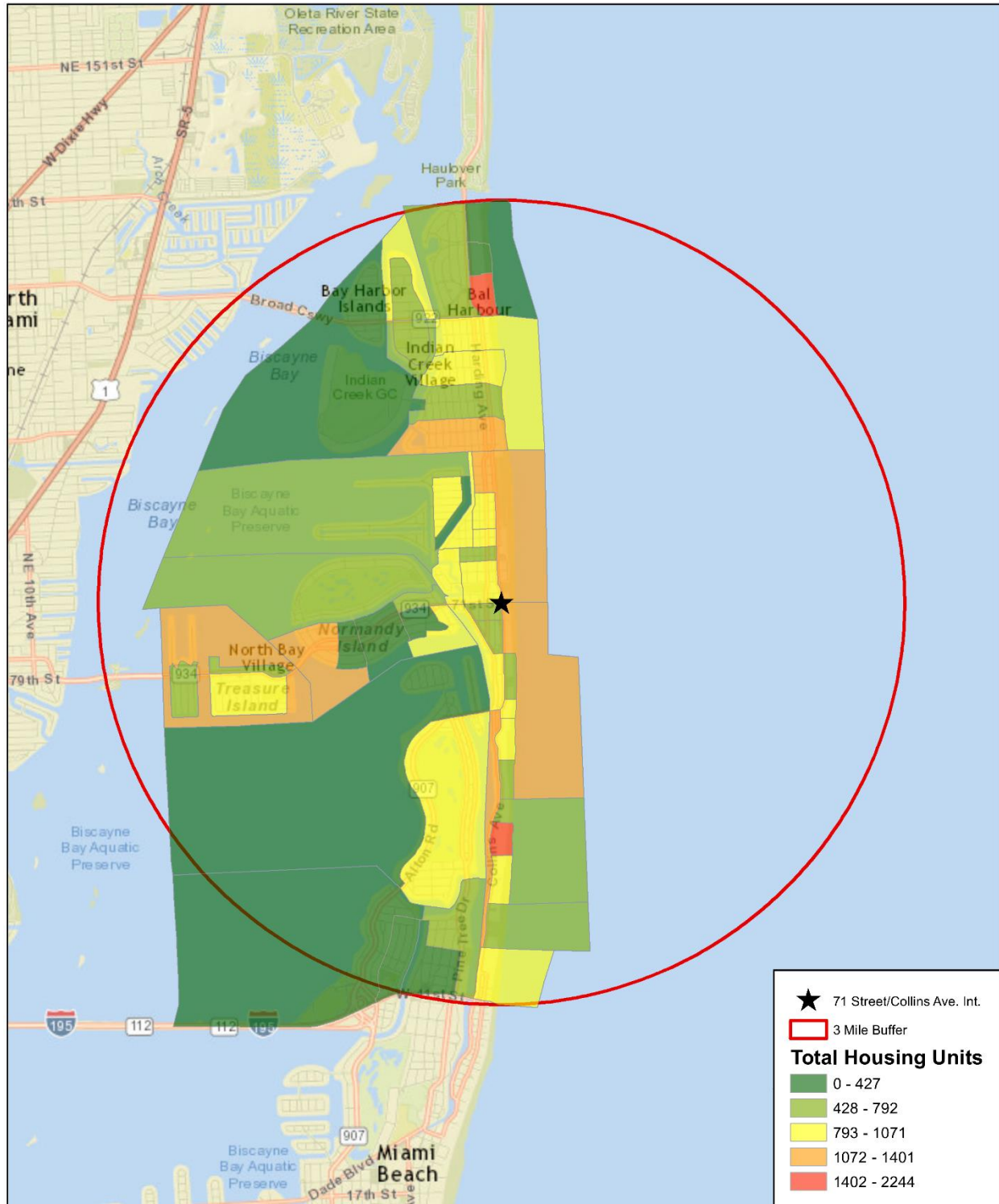
Another important consideration in planning for the intermodal center is the demographic composition of the surrounding area. **Figure 10, Figure 11, and Figure 12** show within a 3-mile radius the demographics surrounding the Town Center district for population, housing units, and housing units with zero cars.

Figure 10. Population by Census Block Group



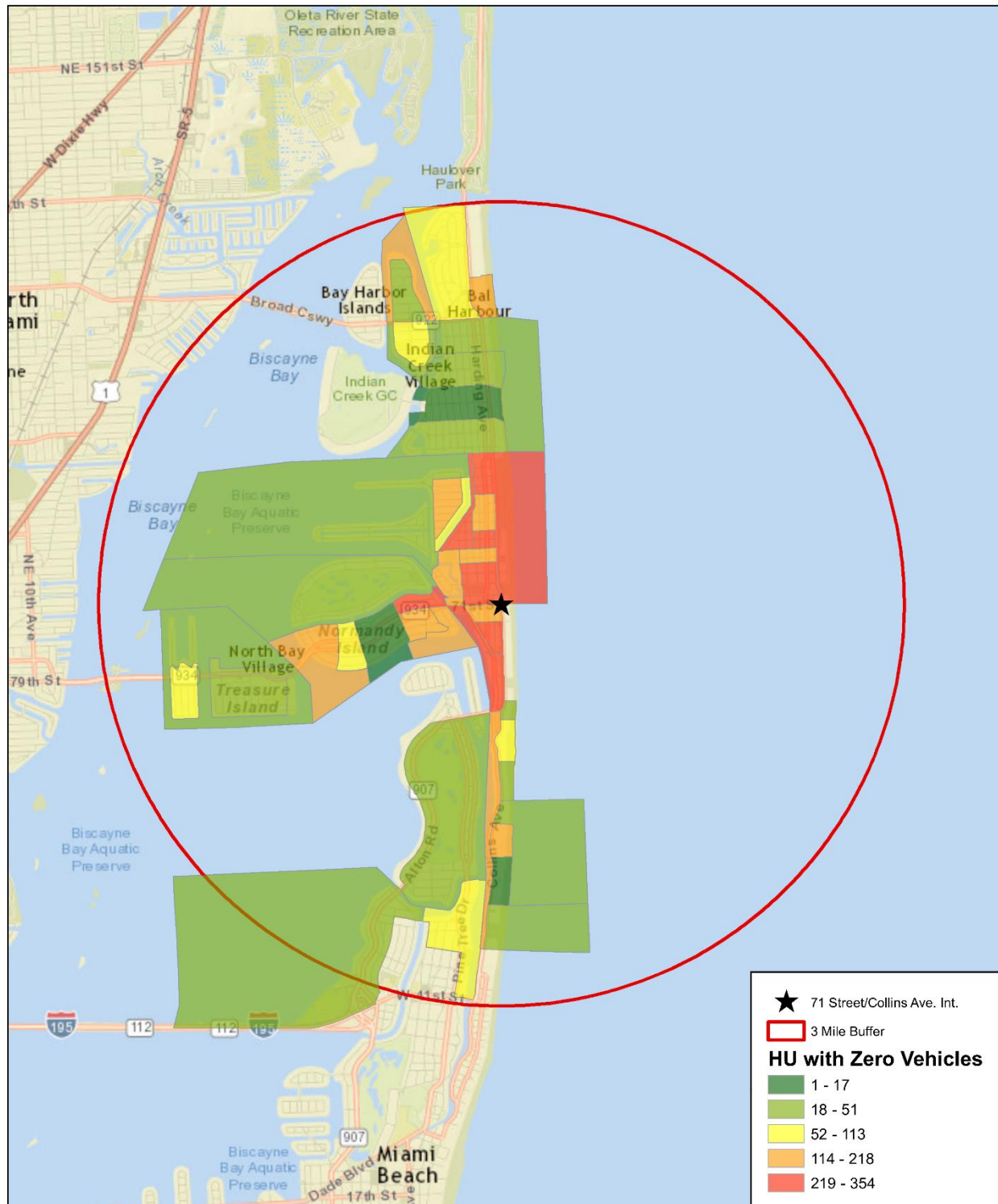
Source: American Community Survey

Figure 11. Total Housing Units by Census Block Group



Source: American Community Survey

Figure 12. Housing Units with Zero Cars by Census Block Group



Source: American Community Survey

Within the 3-mile radius are nearly 66,000 people, 28,500 housing units with an average person per housing unit rate of 2.32 (and ranging from 1.6 to 3.6), and 5,300 housing units with no car available, about one of every eight housing units. The latter could be either senior citizens or younger adults who prefer a car-free lifestyle.

Several additional observations can be made regarding this demographic data:

- There is a concentration of population to the north of 71st Street, with moderate levels to the south and west as well.
- Housing units are denser to the east of Collins Avenue throughout the area, but there are moderate levels on the west side of Collins Avenue.
- There is a real concentration of zero-car housing units within a one-mile radius, indicating a higher level of transit ridership potential, represented by the majority of the 5,300 zero-car housing units.

These factors can be interpreted to reflect the trend for a market element that is bound by or chooses a no-car lifestyle, and that there is density that is also supportive of transit usage.

Land Use

As discussed in the Re: MiamiBeach.com website on Sept. 24, 2017, “An historic agreement has been reached between leaders in the Miami Beach preservation community and developers to support a voter referendum that would increase FAR – the maximum allowable size of a building – in the Town Center district of North Beach. In turn, Tatum Waterway and Crespi Boulevard will be put back into the proposed North Beach Local Historic Districts. Both actions were recommended in the North Beach Master Plan as a means to revitalize the area and the Historic Districts to maintain their character.

Since the Master Plan’s acceptance by the City Commission last fall, Tatum Waterway and Crespi Boulevard were exempted from the Local Historic Districts and proposed as a Conservation District, a designation with fewer protections, after concerns were raised about their vulnerability to sea level rise. But dividing the historically designated areas created unease among preservationists who were less willing to support changes to allow for a denser Town Center. Town Center was proposed as a means of bringing much needed revitalization to the area, a walkable hub of retail stores, restaurants, and offices with the potential for attainable housing.

The agreement was reached between the Executive Director of the Miami Design Preservation League (MDPL), and the MDPL Advocacy Committee; Miami Beach United, former City Commissioner, and member of the Historic Preservation Board; and the North Beach Property Owners Association. This is the first time in the history of MDPL that it has supported an increase in FAR since a City Charter amendment in 2001 requiring voter approval for increases.

The City has already adopted one portion of the Master Plan increasing height to 125 feet in the Town Center. The ballot question follows the Plan’s recommendation to combine the three TC districts into one and increase FAR to allow for larger buildings. FAR measures density and is determined by taking the total gross area of a building and dividing it by the area of the lot. Allowable FAR varies by zoning district with the least intense FAR being 1.25 in the RM-1 residential district. Currently the TC districts range from 2.25 to 2.75 in allowable FAR. The ballot question would increase FAR to 3.5 in a combined TC District.

The Town Center area is located between 69th and 72nd Streets from the West side of Collins Avenue to Bonita Drive, an area that generally has deteriorated over the years. The City Commission voted unanimously in favor of a resolution supporting “implementation of

the entirety” of the North Beach Master Plan and, in effect, supporting the agreement. By unifying the TC-1, TC-2, and TC-3 districts and increasing the FAR, a more catalytic-type Town Center in North Beach was anticipated.

The rezoning item received a majority of votes on the November 8, 2017 ballot, and sets the stage for an increased FAR in the Town Center designation area, while allowing historic districts to preserve structures north of 73rd Street.

This increased FAR capacity is expected to trigger developer interest in more impactful mixed use projects in the Town Center, providing a broader mix of retail, shopping, service, and dining options, which in turn would make the area more attractive to additional residents, including those who seek a lifestyle less dependent upon the automobile.

These events in rezoning and the associated redevelopment opportunities are impactful in terms of the role of transit services and an intermodal center to enhance connectivity between non-auto travel modes.

Denser mixed-use development and redevelopment projects are expected south of 71st Street, which will create a more vibrant array of residences, shopping, dining and service options. This mix in turn should lead to a more walkable environment and fewer auto trips internally. As an attraction, the new uses may generate external trips, but hopefully many of those would be served by bicycle, transit, and other modal options such as the emerging Freebee service. An adjacent transit transfer facility to expedite seamless transit and intermodal connectivity is a critical support element to the planned revisioning of the Town Center District.

72nd/73rd Street Parking Lot History

A significant public asset in the North Beach district is the 72nd/73rd Street Parking Lot. This section of the report describes its history and developments that have been proposed for the site. further details:

- **Origin of the 72/73rd Street Parking Lot**

A February 13, 2013 Land Use and Development Committee Memo provides background on this public site. The land that became North Shore Park, including the 72/73rd Street parking lot, was acquired by the City of Miami Beach in 1941 after a 14-year-long effort to convince the U.S Coast Guard to release it. Originally the land was part of a larger tract owned by the federal government for the Biscayne House of Refuge, one of a series of U.S. Federal Life Saving Service Stations located along the southeastern coastline beginning in 1875. By 1921, the need for life saving stations lessened by the advent of modern navigational aids and a quickly developing inhabited Florida coastline. Following the hurricane of 1926, the site became an overgrown wasteland and an obstacle to development in North Beach. Finally, in 1941, by authority of Congress, the land was exchanged for a site on Causeway Island in Biscayne Bay for the use of the Coast Guard. Ironically, because the original Life Saving Station Reservation charter of 1875 prohibited the sale of any portion of the Reserve, Congress, in 1941, had to grant the land to a local land reclamation contractor, the Paul Smith Construction Company, in exchange for creating the site for a new Coast Guard station on Causeway Island. The contractor was then able to sell the exchanged land to the City of Miami Beach for a public park. However, the park license was granted to the City of Miami and subsequently had to be sold to the City of Miami Beach.

- **Referendum**

The 72/73rd Street Parking Lot is subject to referendum if sold or developed. Referendum: Sec. 103.2(b)2 of the City Charter states: "The sale, exchange, conveyance or lease of ten years or longer of the following properties shall also require approval by a majority vote of the voters in a City-wide referendum: ... (3) *72nd Street Parking Lot*: The City-owned surface parking lot bounded by 73rd Street on the North, Collins Avenue on the East, 72nd Street on the South, and Harding Avenue on the West; ... "

- **Previous Development Proposals**

In 1999 and 2000, the City issued RFPs for development of the 72nd/73rd Street parking lot. In April 2002, the Commission voted unanimously to terminate negotiations with the potential developer from the 2000 RFP. The sentiment of the Commission was to keep the property for public use. They directed the Administration to determine what should be done with the land along with the process of finalizing the North Beach Master Plan.

- **North Beach Town Center Plan (2007)**

This plan called for a transit transfer center to be located on the perimeter of the 72nd Street municipal parking lot, with a schematic showing it sited on the south edge of the parking lot, and the remainder of the land redeveloped as an open space park.



- **Intermodal Terminal**

Over the years, the 72nd/73rd Street Parking Lot has been considered as a potential site for an intermodal transfer station, as follows:

- The Coastal Communities Transit Study (CCTS) identified opportunities to improve bus transit service in the short term and lay the groundwork for a more advanced type of transit service in the future. The goal was to consolidate many of the 14 bus routes into one local and one express bus route running north/south on A1A, and to connect the north/south route to the east/west bus service at strategically located transfer terminals.
- In 2008, the City commissioned a Transit Center Feasibility Study for the 72 Street lot by HDR Engineering. The study found it to be a viable site for use as a transit transfer station; however, the alternative concept drawings for the site plan were later found to be flawed from an engineering standpoint.
- In 2010, the City Administration tried to resurrect the project in an effort to transfer a Federal Transit Administration (FTA) grant from a site in South Beach. Refined engineering drawings that were deemed acceptable by Miami-Dade Transit (MDT) and the Florida Department of Transportation (FOOT) required the use of more than one-

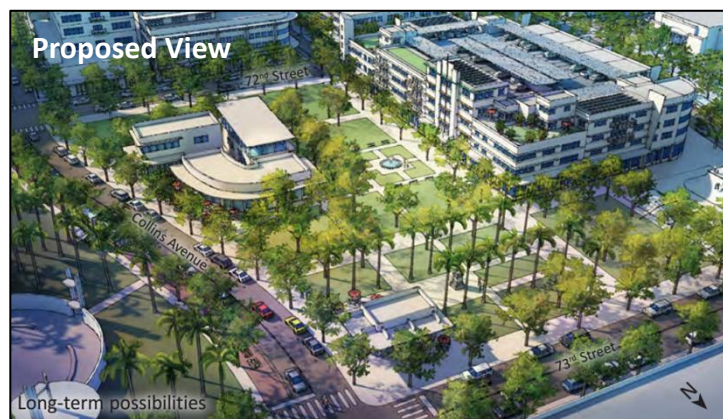
half of the entire site, leaving undesirable options for parking and other uses. Furthermore, MDT had failed to implement the most important recommendations of the CCTS concerning streamlining of the bus routes. Therefore, there was limited need for passenger transfers. Ultimately, the City determined that the benefits of a bus transfer station at this site did not outweigh the costs of giving up valuable public land and returned the FTA grant funds to the federal government.

- **Sewer Connection Project**

An August 11, 2011 Letter to Commission (207-2011) discussed a joint project between Miami Beach, Bal Harbor, and Surfside to relocate a sewer force main to Collins Avenue from the Collins Court alleys between Collins and Harding and the final connection point moved from 76th Street at Collins Avenue to the 72nd/73rd Street Parking Lot.

- **Plan NOBE (2014)**

This plan identified in the public parking parcel a community facility and a future parking garage to address parking needs in the district. The views below to the southeast illustrate the existing and proposed site configuration. Plans for the parking garage are on hold presently.



- **Skate Park**

At the March 31, 2017 Finance and Citywide Project Committee Meeting, the Committee motioned the following in regards to the Skate Park and Parking Structure at the 72nd/73rd Street Parking Lot:

- The Committee directed staff to work on the calculations for the buildable footprints of the parking lot and the volumetric analysis to tell the Committee how many parking spaces and how much square footage can be available for other uses, and to included space for

appropriate amenities. Staff should work with Commissioner Alemán to look at possible footprints to maximize space.

- The Committee asked staff to put a bid package together for design criteria of a parking structure and a recreational park that includes a skate park. In addition, the Committee simultaneously directed staff to come back to the Committee after working with Commissioner Alemán regarding the options for where the structure will go in order to engage a multidisciplinary designer.
- The Committee recommended moving forward with adding a capital budget request for consideration in the budget process for the design of the parking garage.

- **Ocean Terrace**

Near the the public parking lot, a large-scale redevelopment project was proposed for Ocean Terrace in 2017, and is still active. The proposed redevelopment is bounded by 74th Street to the south, 75th Street to the north, Ocean Terrace to the east, and Collins Avenue to the west, consisting of 58 condominium units, 78 hotel rooms, 18,022 square feet of retail, a 288-seat restaurant and a 4,320 square foot bar.

Currently the project site is occupied by 16 apartment units, 5 hotel buildings providing 181 active hotel rooms, and 32,149 square feet of active retail contained within six (6) separate buildings. Crosswalks, freight loading, and travel demand management requirements have been suggested as mitigation measures by Miami Beach Transportation Department

4.2 Facility Alternatives

4.3.1 Alternative Sites

Through the course of several meetings with City Transportation Department staff and with consultant input, seven alternative sites for the intermodal center were identified. These options, some located on-street and some located off-street, are shown in **Figure 13**. The potential locations are listed as follows:

- A. Harding Avenue/Collins Avenue Split Configuration (existing layout)
- B. 73rd Street On-street (between Harding and Collins Avenues)
- C. 72nd Street On-street (between Harding and Collins Avenues)
- D. Proposed 72nd Street Parking Garage – Level 1 (adjacent to Harding Avenue)
- E. Harding Avenue On-street (between 72nd and 71st Streets)
- F. Proposed Abbott Avenue Parking Garage – Level 1 (near 71st Street)
- G. Harding Avenue On-street (between 71st and 69th Streets)

Each of these potential locations are profiled in **Figures 14 through 20**, with a location map, and descriptions of configuration, transit vehicle access, and interface with adjacent land uses.

Figure 13. Alternative Intermodal Center Sites

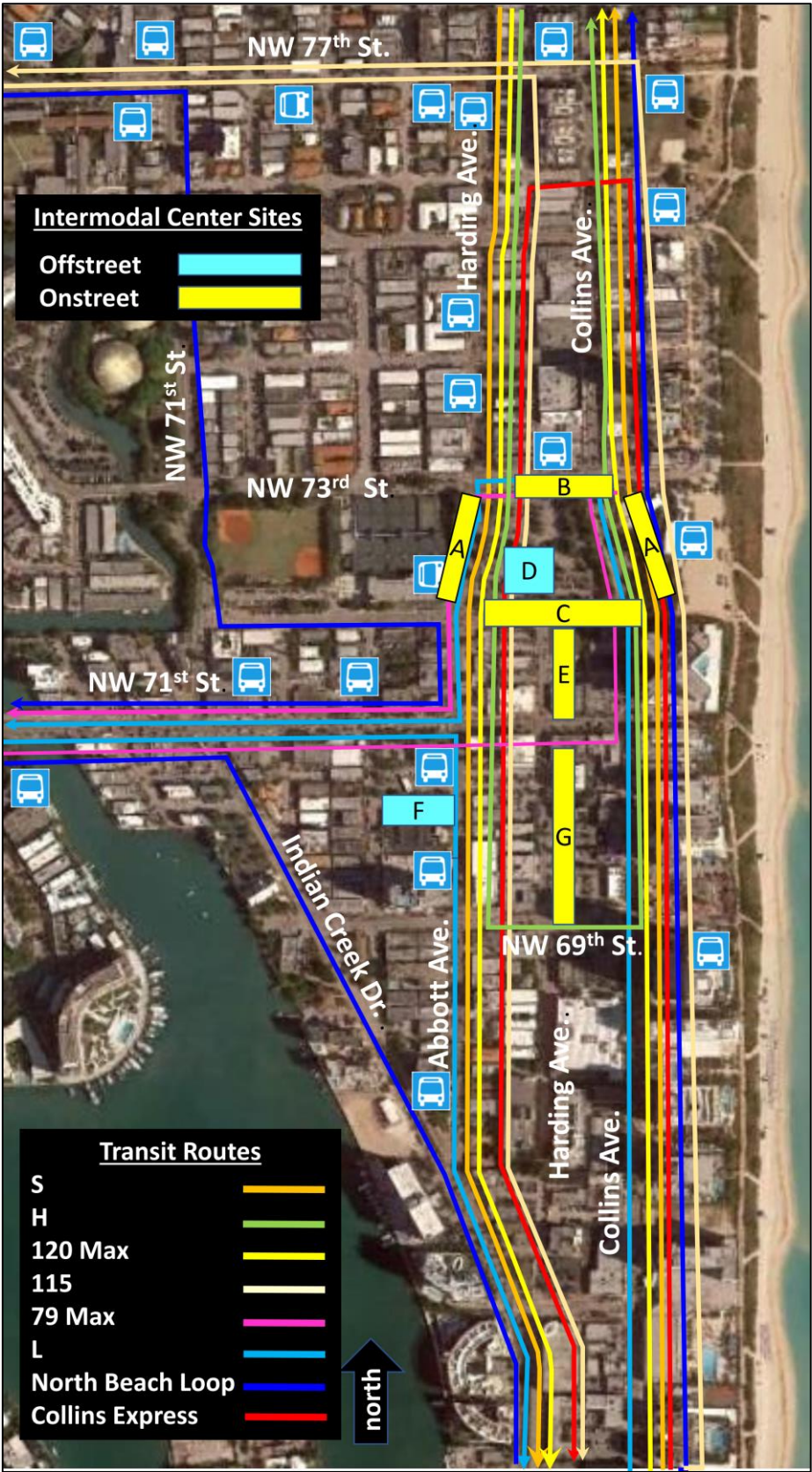


Figure 14. Alternative A Site

Name: Harding Avenue/Collins Avenue Split Configuration (existing layout)

Aerial and Street View:



Description: This alternative would improve the existing pair of transit stops on Collins and Abbott Avenues by adding bus bays and enhanced station amenities at station locations. This split configuration is due to the directional transit routings on the one-way pair of streets. This layout would support the Plan NOBE street proposals, the new Town Center District, the potential Ocean Terrace redevelopment, and the potential Skate Park and parking garage complex, if it comes to fruition on the 72nd/73rd Street site. North Beach residents north of 73rd Street have the lowest car ownership and highest transit ridership in Miami Beach, and the potential intermodal center would assist in their daily commute and improve their quality of life. The increased density to the north (Ocean Terrace) and south (Town Center District) would make the 72nd/73rd Street area more of a focal point through increased use of its recreational amenities and connections to buses running north and south to the employment and entertainment centers in Aventura and South Beach. Potential garage development at the existing surface parking lot could accommodate commuter parking. Potential Skate Park development at the site would not be precluded by the intermodal center development as described in this option.



The advantages and disadvantages of the Alternative A site are as follows:

Advantages:

- Familiar to users.
- No conflicting land use frontages.
- No deviation of routes needed.
- Highly visible location.
- All transit routes pass by both stops.
- Room for larger station area with bicycle racks.
- Adjacent to potential parking garage.
- No right-of-way acquisition needed.
- Bus bays can be expanded.

Disadvantages:

- On north edge of Town Center district.
- Split site configuration, but this is related to the directional transit routings.
- Parking and carshare services would rely on a proposed garage on the public parking lot site between

Observations: While the directional stops are split, there would be no transfers between northbound and southbound transit services. There is sufficient room for expansion to enhance amenities. There is sufficient bus bay length for the southbound peak service; the northbound transit bay may require lengthening. Present shelters are inadequate for the transit demand.

Figure 15. Alternative B Site

Name: 73rd Street On-street (between Harding and Collins Avenues)

Aerial and Street View:



Description: This alternative would utilize the two existing curb lanes of 73rd Street between Collins and Abbott Avenues for bus bays, displacing 18 existing parking spaces. There is insufficient room on the north frontage for bus shelters but the street redesign in the Plan NOBE document would widen sidewalks and permit shelters. Alternatively, the median could be deleted and also provide sufficient space. Northbound and southbound transit routes would need to loop around adjacent street blocks in order to interface the eastbound and westbound curb frontages, adding about 1/3-mile distance to the route in each direction of travel. The south side of the block is in public ownership, while the north side frontage is currently a restaurant, a laundromat and a 2-story apartment building. Bus operations might be considered incompatible with the latter. The original plan for the public parking lot to the south called for a “quiet zone” along the north frontage which also might be considered incompatible with an intermodal center.

Advantages:

- Visible location.
- All transit routes pass by both stops.
- Planned street redesign would accommodate the concept and amenities.
- No right-of-way needed.

Disadvantages:

- On north edge of Town Center district.
- Would require route deviation of 1/3-mile and about 4 minutes per bus, and 4 additional 90-degree turns.
- Parking and carshare services would rely on proposed garage on the block south.
- Taxi/rideshare/kiss-and-ride area not possible.
- Not proximate to new development prospects.
- Possibly incompatible land uses on the south curb frontage.
- Would be necessary to reconstruct the street to accommodate bus stations on the south curb frontage.

Observations: With street reconstruction per Plan NOBE, there would be sufficient room for the bus station and for other amenities. Transit route deviation represents an operational cost consideration to County transit.

Figure 16. Alternative C Site

Name: 72nd Street On-street (between Harding and Collins Avenues)

Aerial and Street View:



Description: This alternative would utilize the two existing curb lanes of 72nd Street between Collins and Abbott Avenues for bus bays, displacing 20 existing parking spaces. There is insufficient room on the south frontage for bus shelters but the street redesign in the Plan NOBE document would widen sidewalks and permit shelters. Northbound and southbound transit routes would need to loop around adjacent street blocks in order to interface the eastbound and westbound curb frontages, adding about 1/3-mile distance to the route in each direction of travel. The north side of the block is in public ownership, while the south side frontage is currently three restaurants, a bicycle shop, and a vacant parcel which has been approved for development. Bus operations might be considered incompatible with these uses.



Advantages:

- Visible location.
- All transit routes pass by both stops.
- Bicycle shop could represent a good interface.
- Room for larger station area with bicycle racks.
- Small taxi/rideshare/kiss-and-ride area possible.
- No right-of-way needed.

Disadvantages:

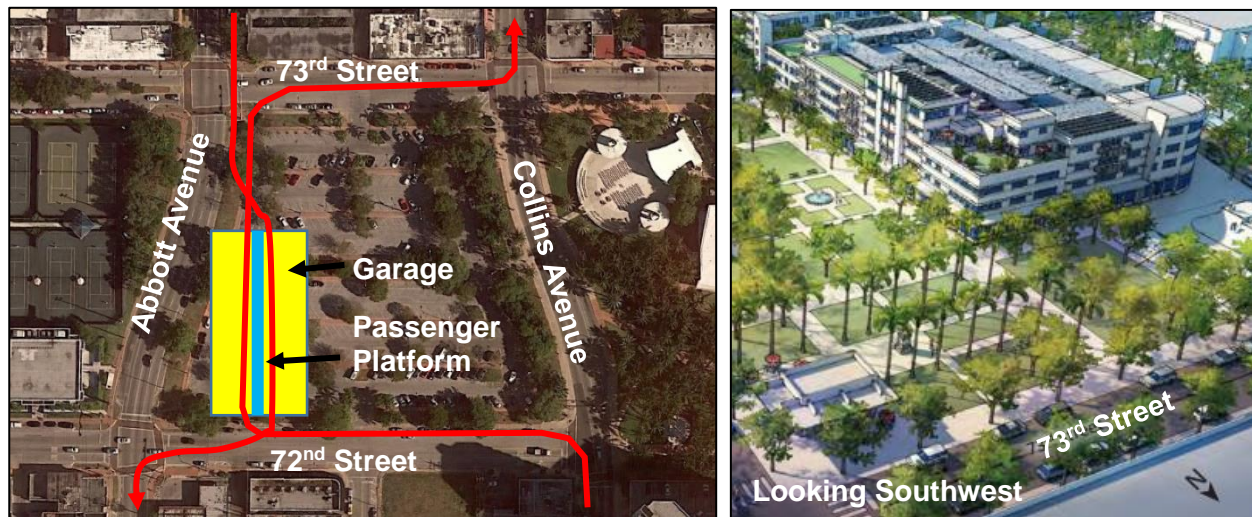
- On north edge of Town Center district.
- Would require route deviation of 1/3-mile and about 4 minutes per bus, and 4 additional 90-degree turns.
- Parking and carshare services would rely on proposed garage on the block south.
- Not proximate to new development prospects.
- Possibly incompatible land uses on both curb frontages.
- Would be necessary to reconstruct the street to accommodate bus stations on the north curb frontage.

Observations: With street reconstruction per Plan NOBE, there would be sufficient room for the bus station and for other amenities. Transit route deviation represents an operational cost consideration to County transit.

Figure 17. Alternative D Site

Name: Proposed 72nd Street Parking Garage – Level 1 (adjacent to Harding Avenue)

Aerial and Street View:



Description: This alternative would integrate an intermodal center within a proposed parking deck shown in Plan NOBE. At one time the City was considering advancing this project, but it is on hold and its presence within the future public space is not certain. The concept called for the garage to be lined on all sides with mixed uses. Use of the first level interior for a transit facility would require allowance for the “liner” spaces and a car ramp to the higher levels, as well as an extra-height first floor clearance for buses. A possible transit routing scheme is shown for both northbound and southbound transit routings. This garage configuration would likely allow for all ancillary intermodal center amenities. The prorated cost of this option would be greater as the transit center would consume much of the first level. A “flow through” transit access pattern uses garage space efficiently, is compatible with column spacing, and is simpler for transit movements.

Advantages:

- Site would provide a quality facility setting.
- Highly visible location.
- Full complement of amenities possible.
- Small taxi/rideshare/kiss-and-ride area possible.
- No right-of-way costs.
- Proximate to existing station locations.

Disadvantages:

- On north edge of Town Center district.
- Relies on the parking deck being built.
- Higher prorated implementation cost.
- Requires minimal route deviation southbound (0.1 mile, 1 minute) and minor deviation northbound (0.25 miles, 3 minutes).

Observations: This alternative provides a more elegant and complete intermodal center solution, but one that may require longer lead time and some additional cost over simpler options. It is also proximate to the existing station locations. Transit route deviations are present but may not be considered significant.

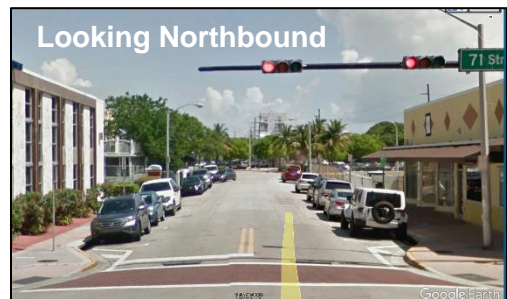
Figure 18. Alternative E Site

Name: Harding Avenue On-street (between 72nd and 71st Streets)

Aerial and Street View:



Description: This alternative would utilize the two existing curb lanes of Harding Avenue between 71st and 72nd Streets for bus bays, displacing 18 existing parking spaces. There is insufficient existing room on both frontages for bus shelters but the street redesign in the Plan NOBE document would widen sidewalks and permit narrow shelters. Northbound and southbound transit routes would need to divert one block via 72nd and 71st (or possibly 69th) Streets to interface with the northbound and southbound curb frontages, adding about 0.11-mile distance to the route in each direction of travel. The west frontage of the block is in public ownership and houses a restaurant, a vacant commercial building, the side elevation of a bank, and parking lots. The east side frontage is occupied by a retail building housing a bakery, shoe repair and skincare shops, and a currently vacant parcel. Driveways interrupt the curb frontage on both sides of the street.



Advantages:

- Visible location.
- No right-of-way needed.
- Closer to Town Center development opportunities.
- Less travelled street.

Disadvantages:

- Would require route deviation of 0.11-mile and about 1.5 minutes per bus, and 2 additional 90-degree turns.
- Small taxi/rideshare/kiss-and-ride area possible.
- Parking and carshare services would rely on proposed garage to the northwest on 72nd Street.
- Would be necessary to reconstruct the street to accommodate bus stations on both frontages.

Observations: With street reconstruction per Plan NOBE, there would be sufficient room for narrow bus stations and for other amenities. Transit route deviation represents an operational cost consideration to County transit.

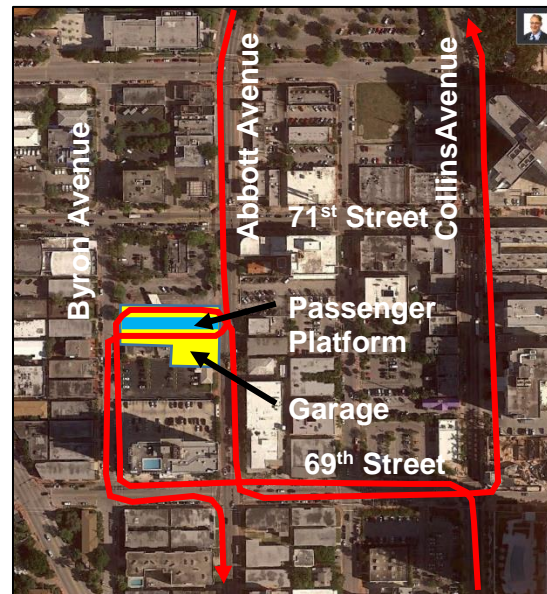
Figure 19. Alternative F Site

Name: Proposed Abbott Avenue Parking Garage – Level 1 (near 71st Street)

Aerial and Street View:



Description: This alternative would integrate an intermodal center within a proposed City parking deck. Use of the first level interior for a transit facility would require a car ramp to the higher levels, as well as an extra-height first floor clearance for buses. This garage configuration would likely allow for all ancillary intermodal center amenities. The prorated cost of this option would be greater as the transit center would consume much of the first level of the garage. A possible transit routing scheme is shown for both northbound and southbound transit routings. It is seen that the deviation for southbound transit routes is minor but does entail four extra turns. For northbound routes, the deviation is much longer and time-consuming with the routing option shown, avoiding 71st Street. The width of this site does not allow reversing of bus movements within the parcel, so a “flow-through” access pattern was adopted.



Advantages:

- Site would provide a quality facility setting.
- Identifiable location.
- Full complement of amenities possible.
- Small taxi/rideshare/kiss-and-ride area possible.
- No right-of-way costs.
- In the midst of the Town Center district.

Disadvantages:

- Relies on the parking deck being built.
- Higher prorated implementation cost.
- Requires minimal route deviation southbound (0.16 mile, 4 extra turns, 2 minutes) and major deviation northbound (0.5 miles, 6 extra turns, 6 minutes).

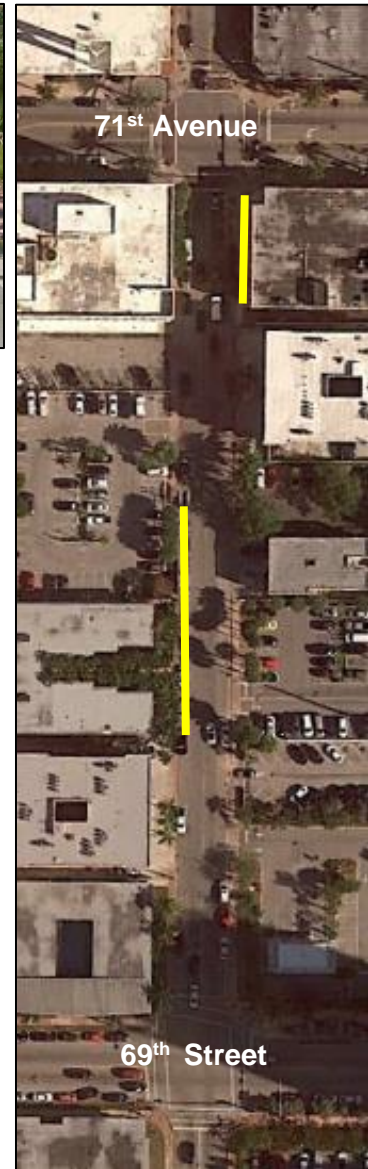
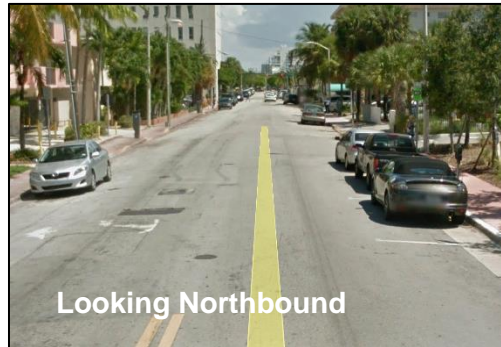
Observations: This alternative provides a more elegant and complete intermodal center solution, but one that may require longer lead time and some additional cost over simpler options. Transit route deviations are present could be considered significant. Near-term implementation would be hampered by the numerous driveways, especially along the east frontage.

Figure 20. Alternative G Site

Name: Harding Avenue On-street (between 71st and 69th Streets)

Aerial and Street View:

Description: This alternative would utilize portions of two existing curb lanes of Harding Avenue between 71st and 69th Streets for bus bays, displacing existing parking spaces. There are 16 spaces on the west curb and 9 spaces on the east curb. Southbound there is an area midblock that would displace up to 10 parking spaces and serve 3-4 buses; northbound the only suitable curb frontage not interrupted by driveways is at the north end of the block, that could serve two short buses or one long bus and displace two parking spaces. There is insufficient existing room on both frontages for bus shelters but the street redesign in the Plan NOBE document would widen sidewalks and permit narrow shelters. Northbound and southbound transit routes would need to divert one block via 72nd and 71st (or possibly 69th) Streets to interface with the northbound and southbound curb frontages, adding about 0.11-mile distance to the route in each direction of travel. The west frontage of the block is in public ownership houses a restaurant, a vacant commercial building, the side elevation of a bank, a drive-in bank, and parking lots. The east side frontage is occupied by a retail building housing a clothing store, two residential buildings, and several parking lots. Driveways interrupt the curb frontage on both sides of the street. There is an existing midblock location southbound of sufficient length to serve as a transit hub. However, for northbound, there are no existing curb frontages of sufficient length to serve two or three buses simultaneously. This situation could change if land owners redevelop within the Town Center district.



Advantages:

- Visible location.
- Closer to Town Center development opportunities.
- No right-of-way needed.
- Less travelled street relative to transit vehicle movements.

Disadvantages:

- Would require route deviation of 0.11-mile and about 1.5 minutes per bus, and 2 additional 90-degree turns each way.
- Parking and carshare services would not be easily accommodated.
- Existing driveways restrict bus bay siting.
- Small taxi/rideshare/kiss-and-ride area possible difficult to provide presently.
- Would be necessary to partially reconstruct the street to accommodate bus stations on both frontages.

Observations: With street reconstruction per Plan NOBE, there would be sufficient room for narrow bus stations and for other amenities. Transit route deviation represents an operational cost consideration to County transit.

4.3.2 Evaluation of Alternative Sites

The seven alternatives were assessed using the evaluation framework described in Section 4.4.2. Each option was scored against the eight performance measures which in turn were weighted as to relative importance. The result is a composite score for each alternative which can be used as a guide in identifying the best performing options. This evaluation is provided in **Table 7**.

























































From the resulting scores, the following observations can be drawn:

- The existing split configuration (Alternative A) on Harding and Collins Avenues between 72nd and 73rd Streets scores well due to transit operations convenience, space for improvement, and land use compatibility.
- The next two highly scored options are the two configurations involving proposed parking garages (Alternatives D and F). Alternative 6 is scored lower due to the extent of transit route deviation, especially for northbound routes.
- The next ranked options are the two onstreet configurations (Alternatives E and G) on Hardy Avenue on either side of 71st Street. These require both directions of transit routes to deviate one block off current routes, and require street reconstruction to accommodate larger shelters. Alternative G has an issue with curb frontage availability.
- The lowest rank options are (Alternatives B and C on 73rd Street and 72nd Street). These locations also require street reconstruction to accommodate shelters and require significant transit route deviations.

There are other considerations in assessing the alternatives, such as implementation, relative cost, and extent of intermodal center features to be incorporated:

- Implementation timing:
 - Alternative A (Existing Layout) would be simple to implement and lower in cost.
 - Alternatives D and F (garage alternatives) have longer lead times and are more costly to implement, if the cost of occupying much of the first garage level is translated into another garage level.
 - Alternatives E and G (Hardy Avenue on-street options) would require the cost of street reconstruction to better accommodate shelters, and desirably would be better implemented in coordination with redevelopment projects that could partner with a building canopy as part of the station canopy rather than freestanding shelters.
 - Alternatives B and C (73rd and 72nd Streets) also would need street reconstruction to better accommodate transit station shelters.

Table 7. Site Evaluation Matrix

Alt. ID	Alternative	Transit Route Access Directness	Consistency with Planned Street Cross Sections	Nearby Kiss-and-Ride and Bicycle Facilities	Relative Environmental Effects	Relative Implementation Costs	Land Use Compatibility	Patron Weather Protection and Amenities	Accommodation of Enhanced Shelter	ALTERNATIVE SCORE	RANK
	Weight>	3	2	1	2	3	3	3	2		
A	Harding Avenue/Collins Avenue Split Configuration (Existing Layout)									67	1
D	Proposed 72nd Street Parking Garage - Level 1 (Adjacent to Harding Avenue)									65	2
F	Proposed Abbott Avenue Parking Garage - Level 1 (Near 71st Street)									59	3
E	Harding Avenue Onstreet (Between 72nd and 73rd Streets)									51	4
G	Harding Avenue Onstreet (Between 71st and 69th Streets)									50	5
B	73rd Street Onstreet (Between Harding and Collins Avenue)									47	6
C	72nd Street Onstreet (Between Harding and Collins Avenue)									44	7

- Relative cost:
 - Alternative 1 (Existing Configuration) is considered the least expensive option.
 - The other on-street options (Alternatives 2, 3, 5, and 7) with street reconstruction are moderate in cost.
 - The garage options (Alternatives 4 and 6) would be the most expensive if the cost of one level of a garage is taken into account.
- Extent of intermodal center features:
 - Alternative 1 (Existing Configuration) would not easily accommodate mode transfer options involving the auto (rideshare, taxi, carsharing, kiss-and-ride, park-and-ride), though the 72nd Street garage, if built, could compliment Alternative 1 if Alternative 4 is not pursued.
 - The other on-street alternatives (Alternatives 2, 3, 5, and 7) share the same shortcoming as Alternative 1 as far as the above auto transfer options.
 - The garage options (Alternatives 4 and 6) afford the opportunity for a full-fledged intermodal center with all justifiable features, and would represent a significant and long-term commitment to non-automotive travel best in line with City policy.

4.3 Conclusions

Based on this evaluation, the following conclusions are offered to guide the development of a North Beach Intermodal Center:

- Alternatives 2 and 3 should be dropped from consideration given the extent of transit route deviation that is required for both.
- Alternative 7 should be dropped from consideration given the extent of transit route deviation that is required.
- Alternatives 5 and 7 (Hardy Avenue options) would place the intermodal center in the heart of the Town Center district, but implementation may be better executed as redevelopment occurs and driveways can be reduced or relocated.
- Alternative 1 provides a lower cost option without all the desirable features of an intermodal center, and Alternatives 1, 5, and 7 are similar to each other in this regard.
- Alternative 4 best responds to a complete intermodal center, but it is sited on the Town Center district fringe, and there may a question as to its ultimate development given the planned parking garage represented by Alternative 6 on the south side of 71st Street.

It appears that further discussion of any other factors involved with North Beach Intermodal Center concept may inform the decision-making process with key parameters that further clarify the best solutions.

Given the lead time involved with actual implementation, one strategy would be to implement the new transit shelters at the Alternative 1 (Existing Condition) site as an initial investment to better serve demand in the short term, while plans are developed for a long-term solution.

5.0 Intermodal Facility Concepts

This section of the report highlights the proposed options developed for the preferred Alternative A - Harding Avenue/Collins Avenue Split Configuration (existing layout). The conceptual cost of these options is presented, and discussion of potential funding approaches is also addressed.

5.1 Proposed Intermodal Facility Options

As defined, Alternative A is defined as improvement of the existing Harding Avenue/Collins Avenue Split Configuration of one shelter in each direction of the SR A1A one-way pair. Based on the menu of potential intermodal center features and the physical dimensions of the Alternative A location, three improvement options were identified for Alternative A. An overview of the principal features of each alternative is presented below:

- Option 1 – Basic Improvements:
 - Three new “full-size” shelters (using the new city shelter design to be selected)
 - Wider southbound sidewalk (requiring power pole relocation)
 - Bicycle parking
 - Bus bays retained in current configuration
- Option 2 – Facility Upgrade:
 - Three sawtooth bus bays of differing sizes
 - Connecting canopy across the three bus bays
 - Wider southbound sidewalk (requiring power pole relocation)
 - Bicycle parking
 - Driver rest station
- Option 3 - Complete Facility:
 - Four sawtooth bus bays all sized for the largest articulated bus
 - Fourth bus bay for bus layover
 - Connecting canopy across the four bus bays
 - Bicycle parking
 - Air-conditioned waiting pod
 - Wider southbound sidewalk (requiring power pole relocation)
 - Driver rest station

Table 8 summarizes specific proposed features for each of the three facility options.

Table 8. Proposed Features by Option

Intermodal Center Feature	Option 1	Option 2	Option 3
Waiting Area	✓	✓	✓
Shelters	✓		
Canopy		✓	✓
Lighting	✓	✓	✓
Seating	✓	✓	✓
Trash receptacles	✓	✓	✓
Bicycle rack	✓	✓	✓
ADA Accessibility	✓	✓	✓
System map and information	✓	✓	✓
Security Camera		✓	✓
Station name/logo	✓	✓	✓
Station locale map	✓	✓	✓
Real-time information and audio system		✓	✓
Wi-Fi connection		✓	✓
Ticketing machine		✓	✓
Background music		✓	✓
USB charging ports		✓	✓
Driver station		✓	✓
Bus layover space			✓
Branding with iconic sign		✓	✓

It is envisioned that the enhancement of the existing pair of transit shelters into a more robust focal point for transit mobility will bring a stronger sense of identity and presence to the facility, will provide enhanced patron amenities and will strengthen the attractiveness of several transit routes that will be better served by the improved facility. This outcome is especially important for several reasons:

- This area generates significant transit boardings and alightings – both interroute transfers and passengers originating from or destined to the immediate vicinity.
- The corridor of land between 72nd and 73rd Streets from the ocean to Dickens Avenue is a public use corridor. There is a vision to convert the only existing paved use in the public parking lot between Collins and Harding Avenues into an additional public use space. This corridor attracts a large volume of recreational users to the various sports facilities (tennis, baseball, and volleyball), the ocean beach, and recreational and community facilities (North Beach bandshell and the North Shore Park and Youth Center).

- The recent rezoning action for the North Beach district will encourage higher density, mixed use projects which will create a more walkable environment, with fewer auto trips and greater focus on the multiple transit routes for broader non-auto mobility to other districts of Miami Beach and the mainland.

The Alternative A intermodal facility sites on the one-way pair are situated along SR A1A, a state highway, and abut municipal lands which can readily accommodate the expanded transit facilities. Both northbound and southbound sites are heavily treed presently and it is proposed to enhance that condition with additional tree plantings within Options 2 and 3. Wider sidewalks separated from the transit waiting areas will facilitate through pedestrian movements and accommodate movements within the intermodal facility footprints.

Option 1 would feature three full-size units of the city's new transit shelter design in each travel direction. Options 2 and 3 would feature a customized continuous overhead canopy extending along the entire length of the bus bays.

In terms of transit operations, Option 1 retains the existing layout wherein the first bus to arrive pulls forward to the further downstream dwell location. Option 2 introduces sawtooth bus bays of three sizes which allow any arriving bus to pull into its appropriately sized bus bay (trolley, standard bus, articulated bus). Option 3 provides four sawtooth bus bays sized for the largest articulated bus, allowing any bus to pull into any bay. Also, Option 3 includes a lay-over bus bay position at the first position, allowing bus operators to discharge passengers, lock the bus, and avail themselves of the driver rest station, also included with Option 2. In addition, none of the options require a change in the routing of any City or County transit route, as Alternative A preserves the existing routing configuration.

Another special feature of Option 3 as proposed would be an air-conditioned waiting pod near the center of the canopy, as an added amenity for patrons. All options would be well-lit, creating an inviting and more secure environment during hours of darkness. For Options 2 and 3, the centers would be branded by iconic signing at either end of the facility, both northbound and southbound.

All three options are compatible with existing street operations, although Option 3 does require the removal of five onstreet parking spaces in the southbound direction of travel.

Figures 21 through 26 present the proposed Options 1, 2 and 3 for both the northbound and southbound directions of travel.

Figure 21. Alternative A – Option 1 Basic Improvements - Northbound

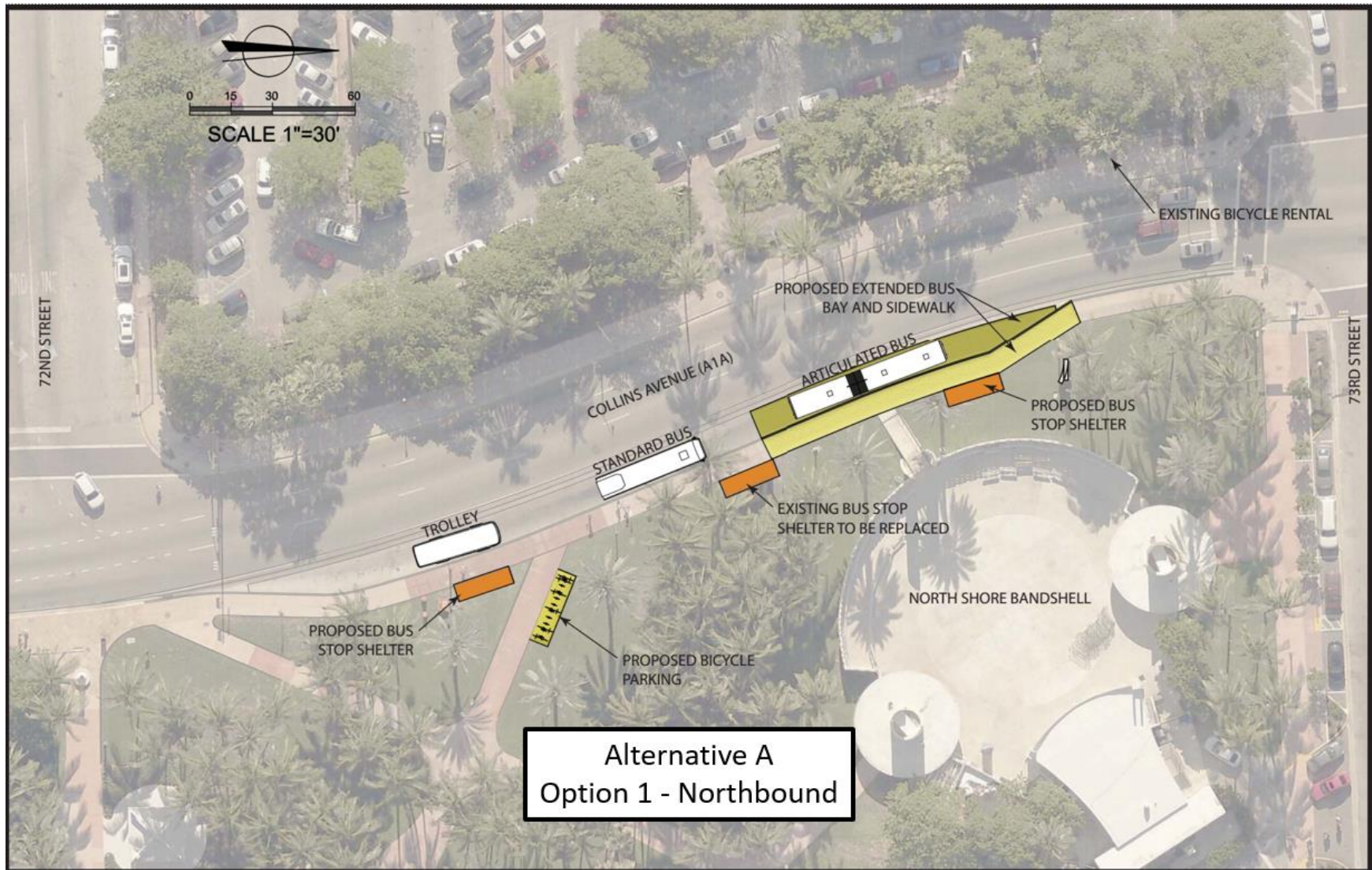


Figure 22: Alternative A – Option 1 Basic Improvements - Southbound

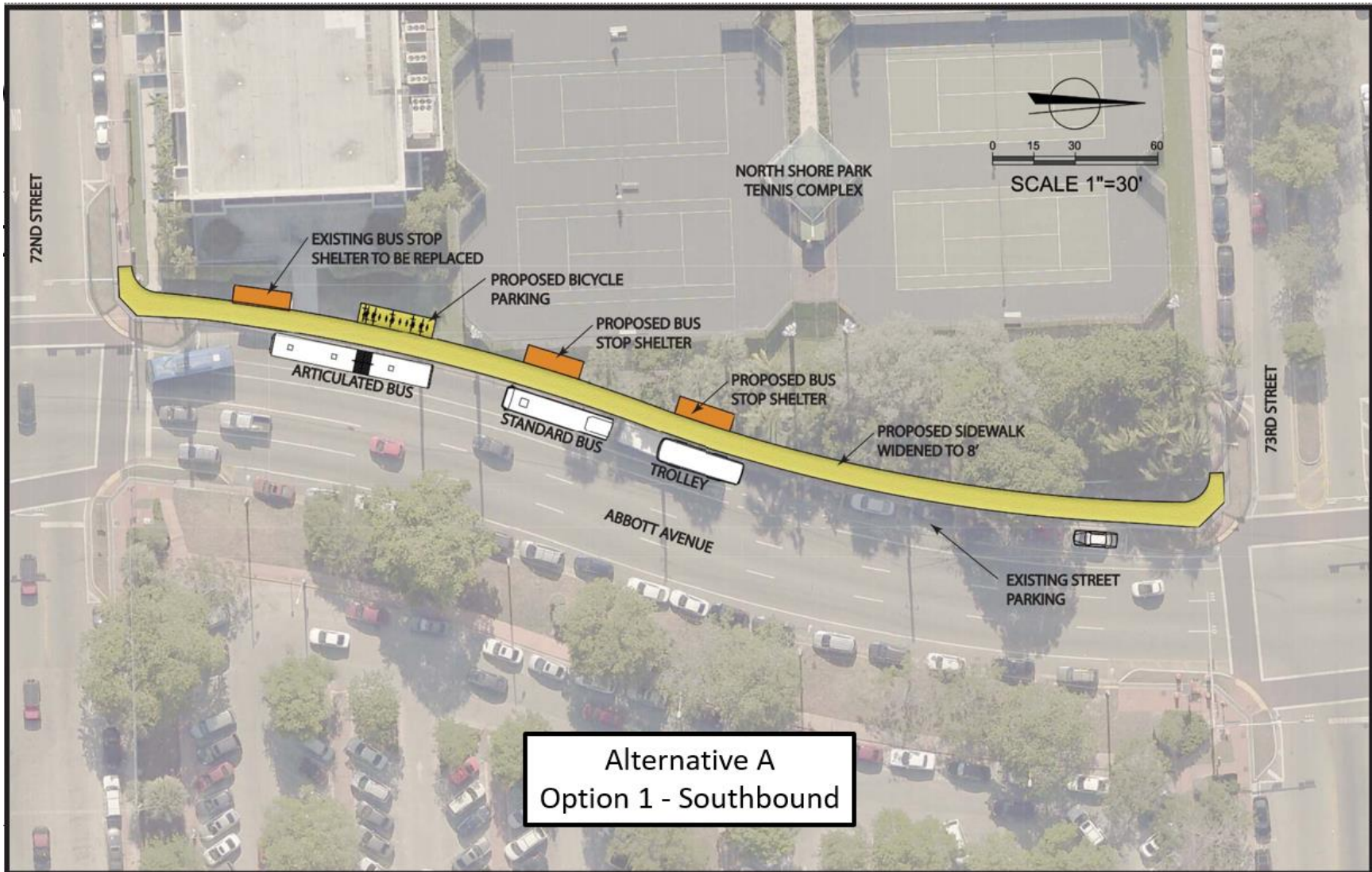


Figure 23. Alternative A – Option 2 Facility Upgrade - Northbound

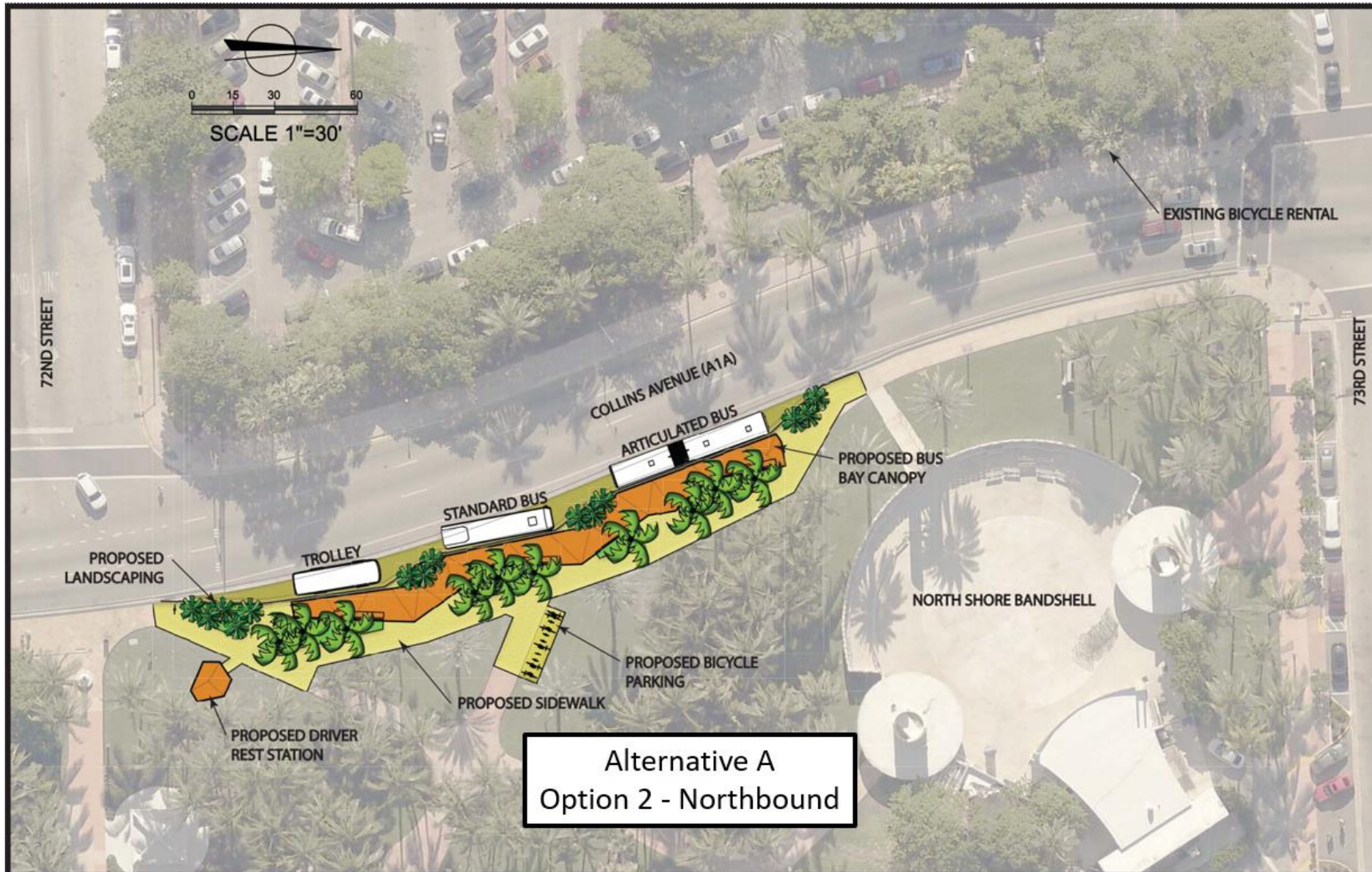


Figure 24. Alternative A – Option 2 Facility Upgrade - Southbound

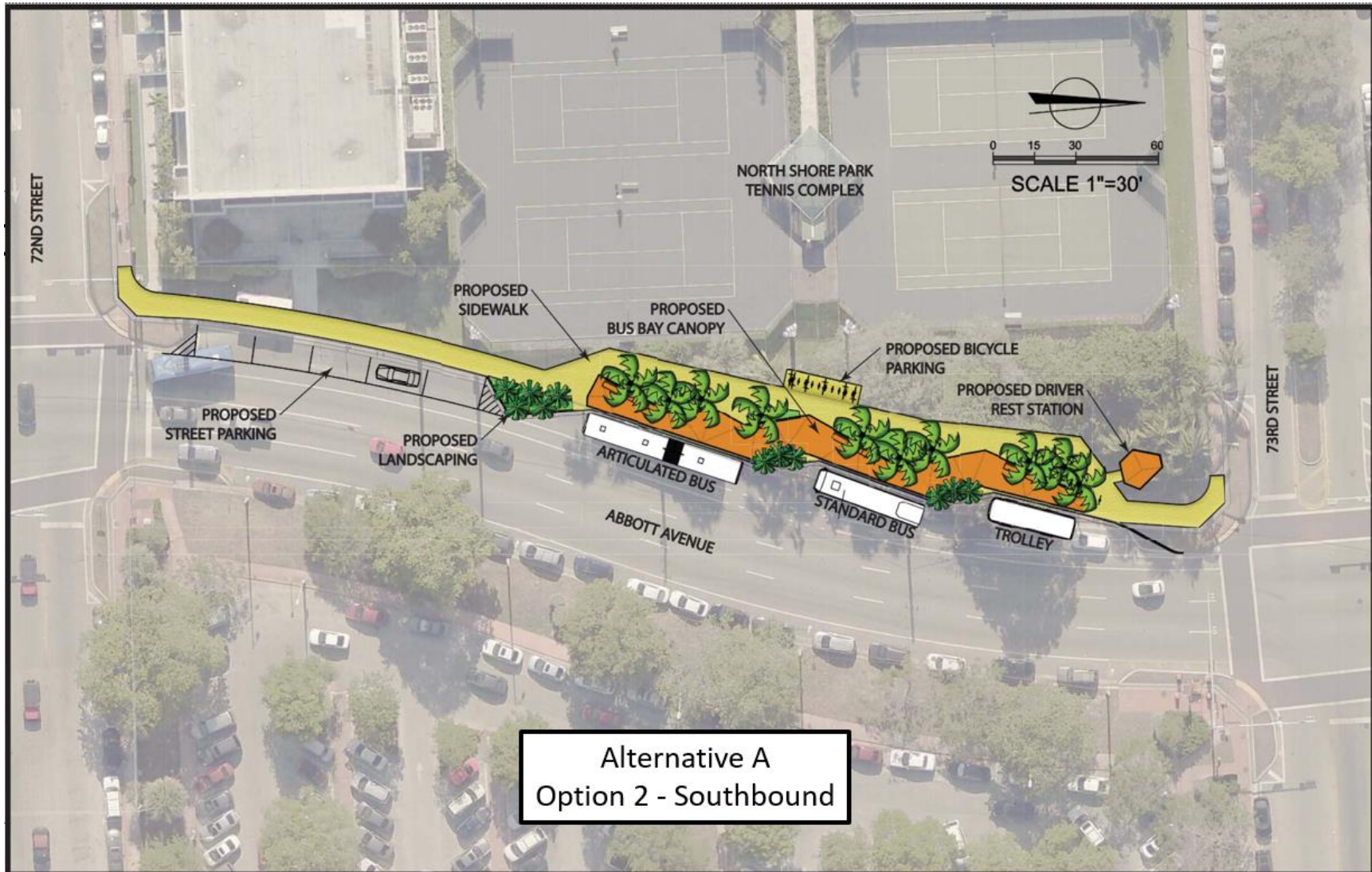


Figure 25. Alternative A – Option 3 Complete Facility - Northbound

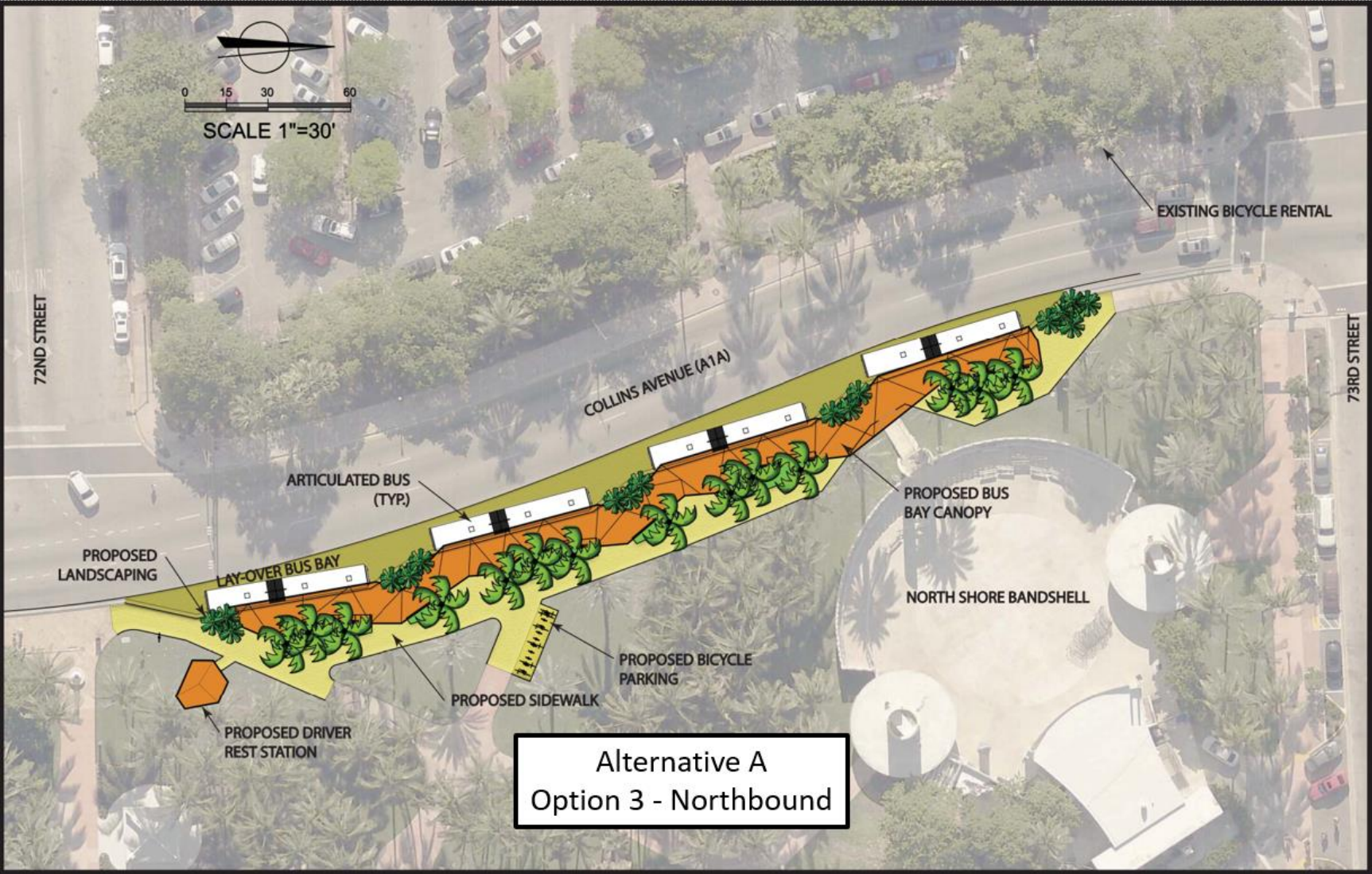
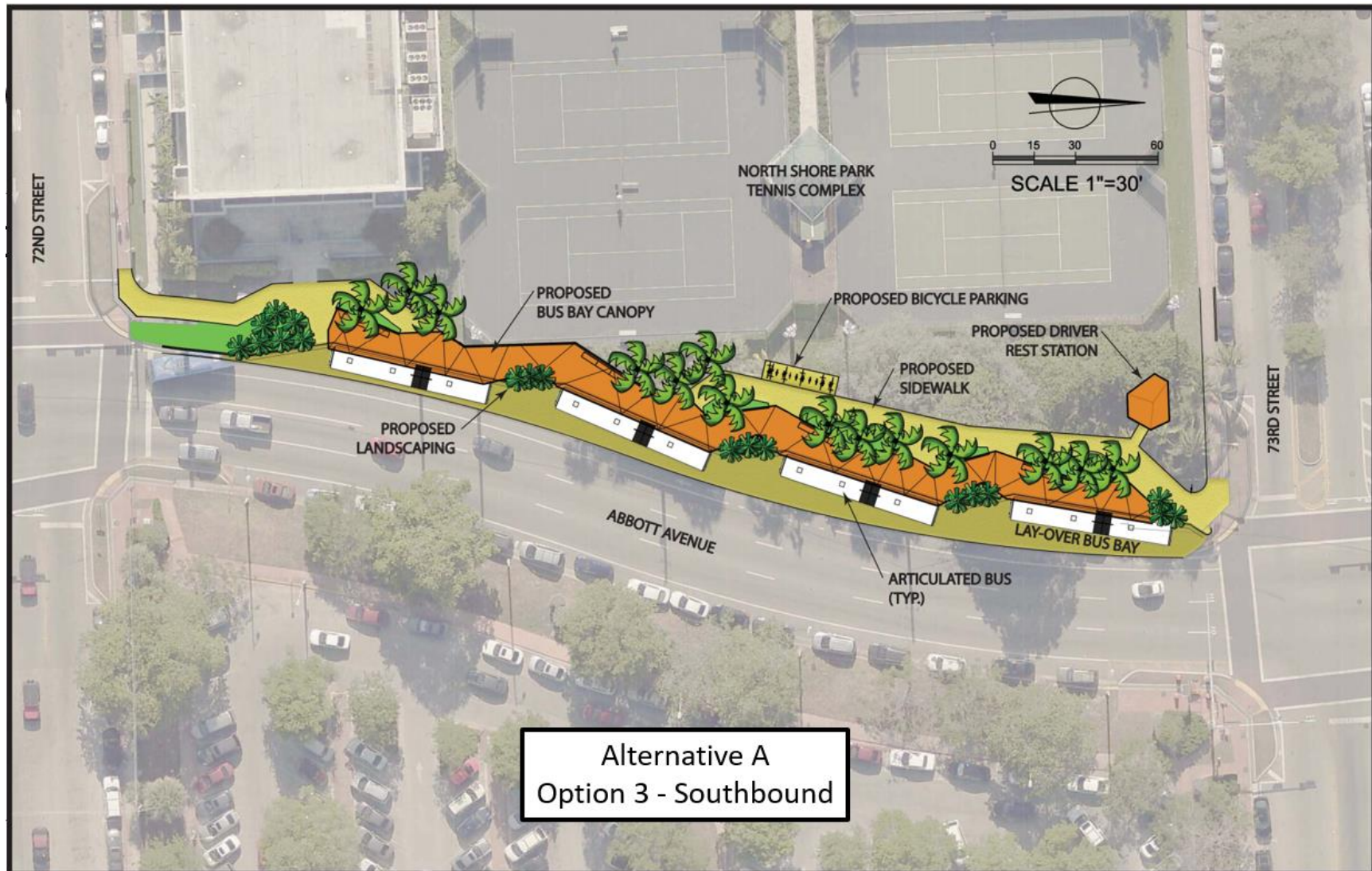


Figure 26. Alternative A – Option 3 Complete Facility - Southbound



5.2 Conceptual Cost Estimates and Funding Strategies

For each of the proposed improvement options, a conceptual cost estimate was developed for both the northbound and southbound facilities. These estimates included basic construction elements as presented in the improvement concepts. Quantities were developed for most items and lump sum allowances were made in other cases, utilizing estimates from other similar facilities. Percentage factors were utilized for maintenance of traffic (6%), mobilization (8%), and cost contingency (15%). In addition, percentage factors were applied to the construction cost estimate subtotal for design (9%) and construction phase inspection (8%) costs.

The conceptual cost estimates are summarized in **Table 9**, and presented in **Appendix A**. As shown, Option 1 has a construction cost of \$1.36 million and a total cost of \$1.59 million; Option 1 used an estimated cost of \$150,000 for each of the “full size” new transit shelters, as now specific cost estimates are yet available. Option 2 has a construction cost of \$3.15 million and a total cost of \$3.68 million. Option 2 has a construction cost of \$1.36 million and a total cost of \$1.59 million. Option 3 has a construction cost of \$4.11 million and a total cost of \$4.81 million.

Option 2 is well over twice the cost of Option 1. Option 3 is three times the cost of Option 1, and 30% times the cost of Option 2.

Table 9. Conceptual Cost Estimates

Option	Title	Construction Cost	Design and CEI	Total Cost
OPTION 1	Basic Improvements			
	Northbound	\$627,972	\$106,755	\$734,727
	Southbound	\$730,463	\$124,179	\$854,641
	TOTAL	\$1,358,435	\$230,934	\$1,589,368
OPTION 2	Upgraded Facilities			
	Northbound	\$1,544,511	\$262,567	\$1,807,077
	Southbound	\$1,604,328	\$272,736	\$1,877,064
	TOTAL	\$3,148,838	\$535,303	\$3,684,141
OPTION 3	Complete Facilities			
	Northbound	\$1,997,622	\$339,596	\$2,337,218
	Southbound	\$2,113,767	\$359,340	\$2,473,107
	TOTAL	\$4,111,389	\$698,936	\$4,810,325

Whichever option is selected for implementation, there are various funding sources that can be considered to fund the improvements. These are summarized as follows:

- **City of Miami Beach Capital Works funding**
This source of project funding is used for many capital projects of all types across the city and could be considered for this proposal.

- **Adopt-a-shelter program**

This program is often used by transit operators to fund the capital cost and maintenance of a shelter, but this program typically applies to smaller, more modest, and lower cost shelters.

- **Private sector sponsorship with advertising**

Miami Beach and many jurisdictions have a transit shelter program involving a partnership with an advertising agency which installs and maintains the shelter in return from revenue from advertising panels on the shelter. This approach would not fund the more expensive facilities contemplated in this study.

- **Private sector naming rights**

One approach for helping to fund civic facilities is to permit naming rights to be granted. Large scale examples are the American Airlines Arena and the BB&T Center in Broward County.

- **Miami-Dade County Dept. of Transportation and Public Works - DTPW (County transit)**

The DTPW could lead or partner in funding for the proposed facilities. At this time, the agency has indicated that all available capital improvement funds are being directed towards implementation of the countywide SMART plan of premium transit improvements.

- **Federal grants**

Jurisdictions have in the past used various federal grant programs to fund transit capital projects. Some of these programs have restrictions on the use of the funds in certain demographic areas.

- **Developer contributions or impact fees**

As new developments are approved in the North Shore district, funding by developers as a traffic mitigation, parking requirement reduction credit, or other rationale could be considered.

- **Benefit district tax**

A benefit district tax imposes a small tax on properties within a defined district benefitting from a public improvement. Such a tax was utilized in the 1980s to fund the 20% local share funding for the Metromover peoplemover in downtown Miami. Due to an acceleration of downtown development, the debt obligation was retired early. The North Shore district with increased FAR ceilings could be considered in this way.

It is anticipated that the funding for this project might likely involve several sources of revenue working in combination to underwrite the capital costs. Regardless of the construction cost, an agreement would need to be struck with County transit for the ongoing maintenance of the constructed facility, given the preponderance of County transit routes using the facility, though the City could choose to participate to some extent.

5.3 Implementation Steps and Timelines

This section addresses a potential timeline for the implementation of the North Beach Intermodal Center project. Key steps and schedule allowances for the implementation process are suggested as follows:

- Enter the project in the City capital projects budget and identify its priority
- Investigate potential funding sources within the City and with partners
- Procure engineering/architectural design and construction phase professional services
- Coordinate project design with City Commission and other City committees
- Prepare design plans and specifications
- Advertise the project for construction bids
- Construct the project improvements
- Open the facilities for public use

For the purposes of this schedule, one year is allowed for identification of funding sources and securing any required commitments and obligations; the duration of this step could vary based on funding availability. Based on the identified steps and assumptions, the implementation of the proposed North Beach Intermodal Center approximately 2 years and 8 months assuming steps fall into place as shown. The potential implementation timeline is displayed in **Table 10**.

The development of this new transit intermodal facility is envisioned to be a synergistic complement to the future of the North Beach district and prospects for its further development and redevelopment. Convenient, quality, and seamless transit service, as enhanced by the North Beach Intermodal Center has the prospect to meaningfully contribute to alternative non-auto travel choices for Miami Beach residents, businesses, and visitors.

Table 10. Potential Implementation Timeline

Implementation Activity	2018												2019												2020												2020											
	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D		
Enter the project in the City capital projects budget and identify its priority																																																
Investigate potential funding sources within the City and with partners and finalize approach																																																
Procure engineering/architectural design and construction phase professional services																																																
Coordinate project design with City Commission and other City committees, and the public																																																
Prepare design plans and specifications																																																
Advertise the project for construction bids																																																
Construct the project improvements																																																
Open the facilities for public use																																																

APPENDIX

Appendix A – Conceptual Cost Estimates

City of Miami Beach
 NORTH BEACH INTERMODAL CENTER
 Conceptual Cost Estimate

2/16/2018

Option	Title	Construction Cost	Design and CEI	Total Cost
OPTION 1	Basic Improvements			
	Northbound	\$627,972	\$106,755	\$734,727
	Southbound	\$730,463	\$124,179	\$854,641
	TOTAL	\$1,358,435	\$230,934	\$1,589,368
OPTION 2	Upgraded Facilities			
	Northbound	\$1,544,511	\$262,567	\$1,807,077
	Southbound	\$1,604,328	\$272,736	\$1,877,064
	TOTAL	\$3,148,838	\$535,303	\$3,684,141
OPTION 3	Complete Facilities			
	Northbound	\$1,997,622	\$339,596	\$2,337,218
	Southbound	\$2,113,767	\$359,340	\$2,473,107
	TOTAL	\$4,111,389	\$698,936	\$4,810,325

City of Miami Beach

NORTH BEACH INTERMODAL CENTER

Option 1 - Northbound

Conceptual Cost Estimate

2/16/2018

Item	Quantity	Unit	Unit Cost	Total Cost
Demolition	1	LS	\$5,000	\$5,000
Utility Adjustment	0	LS	\$25,000	\$0
Drainage	0	LS	\$20,000	\$0
Pavement and Related				
Asphalt Pavement	0	SY	\$40	\$0
Curb & Gutter	0	LF	\$19	\$0
Sidewalk	180	SY	\$45	\$8,100
Striping	0	LS	\$5,000	\$0
Signage	1	LS	\$3,200	\$3,200
Structures				
Bus Shelters - Large (New Style)	3	LS	\$150,000	\$450,000
Rest Station Building	0	SF	\$450	\$0
Branding Icons	1	LS	\$7,500	\$7,500
A/C Waiting Pod	0	SF	\$300	\$0
Electrical				
Lighting	1	LS	\$5,000	\$5,000
Transit Infor. & Security Systems	0	LS	\$250,000	\$0
Furnishings				
Seating	0	EA	\$2,400	\$0
Trash Receptacles	0	EA	\$3,000	\$0
Bike Racks	10	EA	\$800	\$8,000
Landscaping				
Trees	0	EA	\$1,000	\$0
Ground covers	0	SF	\$3	\$0
Irrigation	0	SF	\$2	\$0
Maintenance of Traffic	1	LS	6%	\$29,208
Mobilization	1	LS	8%	\$38,944
Contingency	1	LS	15%	\$73,020
Construction Subtotal				\$627,972
Design Fee	1	LS	9%	\$56,517
CEI Costs	1	LS	8%	\$50,238
Design and Construction Professional Services				\$106,755
Grand Total				\$734,727

City of Miami Beach

NORTH BEACH INTERMODAL CENTER *Option 1 - Southbound*

Conceptual Cost Estimate

2/16/2018

Item	Quantity	Unit	Unit Cost	Total Cost
Demolition	1	LS	\$5,000	\$5,000
Utility Adjustment	1	LS	\$75,000	\$75,000
Drainage	0	LS	\$20,000	\$0
Pavements and Related				
Asphalt Pavement	0	SY	\$40	\$0
Curb & Gutter	0	LF	\$19	\$0
Sidewalk	350	SY	\$45	\$15,750
Striping	0	LS	\$5,000	\$0
Signage	0	LS	\$3,200	\$0
Structures				
Bus Shelters - Large (New Style)	3	LS	\$150,000	\$450,000
Rest Station Building	0	SF	\$450	\$0
Branding Icons	1	LS	\$7,500	\$7,500
A/C Waiting Pod	0	SF	\$300	\$0
Electrical				
Lighting	1	LS	\$5,000	\$5,000
Transit Infor. & Security Systems	0	LS	\$250,000	\$0
Furnishings				
Seating	0	EA	\$2,400	\$0
Trash Receptacles	0	EA	\$3,000	\$0
Bike Racks	10	EA	\$800	\$8,000
Landscaping				
Trees	0	EA	\$1,000	\$0
Ground covers	0	SF	\$3	\$0
Irrigation	0	SF	\$2	\$0
Maintenance of Traffic	1	LS	6%	\$33,975
Mobilization	1	LS	8%	\$45,300
Contingency	1	LS	15%	\$84,938
Construction Subtotal				\$730,463
Design Fee		LS	9%	\$65,742
CEI Costs		LS	8%	\$58,437
Design and Construction Professional Services				\$124,179
Grand Total				\$854,641

City of Miami Beach

NORTH BEACH INTERMODAL CENTER

Option 2 - Northbound

Conceptual Cost Estimate

2/16/2018

Item	Quantity	Unit	Unit Cost	Total Cost
Demolition	1	LS	\$5,000	\$5,000
Utility Adjustment	1	LS	\$25,000	\$25,000
Drainage	1	LS	\$20,000	\$20,000
Pavement and Related				
Asphalt Pavement	342	SY	\$40	\$13,680
Curb & Gutter	310	LF	\$19	\$5,890
Sidewalk	665	SY	\$45	\$29,925
Striping	1	LS	\$5,000	\$5,000
Signage	1	LS	\$3,200	\$3,200
Structures				
Canopy	3,000	SF	\$200	\$600,000
Rest Station Building	230	SF	\$450	\$103,500
Branding Icons	1	LS	\$7,500	\$7,500
A/C Waiting Pod	0	SF	\$300	\$0
Electrical				
Lighting	3,000	SF	\$20	\$60,000
Transit Infor. & Security Systems	1	LS	\$250,000	\$250,000
Furnishings				
Seating	9	EA	\$2,400	\$21,600
Trash Receptacles	3	EA	\$3,000	\$9,000
Bike Racks	10	EA	\$800	\$8,000
Landscaping				
Trees	24	EA	\$1,000	\$24,000
Ground covers	1,200	SF	\$3	\$3,600
Irrigation	1,200	SF	\$2	\$2,400
Maintenance of Traffic	1	LS	6%	\$71,838
Mobilization	1	LS	8%	\$95,784
Contingency	1	LS	15%	\$179,594
Construction Subtotal				\$1,544,511
Design Fee	1	LS	9%	\$139,006
CEI Costs	1	LS	8%	\$123,561
Design and Construction Professional Services				\$262,567
Grand Total				\$1,807,077

City of Miami Beach

NORTH BEACH INTERMODAL CENTER *Option 2 - Southbound*

Conceptual Cost Estimate

2/16/2018

Item	Quantity	Unit	Unit Cost	Total Cost
Demolition	1	LS	\$5,000	\$5,000
Utility Adjustment	1	LS	\$75,000	\$75,000
Drainage	1	LS	\$20,000	\$20,000
Pavements and Related				
Asphalt Pavement	330	SY	\$40	\$13,200
Curb & Gutter	310	LF	\$19	\$5,890
Sidewalk	595	SY	\$45	\$26,775
Striping	1	LS	\$5,000	\$5,000
Signage	1	LS	\$3,200	\$3,200
Structures				
Canopy	3,000	SF	\$200	\$600,000
Rest Station Building	230	SF	\$450	\$103,500
Branding Icons	1	LS	\$7,500	\$7,500
A/C Waiting Pod	0	SF	\$300	\$0
Electrical				
Lighting	3,000	SF	\$20	\$60,000
Transit Infor. & Security Systems	1	LS	\$250,000	\$250,000
Furnishings				
Seating	9	EA	\$2,400	\$21,600
Trash Receptacles	3	EA	\$3,000	\$9,000
Bike Racks	10	EA	\$800	\$8,000
Landscaping				
Trees	24	EA	\$1,000	\$24,000
Ground covers	1,200	SF	\$3	\$3,600
Irrigation	1,200	SF	\$2	\$2,400
Maintenance of Traffic	1	LS	6%	\$74,620
Mobilization	1	LS	8%	\$99,493
Contingency	1	LS	15%	\$186,550
Construction Subtotal				\$1,604,328
Design Fee		LS	9%	\$144,390
CEI Costs		LS	8%	\$128,346
Design and Construction Professional Services				\$272,736
Grand Total				\$1,877,064

City of Miami Beach

NORTH BEACH INTERMODAL CENTER

Option 3 - Northbound

Conceptual Cost Estimate

2/16/2018

Item	Quantity	Unit	Unit Cost	Total Cost
Demolition	1	LS	\$50,000	\$50,000
Utility Adjustment	1	LS	\$25,000	\$25,000
Drainage	1	LS	\$20,000	\$20,000
Pavement and Related				
Asphalt Pavement	456	SY	\$40	\$18,222
Curb & Gutter	390	LF	\$19	\$7,406
Sidewalk	803	SY	\$45	\$36,155
Striping	1	LS	\$5,000	\$5,000
Signage	1	LS	\$3,200	\$3,200
Structures				
Canopy	4,002	SF	\$200	\$800,400
Rest Station Building	230	SF	\$450	\$103,500
Branding Icons	1	LS	\$7,500	\$7,500
A/C Waiting Pod	180	SF	\$300	\$54,000
Electrical				
Lighting	4,002	SF	\$20	\$80,040
Transit Infor. & Security Systems	1	LS	\$250,000	\$250,000
Furnishings				
Seating	12	EA	\$2,400	\$28,800
Trash Receptacles	4	EA	\$3,000	\$12,000
Bike Racks	10	EA	\$800	\$8,000
Landscaping				
Trees	31	EA	\$1,000	\$31,000
Ground covers	1,657	SF	\$3	\$4,971
Irrigation	1,675	SF	\$2	\$3,350
Maintenance of Traffic	1	LS	6%	\$92,913
Mobilization	1	LS	8%	\$123,884
Contingency	1	LS	15%	\$232,282
Construction Subtotal				\$1,997,622
Design Fee	1	LS	9%	\$179,786
CEI Costs	1	LS	8%	\$159,810
Design and Construction Professional Services				\$339,596
Grand Total				\$2,337,218

City of Miami Beach

NORTH BEACH INTERMODAL CENTER

Option 3 - Southbound

Conceptual Cost Estimate

2/16/2018

Item	Quantity	Unit	Unit Cost	Total Cost
Demolition	1	LS	\$50,000	\$50,000
Utility Adjustment	1	LS	\$100,000	\$100,000
Drainage	1	LS	\$20,000	\$20,000
Pavements and Related				
Asphalt Pavement	440	SY	\$40	\$17,600
Curb & Gutter	385	LF	\$19	\$7,315
Sidewalk	735	SY	\$45	\$33,060
Striping	1	LS	\$5,000	\$5,000
Signage	1	LS	\$3,200	\$3,200
Structures				
Canopy	4,065	SF	\$200	\$813,000
Rest Station Building	230	SF	\$450	\$103,500
Branding Icons	1	LS	\$7,500	\$7,500
A/C Waiting Pod	180	SF	\$300	\$54,000
Electrical				
Lighting	4,065	SF	\$20	\$81,300
Transit Infor. & Security Systems	1	LS	\$250,000	\$250,000
Furnishings				
Seating	12	EA	\$2,400	\$28,800
Trash Receptacles	4	EA	\$3,000	\$12,000
Bike Racks	10	EA	\$800	\$8,000
Landscaping				
Trees	33	EA	\$1,000	\$33,000
Ground covers	2,132	SF	\$3	\$6,396
Irrigation	2,454	SF	\$2	\$4,908
Maintenance of Traffic	1	LS	6%	\$98,315
Mobilization	1	LS	8%	\$131,086
Contingency	1	LS	15%	\$245,787
Construction Subtotal				\$2,113,767
Design Fee		LS	9%	\$190,239
CEI Costs		LS	8%	\$169,101
Design and Construction Professional Services				\$359,340
Grand Total				\$2,473,107