STUDY FINAL REPORT

Technical Validation, Economics & Financing, Public Engagement

Pinellas Gondola Feasibility Study
For TBARTA & Forward Pinellas

Final

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CONSULTING SERVICES

Pinellas Gondola Feasibility Study

Study Final Report

Technical Validation, Economics & Financing, Public Engagement

Project Information

Project:	**Pinellas Gondola Feasibility Study**
Prepared for:	**Tampa Bay Area Regional Transit Authority (TBARTA) & Forward Pinellas**

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1. EXECUTIVE SUMMARY

This study was completed for the Tampa Bay Area Regional Transit Authority (TBARTA) and Forward Pinellas. The goal of this feasibility study is to determine:

a) Are aerial gondolas feasible and well-suited to the Tampa Bay Area,
b) If well-suited, are there suitable alignments to serve the destination centers in Clearwater and in St. Petersburg,
c) If there are suitable routes, are the routes technically feasible,
d) If technically feasible, are the projects financially feasible, and
e) Is the public at large supportive of the projects.

In the first phase of this project, SCJ Alliance (SCJ) engaged with various stakeholders to determine their interests with regards to an aerial gondola in the Tampa Bay Region of Florida, specifically in Clearwater and in St. Petersburg. In the second phase of this project, SCJ and their associated subconsultants conducted a Strengths, Weaknesses, Opportunities & Threats (SWOT) assessment for the proposed gondola alignments in each project area. This assessment treated the alignment alternatives for each project area as separate and did not compete the alternatives of Clearwater against the alternatives of St. Petersburg.

Upon consultation with stakeholders in St. Petersburg, it was decided by the Mayor not to proceed with further effort. This was largely in response to the incoming Mayor stating that the project was not a current priority of the administration. As such, work on the St. Petersburg project ceased.

The Clearwater project is considering an aerial gondola system between Downtown Clearwater and Clearwater Beach with a stop at the Clearwater Marine Aquarium. As this project evolved, it became clear that there was strong interest in connecting Downtown Clearwater and Clearwater Beach to effectively create one unified entertainment and economic district. With the improvements to Coachman Park (Imagine Clearwater), it is anticipated that significant numbers of people living and staying at Clearwater Beach will have interest in traveling Downtown for recreation and events at the park. An aerial gondola system could additionally reduce traffic on the Memorial Causeway by allowing Beach visitors to park downtown and ride the gondola to the Beach.

Due to the dynamic nature of various development plans in the downtown core, it was determined that the approach to the gondola study should continue with optionality. The Clearwater Beach gondola station will be assumed to be located somewhere in the Clearwater Marina. Within Downtown Clearwater, it will be assumed that the gondola station location can range from Drew Street to the north to Court Street to the south and between South Ft. Harrison Avenue to the east and the waterfront/Memorial Causeway to the west. Figure 1 (see below) shows the proposed aerial gondola alignments considered. This route maintains variability in the vicinity of the Clearwater Marina and Downtown Clearwater.

Figure 1 – Considered Gondola Alignments

Are aerial gondolas feasible and well-suited to the Tampa Bay Area?
The short answer is, "yes". Aerial gondolas have been constructed, are currently operating and are successfully operating in similar environments around the world. Systems are operating as both point-of-interest attractions and as urban-transit systems in the same, or more-impactful, heat, humidity, rain, wind conditions, lightning, and marine environments.

Are there suitable alignments to serve the destination centers in Clearwater?
It was determined that the gondola alignment shown in Figure 1 (see below) does adequately serve Downtown Clearwater, Clearwater Beach and the Clearwater Marine Aquarium by generally following the Memorial Causeway.

Are the Clearwater gondola routes technically feasible?
The above alignments were studied for the advanced 3S (Tricable) aerial gondola technology which carries up to 35 people, similar to a city bus. Traveling at up to 17 mph, capable of spanning long distances and being air conditioned, this gondola technology is well-suited to the Clearwater project.

Figure 2 – 3S Gondola
(photo courtesy of Leitner-Poma)

The alignments alternatives shown in Figure 1 (above) were analyzed for:

- Vertical/lateral clearance
- Climate control/passenger comfort
- Property availability/impacts
- Environmental/social impacts
- Parking availability
- 1st/last mile connectivity
- System capacity
- Wind resistance
- Safety
- Viewsheds
- Noise
- Accessibility
- Travel time
- Geology/terrain
- Lightning protection
- Reliability
- Civil/traffic impacts

The project was determined to be technically feasible. The aerial gondola system would have the following specifications:

Table 1 – System Specifications

Criteria	Parameter	Notes
Length:	9,500-10,000 ft	(varies by alternative)
Line Speed:	Up to 17 mph	
Cabin Capacity:	Up to 28	
System Capacity:	Up to 3,600	(people per hour per direction)
Wait Time:	As low as 28 seconds	
Trip Time:	As low as 11 min	(downtown to beach)

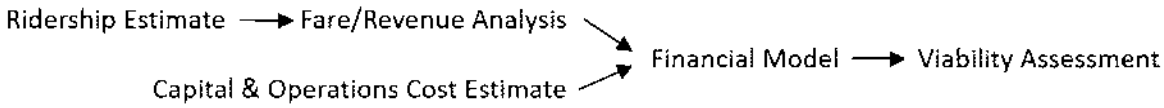
To expand on several of the above areas of study:

Property Availability/Impacts:	Within the range of the alignment alternatives, there are alternatives that avoid traveling over any private property. Should the southern area of the Downtown range of gondola station locations be advanced, the property of Pierce 100 could be impacted as well as some properties Downtown for other alternatives.
Environmental/Social Impacts:	While permitting the proposed alternatives described in this study would be complex and time-consuming, it is believed that there is a pathway for the successful permitting of all of the alternatives described in this study.
Accessibility:	The 3S aerial gondola technology and the proposed station concepts result in a fully ADA compliant transit system. The gondola system provides level-floor boarding and all station facilities are conceived to have elevators as required.
Civil/Traffic Impacts:	The impacts to the existing infrastructure and roadways were studied for the range of station locations in the above alignment alternatives. Unfortunately, at this time, limited data is available regarding the subgrade utilities in the areas of the Clearwater Beach Marina and Downtown Clearwater. It is understood that more information will become available as other projects in these areas advance. Aerial gondola system infrastructure is extremely flexible, especially compared to ground-based fixed-guideway transit (LRT, BRT, monorail, etc.), and it is not anticipated that there will be any significant constraints to the implementation of the proposed aerial gondola system. With regards to traffic impacts, a traffic study was conducted to consider the impacts in the vicinity of the gondola stations and along the Memorial causeway. It was determined that the implementation of the gondola system would serve to reduce traffic overall and not contribute to traffic negatively.

Parking Assessment:	The availability of parking in Downtown Clearwater and at Clearwater Beach in the vicinity of the proposed gondola stations was studied. The study determined that there is more than sufficient existing parking Downtown to support the users of an aerial gondola system originating Downtown. The parking availability at Clearwater Beach was found to be limited. There are opportunities for alternative modes of arrival for users of the gondola that originate at the Beach gondola station (see 1st/last mile below).
1st/Last Mile Connectivity:	Passengers originating at Clearwater Beach would likely be return-trip-riders that parked Downtown or residents/visitors staying in Clearwater Beach. The first group would not require parking at Clearwater Beach, as they parked Downtown. The second group may desire to have parking in the vicinity of the Clearwater Beach gondola station, but alternatives exist. Gondola passengers originating at the Beach could utilize the Jolly Trolly (with possible route adjustments) or a variety of micro-mobility devices (e-bikes, e-scooters, etc.) to reach the gondola station. Passengers originating in Downtown Clearwater, outlying Pinellas County or beyond, could either park Downtown or utilize the transit network as it develops. While the gondola system is not proposed to connect to the PSTA transit facility at Court Street and S. Myrtle Avenue, there are opportunities to utilize shuttles (possibly the Jolly trolly), including autonomous vehicles, or micro-mobility devices to connect the gondola to this facility. The project team encourages future phases of this project to consider a valet-parking concept for the Downtown gondola station. Patrons could pull-up to the valet, unload their beach gear or bicycle and quickly access the gondola. Upon returning to Downtown, valet-users could use a mobile phone ap to have their vehicle readied.

Is the Clearwater gondola project financially feasible?

In order to determine the financial viability of the Clearwater gondola project a sequential process was utilized:



Ridership:

Ridership was derived from two main sources: 1) transit ridership based on 2019 vehicle users and 2) projected attraction riders. 2019 was used as the baseline year as it best represents the pre-Covid-19 patterns in Clearwater.

Roadway data was used to understand the size of the first group. Estimates of mode-switching were used to determine the likely number of people that would use the gondola system as transit based on a propensity for transit considering cost and travel time. It was estimated that 1,400,000 people per year would switch from automobile travel between Downtown Clearwater and Clearwater Beach (and vice versa) to the gondola system, reducing vehicle trips by nearly 1,000,000 trips per year.

The second group was estimated based on the ridership on comparable gondola systems around the world that offer a point-of-interest experience. A conservative estimate of the number of novelty riders per year is 500,000.

Combining these estimates, it is assumed that between 1.4-1.9 million gondola riders would travel between Downtown Clearwater and Clearwater Beach (and vice versa).

Fare Structure:

It is anticipated that the gondola fare structure would vary based on the user's category:

Beach Employees
Likely purchase a monthly pass costing around $40 which would include parking Downtown. This rate is similar to the existing Beach parking rate today. The gondola would provide more consistent and predictable travel times for employees.

Residents
City and/or county Residents would be offered an annual pass. This pass could cost in the range of $250 per year and allow unlimited rides in non-peak times.

Visitors
Based on an assessment of existing Beach parking rates ($20-50 per day), similar attractions in Clearwater (average cost $47), and average gondola ticket prices worldwide ($24), it is estimated that the Clearwater gondola could charge an effective average ticket price of between $12.50 and $17.50 per day for a pass with unlimited rides. This range was used to create a low, medium and high estimate of revenue.

There is also an opportunity to offer prime-time rides at sunset or during special events for an additional fee.

Revenue Estimate:

For the above user groups, revenue was calculated. The Beach employee and resident revenue was not included in the overall revenue estimate as it is assumed that these groups would be break-even with regards to cost and revenue.

Table 2 – Estimated Annual Revenue

Effective Avg. Ticket Price	Annual Ticket Sales (millions)		
	1.40	**1.65**	**1.90**
$12.50	**17.5**	20.6	23.8
$15.00	21.0	**24.8**	28.5
$17.50	24.5	28.9	**33.3**

Costs:

Costs were estimated both for the capital cost expenditure (CAPEX) to realize the Clearwater gondola project and the annual operations & maintenance (O&M) costs (OPEX):

CAPEX - $124-184 million in 2022 dollars

OPEX - $10 million per year +/- 20% in 2022 dollars

Financial Model:

Financial models were prepared for the low-, medium- and high-revenue cases compared with the high-, median- and low-cost cases, based on a number of assumed financial parameters. This analysis resulted in the following assessment:

Best-Case Scenario

Represents a very good investment that would be easy to finance.

Medium/Median-Case Scenario

A reasonable investment that would likely get financing.

Worst-Case Scenario

Represents a poor investment that would not receive financing.

The results of this study dictate that costs need to be controlled as to not exceed the Medium-Case CAPEX and OPEX level. As there is no way to guarantee ridership or revenue, conservative estimates of both should be maintained. Keeping costs to the Medium/Median-Case level, or lower, would likely yield a financially viable project capable of attracting investors. This analysis assumes private investment and financing. Should the City of Clearwater or another agency participate financially in the project, provide a revenue back-stop or providing municipal bonding, the financial model will be different.

Delivery & Financing:	There are a number of public, private and Public-Private Partnership (PPP) arrangements that could accomplish the Clearwater gondola project. It has generally been the opinion of City Staff consulted with thus far that for the Clearwater Gondola to be realized, it would be in some form of PPP. The idea of providing some initial early-stage capital in the range of $10-15 million was raised as a possibility as was the idea of the City acting as a conduit for the private sector to access low-interest, long-term government bonds.

Is the public at large supportive of the Clearwater gondola project?

The project team conducted an online social media outreach campaign with a questionnaire to determine general knowledge of aerial gondolas, likelihood of gondola use and interest in public money being used to advance the project. The results were overall favorable. The following summarizes the results of the questionnaire:

- 8,306 Responses:
- 76% Familiar/Very Familiar with aerial gondolas
- 73% Likely/Very Likely to use a gondola to:
- 78% said Causeway traffic prevented trips
- 69% of CW residents possibly/definitely open to City tax dollars being used for the project
- 69% of Pinellas County residents possibly/definitely open to County tax dollars being used for the project

Recommendations & Next Steps

SCJ believes that there are two possible paths for the realization of a gondola project between Downtown Clearwater and Clearwater Beach: 1) a public project and 2) a private project. These paths are described in detail within this report. Depending on the preferred path, SCJ offers the following recommendations for the advancement of this project:

- City needs to select station locations and engage with the Aquarium
- Preliminary station designs should be prepared
- The Unsolicited Proposal (UP) mechanisms, the need for a referendum and the available financial tools should be reviewed by the project team
- The project team needs to determine the project path

2. INTRODUCTION

An aerial gondola system is a highly reliable and high-capacity transit technology that is well-adapted to urban applications. Similar to gondola systems at ski areas, urban transit gondola systems transport passengers comfortably in cabins from station to station. Towers support the system's cables between stations and ensure adequate ground clearance.

This study was completed for the Tampa Bay Area Regional Transit Authority (TBARTA) and Forward Pinellas. The goal of this feasibility study is to determine:

a) Are aerial gondolas feasible and well-suited to the Tampa Bay Area,
b) If well-suited, are there suitable alignments to serve the destination centers in Clearwater and in St. Petersburg,
c) If there are suitable routes, are the routes technically feasible,
d) If technically feasible, are the projects financially feasible, and
e) Is the public at large supportive of the projects.

Following this phase, a series of presentations will be made to the Study Advisory Committee (SAC), key stakeholders, the City of Clearwater, TBARTA and Forward Pinellas. Content developed during these presentations will be included in an appendix to this final report.

2.1 BACKGROUND

In the first phase, SCJ Alliance (SCJ) engaged with various stakeholders to determine their interests with regards to an aerial gondola in the Tampa Bay Region of Florida, specifically in Clearwater and in St. Petersburg. In the second phase of this project, SCJ and their associated subconsultants conducted a Strengths, Weaknesses, Opportunities & Threats (SWOT) assessment for the gondola alignments in each project area. This assessment treated the alignment alternatives for each project area as separate and did not compete the alternatives of Clearwater against the alternatives of St. Petersburg. The results of this assessment were documented in the December 2021 SWOT Report prepared by SCJ. This report was amended in July of 2022 based on developments in the first half of 2022. The following is a brief summary of project decisions that were made after the completion of the SWOT report and prior to the work summarized in this report. Additional information is in Appendix A of the aforementioned report.

<u>St. Petersburg</u>

The gondola route alternatives studied for the St. Petersburg project area included both primary and secondary alignments. The primary alignments primarily travel in the east-west direction from 1st Street to the Warehouse Arts District along 4th Avenue South, 5th Avenue South, 6th Avenue South and Central Avenue. The secondary alignments are intended to augment the primary alignments and serve individual purposes. This second group included primarily north-south connectors that intersect the primary alignments. These routes are located within the Tropicana Field site, the waterfront and the Pier. All of these routes were determined to be technical feasible. Upon consultation with stakeholders in St. Petersburg, it was decided by the Mayor not to proceed with further effort. This was largely in response to the incoming Mayor stating that the project was not a current priority of the administration. As such, work on the St. Petersburg project ceased.

Clearwater

This project was conceived to construct an aerial gondola system between Downtown Clearwater and Clearwater Beach with a stop at the Clearwater Marine Aquarium. Due to the dynamic nature of various development plans in the downtown core, it was determined that the approach to the gondola study should continue with optionality. The Clearwater Beach gondola station will be assumed to be located somewhere in the Clearwater Marina. Multiple options will be considered. Within Downtown Clearwater, it will be assumed that the gondola station location can range from Drew Street to the north to Court Street to the south and between South Ft. Harrison Avenue to the east and the waterfront/Memorial Causeway to the west. This area is shown in yellow in Figure 1. In addition to considering a gondola station in the general highlighted area, the study will specifically look at a gondola station in the vicinity of the Library parking lot and the Court Street parking garage, both shown in red below.

Figure 3 – Downtown Clearwater Station Envelope

Based on the background information provided above, the purpose of this phase is:

- Technical Validation
- Economics & Financing Validity
- Public Engagement

Each of the above focus areas and their results are documented in Sections 4, 5 and 6 of this report. This report will conclude the Pinellas Aerial Gondola Feasibility Study with the exception of presenting this information to the appropriate stakeholders.

3. CLEARWATER GONDOLA SYSTEM DEFINITION

At the beginning of this project phase, SCJ studied gondola alignments between Clearwater Beach and Downtown Clearwater by way of the Aquarium. All considered concepts generally traveled along the Memorial Causeway. A single optionality-based alignment was settled on that achieved the following criteria:

- Services Clearwater Beach, Downtown Clearwater and the Clearwater Marine Aquarium
- Is likely technically feasible
- Allows flexibility at the Clearwater Marina
- Allows flexibility in Downtown Clearwater
- Minimizes towers in the water and in sensitive areas including the mangrove areas along the Memorial Causeway Island
- Provides adequate clearances

The following pages describe the preferred gondola technology, alignment, station location, tower locations and possible impacts.

Technology Selection

In an earlier phase of this project, SCJ recommended the Tricable Detachable Gondola (TDG or 3S) technology for the Clearwater Aerial Gondola System. This technology will allow for this transit system to travel faster, span longer distances and carry larger cabins. More discussion of this technology and the recommendation can be seen in the December 2021 SWOT Report prepared by SCJ.

Alignment Centerline

Figure 2 shows the alignment advanced for study. This route maintains variability in the vicinity of the Clearwater Marina and Downtown Clearwater. Aerial gondola systems can only turn slight angles (generally less than 5 degrees) at towers; larger angle changes require stations. In order to not exceed the number of planned stations, the number of turns were minimized. The alignment has two angle (turning) points, the first between the Clearwater Marina and the Aquarium and the second near the east end of the Causeway Island (shown below in blue). From these points, the east and west portion of the alignment can land in nearly any location in the Clearwater Marina and in the yellow-highlighted area in Downtown Clearwater.

Figure 4 – Considered Gondola Alignments

Detailed Plan & Elevation Profile drawings can be seen in Appendix A. These drawings depict the various options considered.

Stations

It is assumed that the Clearwater Beach, Aquarium, and Downtown Clearwater gondola stations would be passenger boarding and alighting (exiting) stations. The eastern angle point can either be a turning-tower (if the turning angle is less than five degrees) or an angle station (if a larger turn angle is required). It is assumed that this angle point would be a non-passenger-boarding station in either case. This decision was made based on the low demand for transit at this location and the increase in cost required for a boarding station.

The architecture and non-gondola related amenities of the stations are not part of this study. Basic assumptions were made in order to prepare the station concepts discussed in this report. In future phases, these details will need to be evaluated for thorough project costing and the identification of impacts.

Gondola stations serve several purposes:

- House Gondola Electromechanical Equipment
- Allow Passenger Entry/Exit (including vertical circulation)
- Provide Gondola Boarding/Alighting Area
- Provide Areas for Operations Staff

Gondola stations can be either at-grade or elevated. At-grade stations have a boarding floor elevation only slightly above the surrounding ground elevation. At-grade stations are typically less costly as their structures are simpler and they do not need vertical circulation equipment (elevators, stairs and/or escalators). At-grade stations do require a closed area immediately outside the station where the gondola cabins exit the station. This area would be closed to pedestrian and vehicle access, due to insufficient clearance below the gondola cabins.

Elevated stations may be required to provide vertical clearance outside the station where gondola cabins travel over roadways, other structures or pedestrian areas. As gondolas can travel upwards only at moderately shallow angles, stations may need to be raised to gain needed clearances if only a short horizontal distance is available to gain height. It also may be advisable to raise stations to keep the station and the housed equipment above predicted storm surge elevations, estimated to be 15 feet.

Gondola stations can be constructed large enough to have space for passenger queuing lines or queuing can be assumed to be outside the station. In the case of the Clearwater Gondola's Clearwater Marina and Downtown Stations, queuing has been assumed to be outside of the stations. Passengers boarding the Gondola at the Aquarium Station could utilize the pedestrian bridge for queuing if necessary.

A typical gondola station requires the following floor areas:

Table 3 – Gondola Station Space Requirements (square feet)		
Space	**End Station Requirement**	**Intermediate Station Requirement**
Gondola Path (travel path and inner space)	6,800	13,800
Boarding/Alighting Platform (w/o queuing area)	40	2 x 40
Machine Platform (above boarding area)	7,000	13,800
Operator Booth	1 x 25	2 x 25
Misc. Electrical Cabinets	20	2 x 20
Employee Restroom	20	20
Janitor Closet	30	30
Backup Generator/Tank	130	130

Station Specifics

Conceptual drawings of the primary station options can be viewed in Appendix B.

Within the Clearwater Marina, four primary gondola station locations were considered:

Marina Option #1 (red): This station option is located at the far west end of the Marina property adjacent to Coronado Drive and above the existing parking area. The elevation of the station structure and boarding floor are elevated to be approximately 18 feet and 20 feet above grade respectively. This elevation allows for the gondola cabins to adequately clear the Marina Cantina building structure. The elevation of the boarding floor accommodates the incorporation of a level pedestrian bridge crossing over Coronado Drive to the Pier 60 parking lot on the west side of the roadway. This concept will require vertical circulation infrastructure on each side of Coronado Drive.

Marina Option #2 (magenta): This station option is located in the north-central area of the Marina property adjacent to Memorial Causeway Boulevard and the roundabout. This option was conceived to be an at-grade or a slightly elevated station. It may be desirable to elevate this station to protect it from a potential storm surge. The advantage of an at-grade station is the lack of vertical circulation infrastructure and the added cost and complexity of an elevated structure.

Marina Option #3 (green): This station option was conceived to be located on the roof of a future parking garage. It is understood that a new parking garage is contemplated in the Marina property, but specifics as to the planned location or geometry were not available at the time of this writing. This option assumed a garage at the east end of the Marina property. The advantage of this option was that it avoids placing a gondola support tower in the water between the Marina and the Aquarium gondola station. For this option to provide adequate clearance (50 feet assumed) above the water, the boarding floor elevation of this station is required to be at least 92 feet above grade. This elevation may be prohibitively tall. Should a shorter overall structure be desirable, either the water clearance can be reduced or the addition of a support tower in the water may be required. This station concept would utilize shared vertical circulation equipment with the garage structure.

Marina Option #4 (cyan): This station option is located just east of the Crabby's Dockside Restaurant building and at-grade (see commentary on Option 2 above).

Aquarium Station: The station serving the Clearwater Marine Aquarium was envisioned to be situated on the Causeway Island across the channel from the Aquarium facility. This gondola station will be connected to the Aquarium property by way of a pedestrian bridge crossing the water. The landing point of the bridge on the Aquarium side is flexible and will largely depend on the gondola passenger flow to the Aquarium. A number of landing locations were considered including the southwest corner of the Aquarium property, the southeast corner of the Aquarium property and the south-central area of the Aquarium property. Arriving gondola passengers/Aquarium visitors could either travel on foot to the current Aquarium entrance on the northeast side of the facility (parking garage) or be already ticketed when arriving at the Aquarium property and enter the Aquarium in a convenient location. Aquarium tickets could be purchased in combination with the gondola ticket or in the gondola station or ped bridge.

The elevation of the station structure and boarding floor are elevated to be approximately 23 feet and 25 feet above grade respectively. This elevation would allow for clearance above the water to the west and a near-level walkway elevation to the Aquarium with suitable clearance above the Causeway.

East Angle Station (optional): As discussed above, this angle point will either be an angle station or a turning-tower. If a turning station, the station will need to be elevated to provide clearance over the Causeway. The elevation below the cabin will be approximately 25 feet above the roadway. As this facility will not be a boarding and alighting station, the facility can be minimalistic.

Downtown Library Option: This station option is located on the south side of the Downtown Clearwater Library building and elevated above the existing parking area. It was the intent of the design concept that the parking area would remain in service with minimal loss of use. The elevation of the station structure and boarding floor will be approximately 25 feet and 27 feet above grade respectively. This concept will require vertical circulation infrastructure (elevators and stairs).

At the time of this writing, it is unclear if the location of the gondola station or its support columns and foundations would extend west of the 28-foot contour line. It is understood that crossing this line may trigger a referendum vote as part of the permitting process. If at all possible, the station design should attempt to avoid triggering a referendum as to reduce permit uncertainty.

This station would accommodate the valet concept (See Appendix B, EX-03 Page 9), as the area below the station could be used as a drop-off location in addition to a parking lot.

Downtown Court St. Option: This station option is located on the west side of the existing Court Street parking garage. Due to the limited space between the garage and the Causeway roadway, the station will likely need to be elevated and extend over the roadway. The elevation of the station structure and boarding floor will be at approximately the same elevation as the upper floor of the garage. This concept will connect the gondola station to the parking structure and can utilize the existing vertical circulation infrastructure in the garage, but additional vertical circulation infrastructure may be required.

At the time of this writing, it is unclear if the location of the gondola station or its support columns and foundations would extend west of the 28-foot contour line (see above).

This station would easily accommodate the valet concept (See Appendix B, EX-03 Page 8). The parking garage could include a drop-off location and could hold the cars from valet patrons.

Alternate Downtown Stations: In addition to the two Downtown station options discussed above, alternate configurations exist. As discussed above, a gondola station could be located almost anywhere in the yellow-highlighted area of Figure 1 in Section 1. Most likely, the gondola station would be coupled with a new facility (hotel, mixed-use development, etc.). Gondola system stations are highly flexible and can easily be combined with most facilities if planned in concert.

One possible concept considers a gondola station in a high-rise building. The ground level could be used as the valet drop-off area and the gondola station could be on a higher level within the building. Vehicles from the valet or self-park patrons could be parked in an included parking structure or in a nearby parking garage.

Another possible concept considers an at-grade gondola station adjacent to a mixed-use development. The gondola station would act as an amenity to this development. As stated above, vehicles could be parked in an associated or nearby garage.

Maintenance Area & Gondola Cabin Storage

Aerial gondola systems require an Operations & Maintenance (O&M) facility in at least one location along their length and in the vicinity of a station. Additionally, aerial gondola systems require a facility to store the gondola cabins when the system is out of operation, undergoing major maintenance or during significant weather events. It is preferred, but not required, that the cabin storage facility be collocated with the O&M facility.

In the context of the Clearwater Gondola project, the O&M and cabin storage facilities may be placed at any station or angle-point location. O&M and cabin storage facilities may be located at the same elevation as the gondola station boarding floor, further elevated, or on a lower level. One important item for consideration is the overall elevation of the facilities. The facilities should be designed to be sufficiently elevated to avoid inundation with water in the case of storm surge or flooding. A few alternatives are shown in the station concept drawings in Appendix B.

A typical gondola Operations & Maintenance (O&M) and cabin storage facility requires the following floor areas:

Table 4 – Gondola O&M and Cabin Storage Space Requirements (square feet)

Space/Room	Requirement
Manager's Offices	130
Crew Break/Training	200
Staff Restroom	100
Staff Locker	1,000
Parts Storage	1,000
Cabin Wash Area	300
Maintenance Vehicle Storage (located within Parts Storage)	36
Maintenance Area	1,000
Cabin Storage	180 SF per Cabin
Cabin Elevator (if needed)	270

Support Towers

The assumed locations and heights of support towers are shown on the conceptual Plan & Profile drawings in Appendix A. Note that, depending on the number of towers each alternative requires, the tower numbering varies for similar locations. A conceptual tower drawing of the assumed tower structures can be viewed in Appendix B.

SCJ has assumed steel tubular tapered towers would be utilized for all towers required for the gondola alignment alternatives. However, other options exist, including architecturally designed signature structures. With the exception of steel lattice structures (common in power transmission), all other alternatives would be more expensive. Steel lattice towers have not been included in the conceptual design as these structures are climbable by non-authorized personnel, which increases the risk for vandalism. The proposed tubular towers would have internal ladders or man-lifts with secure doors at the base and adequate security monitoring. These towers would have interior bolted segments to allow components to be transported to the tower location in pieces and then erected without welding or fabrication. As most tower locations are in the water or in the vicinity of the water, tower components will likely be transported by barge and installed by a barge-based crane. The estimated weight of the tower tubes along with the assumed base widths and heights are shown in Table 3 below.

SCJ has assumed that pile foundations will be used for all towers. The piles can be either drilled piles (caissons) or driven concrete or steel piles. It is assumed that each tower will have a concrete pile cap slightly larger than its base which will connect the tower to the piles. The estimated volumes of concrete are shown in Table 3 below as well as the total length of pile for each tower.

The following tower parameters were calculated for the conceptual tower designs:

Table 5 – Conceptual Tower Designs

T#	Type	Height (ft)	Span 1 (ft)	Span 2 (ft)	Base Width 1 (ft)	Base Width 2 (ft)	Tower Tube Weight (lb)	Pile Cap Vol. (CY)	Total Pile Length (ft)
1	Water	270	877	812	12	6	222,000	42	1,260
2	Water	185	492	792	8	8	105,000	25	1,260
3	Water	190	760	734	8	8	105,000	25	1,260
4	Land	60	217	500	6	6	25,000	16	800
5	Land	60	500	500	6	6	25,000	16	800
6	Land	60	500	500	6	6	25,000	16	800
7	Land	60	500	500	6	6	25,000	16	800
8	Land	60	500	500	6	6	25,000	16	800
9	Land	60	500	500	6	6	25,000	16	800
10	Land	60	500	500	6	6	25,000	16	800
11	Land	60	500	500	6	6	25,000	16	800
12	Land	60	500	265	6	6	25,000	16	800
13	Land	60	620	1,585	6	6	25,000	16	800
14	Land	100	345	1,657	16	8	120,000	75	1,100
15	Water	200	1,657	746	30	15	870,000	318	2,240
16	Water	250	1,585	824	30	15	870,000	393	3,340
17	Water	170	824	459	30	15	870,000	393	3,340
Totals		1,965					3,412,000	1,428	21,800

The following descriptions are of specific and noteworthy towers:

Marina Option #1/2/4 – Tower 1:	For each of these alignment options, a tower is located just east of the east end of the Marina and in the water. The towers are situated in the water so as to avoid impacts to Marina operations and infrastructure. In later project phases of this project, the impacts to the Marina must be better understood as well as the environmental and boat operations impacts in the water. The best location can only be understood once all impacts and permitting challenges are understood. These towers range from 180-270 feet tall as measured from the water level to the gondola cables. The heights of the towers were selected to provide clearance above the marina property as quickly as possible for the at-grade stations and to provide at least 67 feet of clearance above the water.
Causeway Island Towers (multiple):	The towers situated on the Causeway Island are spaced approximately 500 feet apart and range from 60-65 feet tall as measured from ground level to the gondola cables. Approximately nine (9) towers are required. The towers are generally in the vicinity of the existing bike trail along the Causeway Island so as to avoid impacts to the Causeway roadway and the sensitive mangroves. Minimal impacts to the bike trail may be necessary. The towers will provide approximately 25 feet of clearance along this segment of the alignment.

East-Most Causeway Island Tower: This tower can either be a turning-tower or the first tower east of the east angle-station, both residing on the Causeway Island. It was determined that the turning-tower option could be as short as 60 feet, as that provided adequate clearance over the water in the vicinity of the Downtown Marina and Causeway Bridge. The existing bridge has a clearance of 69 feet, so any gondola elevation profile should have no less than this clearance.

In the case where this tower is just east of a turning station, this tower will need to be at least 100 feet tall. This height provides 75 feet of clearance above the water, exceeding the 69 feet minimum.

East-Most Water Tower: The east-most tower was determined to be best situated in the water in the vicinity of the Downtown Marina, either north of the Causeway Bridge or south of the Causeway Bridge depending on the gondola landing location Downtown. The best locations are assumed to be in the vicinity of the existing Marina structures. This would minimize any reduction in the shipping channel and reduce the likelihood of collisions with boats. These towers range from 200-250 feet tall as measured from the water level to the gondola cables.

Potential Conflicts

One possible impact was identified during the conceptualization of the gondola alignment alternatives. The alignment to the Court Street parking garage would travel over the existing Pierce 100 residential building. The elevation profile for the gondola was designed to clear the building by a minimum of 27 feet by placing a 170-foot-tall tower in the water immediately east of the peninsula that Pierce 100 resides. The possible impact is not a concern from a clearance standpoint, but this represents a private property impact, a viewshed impact and a possible fire risk for the gondola. Fire below a gondola is a serious matter as the heat can cause a catastrophic failure of the cables. For this reason, gondola system planning tends to avoid placing a gondola over uncontrolled structures. In the cases where gondolas do travel over uncontrolled structures, the clearance is often increased significantly and/or the property in question is upgraded to have both integrated fire alarm systems as well as enhanced fire protection systems compatible with a place of assembly having the same capacity as the building and the gondola system. Should this alignment alternative be selected for advanced study, these issues will need to be studied further.

4. TECHNICAL ADVANCEMENT & VALIDATION

4.1 PRECEDENTS OF URBAN GONDOLA SYSTEMS

It would only be natural for a person in Florida to say, "A gondola in Florida? There's no snow here." While most gondolas are installed in snowy, mountainous, alpine environments and Florida is flat and tropical, gondolas do exist in Florida and should be considered as a viable technology for urban transit. This section is intended to reinforce this concept and alleviate some of the concerns of this often-unfamiliar technology. SCJ offers the following examples of how the substance of these concerns has been mitigated in other contexts:

Climate Precedents

Clearwater has a subtropical climate with annual average temperatures ranging from 60 to 79°F and humidity at approximately 76% throughout the year. The months of May through August exhibit a mean of ten hours of sunlight per day, with highs often in the 90s. In contrast, winter months tend to be mild and dry.

The National Weather Service calls the summer Thunderstorm Season, which averages 13 days per month of rain. Florida experiences more thunder and lightning than any other region in the United States. Average wind speeds in Pinellas County range from 11 mph to 18 mph with typical peak gusts of 25 mph. The Tampa Bay Area is also prone to hurricanes, which induce much higher wind velocities. Clearwater's subtropical climate is atypical for the application of a gondola compared to the more traditional mountain applications. It is important to note that gondola systems are currently operating in areas of the world with similar wind, lighting and climate conditions.

Wind:

Table 6 below compares the average annual wind speeds of Clearwater to other global locations that have existing gondola systems. This established precedent provides a basis for what is already known to be achievable. 3S Gondola systems have proven to be capable of operating in high winds, similar to, or even more extreme than the typical weather conditions of Clearwater. The Peak to Peak 3S Gondola on Whistler Peak, in British Columbia Canada, operates in wind speeds up to 48 mph and the Kitzbuhel 3S Gondola in Austria has been tested in 60 mph wind speeds with no difficulties. It should be noted that there is no intention for the Clearwater Gondola to operate in severe weather. The system will be designed to survive severe weather conditions and it will be able to quickly return to service, but operations will be limited to typical weather conditions.

Table 6 – Average Annual Wind Comparison

Location	Avg. Wind Velocity (mph)
Clearwater, FL	8.9
Koblenz, Germany	9.4
Cat Ba, Vietnam	10.3
Mayrhofen, Austria	6.4

Temperature:

The Koblenz cable car, an urban transit system, was the first 3S Gondola built in Germany. The system was built to improve the connection between parks and gardens for the 2011 Federal Horticultural Show and remains in service due to its popularity. The summer temperatures in Koblenz often reach 89°F, not dissimilar to Clearwater.

Wind, Temperature, Rain & Humidity:

The Sun World Cat Ba Cable Car is a 3S Gondola system connecting the Cat Ba Island to the coast of northern Vietnam. The weather in Cat Ba is characterized by the tropical monsoon climate, and temperatures often reach the upper 80s. The humidity is high and the area receives an average of over 67 inches of rainfall per year, exceeding Clearwater's average of 51 inches. The island has experienced Category 3 hurricanes with wind speeds exceeding 120 mph. The system closes for hurricanes and typhoons but not ordinary rainstorms.

Lightning:

The Sentosa Island Gondola in Singapore has been successfully operating since 1974. The gondola was upgraded in 2011. Singapore is the home of some of the most concentrated lightning strike areas in the world. The fact that this gondola operates routinely in this environment shows the possibilities for Clearwater.

The gondola in Telluride, Colorado operates at an elevation of 8,750 feet above sea level and commonly experiences afternoon thunderstorms with significant lightning. This publicly funded transit system transports 2.8 million people a year. Prior to the installation of the lighting protection, the gondola would have to stop operating for several hours on most summer days when storms were in the vicinity of the gondola. In the 1990s, the town did extensive research on lightning protection systems, with the intent to maximize the gondola's operational hours. The town partnered with the company Lightning Eliminators & Consultants, Inc (LEC) to install a patented dissipation array system (DAS). This DAS technology works by reducing the electric field around the structures where the arrays are installed. With the DAS system, most areas the system is installed remain below lightning-collection levels. This allows the gondola system to run during most storms and minimize shutdowns throughout the day.

Figure 5 – DAS Array on Tower
(photo by LEC)

(continued on next page)

SCJ meet with the Transit Director for the Telluride Mountain Village to discuss their experience with lightning and the DAS system as the Director worked with Telluride before and after the implementation of the DAS system. According to the Director, the lightning protection system reduced system outages during the summer monsoon season from multiple outages per week to virtually none. Cost of implementation was in the low millions. Based upon the consultations conducted, the consultants are comfortable that a technology exists to deal with the challenges of lightning in the Tampa Bay Region. This is said with two caveats: 1) there is little architectural leeway to be had with the systems and could be considered an eyesore in the eyes of some individuals and 2) at a subsequent stage of analysis a qualified specialist in the field of lighting protection should be retained to investigate its direct application in a Tampa Bay context.

Passenger Comfort & Safety:

Cooling technologies are essential to creating comfortable environments in the Tampa Bay Area. Commercial areas generally have air conditioning. The high humidity combined with the high temperatures create a Heat Index that averages over 100 in August. Air conditioning is an amenity that would be beneficial to the proposed gondola, and it is currently assumed that it will be installed in each gondola cabin, but there is a possibility that it will not be required.

There are many gondola systems across the world that operate in similar, or more extreme climates. Most systems in tropical areas are not air conditioned, and passengers are typically comfortable with passive ventilation via small windows.

Table 7 compares the average humidity and temperature conditions of Clearwater to several locations across the world that have un-air-conditioned gondolas:

Table 7 – Similar Weather Locations

Location	Avg. Humid.	Record High (°F)	Max. Precip.
Clearwater, FL	79%	97	9.5
Cat Ba, Vietnam	86%	90	15
Orlando, FL	79%	103	8.4
Sentosa, Singapore	80%	99	9.8

The above examples demonstrate that gondola systems without air conditioning often operate in similar climates to Clearwater without air conditioning. There is an issue of more significant concern than passenger comfort – Passenger Safety. Both, the above-described passive ventilation and the cabin air conditioning require the gondola cabins to be moving along the cables. The power for the air conditioning is produced by a generator connected to the cables that produces power by way of the relative motion of the moving and fixed cables. In a worst-case scenario, on a hot day, the gondola system has a system outage while passengers are in the gondola cabins. With direct sunlight, high ambient temperatures, high humidity and without passive ventilation or air conditioning, the temperature inside the gondola cabins could grow to unsafe levels. There are a number of ways this can be mitigated.

Active Ventilation and Cooling:

The Emirates Air Line gondola in London that opened in 2012 has an active cooling system. The system utilizes supercapacitors to store power. The supercapacitors are charged in the gondola stations hold enough power to support small air conditioning units. While the Clearwater Gondola would require more cooling power than this system in London, both due to cabin size and climate, batteries or supercapacitors could power either an air conditioner or ventilation fans to keep the cabins at an acceptable temperature, even if the system stops.

Window Openings:	Operable windows may be installed to increase the natural ventilation in the case of a system shut down. The windows could have mesh or louvers to maintain passenger safety. These windows could be mechanically locked and only openable when the system stops for a predetermined time.
Cabin Color:	Reflective and light-colored paint could be implemented to reduce the energy transmission to the cabin interior. Similarly, the cabin windows can be tinted or be made reflective.
Hydration:	Cabins can be equipped with storage compartments that are often placed under seats that have bottled water for riders should an unexpected system stoppage occur. The availability of water can significantly reduce the likelihood of health issues in hot climates.

Cable Car Applications

In addition to precedents for weather, there are precedents for gondola systems that function in urban environments, as transit, as tourist systems, with tall towers and with towers in the water:

Urban Cable Cars:

One of the first urban applications of cable car technology for transit was the Roosevelt Island Tramway that crosses the East River to Manhattan. This system started carrying passengers in 1976 and continues to operate as part of the subway system today.

Cable cars in urban areas have been on the rise in recent decades. In 2004, the Metrocable opened in Medellin, Colombia. Since its resounding success in connecting peripheral populations to the city's urban center, other Latin American cities followed suit: La Paz, Caracas and Mexico City. Following these frontrunners, about a dozen urban cable cars have been built, largely in Europe, Asia, and Latin America. Ridership numbers have been supporting this development in technology, too. The Metrocable is the world's busiest cable car with a ridership of 6.3 million in 2012. The number of passengers on the Mexico City Cablebus line exceeded expectations by 78% in 2022, with up to 50,000 passengers per day using just one of three cable car lines in Mexico City. Annual ridership in Telluride is 2.8 million. The London cable car transports 1.4 million tourists per year. Mi Teleferico in La Paz transports over 30 million people annually, about 100,000 people per day.

Point of Interest Cable Cars:	A Point of Interest (POI) cable car provides transportation to an attraction, such as a vista point, shopping mall, or resort. These systems often connect urban areas to areas of interest without requiring visitors to drive. A gondola in Rio de Janeiro provides a ride to the top of Sugarloaf Mountain, which lets people view the entire city from above. The Ngong Ping 360 in Hong Kong has some glass-floored cabins, which provide viewers a new perspective to the Tian tan Buddha and a Buddhist monastery. Point of interest cable cars provide a unique opportunity to create a tourist experience where otherwise may not be physically possible.
Tall Gondola Towers in the Water:	The question of building tall gondola towers in water environments has been answered. The Sun World Cat Ba Cable Car in Vietnam is the longest cable car in the world and crosses a portion of the Lan Ha Bay. This world-record-holding gondola system has not only most of its towers in the water, but it has the tallest gondola towers in the world, over 700 feet tall. These towers are able to withstand the turbulent tides of the Bay, which at times makes it unnavigable for boats. The Emirates Air Line gondola in London spans the Thames with towers in the water. The Koblenz cable car in Germany crosses the Rhine River.

Summary

The above examples demonstrate that Clearwater, Florida does not present an environment or the use of a gondola system that would surpass other systems in operation around the world. The Clearwater Gondola could be the first urban 3S Gondola in the Western Hemisphere though.

4.2 TECHNICAL VALIDATION

SCJ conducted a technical validation exercise for the above-described gondola system concepts. The gondola concepts included in Section 3 have been determined to be technically viable.

Technology Choice

As described in the December 2021 SWOT Report prepared by SCJ, SCJ recommends the Tri-Cable/3S Detachable Gondola technology for the Clearwater Gondola. The tricable detachable gondola is termed a "3S" gondola given that the technology for gondolas is European and the German word for rope is "Seil". Therefore, 3-Seil (3-rope) = "3S".

This technology has the following basic specifications:

Table 8 – Typical 3S Specifications

Specification	Value	Notes
Number of Cables:	3	Per lane (2 support, 1 propulsion)
Cabin Capacity	35 maximum 28 seats typical	
Appropriateness for: -Strollers -Wheelchairs/Walkers	 Good Good	Little capacity reduction
Travel Speed	Up to 17 mph	
Span Between Towers	Up to 1,000 ft Up to 2,000+ ft	Preferred Possible
Maximum Operating Wind Speed (gusts)	 50 mph 75 mph	 Comfortable Possible
Headway	30-60 sec	Cabin Interval
System Capacity	5,000 maximum	PPHPD
Cabin Power: -Air Conditioning -Heat -Multimedia/Lighting	 Possible Possible Possible	

Figure 6 – 3S Examples

System Specifications

Table 9 describes the proposed gondola concepts presented in Section 3. As there is optionality in the proposed concept, these figures are approximate.

Table 9 – System Specifications		
Criteria	**Parameter**	**Notes**
Length:	9,500-10,000 ft (1.8-19 mi)	(varies by alternative)
Line Speed: 	980 fpm (11 mph) 1,475 fpm (17 mph)	Recommended Possible
Cabin Capacity:	28	Assumed for Capacity Calculations
System Capacity: -Initial -Expandable to	 1,680 3,600	 (people per hour per direction)
Quantity Cabins: -Initial -Future	 13 26	 (not including spares)
Wait Time: -Initial -Max. Capacity Case	 60 sec 28 sec	 (time separation between cabins)
Trip Time:	11 min	(downtown to beach)

Vertical Clearance

As discussed in Section 3, the gondola concept considered the vertical clearance between the gondola cabins and the ground, the water or other infrastructure below the gondola. SCJ uses an in-house proprietary ropeline profile software to calculate the cable tensions and sags between stations and support towers. With this software, the conceptual design of the Clearwater Gondola was iteratively designed for the appropriate clearances while minimizing the height of the gondola stations and towers.

Vertical clearance requirements are based on a number of codes and standards. The ANSI B77.1 Passenger Ropeway Standard specifies a minimum of 5 feet of vertical clearance between a gondola cabin and a building or infrastructure. This standard further specified a minimum vertical clearance of 8 feet above pedestrian areas. This standard does not specify a minimum vertical clearance over roadways, but rather yields to local jurisdictional requirements. The City of Clearwater, Pinellas County and Florida Department of Transportation may have additional vertical clearance requirements. These clearances must be evaluated fully in later project stages. The minimum vertical clearance values that SCJ assumed below likely exceed these values.

It should be noted that it may be advantageous for vertical clearance over roadways to exceed the recommended minimums in certain areas as the perception of clearance over a roadway may seem lower for moving objects like gondolas.

The following criteria were generally used to determine sufficient clearance:

Bridge Clearance Over Roadway:	15 feet
Station Clearance Over Parking Area:	18 feet minimum
Gondola Clearance Over Roadway:	25 feet
Gondola Clearance Over Bike Trail:	25 feet
Water Clearance at Clearwater Marina:	65 feet
Water Clearance at Causeway Bridge:	69 feet (matching bridge)

Lateral Clearance

Lateral clearance to the gondola system is also stipulated in the ANSI B77.1 Passenger Ropeway Standard. The standard specifies that a minimum of 5 feet of lateral clearance between a gondola cabin and adjacent structures. Separately, this standard stipulates that cabins may not contact any adjacent structure if the cabin swings outward 15 degrees. The combination of these requirements defines the airway Right-of-Way (ROW) which is typically taken as 65.6 feet for a 3S gondola system. Generally, all structures must remain outside of this ROW unless the gondola travels over the structure with sufficient height to satisfy the section above.

The City of Clearwater, Pinellas County and Florida Department of Transportation may have additional lateral clearance requirements. These clearances must be evaluated fully in later project stages.

Fire Separation

This section provides recommendations and guidance on mitigation strategies based on the nature of the separation distance between the gondola and adjacent buildings. Additional requirements may be appropriate for fuel storage areas or other hazardous situations. These conditions are not covered in this section, but will need to be evaluated further in later project phases if these situations exist.

A number of structures exist along the gondola alignment and additional structures may be constructed in the future. Existing and future structures can be classified as "controlled" and "uncontrolled":

Controlled Structures: Structures owned and maintained by an entity associated with the operation of the gondola such that construction, maintenance and use are restricted and suitable so as to be compatible with the gondola operations with regards to fire risk. Further, controlled structures shall have fire alarm systems and emergency procedures integrated with the gondola operations. Controlled structures do not require more clearance than the minimums described in the previous sections. It is assumed that all controlled structures will be evaluated during the later design phases of this project for fire risk, mitigation, and use.

Uncontrolled Structures: Structures not owned and maintained by an entity associated with the operation of the gondola. Specific clearances and fire mitigation strategies are discussed below. Upgrading uncontrolled structures is often a project cost that must be considered by the owner of the gondola system.

It is SCJ's recommendation that the following criteria be used to evaluate existing and proposed uncontrolled structures in the vicinity of the gondola alignment:

Table 10 – Recommendation Matrix for UNCONTROLLED Structures (Vertical Clearance)

Horizontal Distance from Gondola Centerline	More than 65 feet	5 feet to 65 feet
More than 200 feet	**No Restriction**	
50 feet to 200 feet	**Category A**	
30 feet to 50 feet	**Category B**	
Less than 30 feet	**Category B**	**Category C**
Structures within 80 feet of gondola stations or towers	**Category C**	

See Table 7 for recommended mitigation strategies for each of the above Categories.
See Appendix C for a graphic description of the above clearance areas.

	Table 11 – Recommended UNCONTROLLED Structure Criteria Mitigation Recommendations
Category A	● Limitations on hazardous materials and usage similar to any structure in vicinity of a place of assembly.
Category B	● Automatic and integrated alarm system with gondola operations. ● Limitations on hazardous materials and usage similar to any structure in vicinity of a place of assembly.
Category C	● Fire protection (sprinklers, alarms) meeting the requirements of a place of assembly of similar occupancy. ● Automatic and integrated alarm system with gondola operations. ● Restrictions to non-flammable building materials. ● Limitations on hazardous materials and usage similar to any structure in vicinity of a place of assembly.

Note, large buildings that extend beyond the boundaries created by the above criteria must comply with the most stringent criteria unless the building can be designed or modified to have integral fire separation.

Operational Conditions

It is understood that Clearwater, Florida experiences extreme weather in the form of lightning, wind, rain and hurricanes. The following sections comment on severe weather with regards to the operation of an aerial gondola. Reference Section 4.1 for examples of areas where gondolas operate in similar environments.

Wind:

3S gondola technology is extremely stable in the wind due to the three-cable system. The wide gauge of the track (support) cables reduces the gondola cabin's ability to swing. For this reason, 3S gondola systems commonly operate at relatively high wind speeds around the world. It is known that 3S gondolas can operate comfortably in wind gusts up to 50 mph and safely operate in wind gusts up to 75 mph. This range of wind gust speeds is adequate for all reasonable operational conditions. Beyond these speeds, it is unlikely that any public transit system will operate.

Gondola systems have wind anemometers that measure wind speeds at critical locations. Based on the measured speeds, the gondola system can automatically slow down or stop if operational limits are reached.

Lightning:

Modern gondola systems are less sensitive to lightning energy than their predecessors. That said, most gondola systems do not operate through lightning events that are in close proximity to the system. This is partially due to passenger and employee safety outside of the gondola cabins, but also the operational capabilities. Passengers are generally safe in cabins as they create a Faraday cage similar to automobiles.

The electromechanical system of a gondola can suffer from lightning energy that can temporarily shut down the system or even damage components. Operations can generally be restored quickly for shutdowns without damage, usually in 1-2 minutes. Following damage to a component, usually a rope sensor on a support tower, operations can generally be restored in 15-30 minutes as a maintenance person must reach the top of the tower to replace the component. For these reasons, operations are often halted so as to minimize the potential for component damage and to reduce the number of people on the system. Modern lightning tracking services can help to predict lightning events which can reduce the inconvenience of shutdowns.

Geology/Terrain:

The area in the vicinity of the proposed gondola alignment is suitable for the support structures of a gondola system. Whether it is the Clearwater Marina land, the Causeway Island, Downtown, or the bodies of water in between, gondola systems are very flexible and can adapt to most terrains and geologic conditions. In most cases the support towers are anticipated to be founded on pile foundations, whether on land or in the water. Pile foundations are appropriate for most soil conditions, even the most challenging types. Similarly, station structures are anticipated to be founded on concrete columns (when elevated) that are supported by pile foundations.

Towers installed in water areas must also consider boat impacts. This will likely be accomplished by way of a pile cap near the water surface that has sufficient capacity to withstand an impact.

4.3 GONDOLA EQUIPMENT SUPPLIER CONSULTATION

Industry consultations were conducted to answer these primary questions (see also Section 4.1):

Is SCJ satisfied with the available gondola climatization systems available?
Answer = YES

There exist four methods of cabin climatization in the ropeway market:

Passive Ventilation: Operable windows and floor vents allow air to pass through the cabin as it moves much like a car with open windows does. This requires no electricity consumption and is applicable with all gondola technologies.

Active Ventilation: Low-energy fans transfer warm air out of the cabin and draw in fresh and cooler outside air through the passive ventilation vents. This requires limited electricity consumption and is applicable with all gondola technologies. Electricity can be provided by way of batteries, super-capacitors, solar panels or a combination thereof. Alternatively, with a 3S technology, such as is planned for the Clearwater Gondola, generators can be attached to the cables, generating electricity as the cabin rolls along the track cables.

Window Film: Thin films are applied to the windows of the cabin in order to reduce the glare of the sun and lower temperatures in the cabin. This requires no electricity consumption and is applicable with all gondola technologies.

Air-Conditioning: Using a combination of cable generators, batteries and super-capacitors, full air-conditioning can be used to provide comprehensive climatization. This technology is rarely implemented as the first three techniques are generally deemed to be sufficient. It is the consultant's opinion that the technologies involved with full air-conditioning are non-controversial and essentially "off-the-shelf" component and should be adequate for the project in question. This is said with one caveat — due to the requirement for super-capacitors and batteries, the costs associated with air-conditioning are not insignificant and the weight of the batteries and super-capacitors decrease the total capacity of each cabin. To compensate, additional cabins will need to be procured at additional costs.

Are there entities that would be interested in participating in the financing of the Clearwater Gondola?
Answer = MAYBE

The following represents possible financing partners:
Traditional lender financing does not exist in the gondola space. Like other novelties or recreational attractions (hotels, restaurants), traditional lenders have no way to prove that revenues will be what is projected and are hesitant to loan. Typically, this problem is solved by the majority of the project's cost being paid through equity. Once the project hits stabilization in year 1 or 2 of operations and a traditional lender is comfortable with demonstrable expenses and revenues, the project can oftentimes be re-financed by said traditional lender.

In the event the City, State, County or other agency/entity were to provide a revenue guarantee on a project such as this, finding traditional financing would likely be much easier as the government would be guaranteeing payment on the loan by way of the revenue guarantee.

Aside from traditional lenders there are a small number of family offices and smaller financial partners who are interested in the gondola space. Out of respect for the privacy of the offices in question, the SCJ cannot reveal the names of these offices, but has reached out to several of them. There is certainly interest from the offices contacted, but interest is based upon the nature of how the project would be procured by the City. The preference would be for the City to accept an unsolicited proposal from a consortium with the recognition that a procurement process would likely have to be run. Ideally, this procurement process would include what is known as a "Swiss Challenge" whereby the originating proponent has the right to match any competing offers.

A central issue then becomes who would the unsolicited proposal be submitted to? Would it be submitted to the City of Clearwater? To Pinellas County? To TBARTA? To Florida Department of Transportation (FDOT) or some other entity? Submitting the unsolicited proposal to the "wrong" entity could cause difficulties and may encourage "turf" battles. Proper consultation by any project proponent would be required at the early stages to ensure these issues are prevented.

Financing by the gondola suppliers themselves is in its infancy and should not be relied upon as a given by any developer. Further, as a significant amount of gondola components would be procured from Europe, there exist local export development agencies that can assist in financing a portion of project costs — but again, this is on a case-by-case basis and should not be relied upon as a given.

4.4 OTHER CONSIDERATIONS

The following sections have been added as an attempt to alleviate concerns about this often-unfamiliar technology:

Passenger Comfort

The following features are available on 3S Gondola systems:

- Large, well-lit cabins that are approximately the size of a city bus
- Air conditioning in the cabins
- Large windows in the cabins that offer great views and a sense of openness
- Seats for every passenger with USB charging ports
- Room for strollers, bags, beach gear, etc.
- Less than 1 minute wait times typically
- Quick 11-minute ride from Downtown to the Beach
- Intercom to contact the operator and cameras to watch for vandalism
- Easy, level boarding
- Bicycle-friendly

Sightlines

It is anticipated that the visual impact of the gondola system will require significant public engagement and possibly mitigation actions. Some particular areas where there may be concerns are:

- Clearwater Marina/Pier 60 area
- Causeway Island adjacent to the Island Estates neighborhood
- Causeway Bridge area and Pierce 100 residential property
- Downtown Clearwater

In an urban environment, transit systems must often navigate the available open space. This often brings a transit system in close proximity to existing structures and other properties. Aerial gondola systems are not unique in this fact, but the nature of the systems creates some additional advantages and challenges. The ability of an aerial ropeway system to fly over challenging terrain and infrastructure is a net positive, but due to their significant height, screening the system is impractical, and viewsheds are more impacted. People are typically used to seeing buses and light rail vehicles traveling through a city. The simple fact that a gondola system is different and new may create additional concerns. There is often a period of time required for such a system to become accepted in a community. One example of this situation is the Roosevelt Island Tramway. It was originally built as a temporary measure to provide easy access from the Island to Manhattan while the subway below the East River was built. Though the system was initially met with some resistance, it ultimately became a preferred method of transit to the Island. After the subway was completed, removal of the tramway was rejected by the community.

Some of the concerns of property owners and occupants in the vicinity of an aerial gondola are related to gondola passengers either seeing into their buildings through windows and skylights or seeing into a fenced piece of property that is otherwise screened from viewing. There are several mitigation measures that can address these issues:

Profile Design:	One advantage of an aerial ropeway system is that the elevation the cabins travel can vary along the route fairly easily. In some instances, increasing the elevation of the system can mitigate privacy concerns.

For example, raising a system above the height of a building can prevent the gondola cabins from passing by its windows. Alternatively, lowering an alignment may also be beneficial if it reduces the perception of property owners that gondola passengers can see into their spaces. Both techniques will likely be required on the Clearwater Gondola project.

Tinting Windows: Technologically advanced glass can be installed for cabin windows. This system is activated automatically and makes windows opaque by introducing an electric current in the material. With this method, the windows can be selectively tinted at various locations along a route where sensitive areas exist. While effective, this system adds cost to the project.

Figure 7 – Window with Tinting Glass

Noise

Gondola systems are typically much quieter than conventional transit systems like light rail or buses. Because the vehicles are propelled by a cable, the majority of the machinery and noise sources are concentrated at station locations. Along the route, cabins do not emit noise, and only minimal sound is produced as the cabins roll over the tops of towers. At stations, the majority of the noise created is due to passengers, air conditioning equipment, and ancillary equipment like escalators. Gondola stations typically produce considerably less noise than bus and light rail stops, as those transit vehicles produce significant noise from braking systems and engine noise.

Safety & Reliability

Aerial gondolas are one of the safest forms of transit available. There has not been a fatality on a gondola system in North America since 1979. The fact that gondola systems travel through the air reduces their interactions with automobiles and other impediments that can hamper other ground-based transportation technologies. Since aerial gondolas travel above ground level, the reliability of the system is obviously very important. As such, there are a number of features of the 3S Gondola technology that ensure both safety and a prompt return to service:

Proper Maintenance:	The first principle of reliable transit operation is a program of well-maintained equipment. Maintaining equipment properly according to a defined schedule makes component breakdown unlikely.
Redundant Machinery:	3S Gondola Systems can be implemented with suitable redundant machinery that under only the rarest of circumstances will a delay in a return to service be likely. Some examples include backup motors that can be quickly engaged and backup electrical power in case of an outage. The safest place for gondola passengers is in the gondola cabin. Whenever possible, passengers should remain in the cabins and the cabins be unloaded in a station. Redundancy makes this possible in most circumstances.
Integrated Rescue:	Through an approach termed “Integrated Rescue”, a 3S Gondola system can be one of the most reliable transit technologies in the world. This concept is named as such because it avoids the need for an evacuation or “rescue”. It accomplishes superior reliability through careful system design in which a detailed hazard analysis identifies potential points of failure and mitigates the likelihood of a failure. This basically means planning a work-around for any piece of failed equipment such that passengers can be transported in cabins to stations under any circumstance.

Figure 8 – Backup Drive

Figure 9 – Backup Power Generators

System Evacuation: The likelihood of a technologically advanced 3S Gondola System failing to operate under its own power is so small that most systems will never experience a system evacuation during a 50-year system life. Aerial ropeway systems are strictly regulated, and one component of the required operation plan is evacuation. This typically entails the integration of one or more rescue vehicles. Systems are designed so that each point along the route can be reached with a rescue vehicle. A rescue vehicle can be designed to do one of two things:

1. Collect passengers from each cabin and take the passengers to a station, or
2. Connect to each cabin and transport the cabins to a station to unload.

Passenger Safety: At times, transit passengers can feel unsafe, especially at night or when a system is operating at low capacity. There are a number of advantages to an aerial gondola system:

- Once passengers are in a cabin and the doors close, they and the other passengers are in a safe space.
- Passengers can request to ride alone or only with people they know at low system usage times.
- In-cabin cameras and intercoms allow passengers to be monitored and request assistance from the operators during their ride.
- Some gondola operators implement woman- and children-only cabins.

Accessibility: 3S Gondola cabins easily accommodate a variety of mobility devices and passengers utilizing these devices. The slow travel speed of the cabins through the stations allows most mobility device users easy access to this technology without assistance. Most systems provide attendants that can offer assistance when appropriate. If needed, the attendant can slow or stop the system for loading or unloading. 3S Gondola Systems can be installed with auditory signaling for passengers experiencing vision impairment. In most cases, auditory signaling has been determined to not be necessary for safe boarding and alighting.

4.5 ENVIRONMENTAL/SOCIAL IMPACTS & PERMITTING

There are a number of environmentally sensitive areas along the gondola alignment. The following are some possibilities and there may be additional considerations determined in a full environmental review:

- Bird Migration
- Recreation Use
- Vegetation (mangroves)
- Development Restrictions
- Wading Bird Rookery
- Seagrass
- Marina Operations
- Land Wildlife
- Aquatic Wildlife
- Boating Access

Some of these sensitive areas and usages may be impacted by the construction and long-term existence of the gondola infrastructure. Later project phases must dedicate effort towards identifying sensitive and impacted areas, adapting the gondola design to minimize impacts, and developing mitigation strategies. As the project moves forward, state, county, and local permits and approvals must also be identified.

Environmental Documentation

It is anticipated that federal environmental documentation will be required for this project, given the need for one or more U.S. Army Corps of Engineers (Corps) permits. It is also possible, depending upon future funding sources, that the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) could potentially be lead agencies for the National Environmental Policy Act (NEPA). Based on the initial findings of the SCJ environmental screening, it is anticipated an Environmental Assessment (EA) will likely be required.

Primary technical reports to support the NEPA document will include:

- Air Quality Assessment
- Biological Assessment (ESA)
- Cultural Resources Assessment (Section 106)
- Environmental Justice Memorandum
- Fish and Wildlife Assessment
- Noise Technical Report
- Soils and Geology Technical Report
- Wetlands Report

Early discussion and coordination with the Corps are critical to confirm the level of NEPA documentation, permits and approvals needed, and the process. Discussions with the Florida Department of Transportation (FDOT)should also take place early in the process to confirm potential right of way needs, FHWA oversight, and potential funding/grant resources. If FHWA does have a federal nexus, then an additional analysis – Section 4(f) of the US Transportation Act – will also be required as part of the NEPA documentation.

Environmental Permits/Approvals

Federal permits and approvals that may be required for this project are listed below:

- Clean Water Act - Sections 401 (water quality) and 404 (fill and dredge, wetland impacts)
- Rivers and Harbors Act - Section 10 (navigable waters)
- National Pollutant Discharge Elimination System Permit (NPDES)

It is also possible, depending on the size and specific location of the towers, the project may fall under a Corps Nationwide Permit for Section 404.

Sources of Information by Topic

- Community Resources and Parks:
  https://ca.dep.state.fl.us/mapdirect/?webmap=42f4869ef578485195c88de5a4fcb4af

- Hazardous Materials:
  https://ca.dep.state.fl.us/mapdirect/?focus=dataportal&topics=*CLEANUP_SITES_SP

- Historic Sites:
  https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466

- Land Use:
  https://egis.pinellas.gov/apps/webgispublic/

- Mangroves:
  https://geodata.myfwc.com/datasets/myfwc::mangrove-habitat-in-florida-1/explore?location=27.969337%2C-82.811035%2C16.72

- Seagrass:
  https://ca.dep.state.fl.us/mapdirect/?webmap=728c56cd3eab475dafd5ebe7b01e05e9

- Wetlands:
  https://www.fws.gov/wetlands/Data/Mapper.html
  https://pinellas-egis.maps.arcgis.com/apps/webappviewer/index.html?id=a027d446c20d4cdf8ceec4069cd3cba8

4.6 TRAFFIC IMPACTS

To evaluate the traffic impacts from the implementation of the gondola system, the same StreetLight data that was used to predict gondola ridership (see Section 5.1 below) was used. This vehicle trip data is based mobile device position data for which the trip origins and destinations are recorded. This data can be used to evaluate the number of vehicles entering and leaving specific zones. Five zones and five cutlines were created for the study as shown in Figure 10. The data from 2019 was used as it best represents the pre-Covid-19 traffic patterns, and the assumed future case in a post-Covid-19 future.

The traffic benefit of an aerial gondola service between Downtown Clearwater and Clearwater Beach lies in the overall traffic reduction in the following zones and specific facilities:

- Clearwater Central Business District Zone
- Memorial Causeway (Causeway Zone) from the confluence of Court Street/Chestnut Street to the roundabout at Coronado Drive/Mandalay Avenue
- Aquarium and Diamond Isle Zones
- Coronado Drive/South Gulfview Boulevard (Clearwater Beach Zone) from the roundabout south to Sand Key Bridge
- Mandalay Avenue (Clearwater Beach and Clearwater Beach Island Zones) from the roundabout to Accacia Street where public parking appears to end

There are five major destination zones within the project area that would be best served by an aerial gondola system. For the Ridership element of this study, the origin-destination (O-D) zones are defined as follows:

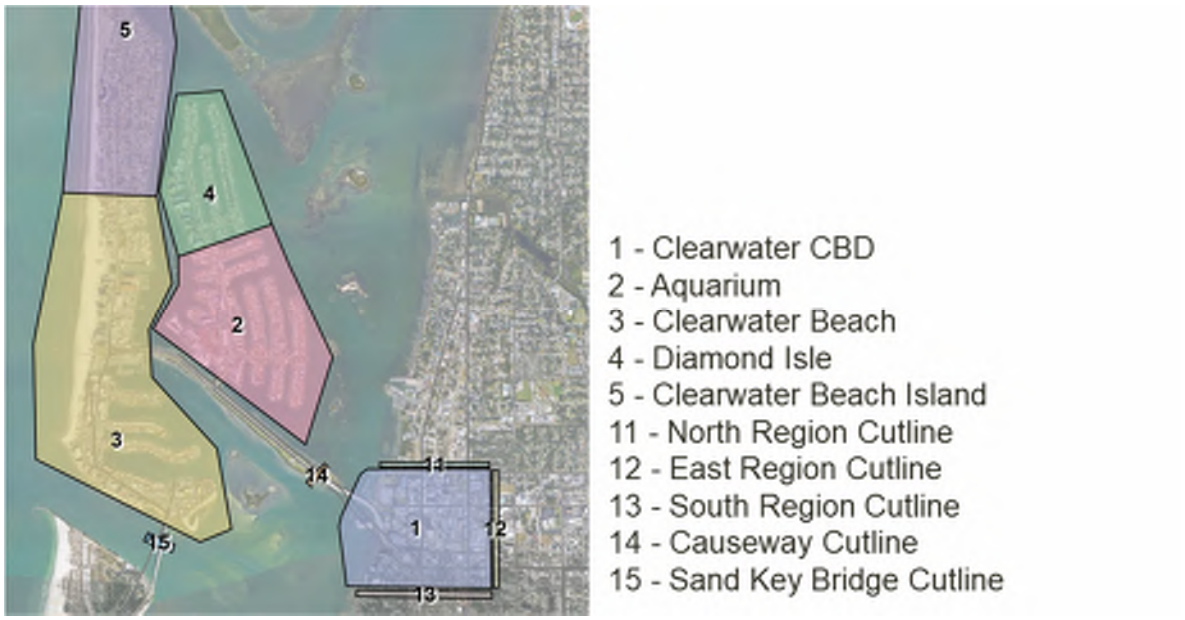


Figure 10 - Origin-Destination Zones

From a volume perspective the greatest O-D interactions relative to a gondola service start or end at the following locations:

- Clearwater Beach
- Central Business District Clearwater (Downtown)
- Clearwater Beach Island
- Clearwater Aquarium
- East Side Cut Line
- North Side Cut Line
- South Side Cut Line

The Cut Line trips come through the Downtown Zone that are more regionally based. These would be heavily made up of tourist/vacation trips. The data from the Clearwater/Clearwater Beach Visitor Profile Reports from 2017-2021 provide the empirical data to support these assumptions (80% to 94% trip purpose is vacation year-round.)

Existing Conditions

Clearwater Central Business District Zone

The Central Business District roadway network is predominantly a grid system. The roadways are governed by several jurisdictions that include the Florida Department of Transportation (FDOT) and the City of Clearwater with Pinellas County maintaining and operating some adjacent roadways. The traffic volumes from 2021 are summarized below.

Table 12 – CBD Traffic Volume Summary

Street Name	Classification	Jurisdiction	Travel Lanes	Accessibility	2019 AADT
North-South Corridors					
Fort Harrison Avenue	Collector	City	2	Center Turn Lane	17,700
Myrtle Avenue	Minor Arterial	FDOT	4	Undivided	12,300
Martin Luther King, Jr. Avenue	Collector	City	2	Undivided	2,500
Missouri Avenue	Minor Arterial	City	4	Undivided	12,100
East-West Corridors					
Drew Street	Minor Arterial	FDOT/City	4	Undivided	13,500
Cleveland Street	Collector	City	2	Raised Median	5,000
Court Street (2-way)	Principal Arterial	FDOT	4	Raised Median	15,500
Chestnut Street (1-way)	Principal Arterial	FDOT	4	One Way	19,000
Memorial Causeway	Principal Arterial	FDOT	4	Raised Median	38,500

Source: FDOT District 7, 2019

The roadway capacity in this zone is more than adequate to support the traffic demand on the arterial and collector roadways. The locally designated streets have sufficient capacity as well, but are purposely designed to be low speed and more pedestrian focused. The roadways approach capacity in this zone are Court and Chestnut Streets which feed into Memorial Causeway and the Clearwater Beach and Island zones.

Causeway Zone

The Causeway Zone connects the Central Business District to the Aquarium, Diamond Isle, Clearwater Beach and Clearwater Beach Island Zones. The main roadway is Memorial Causeway that is governed by the FDOT. The traffic volumes from 2019 are summarized below.

Table 13 – Causeway Traffic Volume Summary

Street Name	Classification	Jurisdiction	Travel Lanes	Accessibility	2019 AADT
East-West Corridors					
Memorial Causeway	Principal Arterial	FDOT	4	Raised Median	38,500

Source: FDOT District 7, 019

Memorial Causeway is at or over capacity. Because of the peak traffic accessing the Clearwater Beach and Island Zones, the ridership analysis of this study assumed travel speeds of 15. The posted speed limit is 45 mph.

Aquarium and Diamond Isle Zones

The Aquarium and Diamond Isle Zones have Island Way as its primary roadway governed by the City of Clearwater. The traffic volumes from 2019 are summarized below.

Table 14 – Aquarium and Diamond Isle Traffic Volume Summary

Street Name	Classification	Jurisdiction	Travel Lanes	Accessibility	2019 AADT
North-South Corridors					
Island Way	Collector	City of Clearwater	4	Raised Median	12,500

Source: FDOT District 7, 2019

Island Way provides the access to the Clearwater Marine Aquarium and Island Estates. Island Way is well below capacity but will experience congestion at the intersection with Memorial Causeway during peak traffic periods from ingress and egress to the Clearwater Beach and Island Zones.

Clearwater Beach and Clearwater Beach Island Zones

The Clearwater Beach and Clearwater Beach Island Zones have Coronado Drive, South Gulfview Boulevard and Mandalay Avenue as its primary roadways governed by the City of Clearwater. The traffic volumes from 2019 are summarized below.

Table 15 – Beach and Beach Island Zones Traffic Volume Summary

Street Name	Classification	Jurisdiction	Travel Lanes	Accessibility	2019 AADT
North-South Corridors					
Coronado Drive	Minor Arterial	City	2	Undivided	11,800
South Gulfview Blvd	-	FDOT	2	Undivided	1,200
Mandalay Avenue	Collector	City	2	Undivided	9,100

Source: FDOT District 7, 2019

The Clearwater Beach and Clearwater Beach Island Zones both appear to have sufficient capacity from an annualized average daily traffic perspective, but frequently experience congestion for prolonged periods from visitors to the beach and associated commercial developments. The posted speed limits are 25 mph on Mandalay Avenue north of the roundabout and on Coronado Drive south of the roundabout. The posted speed limit is 20 mph on South Gulfview Boulevard. The lower speeds are purposely set because of the pedestrian focused land uses adjacent to the roadways. The ridership analysis of this study assumed travel speeds of 10 mph for these roadway segments. The roundabout at the intersection of Memorial Causeway/Mandalay Avenue/ Coronado Drive/South Gulfview Boulevard has six legs. The roundabout is frequently an area of high congestion with a speed limit of 15mph. The ridership analysis assumed the travel speeds through the roundabout are 5 mph.

One contributing factor to the consumption of roadway capacity in these zones is the search for parking. From the Parking element of the overall study, the number of publicly available parking spaces is 2,066. In order to quantify the demand, StreetLight circuity data from the Ridership element was used. Circuity is defined as the average ratio of the length of the trip to the crows' flight (or direct) distance between the end points of the trips starting at an Origin Zone and ending at a Destination Zone. A low circuity trip would be one that takes the most direct path between your Origin and Destination Zone. A high circuity trip would be one that takes an indirect route, between your Origin and Destination zone. Think of an Uber or delivery truck creating a highly circuitous trip as they make pickups and drop-offs. So, if trip circuity is "2," think of it as any trip that is 2x as long in distance compared to the "as the crow flies" distance between the Origin and Destination Zones. The circuity data for the Clearwater Beach and Island Zones are depicted as follows in Figure 2:

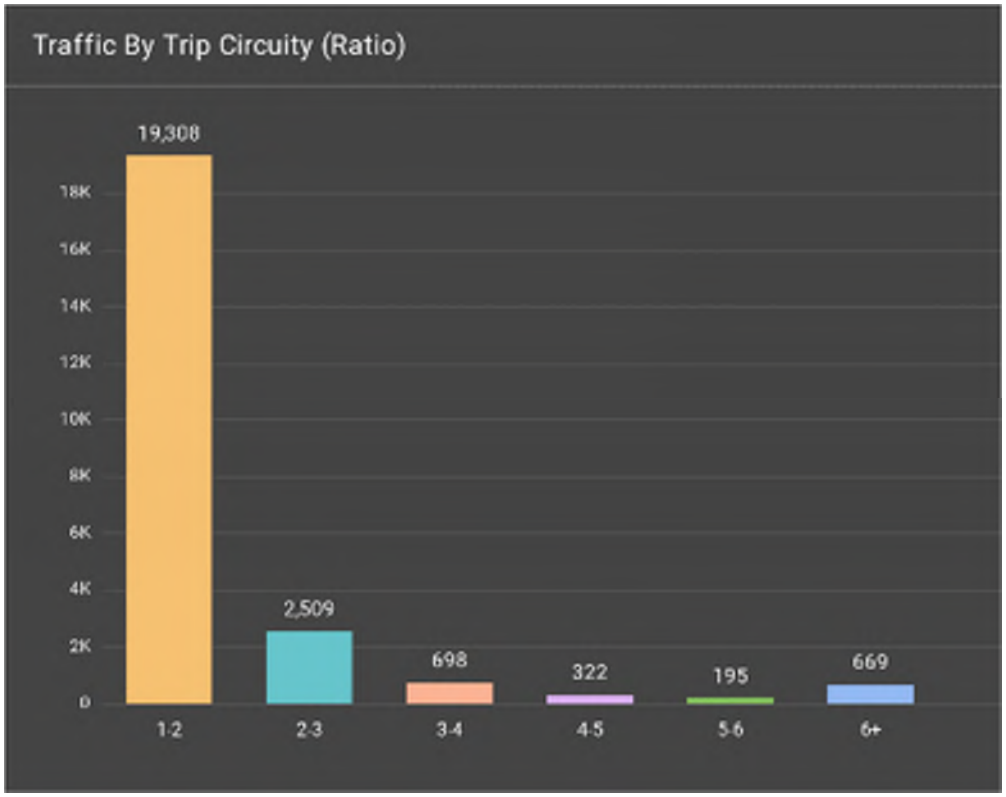


Figure 11 - StreetLight Circuity Data - Clearwater Beach and Clearwater Beach Island Zones

By summing the number of trips with a circuity ratio greater than 2 and dividing by the total number of trips a total of 4,393 daily trips or 19% of the total trips in the zones are more circuitous than 2x. This generally tracks with the search for parking. It also comports with only 2,066 publicly available spaces and a likely demand that is over double the capacity.

Proposed Conditions

Clearwater Central Business District Zone

A proposed aerial gondola service would provide some traffic benefit to the Clearwater Central Business District Zone. The Imagine Clearwater Amphitheater is planned to hold between 4,000 and 10,000 attendees. An aerial gondola could **serve to reduce traffic impacts** from the Clearwater Beach, Clearwater Beach Island, the Aquarium and Diamond Isles Zones. Because the event space has not been opened yet, there are no traffic volumes to analyze; however, a special event of this size will concentrate vehicular and pedestrian traffic in this zone. Anecdotally, this multimodal option will provide some benefit to this zone.

Causeway Zone

The Causeway Zone will benefit from an aerial gondola service as proposed. The Ridership element of this study projected the number of person trips between the Central Business District and Clearwater the Beach and Clearwater Beach Island zones is summarized in the table below.

Table 16 - Annual Gondola Person Trips Going to Clearwater Beach TAZ (Zone 3)

Zone	2019	2049
Clearwater CBD	39,187	49,376
East Side CL	1,023,237	1,268,814
North Side CL	194,767	201,584
South Side CL	85,794	90,083
Annual Person Trips	1,342,985	1,609,857
Daily Person Trips (Annual Person Trips/365)	3,679	4,411
Gondola Daily vehicular reduction (2.8 persons/vehicle)[1]	1,314	1,575

[1] Source: City of Clearwater/Clearwater Beach Visitor Profile Reports 2017-2021

This results to a **8.6% reduction in traffic volume** on Memorial Causeway relative to the 2019 volumes.

Aquarium and Diamond Isle Zones

As stated in the Existing Conditions, the intersection of Island Way and Memorial Causeway is the main source of congestion. The projected **8.6% reduction in traffic on Memorial Causeway** will reduce the severity of the peak congestion within these zones.

Clearwater Beach and Clearwater Beach Island Zones

As stated for the adjacent Causeway zone, a net reduction in trips of 8.6% will likely be translated into the Clearwater Beach and Clearwater Beach Island Zones. The analysis in the existing conditions section for these zones demonstrated that as much as 19% of the total traffic could be attributed to drivers searching for parking. It can be concluded that the **8.6% reduction** will result in a net greater reduction in the congestion levels due to removing drivers searching for parking and making the slow repetitive circuitous trips.

4.7 CIVIL IMPACTS

The availability of underground utility data continues to be limited to the data available on public GIS sites. The data on these sites has questionable accuracy. The data at the Clearwater Beach Marina will become available when the City's Consultant progresses with the marina master plan following the submittal of a grant application for funding. The underground utility information in Downtown Clearwater will likely not become available until after the redevelopment projects are voted on in the November 2022 referendum.

4.8 PARKING

Analyses has been carried out to determine how many parking spaces are within a certain distance of the proposed gondola stations.

The data provided includes parking lots and garages both publicly and privately operated, the total number of spaces as well as locations of on-street parking. The number of spaces for on-street parking were determined using aerial imagery observations. It is important to note that 2 parking lots were removed from the data, as it is known that they will no longer exist. These were:

- Public parking lot on Cleveland Street at Memorial Park
- Public parking lot on Pierce Street and South Osceola Avenue.

The future private and public parking lots being implemented as part of the Bluffs and Imagine Clearwater are also included in this analysis to provide a joint total combining the expected future parking spaces and the existing spaces.

It is important to understand the parking availability near the stations on the mainland to determine if the supply of parking can handle additional demands in the area brought by the new gondola. The City of Clearwater performed a parking study in 2014 for the Downtown Area. While it was performed 8 years ago, the demand has not likely changed significantly since then as the growth has been stagnant. A 50% occupancy factor has been applied to the Downtown Area which is conservative because it is likely much lower. The 2014 Parking Analysis also indicated that the peak consumption of parking capacity was tied to the Clearwater Jazz Holiday event. This will continue with the completion of amphitheater and the future events planned to have 4,000 to 10,000 attendees. These events are assumed to be predominantly in the evening. The peak demand for the gondola service from Downtown to the Beach will likely occur between 9 am and 3 pm with minor overlaps with the amphitheater events. The home-based work trips from the mainland to the island are also analyzed as an option for the employees traveling to the Clearwater Beach and Clearwater Beach Island zones to park in Downtown and ride the aerial gondola service to work. It is also important to determine the parking supply on both ends of the gondola route as trips in either direction will be made, and people visiting the island for the day, may leave their car parked on the island and travel on the gondola into downtown Clearwater. This demand must also be captured as it will potentially provide additional parking capacity for Downtown events in the evening.

Parking Data

For this study, data was provided covering the total public and private parking across the area. In addition, further analysis was undertaken to determine the amount of on-street parking available as well as incorporate the future planned parking that is being proposed for the area. Table 17 below provides a summary of the parking supply.

Table 17 – Parking Supply Across the Clearwater Study Area

Area	Existing			Future		Total
	Public	Private	On-street	Public	Private	
Mainland	1894	1980	381	613	150	5018
Island	1477	184	405	0	0	2066
Total Study Area	3371	2164	786	613	150	7084

Analysis

Mainland Potential Station Zones

The analysis undertaken calculates 5-minute walking distances from a centroid of each of the potential gondola stations zones. These zones were established using the provided information regarding the most likely zone that the gondola station could be in, combined with the 28-ft contour as a barrier limit that the zone could not go past, as shown in Figure 12.

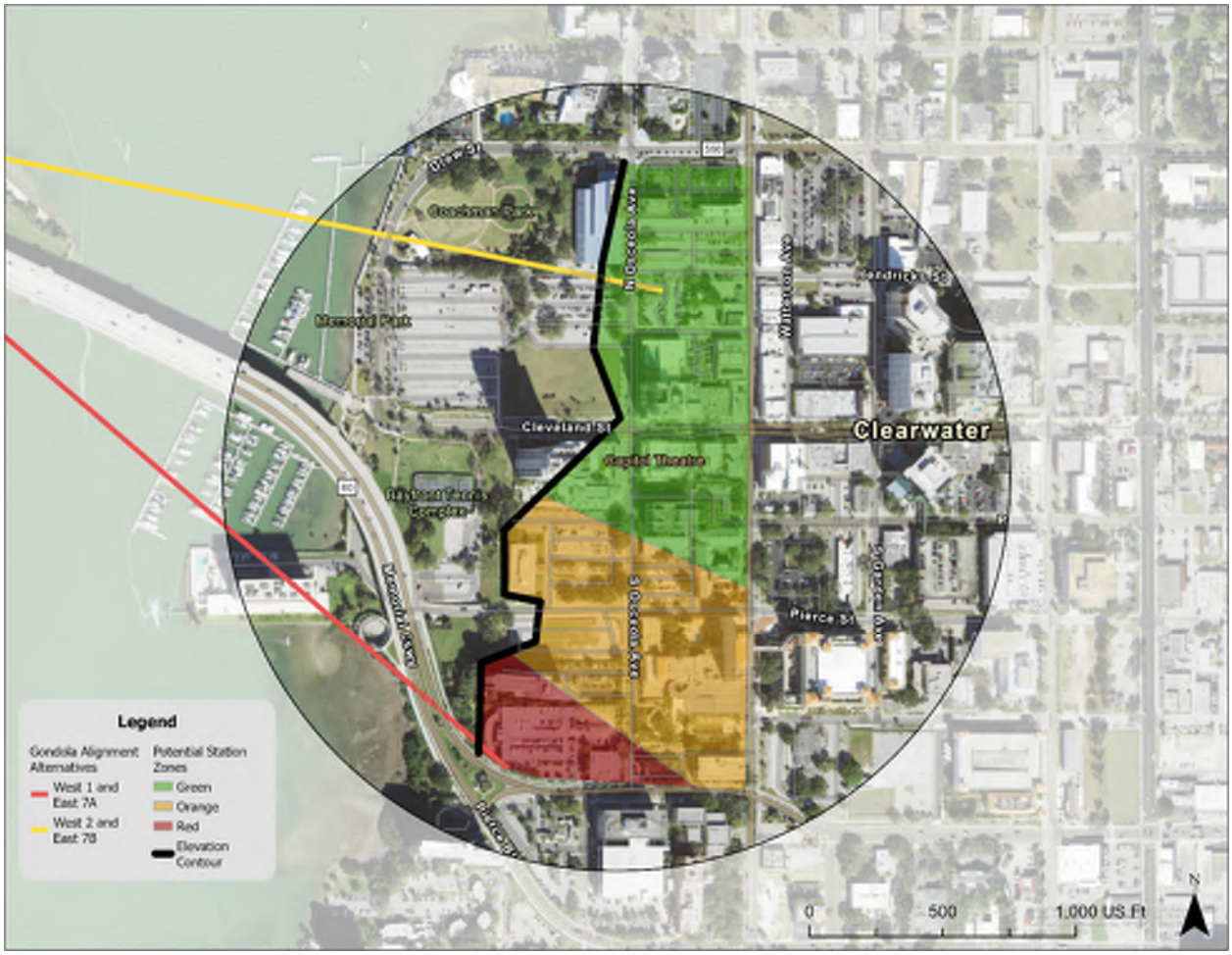


Figure 12 - Potential Gondola Station Zones

5-Minute Walking Distance from Mainland Zones

The 5-minute walking distance uses a fixed speed of 3 miles per hour and the walking route follows only pedestrian walkways as well as designated streets (ignoring rules that affect automobiles, such as one-way streets). The resulting polygon is a boundary layer that demonstrates how far a pedestrian could walk in 5 minutes from the potential gondola station zones centroid, adhering to all pedestrian rules, as shown in Figure 13.

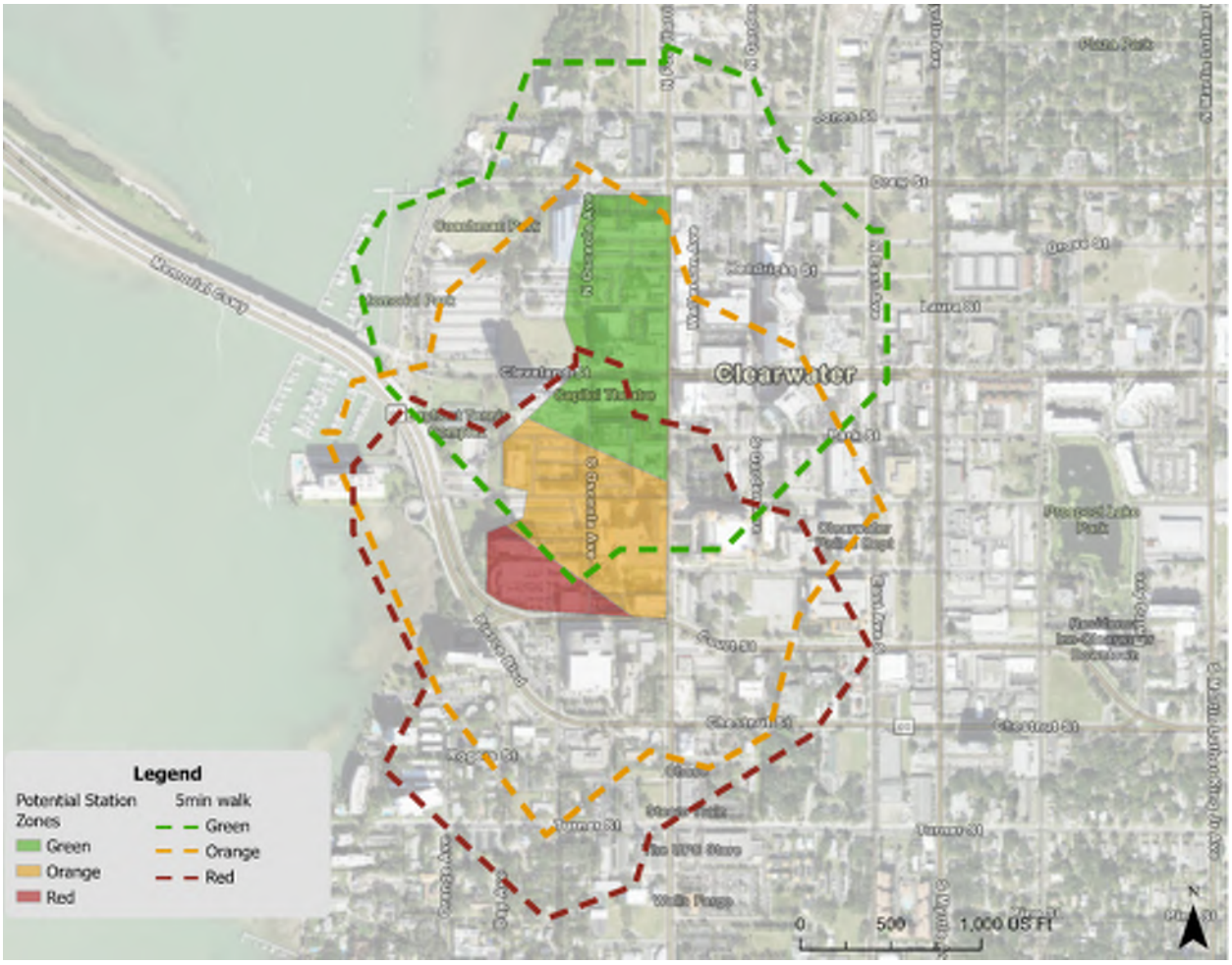


Figure 13 - 5-minute Walking Distance from Station Zones Centroids

Number of Spaces within 5-Minute Walking

Next the parking lots/garages and on-street spaces that are within the 5-minute walking distance have been determined as any that are **entirely within** the distance, thereby providing a total number of parking spaces that can be accessed from the gondola within a 5-minute walk. If the walking distance boundary only intersects part of the parking lot, it is not included. The results of this analysis are shown below in the tables and the figures below .

Green Zone:
The green zone is identified as the most northerly of the potential gondola station options. It has approximately a total of 2,768 parking spaces within a 5-minute walk, including future planned parking lots which is the most overall spaces out of all the potential downtown station zones. It also is within the closest proximity to new planned future parking lots in the downtown area. However, importantly, the vast majority of these spaces (1128) are private spaces, and it actually has the lowest number of publicly owned parking spaces within a 5-minute walk from the zone. Separately, it has the highest number of on-street parking spaces, 284, within 5-minute walk.

Table 18 - Number of Parking Spaces within 5-minute Walk (Green Zone)

Station Zone	Existing			Future		Total
	Public	Private	On-street	Public	Private	
Green	593	1,128	284	613	150	2,768

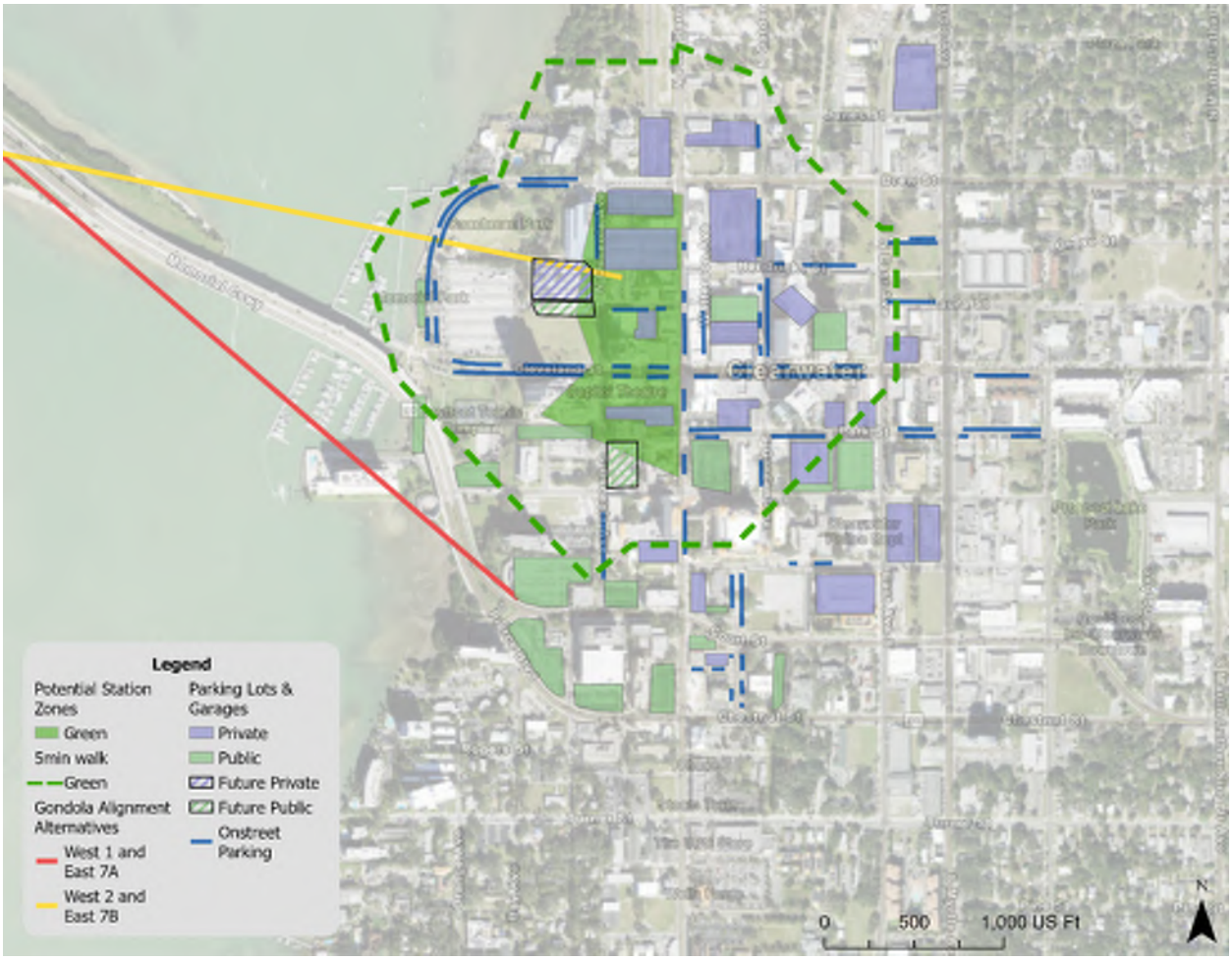


Figure 14 - Parking within 5-minute Walk of Green Zone

Orange Zone:
The orange zone is the central zone in Downtown. It has a similar number of total spaces within a 5-minute walk as the green zone (2,676 compared to 2,768). It also has a similar amount of on-street parking as the orange zone (212 compared to 284). The biggest difference between the orange zone and green zone is that the orange zone has a far greater number of public parking spaces (1,022 compared to 593).

Table 19 - Number of Parking Spaces within 5-minute Walk (Orange Zone)						
Station Zone	**Existing**			**Future**		**Total**
	Public	**Private**	**On-street**	**Public**	**Private**	
Orange	1,022	679	212	613	150	2,676

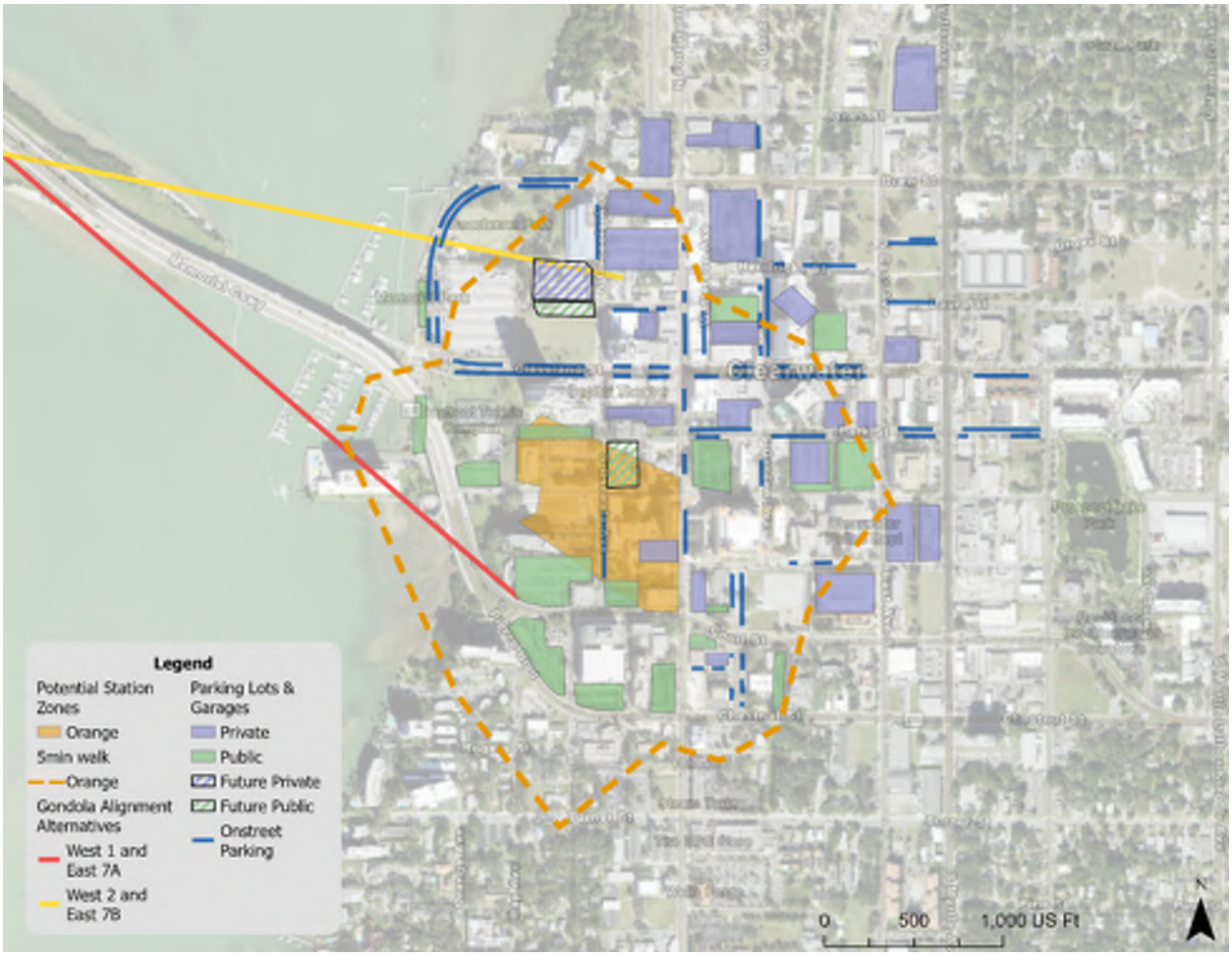


Figure 15 - Parking within a 5-minute Walk of the Orange Zone

Red Zone:
The red zone is the furthest south of the potential zones. It has as the least amount of parking within a 5-minute walking distance at 1,556 spaces. This is distinctly lower than both the green and orange zones. It also has significantly less on-street parking spaces within close proximity at just 80 spaces.

Table 20 - Number of Parking Spaces within 5-minute Walk (Red Zone)						
Station Zone	**Existing**			**Future**		**Total**
	Public	**Private**	**On-street**	**Public**	**Private**	
Red	810	116	80	550	0	1,556

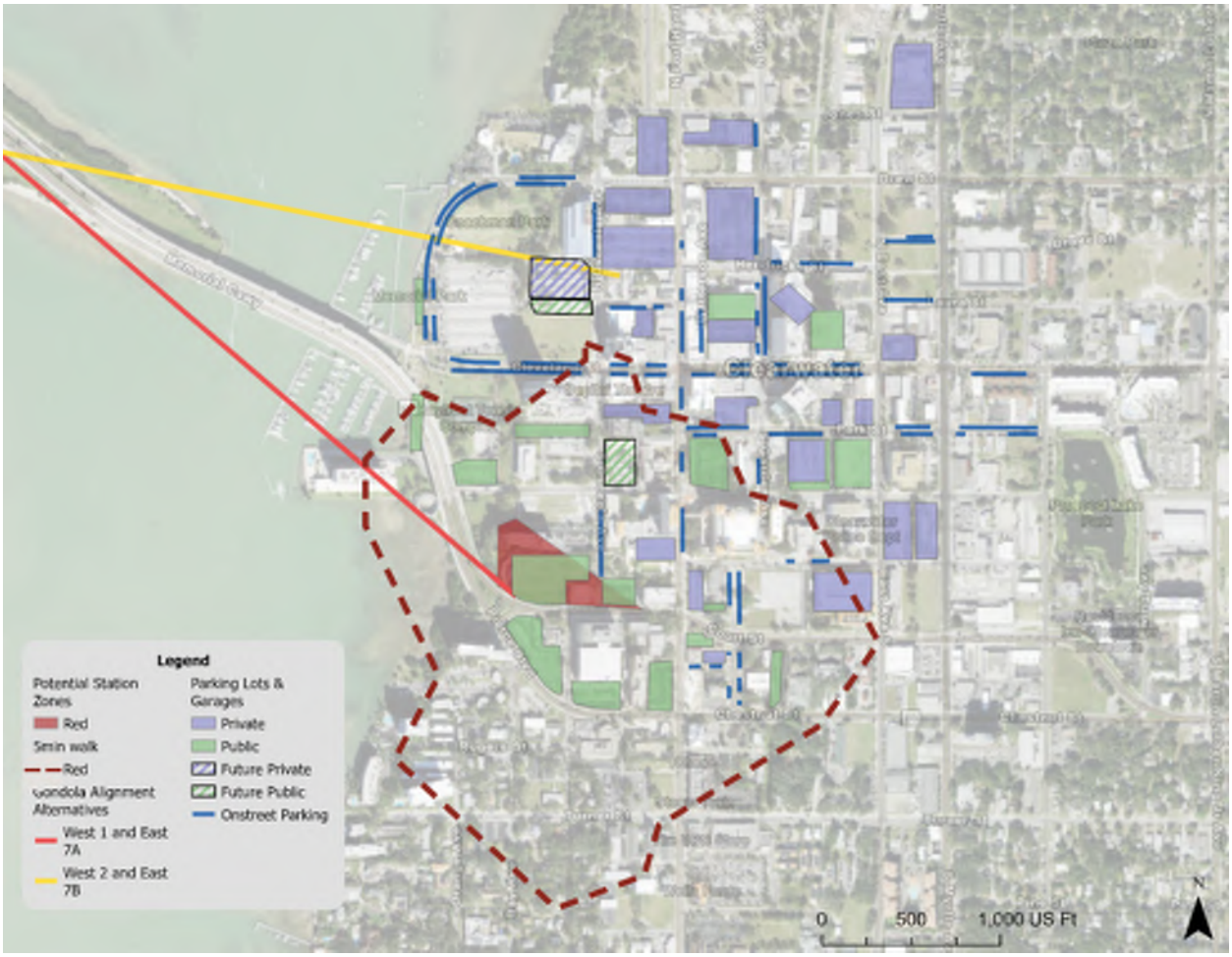


Figure 16 - Parking within a 5-minute Walk of the Red Zone

Summary:
A summary of all the zones parking is provided below. This shows the difference in parking supply within a 5-minute walk of each of the zones.

Table 21 - Number of Parking Spaces within 5-minute Walk (all Downtown Zones)						
Station Zone	**Existing**			**Future**		**Total**
	Public	**Private**	**On-street**	**Public**	**Private**	
Green	593	1128	284	613	150	2768
Orange	1022	679	212	613	150	2676
Red	810	116	80	550	0	1556

In addition to the future parking considered as part of the analysis, with the redevelopment being undertaken as part of the Imagine Clearwater project, there will be numerous additional parking lots provided (see Figure 17) that will be of use to potential, future gondola users looking to access the island. However, figures on number of spaces in these lots was not available at the time of writing this report.

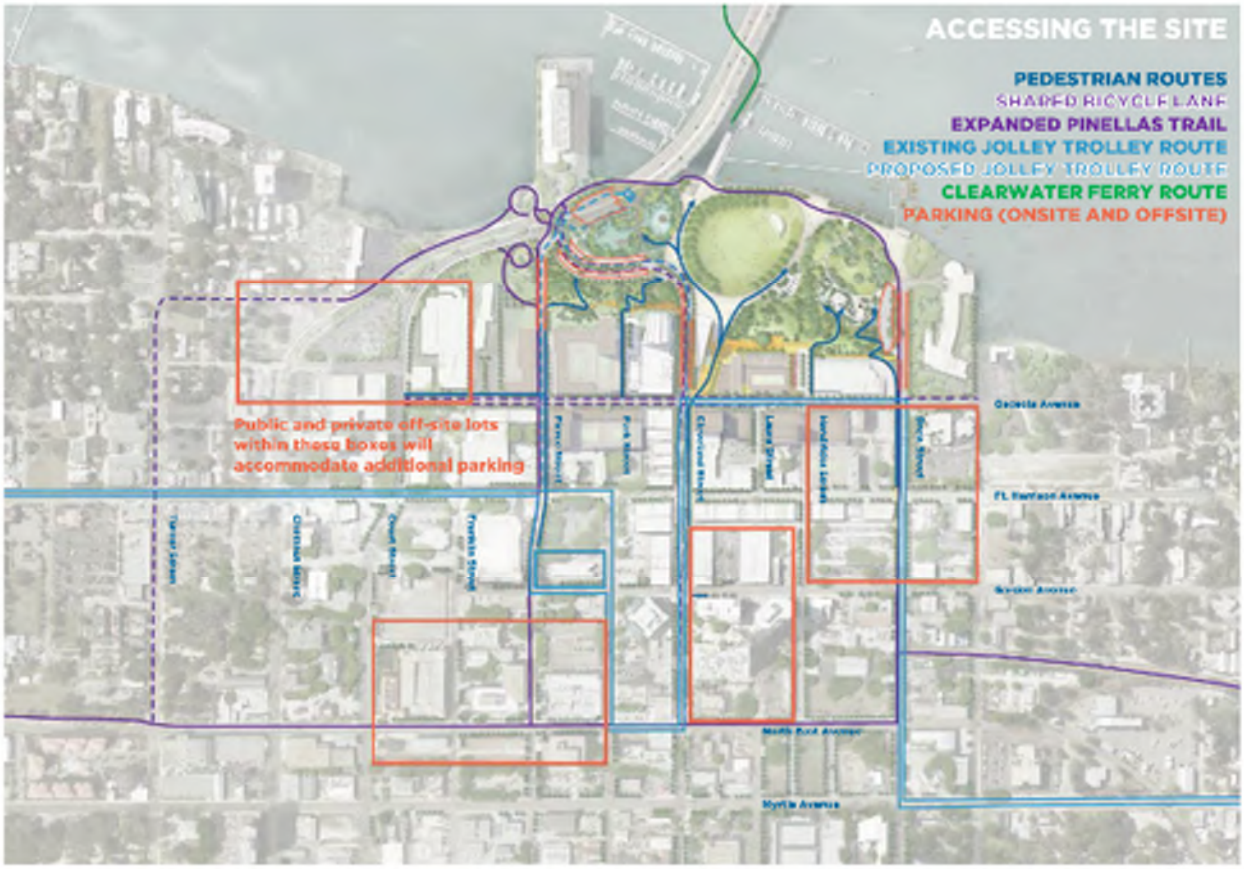


Figure 17 - Future parking for Imagine Clearwater

An overall parking demand analysis related to the Clearwater Gondola was also performed based upon the Gondola Ridership element of the Study. The Ridership derived from StreetLight locational data combined with the information from the City of Clearwater/Clearwater Beach Visitor Profile 2017-2021 Reports were used to determine the consumption of parking inventory in the Downtown Zone. The results summarized in the table below demonstrate that there will be **more than sufficient parking** to support this service.

Table 22 - Number of Parking Spaces within 5-minute Walk (orange zone)

Zone	GONDOLA PERSON TRIPS	
	2019	2049
Clearwater CBD	39,187	49,376
East Side CL	1,023,237	1,268,814
North Side CL	194,767	201,584
South Side CL	85,794	90,083
Annual Person Trips	1,342,985	1,609,857
Daily Person Trips (Annual Person Trips/365)	3,679	4,411
Gondola Daily Parking Demand (2.8 persons/vehicle)[1]	1,314	1,575
CBD Parking Inventory	5,018	5,018
50% Parking Occupancy[2]	2,509	2,509
Net Parking Surplus	1,195	934

The demand for commuter trips (home based work trips) was analyzed using the StreetLight Trip Purpose Data in the Ridership Study. The number of daily, home-based work trips from the mainland zones are summarized below:

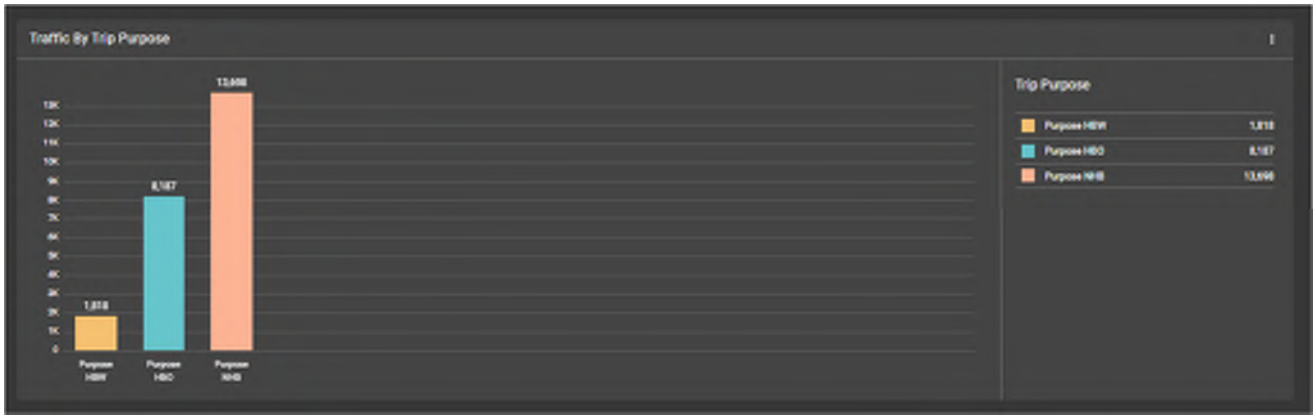


Figure 18 - Home Based Work Trips from Mainland to Island Zones

[1] Source: City of Clearwater/Clearwater Beach Visitor Profile Reports 2017-2021

[2] Estimated from City of Clearwater 2014 Parking Study

With over 1,800 daily trips, there will be clear benefit to incentivize parking and riding the aerial gondola service from the Clearwater Central Business District to the Clearwater Beach and Clearwater Beach Island zones. Even a modest 10% ridership would reduce the roadway capacity consumption and on-Island parking consumption by 180. This would reduce the travel times for the workers, provide more reliable and predictable arrival times at the workplace, help to reduce traffic congestion and provide additional parking.

Island Potential Stations:
On the island side, there are 4 potential final locations for the gondola stop depending on the route alignment chosen, as shown by Figure 19.

Figure 19 - Potential Gondola Alignments on Clearwater Beach

West 1:
The first alignment travels furthest onto the island, crossing over Coronado Drive. As such it has the largest number of spaces within a 5-minute walk from the potential station at 821. The overwhelming majority of these are public owned spaces, 769. The amount of on-street parking is somewhat limited at just 18 spaces in close proximity.

Table 23 - Number of Parking Spaces within 5-minute Walk (West 1 Zone)

Station Zone	Existing			Future		Total
	Public	Private	On-street	Public	Private	
West 1	769	34	18	0	0	821

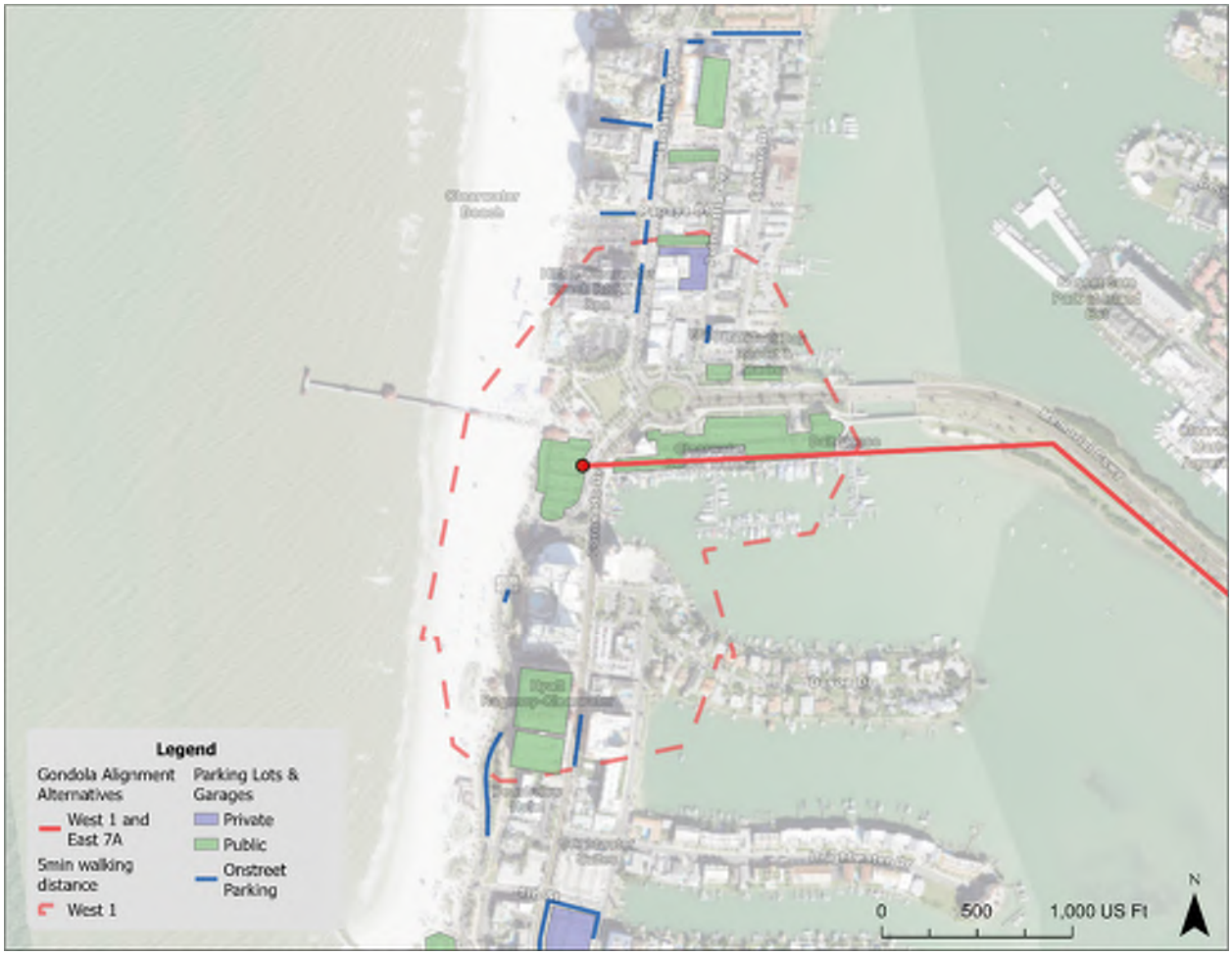


Figure 20 - Parking within a 5-minute Walk of West 1 Gondola Station

West 2:
The 2nd alignment does not go as far onto the island, stopping instead by the roundabout on Causeway Boulevard. As this alignment is very similar to West 4, which also stops just near to the Causeway roundabout, the number of parking Spaces within a 5-minute walk is identical. Totaling 703 spaces in close proximity, of which 644 are publicly owned, 34 privately and 25 on-street.

Table 24 - Number of Parking Spaces within 5-minute Walk (West 2 Zone)

Station Zone	Existing			Future		Total
	Public	Private	On-street	Public	Private	
West 2	644	34	25	0	0	703

Figure 21 - Parking within a 5-minute Walk of West 2 Gondola Station

West 3:
The third alignment travels the shortest distance onto the island and stops at Clearwater Beach Transit Center South bus station. Due to this, it has the least amount of parking spaces within close proximity at 655 within a5 minute walk. Of this, 608 are publicly owned, 34 privately and 13 on-street spaces.

Table 25 - Number of Parking Spaces within 5-minute Walk (West 3 Zone)						
Station Zone	**Existing**			**Future**		**Total**
	Public	**Private**	**On-street**	**Public**	**Private**	
West 3	608	34	13	0	0	655

Figure 22 - Parking within a 5-minute Walk of West 3 Gondola Station

West 4:
As mentioned previously, the West 4 route stops at a very similar location to the West 2 route therefore, the parking accessibility is identical, totaling 703 spaces within a 5-Minute walk.

Table 26 - Number of Parking Spaces within 5-minute Walk (West 4 Zone)						
Station Zone	**Existing**			**Future**		**Total**
	Public	**Private**	**On-street**	**Public**	**Private**	
West 4	644	34	25	0	0	703

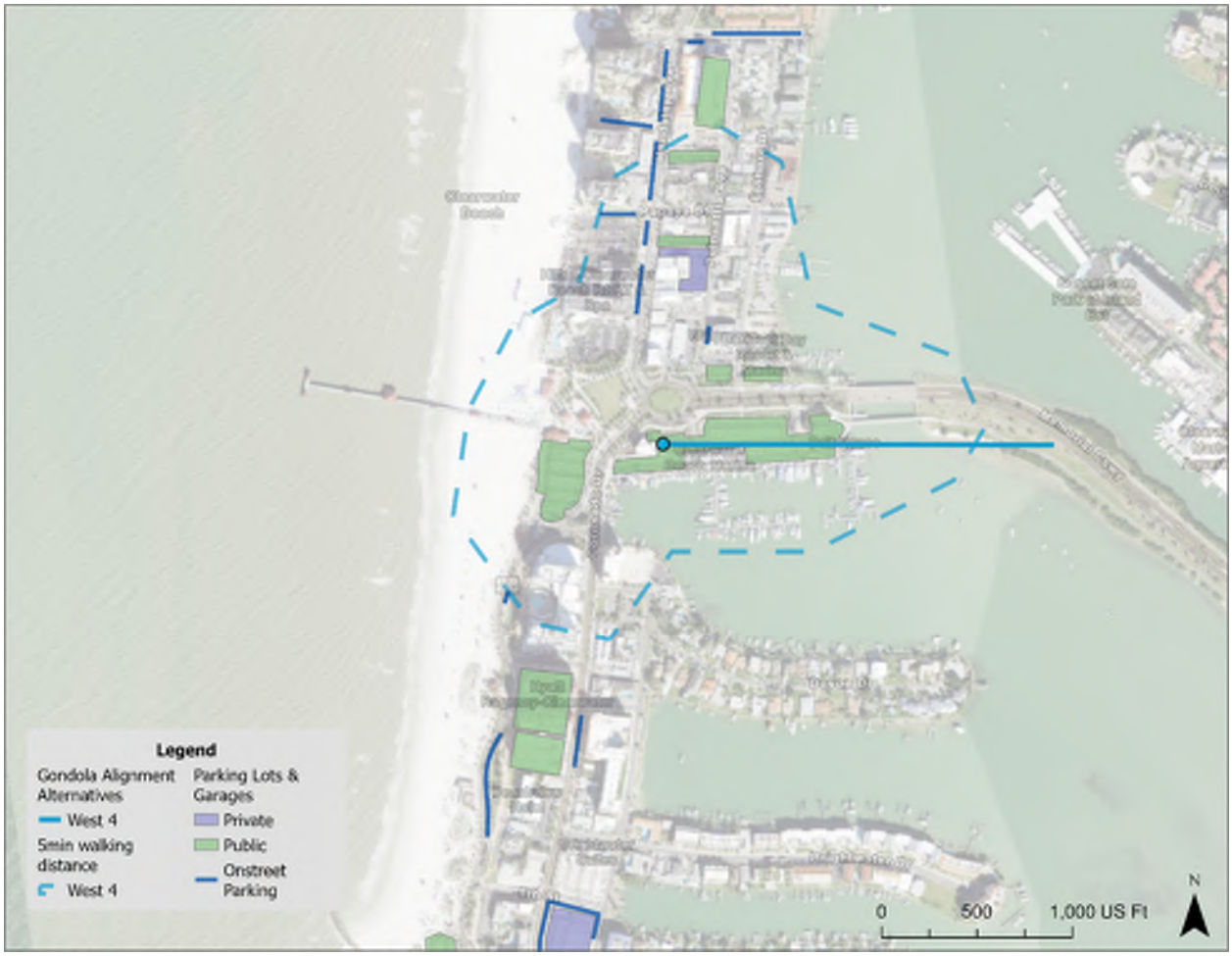


Figure 23 - Parking within a 5-minute Walk of West 4 Gondola Station

Summary:
A summary of the parking accessibility of the island stations is provided below. The number of parking spaces within a 5-minute walk is **somewhat limited** from all stations, Beyond the 5-minute walk time there is a large number of other on-street parking spaces and parking lots/garages, which would be within reach of slightly longer walk. Alternatively, the use of potential micro-mobility modes such as e-scooters or e-bikes is an option. As mentioned at the beginning there are approximately 2066 spaces on the island study area, of which 1,477 are public, 184 private and 405 on-street.

Table 27 - Number of Parking Spaces within 5-minute Walk (all west zones)

Station Zone	Existing			Future		Total
	Public	Private	On-street	Public	Private	
West 1	769	34	18	0	0	821
West 2	644	34	25	0	0	703
West 3	608	34	13	0	0	655
West 4	644	34	25	0	0	703

4.9 1ST MILE & LAST MILE

There are four major destination zones within the project area that would be best served by an aerial gondola system. The ridership element of this study, the origin-destination (O-D) zones are defined as follows:

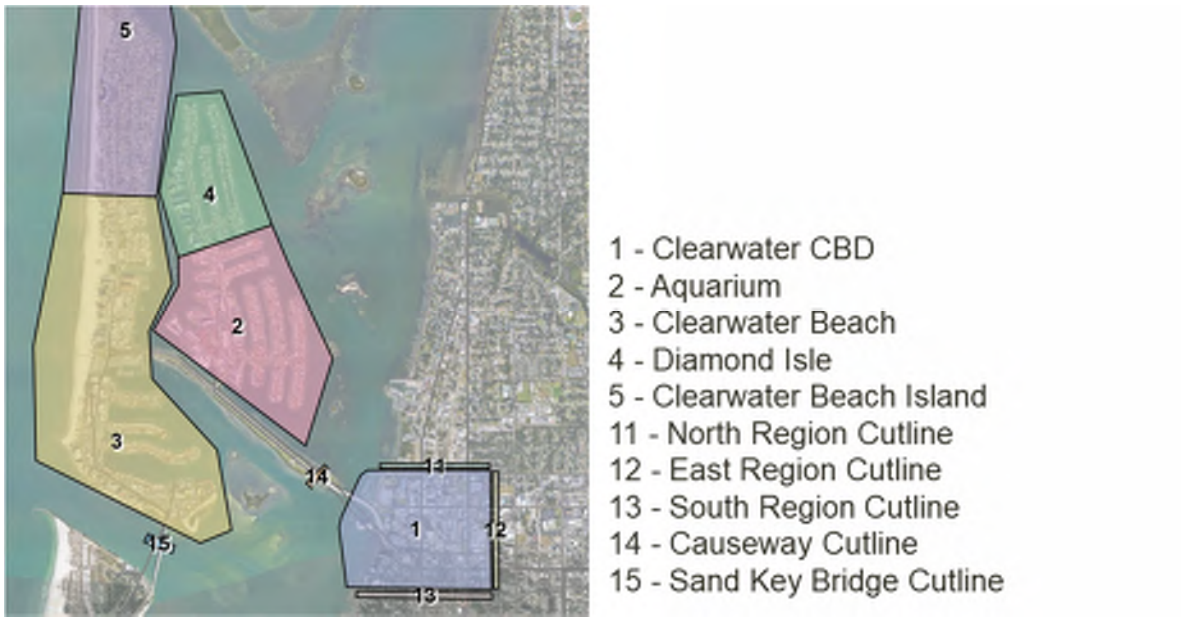


Figure 24 - Origin-Destination Zones

From a volume perspective the greatest O-D interactions relative to a gondola service are as follows:

- Clearwater Beach
- Central Business District Clearwater (Downtown)
- Clearwater Beach Island
- Clearwater Aquarium
- East Side Cut Line
- North Side Cut Line
- South Side Cut Line

The Cut Line trips come through the Downtown Zone that are more regionally based. These would be heavily made up of tourist/vacation trips. The data from the Clearwater/Clearwater Beach Visitor Profile Reports from 2017-2021 provide the empirical data to support these assumptions (80% to 94% trip purpose is vacation year-round).

Based upon the O-D data, the projected gondola ridership and the site conditions, the gondola service and corresponding station locations provide logical landing points. In the first phase of this study, it was stated that the majority of parking for the gondola station will be located in nearby parking lots with minimal or negligible onsite parking. This is affirmed by the O-D analysis and operational nature of the gondola serving the beach with parking in the downtown area. Furthermore, the peak parking usage downtown will be when there are events at the Coachman Park Amphitheater which will have a 4,000-person covered bandshell with open area for an additional 6,000 attendees. The peak demand for special events is unlikely to conflict with the peak demand for gondola parking. Again, the O-D and ridership analysis indicate that the Clearwater Beach, Clearwater Island and the Aquarium are the largest destination zones consisting of vacation/tourist trips. These trips generally peak from 9 am to 3

pm (beach trips). The amphitheater events are assumed to predominantly occur in the evening with minor overlap tips.

The 1st/last-mile analysis will outline the challenges and potential solutions within the study answering the question of how to get around when to and from a gondola station. The gondola service should not create a first-mile challenge in the Downtown area because of the compact size of the zone. The gondola does create a last-mile challenge on Clearwater Beach; however, there are numerous opportunities for 1st/last-mile service connections throughout the project study area.

Existing and Planned Services/Network

Mainland-Downtown Transit Routes

Pinellas Suncoast Transit Authority (PSTA) currently has several bus routes servicing the immediate area including the Jolly Trolley (Clearwater Beach), routes 66 (Indian Rocks/Tarpon Springs), 67 (Clearwater/Downtown Oldsmar), 76 (Clearwater/Westfield) and the existing or proposed new downtown bus terminal will provide access to a wider array of routes. See Figure 25.

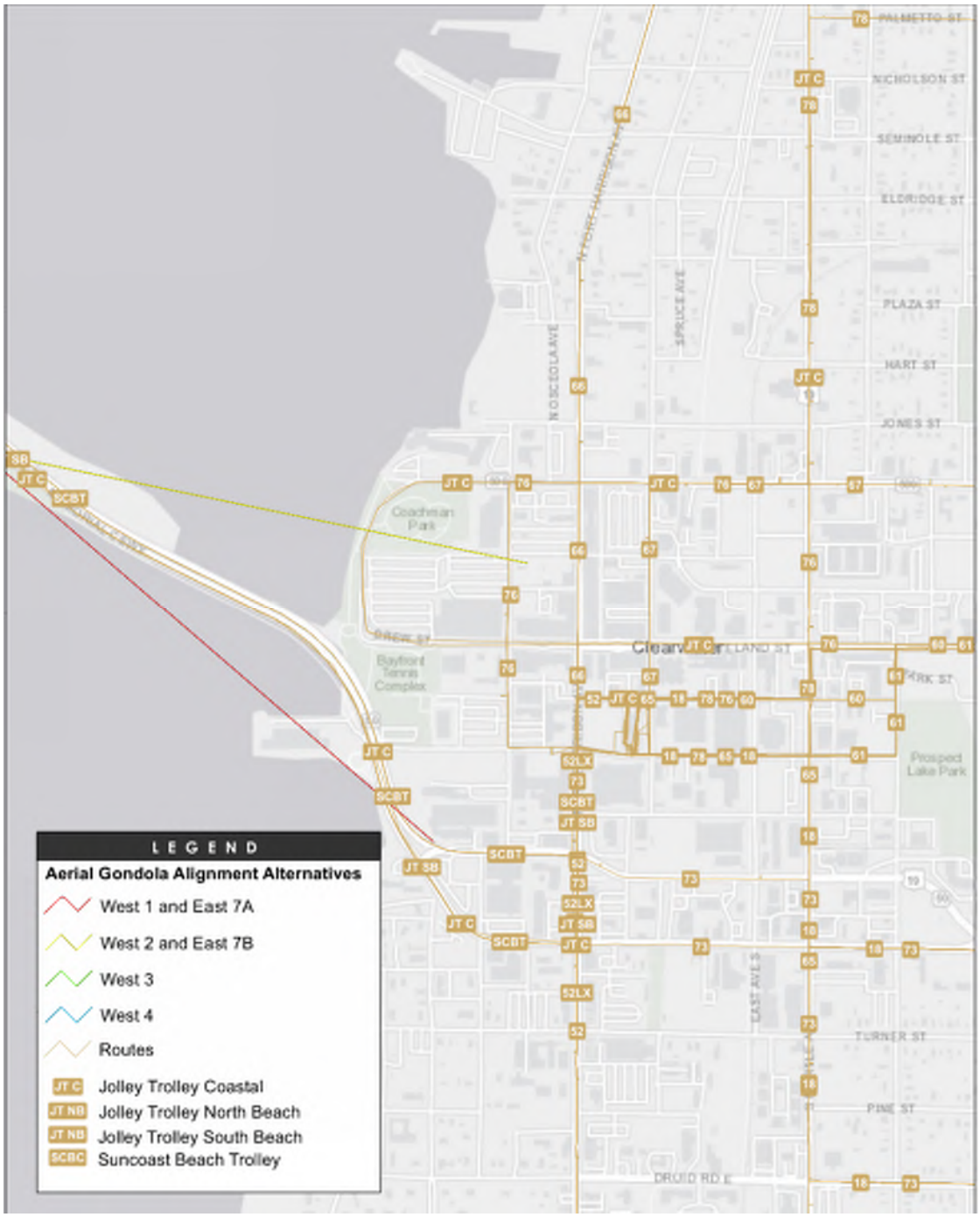


Figure 25 - Aerial Gondola Alignment Alternatives and Existing Services Mainland

The primary transit services on Clearwater Beach are the Jolly Trolley and Suncoast Beach Trolley with the annual ridership in 2019 being 117,916 and 585,183 respectively. The existing Jolly Trolley North and South routes provide on-island services to both North and South Beach on a 21-minute schedule. The Beach Transit Center is located north of the proposed gondola station across Memorial Parkway. The Jolly Trolley ridership is more indicative of the localized service because it serves the more concentrated area of Clearwater Beach and Downtown. This service is a convenient option, but travel time is restricted, similar to automobile travel, by the limited roadway capacity. The ridership element of this study assumed a 15-mph average travel speed across Memorial Causeway.

Figure 26 - Existing services on the Causeway

Figure 27 - Existing Services on the Beach

The ridership study indicates that the gondola service could carry from 1.4 to 1.9 million prole annually. This level of modal shift could create opportunities to adjust the trolley service to focus more as on-island or downtown circulator.

Bicycle/Pedestrian Infrastructure

Mainland-Downtown, Causeway and Island-Beach locations both have well-connected, uninterrupted bicycle and pedestrian facilities including bike lanes, sidewalks and trails. This robust network provides a viable active transportation option for 1st/last-mile trips. According to the Center for Disease Control, the average walk speed in the US is 3 mph +/-. Walking is a viable mode as a 1st/last-mile option Downtown. In the Downtown area, the majority of this zone is a 5-minute walk or only slightly more. The changing land uses, and destinations make walking one of the best modes in this zone. Bikes with a travel speed of 10 to 12 mph can easily increase the travel range within the Downtown zone and beyond. The City of Clearwater is heavily supporting this mode by providing or requiring significant bike parking throughout the city and especially Downtown.

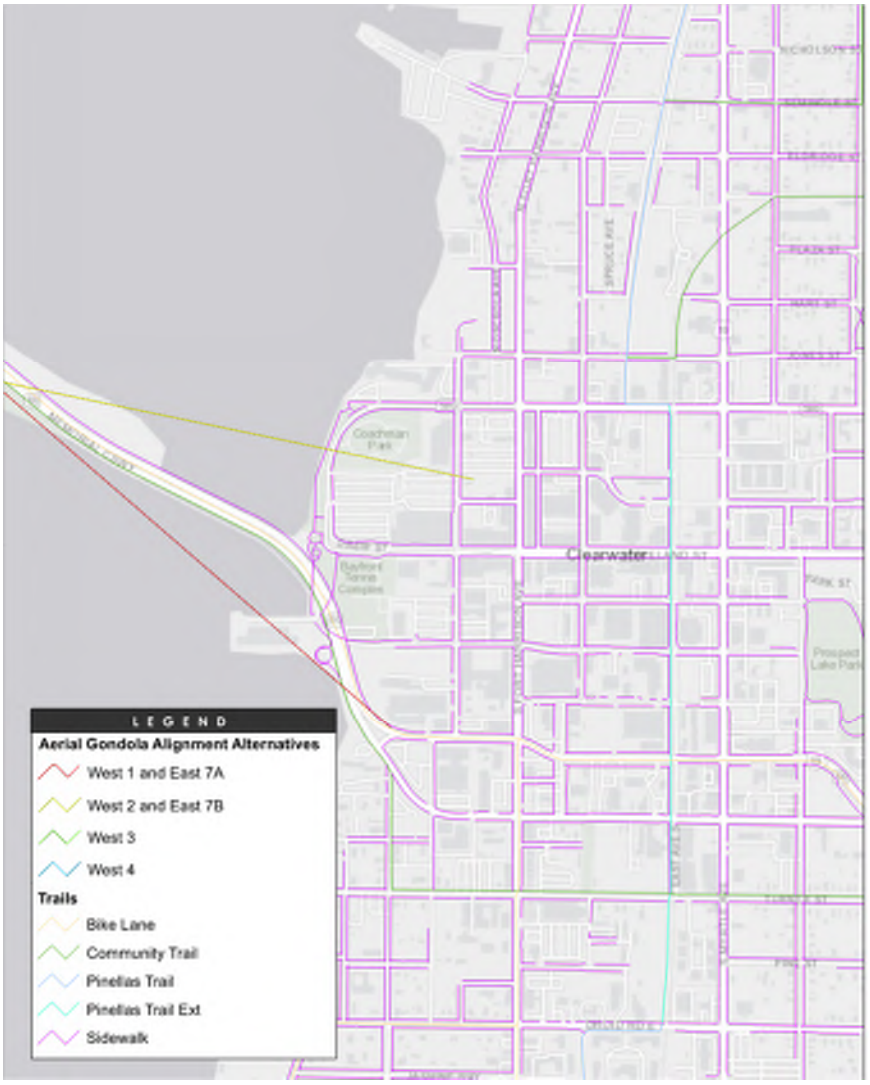


Figure 28 - Mainland Downtown Pedestrian and Bicycle Facilities

Figure 29 - Mainland Downtown 5-Minute Walk Zones from the Station Zones

From the most northerly public beach access at Juniper Street to the Sand Key Bridge, the distance is 3 miles. At 3 mph walk speed, this would take an hour. From proposed gondola station locations, the 5-minute walk gets you to the beach and to some of the adjacent commercial destinations as seen in Figure 31 through Figure 34.

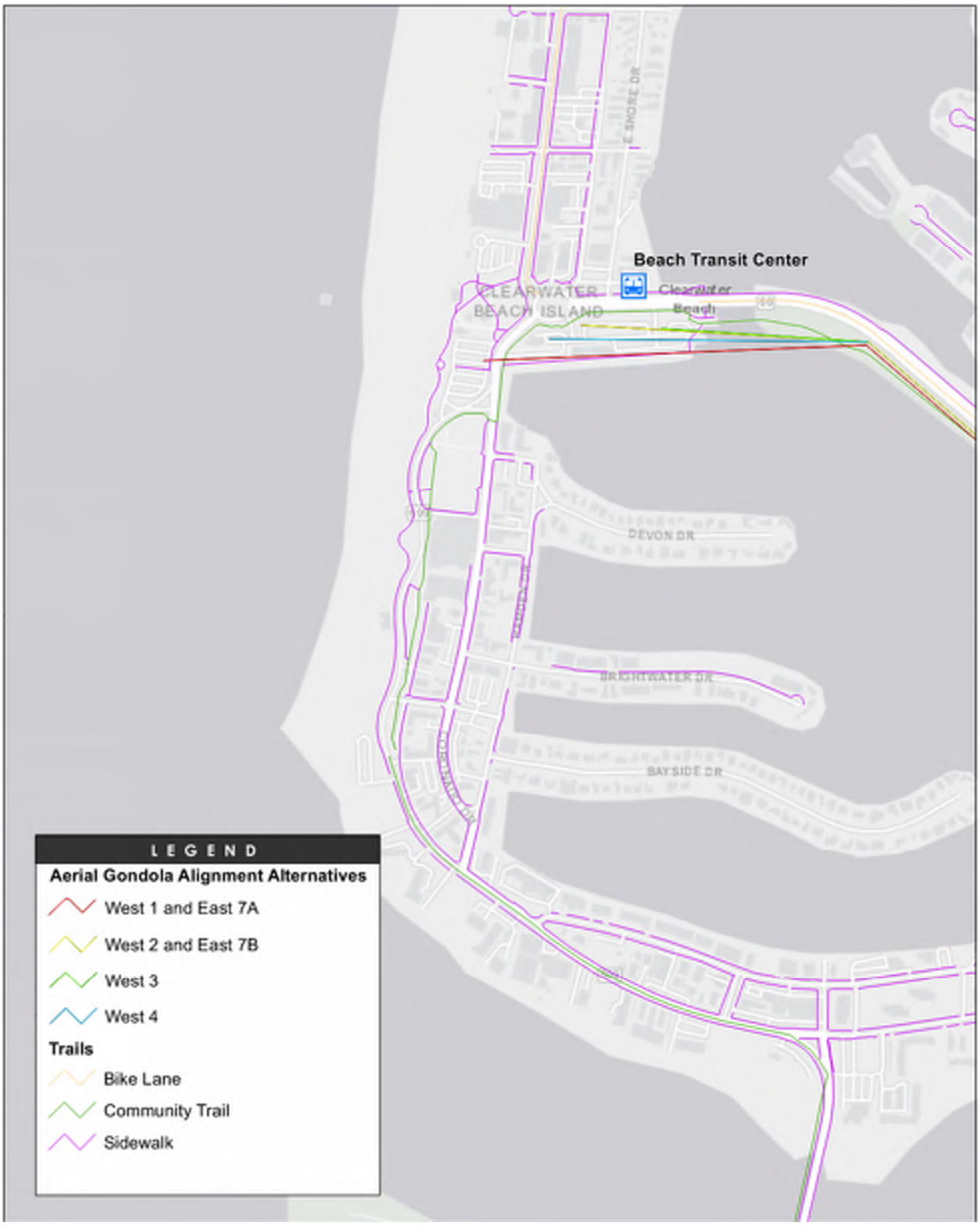


Figure 30 - Pedestrian and Bicycle Facilities on the Island

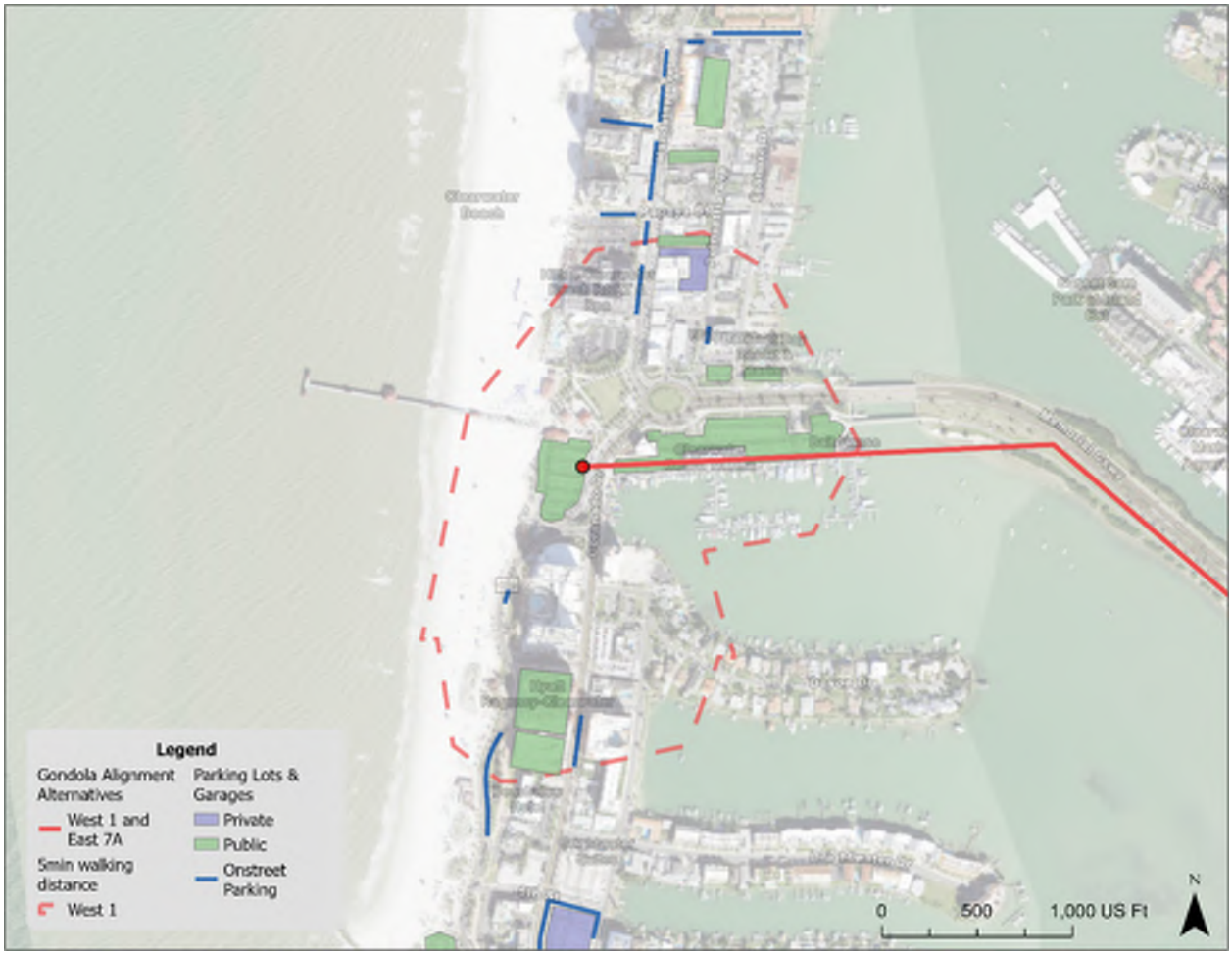


Figure 31 - 5-Minute Walk from Station West 1 on Clearwater Beach

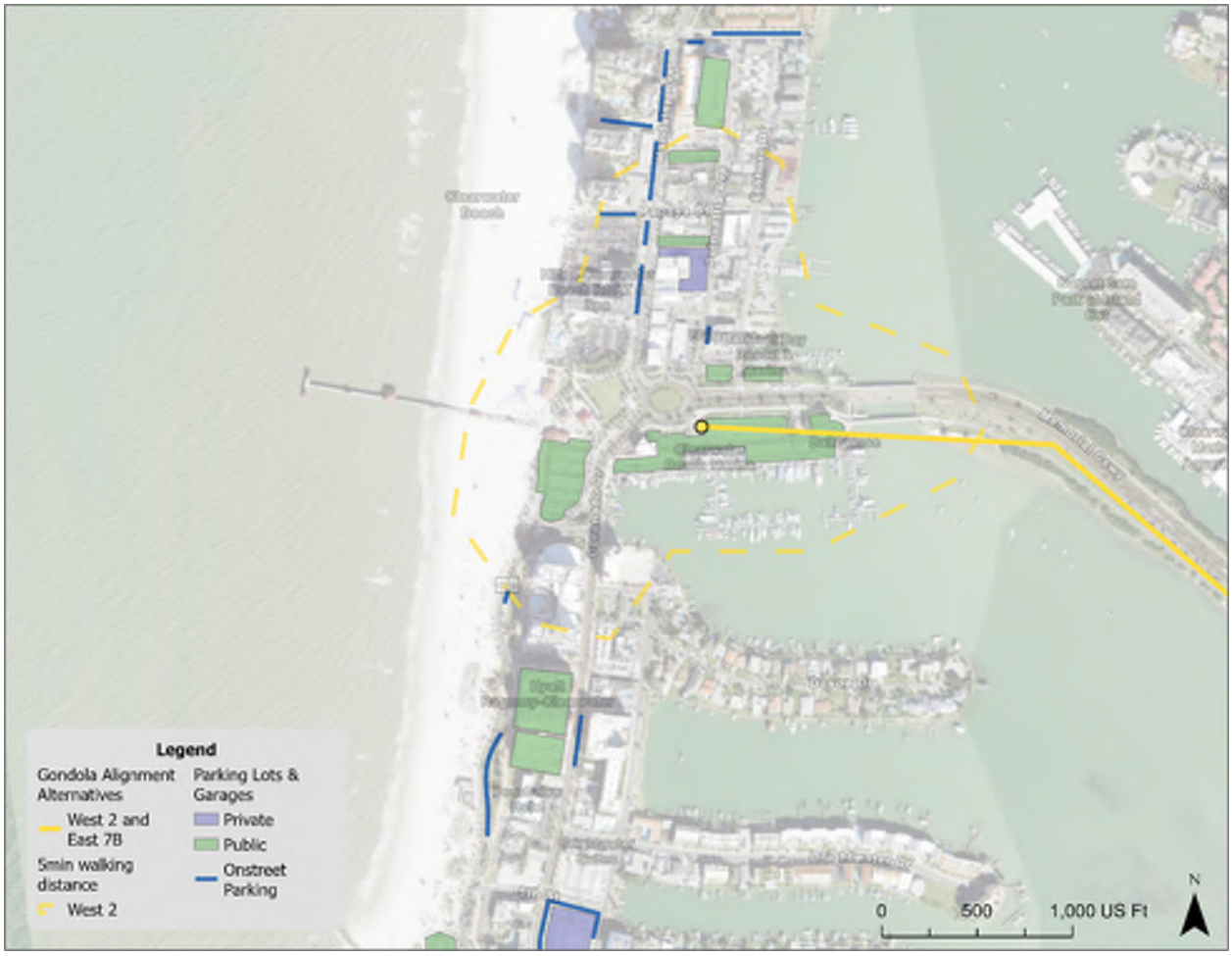


Figure 32 - 5-Minute Walk from Station West 2 and East 7B on Clearwater Beach

Figure 33 - 5-Minute Walk from Station West 3 on Clearwater Beach

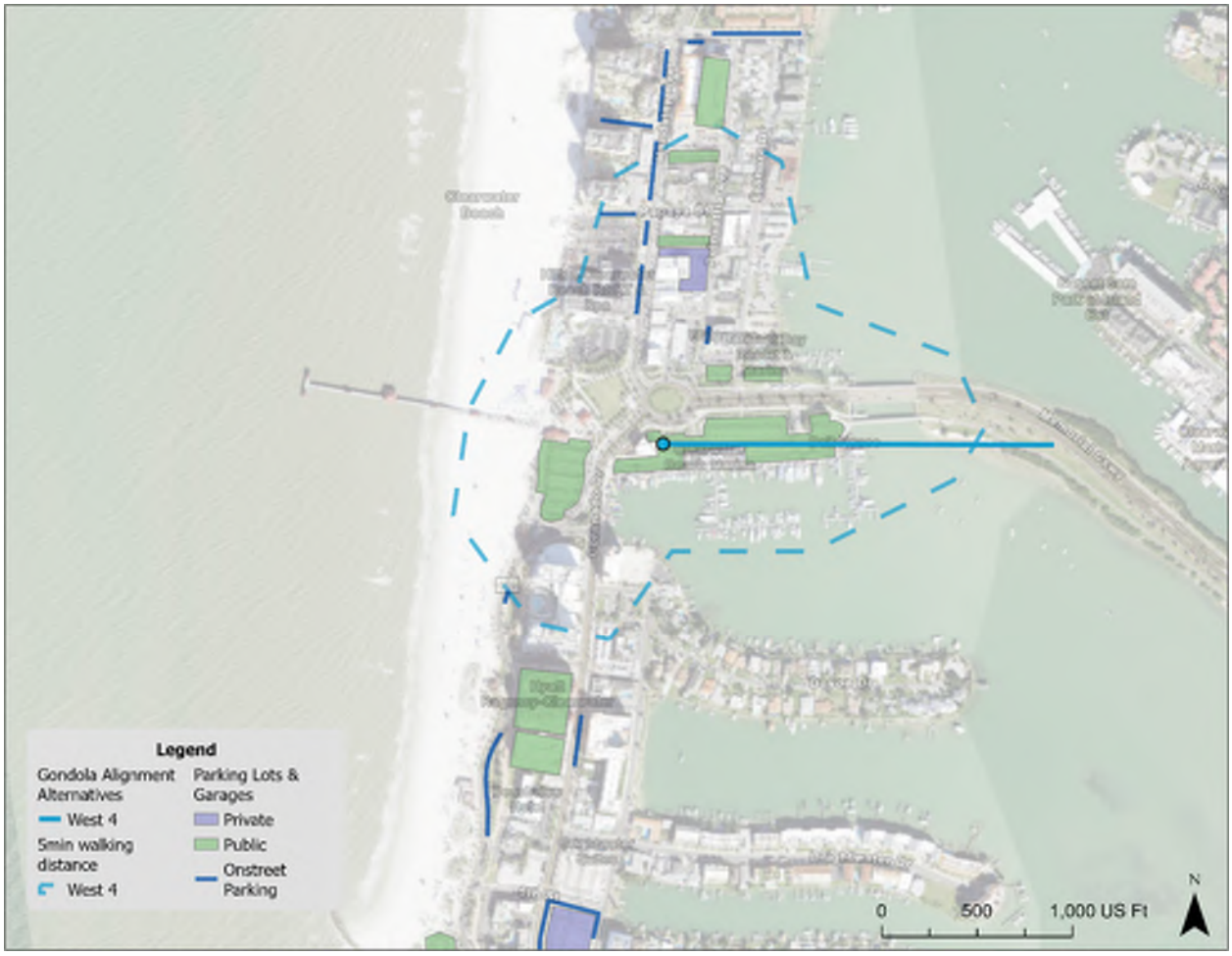


Figure 34 - 5-Minute Walk from Station West 4 on Clearwater Beach

In the Beach zones there are factors that reduce the convenience and attractiveness of walking including weather, the need to carry/transport beach accoutrements and the abilities of the walkers (children, elderly and mobility challenged). The heat/humidity for six months of the year make walking more than ½ mile less than ideal. Beach visits often include bringing various items such as chairs, coolers and umbrellas which provide an additional barrier to using active modes. At the 1st mile, this can be addressed with a drop off at the gondola station with valet parking thereby removing the need to carry items from parking lots to the gondola pick up. At the last mile, when disembarking the gondola, beach buggies could also be available to tote the beach items.

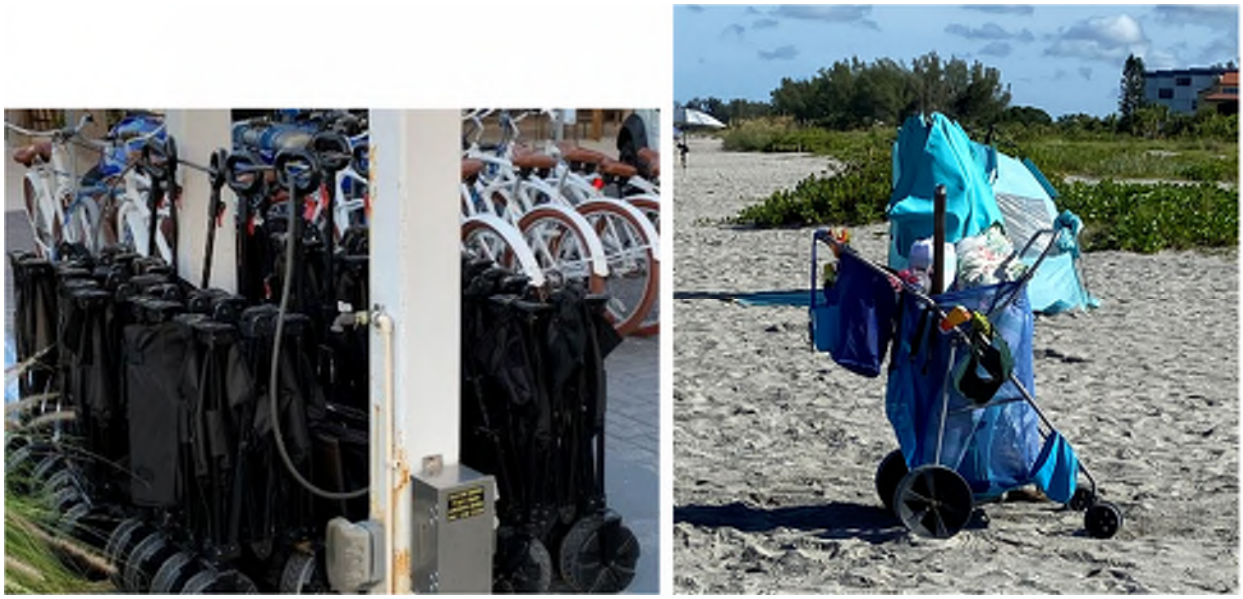


Figure 35 - Example buggies to help with the movement of beach accoutrements.

Additional Potential Solutions - Micro-Mobility

A range of micro-mobility options can be made available to additional 1st/last-mile options including bike\e-bike share, cargo\e-cargo bike share, e-scooters and even AV shuttles. The scooters and bikes have become quite popular in urban and beach settings. While there have been safety concerns raised about the stand-up e-scooters, the vehicles have evolved, and the newer generations of scooters are lower, more stable, are seated and provide baskets to safely carry items.

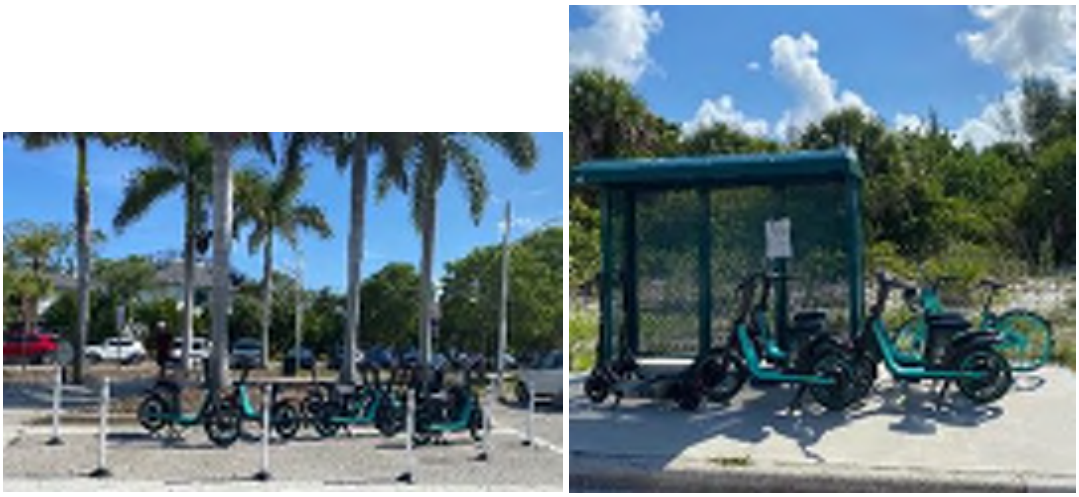


Figure 36 - Example of Micro-Mobility E-Scooters

Figure 37 - Example Micro-Mobility E-scooters and E-bikes

When dealing with a multitude of micro-mobility options, it is important that they be efficiently and effectively grouped into Mobility Hubs. This helps to resolve some of the known issues with these modes, such as vehicles strewn across sidewalks and which have further been addressed with improvement in geofencing, and imposing surcharges for not returning vehicles to a designated area/hub.

There is also the potential for an Autonomous Vehicle Shuttle (AV) circulating route on the island, indeed, beach side has already been tested on the south beach area by PSTA. The AVA service ran for three months in early 2022. In the future, additional services could be implemented to provide last-mile service tied to the aerial gondola service.

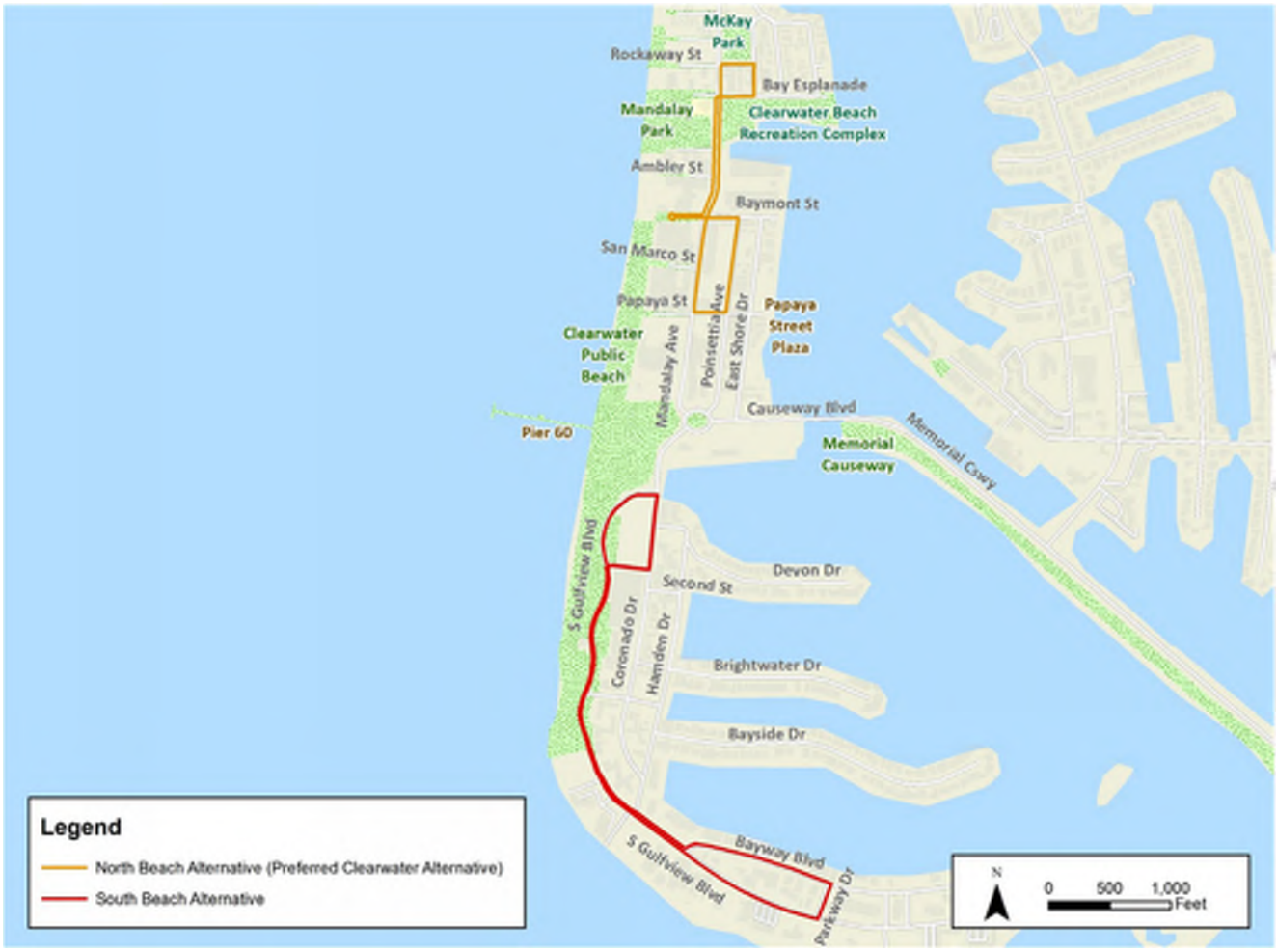


Figure 38 - Autonomous Shuttle Routes

Figure 39 - AVA Autonomous Shuttle Pilot

5. ECONOMICS & FINANCING

The purpose of this section is to document the analysis that HR&A, Transpo, and SCJ completed with regards to the projected cost of the Clearwater Gondola project, the predicted ridership of the gondola, and the estimated revenue that such a project could generate. From these inputs, a group of financial models were prepared that estimate the cash-flow of a potential project.

5.1 RIDERSHIP

Ridership broadly includes the following groups:

1. Employees using transit to get to their place of work (2 trips per shift)
2. Residents of Clearwater Beach using transit to go Downtown
3. Residents of Downtown Clearwater using transit to go to the Beach
4. Visitors parking Downtown and using transit to go to the Beach
5. Visitors staying on the Beach and using transit to go Downtown
6. People riding the gondola as an attraction or experience.

With the exception of the people in Group 6 above, all other people that may use a gondola as transit are currently driving between Downtown and the Beach, or vice versa. A small number of people may be using the Jolly Trolly currently, but this number is low and will not impact the overall assessment of the Gondola system. The following sections describe the ridership study completed by Transpo. This analysis attempted to estimate the shift of existing vehicle trips to gondola trips based on a number of assumptions. See Appendix D for further details on the ridership study.

SCJ conservatively estimates the Group 6 ridership to be as high as 500,000 ticket-buying patrons per year. This estimate is based on SCJ proprietary database of cable car systems worldwide. By comparing the parameters of this system with other systems and by identifying comparable examples, SCJ was able to develop this estimated figure. The Group 6 ridership will be added to the Group 1-5 ridership developed below.

Approach

Based on discussion with project partners about needs for the ridership forecasts, along with review of the proposed gondola system within the context of the Aquarium, Clearwater CBD, Clearwater Beach and surrounding tourist district, the following methodology was developed:

1. Develop a set of geographic "Transportation Analysis Zones" (TAZs) that cover the area of interest
2. Acquire "StreetLight" origin-destination data that characterizes existing vehicle travel patterns in the vicinity of the proposed Gondola system, with the data capturing the estimated number of trips from each zone to each other zone (daily, in year 2019)
3. Develop estimates of journey time and journey cost for each origin-destination pair, separately for vehicle travel and gondola travel
4. Using these estimates of journeys times/costs, develop a mode choice model to estimate the fraction of journeys that will shift from vehicle travel to gondola travel, separately for each origin-destination pair
5. For each origin-destination pair, multiply the number of observed present-day trips in vehicles (#2 above) by the forecasted gondola mode share (#4 above)
6. Develop growth estimates for each origin-destination pair to forecast future year ridership.

Transportation Analysis Zones (TAZs)

A set of 10 zones and cutlines were defined for the study, as shown in Figure 40. (Note: A cutline captures any travel that crosses in either direction. e.g. The East Region Cutline (12) would include travel to/from Tampa).

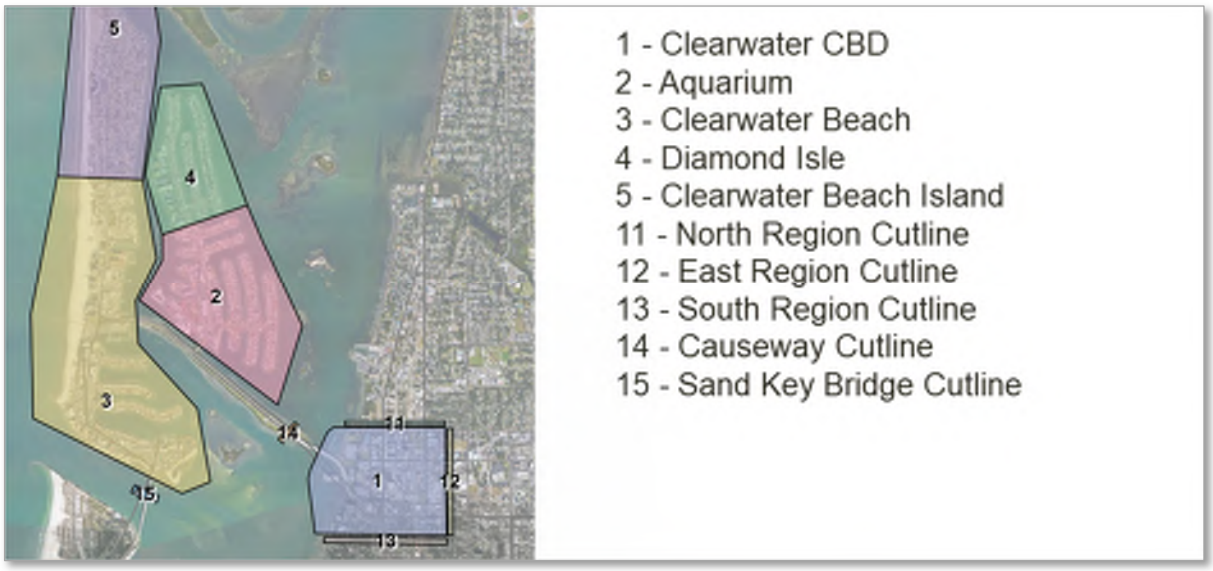


Figure 40 – Transportation Analysis Zones (TAZs)

Origin-Destination Data

Reliable origin-destination patterns of visitors to destinations near the Gondola's stations forms the basis of the ridership analysis which focuses on quantifying the potential for mode shift from vehicles to the cable car mode. StreetLight origin-destination data to and from the area around the proposed stations was purchased to support the study. This vehicle trip data is based mobile device position data for which the trip origins and destinations are recorded. This data can be used to evaluate the number of vehicles entering and leaving specific zones. Five zones and five cutlines were created for the study as shown in Figure 40 above. The data from 2019 was used as it best represents the pre-Covid-19 traffic patterns, and the assumed future case in a post-Covid-19 future.

Table 28 shows the estimated annual vehicle trips to/from and within the Clearwater area zones for year 2019.

Table 28 - Estimated Annual Vehicle Trips

Annual Vehicle Trips	Aquarium	CB Island	Clearwater Beach	Clearwater CBD	Diamond Isle	East Side CL	North Side CL	Sand Key Bridge	South Side CL	Total
Aquarium	-	37,762	458,471	69,442	106,532	689,647	157,832	109,435	153,699	1,782,820
CB Island	32,009	-	217,205	14,648	9,347	224,542	66,391	53,855	49,548	667,545
Clearwater Beach	433,215	223,292	-	272,389	84,688	4,392,728	768,753	1,713,969	369,150	8,258,184
Clearwater CBD	87,384	18,949	339,244	-	25,750	2,134,528	784,081	89,941	778,354	4,258,231
Diamond Isle	83,230	8,954	84,139	22,667	-	204,135	36,444	17,746	53,332	510,647
East Side CL	753,991	214,965	4,091,695	2,188,175	199,158	-	1,166,209	644,954	773,781	10,032,928
North Side CL	165,973	65,408	778,828	739,922	36,140	713,506	-	213,702	1,472,140	4,185,619
Sand Key Bridge	133,552	55,745	1,868,932	82,022	21,372	709,655	227,388	-	103,386	3,202,052
South Side CL	154,368	45,321	343,070	776,579	49,442	1,027,279	1,455,443	80,237	-	3,931,739
Total	1,843,722	670,396	8,181,584	4,165,844	532,429	10,096,020	4,662,541	2,923,839	3,753,390	36,829,765

Travel Journey Time & Cost

A simplified multimodal transportation network was developed to be able to estimate travel times between zones. Since the study is focused on the travel to/from and within the area that will have gondola service, the network was limited to only those roadways and walk connections that support travel to/from and within those areas. Travel speeds were based on posted speed limits, Google maps, industry standards, and review with project partners. Input assumptions are shown in Table 2.

Table 29 - Input Assumptions for Travel Time and Costs

Description		Value
Trips/Person Day		2.0
Persons/vehicle		2.8
Parking Cost	Beach	25.0
	Aquarium	10.0
	CBD	5.0
Auto Terminal Time (min)	Beach	25.0
	Other	2.0
Gondola Cost per Day		$ 15.00
Gondola Terminal Time (min)	Walk	5.0
	Drive	7.5
Walk Times @ Stations	Aquarium	20.0
	CB Island	30.0
	Clearwater Beach	25.0
	Clearwater CBD	10.0
	Diamond Isle	30.0

Mode Choice Model

The core of this analysis is a logit model that simulates, for each journey observed in the StreetLight data, the choice of whether to divert from vehicle travel onto the Gondola. This is known as a "Mode choice" model. The mode choice model is based on the Simplified Trips on Project Software (STOPS). The final model parameters were:

- Car travel time coefficient = -0.10
- Car terminal time coefficient = -0.15
- Gondola in-vehicle travel time coefficient = -0.10
- Gondola out-of-vehicle travel time coefficient = -0.15
- Value of time = $ 16.20/hour
- Gondola alternative specific constant (ASC) = 0.0

Table 30 shows the estimated probabilities of vehicle trips converting to gondola for each origin-destination pair.

Table 30 - Percent of Trips Forecast to be Diverted onto Gondola

Probabilities - Gondola		Aquarium	CB Island	Clearwater Beach	Clearwater CBD	Diamond Isle	East Side CL	North Side CL	Sand Key Bridge	South Side CL
	Zone #	2	5	3	1	4	12	11	15	13
Aquarium	2		0.0%	0.9%	0.2%		0.4%	0.4%		0.4%
CB Island	5	0.0%			0.0%		0.1%	0.1%		0.1%
Clearwater Beach	3	0.9%			4.5%	0.1%	8.8%	8.8%		8.8%
Clearwater CBD	1	0.2%	0.0%	4.1%		0.0%				
Diamond Isle	4		0.0%	0.1%	0.0%		0.1%	0.1%		0.1%
East Side CL	12	0.4%	0.1%	8.9%		0.1%				
North Side CL	11	0.4%	0.1%	8.9%		0.1%				
Sand Key Bridge	15									
South Side CL	13	0.4%	0.1%	8.9%		0.1%				

Color coding is low percentage (green) to high percentage (red)

Ridership Estimates

Applying the calculated probabilities shown in Table 30 above to the annual trips estimated from StreetLight results in the predicted diversion for each origin-destination pair onto the Gondola (see Table 31). The heaviest usage is forecasted to be to/from regional locations, (areas north, east, and south of Clearwater). Overall, the model forecasts for the base year:

- Total person-trips (Boardings) on Gondola: 2,797,169
- **Estimated number of daily Gondola patrons (@ 2.0 person-trips per patron): 1,398,585**
- Estimated reduction in number of car trips (@2.8 people per vehicle): 998,988

Table 31 - Estimated Year 2019 ridership (one-way trips)

Annual Gondola Trips		Aquarium	CB Island	Clearwater Beach	Clearwater CBD	Diamond Isle	East Side CL	North Side CL	Sand Key Bridge	South Side CL	Total
	Zone #	2	5	3	1	4	12	11	15	13	
Aquarium	2	-	3	11,811	395	-	7,968	1,824	-	1,776	23,777
CB Island	5	3	-	-	6	-	753	223	-	166	1,150
Clearwater Beach	3	11,437	-	-	34,633	132	1,086,154	190,083	-	91,277	1,413,717
Clearwater CBD	1	456	6	39,187	-	8	-	-	-	-	39,657
Diamond Isle	4	-	0	128	8	-	412	73	-	108	728
East Side CL	12	8,943	667	1,023,237	-	412	-	-	-	-	1,033,260
North Side CL	11	1,969	203	194,767	-	75	-	-	-	-	197,013
Sand Key Bridge	15	-	-	-	-	-	-	-	-	-	-
South Side CL	13	1,831	141	85,794	-	102	-	-	-	-	87,868
Total		24,638	1,020	1,354,924	35,042	729	1,095,287	192,203	-	93,326	2,797,169

Growth Forecasts

Socioeconomic data from the Tampa Bay Regional Transportation Analysis (TBRTA) travel model, (TBRPM v9.2; Release on April 20, 2021; 2015 Base Year with 2045 Horizon Year) was utilized to estimate future year growth. Changes in population/households and employment from 2015 to 2045 was used to factor up trips on a zonal basis. Interim year forecasts of gondola trips were developed by interpolation. Table 32 shows the estimated gondola trips over time. (Note: trips are one-way and represent a single leg of a journey).

Table 32 - Future Year Gondola Ridership Estimates

Destination	2019	2025	2030	2035	2040	2045
Clearwater Beach	1,354,924	1,408,334	1,452,842	1,497,351	1,541,859	1,586,368
East Side CL	1,095,287	1,164,090	1,221,425	1,278,760	1,336,095	1,393,430
North Side CL	192,203	198,691	204,098	209,505	214,912	220,319
South Side CL	93,326	95,988	98,206	100,423	102,641	104,859
Clearwater CBD	35,042	36,294	37,338	38,382	39,425	40,469
Aquarium	24,638	25,458	26,142	26,825	27,509	28,193
CB Island	1,020	1,054	1,082	1,111	1,139	1,168
Diamond Isle	729	752	771	790	809	828
Sand Key Bridge	-	-	-	-	-	-
Total	2,797,169	2,930,661	3,041,904	3,153,147	3,264,390	3,375,634

These findings are subject to the following caveats:

1) Ridership represents forecasted diversion of trips from vehicle travel onto gondola usage.
2) Other segments of gondola usage are not included in the forecasts. These include:
   a. *Trips diverted onto the Gondola from walking/biking modes, Pinellas Suncoast Transit, or any other mode of travel beside automobile.*
   b. *Trips on the Gondola that would be performed for the purpose of riding the Gondola as an attraction in its own right.*
   c. *Trips that would occur on the Gondola if parking policies and/or locations are modified.* For instance, if parking pricing policies were to be modified to monetarily incentivize travelers to park in the CBD and take the Gondola to the Beach or Aquarium.
3) This analysis is based on the year-2019 level of visitation to the area and does not model the impacts of the covid-19 pandemic.

Summary

Based on the 1.4 million transit riders predicted by Transpo's analysis (Group 1-5 ridership, see above) and the up-to-0.5 million novelty/attraction riders predicted by SCJ (Group 6 ridership, see above), it is estimated that annual ticket sales would be on the order of 1.4-1.9 million.

5.2 FARE STRUCTURE

For a beach of the scale and magnitude of Clearwater Beach, there exists remarkably few additional paid attractions, activities and amenities in proximity to the beach. This is not typical and makes benchmarking an appropriate fare difficult. Beaches across the United States in Galveston, Santa Monica, Long Beach, Atlantic City, Honolulu and Miami all have a plethora of paid attractions and activities to complement the beach-going experience.

In Clearwater, the beach is effectively the only real attraction. The only additional attractions to be found included the Clearwater Marine Aquarium and a variety of boat tours — most of which are duplicative of each other. These attractions carry a not-insignificant price point. Attractions start at $24 and increase dramatically from there.

The following is a brief list of other similar attractions to the Clearwater Gondola:

Table 33 – Clearwater Attractions

Attraction	Parking	Adult Ticket
Calypso Queen Tropical Party Buffet Cruise	N/A	$41
Captain Memo's Pirate Cruise	N/A	$43
Clearwater Beach	$20-50/day*	N/A
Clearwater Marine Aquarium	$10	$35.95
Schooner Sailing Cruise	N/A	$80
Sea Screamer Dolphin Watching	N/A	$27
Segway Tour (2 hours)	N/A	$65
Spectrum Field/BayCare Ballpark	$12	$45
StarLite Majesty Dining Cruise	N/A	$24
Tiki Boat	N/A	$60

**Typically, without return privileges.*

This is a double-edged sword. It suggests there is opportunity to capitalize on the dearth of attractions and the high price point being paid to the few attractions that exists. Conversely, one would read the situation to suggest there is not demand for additional attractions. This last point must be countered, however, with the observation that Clearwater Beach is incredibly space-constrained. Any land-based attractions are unlikely to be able to find the space required to operate, and if they could find said space, the cost associated with the space is likely to be prohibitive.

Additionally, it is important to recognize that a gondola operates both in a novelty space but also a utility space. This utility space is expected to drive down the price people are willing to pay as other alternatives exist. This is unlike many gondola attractions where the destination is prohibitively difficult to get to by other means allowing the operator to increase prices almost at will.

A group of gondolas around the world have been selected to benchmark fares. The systems selected are from Western countries in generally higher priced destinations. The average round trip adult fare is $24.43. Of note, the Disney Skyliner in Orlando is free to ride and the average does not include this.

A goal was to make the system reasonably competitive with parking on the beach. Given that the delta between parking on the beach and parking in downtown is so wide, it is SCJ's opinion that much of that delta can be reallocated to the gondola fare.

Based upon the commentary above and the benchmarking data collected, SCJ believes that day-pass adult ticket price of $20.00 is reasonable and justified. Using this as a baseline, the Effective Average Ticket Price is therefore calculated to be $15.00. Effective Average Ticket Price is typically calculated to be roughly 75% of the full-price ticket and internalizes the various discounts, complementary tickets and specialty prices that any attraction typically experiences.

For the purposes of analysis, low, medium and high Effective Average Ticket Prices have been assumed to be $12.50, $15.00 and $17.50, respectively. This effective average ticket price accounts for locals and employees reduced ticket pricing (see below).

Table 34 – Comparable Cable Car Systems

System	Year Opened	Length (miles)	1-Way Trip Time (min)	Stations	Cabin Capacity	Adult Ticket
Emirates Air Line	2012	0.6	10	2	10	$6.17
Disney Skyliner	2019	~2.7	5 - 15	5	10	**Free**
Ngong Ping	2006	3.4	25	2	17	$ 20.00
Koblenz	2010	0.5	4	2	35	$ 10.50
Singapore, Mount Faber Line	1974	1.0	13	3	8	$ 23.70
Palm Springs Aerial Tramway	1963	2.4	10	2	80	$ 28.80
Gibraltar	1966	0.25	6	3	30	$ 22.50
Scenic Skyway	1958	0.25	5	2	85	$ 35.50
Sea to Sky	2014	0.5	10	2	8	$ 48.30
Average (excluding Disney Skyliner)		1.3	10.3	2.6	31.4	$24.43

Note: All ticket prices are in 2022 USD.

SCJ imagines a multiple-tier ticketing scenario whereby:

Clearwater Residents: Locals would likely be offered an annual pass option. This pass could cost around $250 per year and allow unlimited rides in off-premium times.

Beachside Employees: Employees would be offered a monthly pass option. It is anticipated that the cost of this pass must not exceed the current monthly parking rates for employees. It is understood that the current cost for parking Beachside is approximately $40 per month.

Others: Other users would be granted day passes for the system allowing patrons to use the gondola at will in order to reduce friction of usage. Tickets could be bundled into hotel room costs or attractions like the Clearwater Marine Aquarium. Specialty events and/or times of prime usage such as at sunset or on holidays are likely to be able to realize premium pricing.

5.3 REVENUE

Based on the Effective Average Day Ticket Prices considered ($12.50, $15.00 and $17.50 per Section 5.2) and the predicted annual ticket sales of 1.4-1.9 million (see Section 5.1), the following annual revenues are estimated:

Table 35 – Estimate of Annual Revenue ($ millions)			
	Annual Ticket Sales (millions)		
Effective Avg. Ticket Price	**1.40**	**1.65**	**1.90**
$12.50	**17.5 (low)**	20.6	23.8
$15.00	21.0	**24.8 (medium)**	28.5
$17.50	24.5	28.9	**33.3 (high)**

Note: Estimates are based on 2022 US Dollars

Based on the above calculations, it should be expected that a conservative estimate of annual revenue would be in the range of $17.5-33.3 million. It should be noted, that both ticket prices and costs are assumed to increase proportionally with inflation, therefore a 2022 basis is appropriate for a multi-year analysis. The above bolded low, medium and high estimates of revenue will be evaluated in Section 5.6 for a cash-flow analysis.

5.4 CAPITAL EXPENDITURE

To develop an opinion of probable cost for the Clearwater Gondola project, SCJ relied heavily upon costs from other similar projects. Costs of elements from these other projects were extracted and scaled to provide approximations of costs for the Clearwater project. These scaled costs were then accumulated as a "kit of parts" to develop capital cost expectations. All comparative data points were for projects located outside the Clearwater area. All costs are in 2022 US Dollars.

Because the station designs have not been developed to a customary "take-off" level (such as 30% Design), the costs were developed using a macro-level approach. A more detailed "take-off" approach requires a significantly larger effort for costing as well as a more detailed level of design than is available at this time.

The basis of the gondola, gondola station and support tower costing can be seen in the Appendices A & B.

SCJ has attempted to reasonably account for most typical project costs, but there are certain items for which we have no knowledge or where the variability can be large, so they are excluded. Sample exclusions are costs for property acquisition or easements, legal services for litigation, traffic control, station access equipment, the installation of services(utilities) to the site, and the cost of the internal staff of the responsible or permitting agency.

Iconic architecture or extraordinary design can dramatically impact costs, so no allowance for such has been made. The system costs assume that the procurement is made from the standard offerings of commercially prevalent manufacturers; costs from unusual customization, research and development of new offerings or choosing secondary suppliers have been excluded. SCJ has assumed that the procurement contemplates a simple purchase rather than a risk-share, equity offering or other creative financing that could impact pricing.

See Table 8 on the next page.

The following table summarizes the predicted opinion of probable capital cost for the gondola system and associated facilities:

Table 36 – Opinion of Probable Capital Cost

			Low			High		
Capital Cost Item	Unit	Qty	Per Unit	Extended	Subtotals	Per Unit	Extended	Subtotals
Gondola System Equipment	LS	1	$ 45,200,000	$ 45,200,000	$ 45,200,000	$ 58,800,000	$ 58,800,000	$ 58,800,000
Towers (all required):								
-Earthwork (land towers only)	LS	1	$ 500,000	$ 500,000		$ 800,000	$ 800,000	
-Shoring (land towers only)	LS	1	$ 1,300,000	$ 1,300,000		$ 1,900,000	$ 1,900,000	
-Pile Caps	LS	1	$ 700,000	$ 700,000		$ 1,500,000	$ 1,500,000	
-Piles (all 4.5 ft drilled shaft)	LS	1	$ 9,000,000	$ 9,000,000		$ 17,500,000	$ 17,500,000	
-Tower Structures (basic tubular)	LS	1	$ 9,700,000	$ 9,700,000	$ 21,200,000	$ 26,200,000	$ 26,200,000	$ 47,900,000
Stations:								
-CW Marina Terminal (elevated)	LS	1	$ 11,800,000	$ 11,800,000		$ 15,700,000	$ 15,700,000	
-CW Aquarium Station (elevated)	LS	1	$ 21,100,000	$ 21,100,000		$ 28,100,000	$ 28,100,000	
-Angle Station (optional/elevated)	LS	1	$ 9,700,000	$ 9,700,000		$ 12,900,000	$ 12,900,000	
-Downtown Terminal (at grade)	LS	1	$ 9,700,000	$ 9,700,000		$ 12,900,000	$ 12,900,000	
-Maintenace Facility	LS	1	$ 5,600,000	$ 5,600,000	$ 57,900,000	$ 7,400,000	$ 7,400,000	$ 77,000,000
Total				$ 124,300,000			$ 183,700,000	

Not Included
Contingency
Planning, Permitting, Engineering, Gondola Consulting
Payment and Performance Bonds
Permitting Costs
Identification, handling and removal of archaeological, paleontological, historical, hazardous materials.
Utilities to Site (including power)
Fireproofing
Specialty Doors
Interior Finishes
Painting
Access Control Equipment
Battery Backup (fuel generators assumed)

5.5 OPERATIONS & MAINTENANCE COSTS

SCJ has developed cost opinions for the ongoing gondola operations and maintenance. The opinion was prepared by developing a set of staffing assumptions based on an assumed operating schedule. Beyond the staffing assumptions, the operating schedule provides guidance on the overall system maintenance required. The staffing plan is based on a private owner/operator, not a transit agency-type operation. The labor costs for a transit agency-type arrangement can vary significantly due to labor rates, benefits and collective overhead costs.

Notably, the opinion includes a recommendation for a capital reserve fund. This fund is intended to fund a major maintenance and refurbishment exercise in approximately Year-15 costing approximately 50% of the replaceable equipment cost (or ~42% of the initial electro-mechanical costs).

See Table 9 on the next page.

Table 37 – Opinion of Probable O&M Cost

FIXED LABOR COSTS	STAFF		SALARY	BENEFITS	TOTAL	JOBS
System General Manager	1		$150,000	25%	$187,500	1
Assistant General Manager	2		$125,000	25%	$312,500	2
Technical Director	1		$125,000	25%	$156,250	1
Office Manager	1		$75,000	25%	$93,750	1
Administrator	1		$60,000	25%	$75,000	1
Director of Sales & Marketing	1		$120,000	25%	$150,000	1
Assistant Sales & Marketing	2		$90,000	25%	$225,000	2
IT, Social Media & Web	2		$90,000	25%	$225,000	2
HR Manager	1		$120,000	25%	$150,000	1
	12				$1,575,000	12

VARIABLE LABOR COSTS	In-Op	Out-Op	HOURS	RATE	BENEFITS	TOTAL	JOBS
Operations Supervisor & Chief Mechanic	1		5,760	$45	25%	$324,000	3.4
Mechanics (1 per station)	3		17,280	$35	25%	$756,000	10.1
System Operator (1 per station)	3		17,280	$25	25%	$540,000	10.1
Attendant (2 per station)	6		34,560	$15	25%	$648,000	20.2
Floating Attendant	0		0	$15	25%	$0	0.0
Cashier	5		28,800	$15	25%	$540,000	16.8
Floating Cashiers	0		0	$15	25%	$0	0.0
Janitor (1 per station)	3		17,280	$15	25%	$324,000	10.1
Overnight Mechanic		4	11,520	$35	25%	$504,000	6.7
	21	4	132,480			$3,636,000	77.4
							(FTE equiv)

OTHER ITEMS	UNIT	UNITS	RATE	TOTAL
Spare Parts, Testing & Occasional Maintenance	LS	2	$400,000	$800,000
Electricity	KW-HR	12,800,000	$0.150	$1,900,000
Leased Van	EACH	2	$25,000	$50,000
Insurance	LS	1	$300,000	$300,000
Legals & Accounting	LS	1	$300,000	$300,000
Office Supplies, Computers & Consumables	LS	1	$300,000	$300,000
Total				$3,650,000

CAPITAL RESERVE	UNIT	UNITS	RATE	TOTAL
Capital Reserve Fund (42% E-M by 15yr @ 3%)	LS	1	$1,300,000	$1,300,000

	Per Annum	
	USD	JOBS
TOTAL OPEX	TOTAL	TOTAL
Total	$10,161,000	89
		(FTE equiv)

5.6 FINANCIAL MODEL & CASHFLOW

This section compares the revenue and cost predictions discussed in Sections 5.3, 5.4 and 5.5 above within SCJ's proprietary financial model framework and cash-flow analysis. The following scenarios were considered:

Scenario 1 – Best Case:	Highest Revenue vs. Lowest Cost
Scenario 2 – Medium Case:	Medium Revenue vs. Medium Cost
Scenario 3 – Worst Case:	Lowest Revenue vs. Highest Cost

The following parameters were used in the model:

Base Trip Growth Rate:	2%
Ticket Inflation Rate:	2%
Advertising Revenue:	5% of ticket revenue
Concessions Revenue:	5% of ticket revenue
Municipal Royalty:	5% of revenue
Cost Inflation Rate:	2%
Profit Margin on Concessions:	40%
Capital Raising Fees:	6.5% equity, 2.5% of debt
Debt Ratio:	80%
Interest Rate:	3-5% (best – worst)
Amortization:	30 years
Working Capital:	2% of revenue
Tax Rate:	25.5%
Discount Rate:	10%
Annual Depreciation Rate:	30% (electromechanical) 4% (stations + towers)

The results of this analysis are shown in Table 38 on the next page.

Table 38 – Financial Model Scenarios

	CAPEX	Annual OPEX	Ticket Qty. x Cost = Revenue 1.40M x $12.50 $17.5M	1.65M x $15.00 $24.8M	1.90M x $17.50 $33.3
Best Case	124.3M	8.1M (-20%)			73% Equity IRR $164.3M Equity NPV First 5 years: 28.9% EBITDA 4.8x Debt Service Ratio 3.3x Debt to EBITDA Ratio
Med. Case	154.0M	10.1M		28% Equity IRR $64.9M Equity NPV First 5 years: 17.9% EBITDA 2.2x Debt Service Ratio 6.8x Debt to EBITDA Ratio	
Worst Case	183.7M	12.1M (+20%)	2% Equity IRR $38.1M Equity NPV First 5 years: 8.1% EBITDA 0.6x Debt Service Ratio 18.0x Debt to EBITDA Ratio		

M=millions

See definitions on the next page.

Definitions:

CAPEX:	Capital cost of gondola equipment, station and towers.
OPEX:	Annual operations and maintenance costs.
IRR:	Internal Rate of Return - Financial metric used to assess the desirability of an investment.
Equity NPV:	Equity Net Present Value – the current value of a project if it were funded by 100% equity.
EBITDA:	Earnings Before Interest, Taxes, Depreciation and Amortization – A measure of profitability.
Debt to Service Ratio:	A measure of available cash-flow to debt responsibilities.
Debt to EBITA Ratio:	A measure of the amount of income vs. debt payment.

Commentary on Models

Based on the above calculated metrics, the investment value of the gondola project varies significantly from the Best-Case Scenario to the Worst-Case Scenario:

Best-Case Scenario:	Represents a very good investment that would be easy to finance.
Worst-Case Scenario:	Represents a poor investment that would not receive financing.
Medium-Case Scenario:	A reasonable investment that would likely get financing.

What this means for project planning, is the costs need to be controlled as to not exceed the Medium-Case Capital and O&M cost level. As there is no way to guarantee ridership or revenue, conservative estimates of both should be maintained. Keeping costs to the Medium-Case level, or lower, would likely yield a financially viable project capable of attracting investors.

Note, the above financial models assume private investment and financing, and does not include the items listed in Table 36 (including land acquisition). Should the City of Clearwater or another agency participate financially in the project, provide a revenue back-stop or providing municipal bonding, the financial model will be different.

5.7 DELIVERY & FINANCING

Meetings with the Mayor's office of Clearwater and several senior management staff suggested an aversion to the City of Clearwater owning the gondola or providing any kind of ridership guarantee or revenue. The idea of providing some initial early-stage capital in the range of $10-15 million was raised as a reasonable possibility as was the idea of the City acting as a conduit for the private sector to access low-interest, long-term government bonds.

It has generally been the opinion of City Staff consulted with thus far that for the Clearwater Gondola to be realized, it would be in some form of Public-Private Partnership (PPP). The financial model presented above assumes relatively low interest and a long amortization period of 30 years — assuming the City acts as a conduit for government bonding. No early-stage capital investment by the City and no ridership or revenue guarantee were assumed. Were those included, already strong financial metrics would improve.

Due to the vagaries of politics, staff turnover, the "Weak Mayor" nature of the Clearwater City Council make-up and the long timelines involved in a project of this nature, SCJ believes it is best to provide a variety of PPP structures that have been used to date to bring such a project to fruition.

The section below outlines the main Public-Private Partnership (PPP) arrangements that could be used for financing, building, operating, and/or maintaining an urban gondola in Clearwater. PPPs are becoming a preferred method of infrastructure delivery in many jurisdictions. PPPs allow the public authority to create a secure environment for the private sector to carry out a project, while the private partner contributes its industry know-how, provides funding, and shares in the project risk.

Design-Build (DB)

A DB is when the private partner undertakes both the design and construction of a project for a public agency. This type of partnership can reduce time, save money, provide stronger guarantees and allocate additional project risk to the private sector. It also reduces conflict by having a single entity responsible to the public owner for the design and construction. Meanwhile, the public sector partner owns the assets and retains responsibility for the operation and maintenance.

Operations and Management (OM)

A public partner contracts with a private partner to provide and/or maintain a specific service. Under the private operation and maintenance option, the public partner retains ownership and overall management of the infrastructure. OM providers typically operate under an availability contract that requires a specific level of service.

Operations, Maintenance and Management (OMM)
A public partner contracts with a private partner to operate, maintain and manage a system. The public partner retains ownership, but the private party may invest its own capital in the system. Any private investment is carefully calculated in relation to its contributions to operational efficiencies and savings over the term of the contract. Generally, the longer the contract term, the greater the opportunity for increased private investment because there is more time to recoup any investment and earn a reasonable return.

Design-Build-Operate (DBO)
A single contract is awarded for the design, construction and operation of a capital improvement. Land ownership of the facility remains with the public sector unless the project is a Design-Build-Operate-Transfer or Design-Build-Own-Operate. This method involves one contract with an architect or engineer for design, followed by a different contract with a builder for project construction, followed by the owner taking over the project and operating it upon completion. A simple DB approach creates a single point of responsibility for design and construction and can speed project completion by facilitating the overlap of the design and construction phases. On a public project, the operations phase is normally handled by the public sector under a separate OM agreement. Combining all three phases into a DBO approach maintains the continuity of private sector involvement and can facilitate private sector financing of public projects supported by user fees generated during the operations phase.

Design-Build-Maintain (DBM)
A DBM is similar to a DB except the maintenance of infrastructure over some period of time becomes the responsibility of the private sector partner. The benefits are similar to a DB, with maintenance risk being allocated to the private sector partner, while the guarantee is expanded to include maintenance. The public sector partner owns and operates the assets.

Design-Build-Operate-Maintain (DBOM)
The DBOM model is an integrated partnership that combines the design and construction responsibilities of DB procurements with OM. These project components are obtained from the private sector in a single contract with financing secured by the public sector. The public agency maintains ownership and retains a significant level of oversight of the operations through terms defined in the contract.

Finance-Design-Build-Operate-Maintain (FDBOM)
With the FDBOM approach, the responsibilities for financing, designing, building, operating and maintaining are bundled together and transferred to private sector partners. There is a great deal of variety in FDBOM arrangements, especially in the degree to which financial responsibilities are actually transferred to the private sector. One commonality among all FDBOM projects is that they are either partly or wholly financed by debt leveraging revenue streams dedicated to the project. Direct user fees (tolls) are the most common revenue source. Future revenues are leveraged to issue bonds or other debt that provides funds for capital and project development costs. They are also often supplemented by public sector grants in the form of money or in-kind contributions, such as right-of-way. In certain cases, private partners may be required to make equity investments as well. Value for money can be attained through life-cycle costing.

Finance-Design-Build-Operate-Maintain-Transfer (FDBOMT)
The FDBOMT partnership model is the same as a FDBOM except that the private sector owns the asset until the end of the contract, at which time ownership is transferred to the public sector.

Build-Operate-Transfer (BOT)
In a BOT, the private partner builds infrastructure to the specifications agreed to by the public agency, operates the infrastructure for a specified time period under a contract or franchise agreement with the agency, and then transfers the facility to the agency at the end of the specified period. In most cases, the private partner will also provide some, or all, of the financing for the infrastructure, so the length of the contract or franchise must be sufficient to enable the private partner to realize a reasonable return on its investment through user charges such as fares. at the end of the franchise period, the public partner can assume operating responsibility of the infrastructure, contract the operations to the original franchise holder, or award a new contract or franchise to a different private partner. The BOT model is similar to a Build-Transfer-Operate (BTO) model except that the transfer to the public owner takes place at the time that construction is completed, rather than at the end of the franchise period.

Build-Own-Operate (BOO)
In a BOO, the contractor constructs and operates a facility without transferring ownership to the public sector. Legal title to the facility remains in the private sector, and there is no obligation for the public sector to purchase the facility or take title.

Build-Operate-Transfer & Renewable Operation and Maintenance (BOT+ROM)
BOT+ROM is a combination of BOT and OM or OMM. It allows the private entity to extend the contract, in agreement with the public sector, with scope determined by the original contractual arrangements. This PPP arrangement is often written into BOT arrangements.

Summary
No matter what financing option the ultimate Owner-Entity selects, it is essential that the financing structure be accommodated by companies within the ropeway industry. Given the highly specialized nature of the industry, it is important for the owner and its subcontractors to design a financing structure that can be realized.

Historically, tenders and financing structures created by staff and consultants without experience in the ropeway industry can sometimes be structured in a way that precludes anyone from bidding on the project. Careful attention to the peculiarities and uniqueness of the ropeway industry will be necessary when crafting financing structures and tenders. The services of a qualified Consultant with comprehensive experience in the ropeway industry is necessary.

Tax Increment Financing Opportunities

Clearwater has a Community Redevelopment Agency (CRA), as authorized under Florida Community Redevelopment Act of 1969 codified as Chapter 163, Part III, Florida Statutes. Per the City of Clearwater, the CRA is a "dependent taxing district established by City government for the purpose of carrying out redevelopment activities that include reducing or eliminating blight, improving the tax base, creating and retaining employment opportunities, and encouraging public and private investments in the CRA." The boundaries of Clearwater's CRA include much of Downtown Clearwater and all potential Downtown Clearwater gondola station sites.

The CRA receives 95% of tax increment from within the specified, which currently total just over $5 million annually. This reflects the difference between the total property value and associated property taxes when the CRA was formed and the present day due to general appreciation and value uplift associated with CRA investments.

Currently, the CRA' s tax increment revenues are not pledged externally to any lender for any indebtedness related to the CRA (Tax Increment Financing, or "TIF"). $40M was originally allocated in the Redevelopment Plan developed by the CRA for a "Beach to Bluff Guideway" leveraging federal grants, private funding sources, FDOT, and FTA revenues, but not TIF.

The CRA funds both capital and operational/program activities, including retail/small business subsidies, art grants, public safety, economic development, housing and events. CRA's adopted budget includes roughly $830,000 in annual funding (roughly 17% of all expenditures/transfers) for infrastructure and transportation. This includes ongoing subsidies to the Jolly Trolley and water taxi/ferry services.

Although TIF revenues are not allocated for bond repayment, they are already allocated to a range of services and projects. As such, the CRA could play an important role in subsidizing the operations of the Clearwater Gondola, including potentially supporting debt service or lowering ticket costs. However, it is unlikely that TIF would play a major role in directly funding construction of the gondola, which would require redirection of existing funding streams away from their current uses.

5.8 ECONOMIC BENEFIT

The following section summarizes the possible economic impact of the Clearwater Gondola project with regards to construction jobs, operations & maintenance employment and increased commercial activity. These are the highlights:

Summary

- The construction of the Clearwater Gondola system could generate between **$134 and $197 million in one-time economic impacts** and between **830 and 1,215 jobs.**
- The ongoing operations of the Gondola could also generate as much as **$24 million annually** for the local economy, and as many as **175 ongoing, full-time equivalent jobs.**
- Tourist ridership on the Gondola could attract retail and dining uses to Downtown Clearwater (to/from Clearwater Beach) that could capture as much as **$10.5 million in annual retail spending** that might otherwise be spent elsewhere in Pinellas County, supporting approximately **20,000 square feet of new retail**.
- Given Clearwater Beach's constrained hotel supply, the Gondola could also boost demand for Downtown Clearwater to support as many as **60 new hotel rooms**, a substantial portion of a new hotel.

One-Time Economic Impacts[3]

To estimate the economic benefits of the Clearwater Gondola's construction and operations and maintenance, and visitor spending, this analysis utilized an IMPLAN model specific to Pinellas County. IMPLAN is a widely accepted econometric model that many public agencies use to estimate the economic effects of new investment in, or other changes to, a local or regional economy.

Construction of the Clearwater Gondola could generate between $134 and $197 million in one-time economic benefits within the City of Clearwater and Pinellas County. Construction spending on the project is expected to range from $80-118 million[4]. The impacts of the Clearwater Gondola extend beyond "direct" impacts associated with construction spending; "multiplier" impacts on the regional economy include "indirect" impacts associated with the supply chain impacts generated by project construction and "induced" impacts associated with increased household spending by project-associated workers.

In total, HR&A estimates that the project could create between 830 and 1,215 one-time jobs in Pinellas County, ranging from engineers to steelworkers constructing stations and towers on site, to laborers at off-site concrete plants, to service workers supplying construction workers lunchtime or other spending. Jobs represent individuals may be employed for only a portion of the project, but in total **workers could expect to receive between $44 and $64 million in total wages**.

[3] IMPLAN® model, using inputs provided by the SCJ Alliance and IMPLAN Group LLC, IMPLAN System (data and software), www.IMPLAN.com

[4] SCJ Alliance. Cost of gondola equipment removed, which will be imported and installed by supplier.

A breakdown of one-time economic impacts is shown in Figure 41 and Figure 42 below:

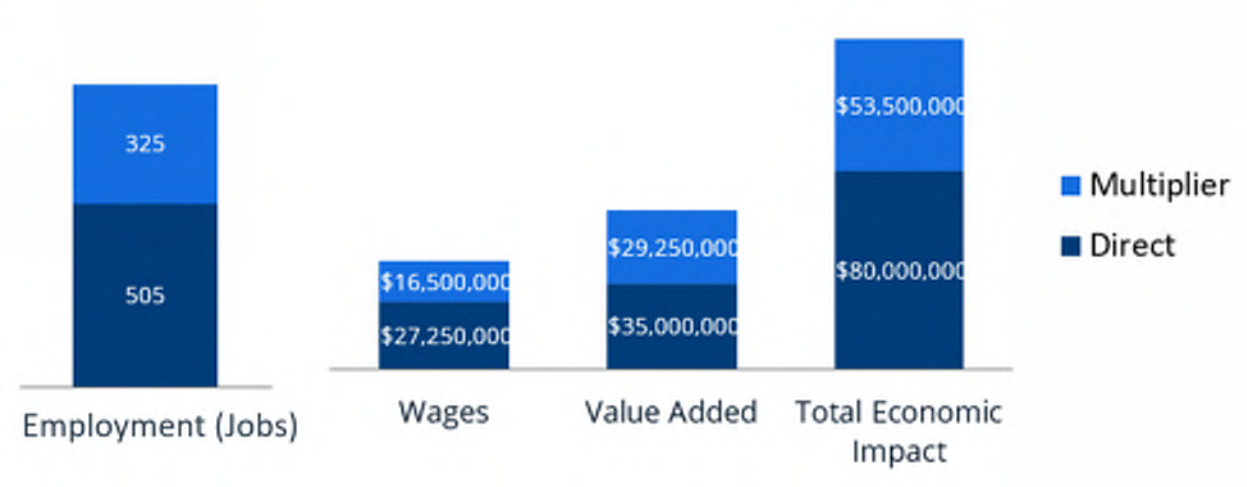


Figure 41 – Economic Impacts (Construction – Low)

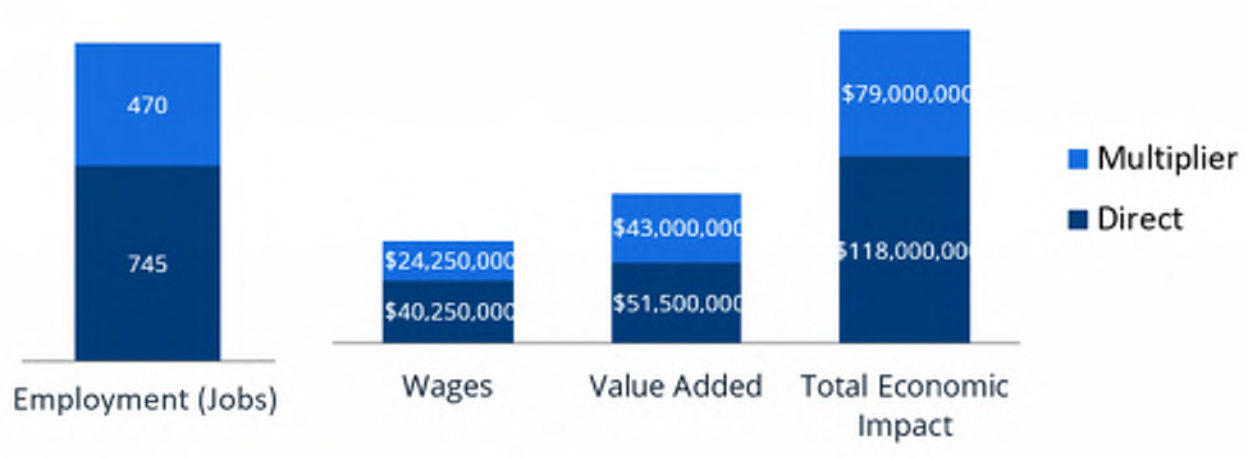


Figure 42 - Economic Impacts (Construction – High)

Ongoing Economic Impacts[5]

The Gondola's ongoing operations could directly support as many as **90 Full-Time Equivalent (FTE) employees in any given year, with roughly 12 full-time positions earning an average of $126,000 annually before benefits, and hourly workers earning at least $15/hour.**[6]

The operations will also support broader multiplier activity in the region. **In total, HR&A estimates that the project could support between as many as 175 jobs in Pinellas County annually, and $9.4 million in annual wages.** Wages and spending by the Clearwater Gondola could generate between as much as **$24 million in economic impact within the City of Clearwater and Pinellas County on an ongoing basis.**

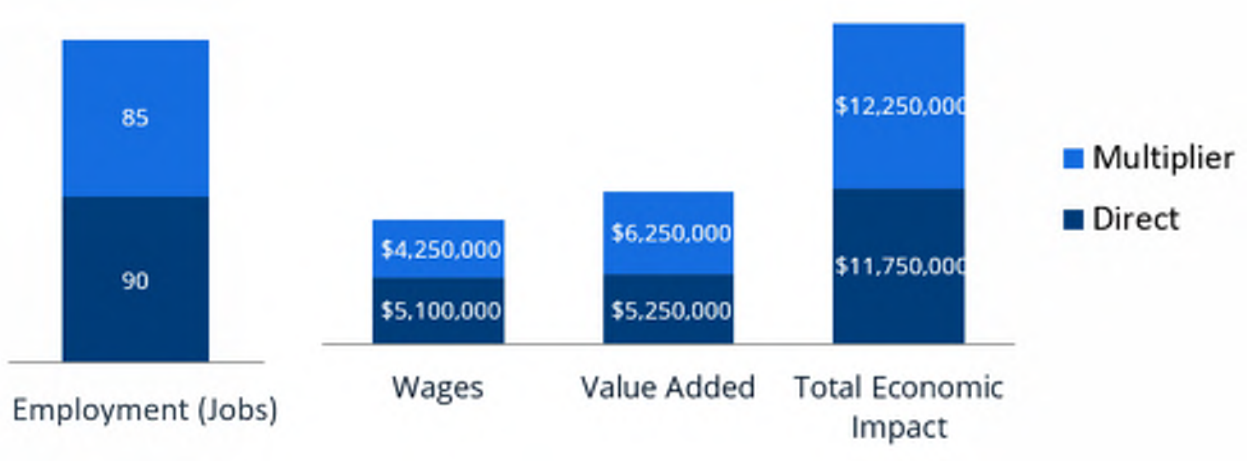


Figure 43 - Economic Impacts (Operations)

[5] IMPLAN® model, using inputs provided by the SCJ Alliance and IMPLAN Group LLC, IMPLAN System (data and software), www.IMPLAN.com

[6] SCJ Alliance

Tourist Spending[7]

Roughly **15.3 million tourists visited Pinellas County in 2019** and Pinellas County appears to be on track to exceed those figures for 2022. The average income of visitors to St. Pete/Clearwater was $112,000 in 2021, with an average length of visit of roughly 3.3 days, representing a substantial boon to the County and local cities economies. ***Of beach-going visitors to Pinellas County, 52 percent visited Clearwater Beach***, tied with Madeira Beach.

Increased tourist capacity associated *with* ***the Clearwater Gondola provides a strong potential to leverage spending from Clearwater Beach visitors****, directing money* that might otherwise be spent elsewhere in Pinellas County to Downtown Clearwater. The average length of stay for beach-goers in particular was just under 5 days (longer than overall visitors to the area), with average tourist spending for beach-goers totaling roughly $130/per person in 2021. Travel parties for beach-goers averaged 2.8 persons. 96 percent of beach-goers dined in restaurants, while 67 percent shopped at local stores.

Assuming that of the 1.4-1.9 million riders of the Clearwater Gondola, of which roughly 500,000 are tourist riders[8], ***tourist spending could support approximately 20,000 SF of retail space in Downtown Clearwater.***[9] Of this newly supportable retail space, about 14,000 SF could be restaurants and bars and 6,000 SF conventional retailers, including souvenirs, clothing, or gifts. Additional spending on entertainment (roughly $8 per day per tourist) could potentially be captured in Downtown Clearwater and Coachman Park.

500,000 tourist riders represent roughly 3% of total visitors to St. Pete/Clearwater (based on 2019 full-year statistics, the latest available). Data shows that tourists spend roughly $33 on restaurants per day, and $9 per day on retail. HR&A's analysis assumes that tourist riders spend roughly one-half of a day's average restaurant and retail spending in Downtown Clearwater before or after their trip to Clearwater Beach. This estimate excludes tourist spending on entertainment and transportation. ***In total, HR&A's analysis estimates roughly $10.5 million annually in new tourist retail spending in Downtown Clearwater.***

[7] Destination Analysts. "St. Pete/Clearwater Visitor Profile Study." Quarter 1, 2021 Visitor Profile Study, St. Petersburg/Clearwater Area Convention and Visitors Bureau, https://partners.visitstpeteclearwater.com/sites/default/files/quarter_1_2021_visitor_profile.pdf

[8] SCJ Alliance

[9] HR&A analysis, utilizing Destination Analysts, International Council of Shopping Centers and Retail MAXIM data.

Hotel Impacts [10] [11]

Pinellas County tourists accounted for roughly 6.8 million room nights in calendar year 2019, of which roughly 650,000 (or 10%) were in Clearwater Beach. Available supply of beach-accessible room nights is a major driver of both local economic activity ($9 billion in overall activity) and Pinellas County tax revenues ($331 million). ***23% of hotel visitors indicated that ease of getting to their destination was an important factor in their decision to visit St. Pete/Clearwater, which could be enhanced by the Clearwater Gondola***.

As shown in Figure 44 below, Clearwater Beach hotel visitation is somewhat seasonal in nature, with visitation peaking in late winter and spring. Hotels are rarely 100% occupied, due to the differing lengths of stays of customers, and the need to turn over rooms between guests' stays. Generally, when evaluating hotel markets, HR&A uses a benchmark of 75 to 80 percent annual occupancy to determine the point at which a hotel market could support additional supply (new hotel rooms). When annual occupancy exceeds 75 percent, a market can be deemed "undersupplied" and new hotel rooms could support capture of increased visitation.

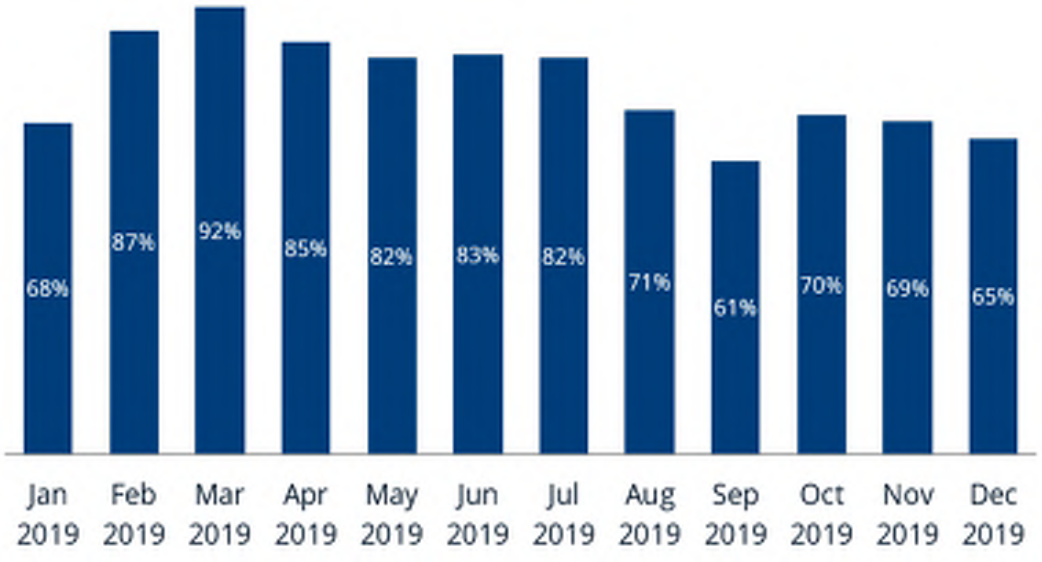


Figure 44 – Clearwater Beach Hotel Occupancy (2019)

[10] Destination Analysts.

[11] Clearwater Beach Hotel Performance" CoStar, CoStar (Including Former Smith Travel Research Data), https://www.costar.com/.

Clearwater Beach's 12-month rolling occupancy peaked in February 2020 at 76.9 percent, and has shown increased strength since 2021, with May 2022 12-month rolling occupancy at 75 percent, even after accounting for the delivery of a new 139-room hotel. At the same time, Average Daily Rates (ADRs) have increased over 33 percent from $191 to $266.

This is reflective of increased demand in the overall Florida and domestic market, particularly from wealthy visitors who have broad economic impact on local hotels and businesses. ***Based on 2019 Clearwater Beach hotel occupancy, which it appears will be surpassed in 2022, there is demand for at least 60 new hotel rooms that could be captured by Downtown Clearwater.*** [12] ***The presence of a Gondola will both support the delivery of those new hotel units and make future hotel development downtown more viable.*** This is because there is limited land available for new hotel development in Clearwater Beach; the Clearwater Gondola could unlock beach-accessible hotel demand in Downtown Clearwater by providing for direct access to beach amenities.

Increased hotel room rates (ADRs) may also be a constraint to demand, and the provision of lower-cost lodging in Downtown Clearwater, unlocked by the Clearwater Gondola, could support lower ADRs and a substantially increased visitor base. In particular, because of lower land costs, Downtown Hotels could potentially support lower-cost lodging. A 150-room hotel proposed by the Gotham Organization and The DeNunzio Group suggests developers may be aware of these trends, which could be accelerated by the Gondola.

[12] HR&A analysis of Costar data using proprietary methodologies. 60 additional rooms, assuming consistent room-night demand, would stabilize vacancy rates at 75%.

5.9 PROJECT TIMELINE & BUDGETING

The project timeline is based on a design, build, operate and maintain procurement process utilizing a Construction Manager. Design-Build (DB) projects engage a single entity to complete the design and then build the project starting from a level of design and specification, which convey the project requirements. Because the final design is completed by the builder, the majority of the design risk is shifted to the builder.

The major components of the proposed gondola can be roughly separated into three large functional groups:

1) System equipment – This is the mechanical and electrical equipment which carries the passengers. Included are the cabins, cables, electromechanical equipment, tower heads and other related equipment;
2) Towers and their foundations – These are the structures (and foundations for them) which support the cables and cabins along the alignment; and
3) Stations and their foundations – These are the buildings (and foundations for them) that house equipment and receive passengers and potentially serve functions beyond the transit service.

System Equipment

It is anticipated that the gondola equipment would be purchased from one of two manufacturers: Leitner-Poma or Doppelmayr. Traditionally, Leitner-Poma and Doppelmayr provide and install equipment on a design-build basis based on 30% project specifications and engineering. They receive project needs and constraints in the form of a Preliminary Design reflected by drawings and specifications, then select or design their proprietary equipment to meet those needs and generally install and commission such. It is further anticipated that the selected system equipment supplier would provide the initial Operations and Maintenance (O&M) of the system equipment for the first few years of operation.

It is recommended that the system equipment supplier be selected prior to commencement of the final design of the towers, foundations and stations so that the selected supplier can provide interface geometry and loads and design details to the design-build team. Further the system supplier would become a specified sub to the design-build team.

Towers, Stations and Foundations

In coordination with the system equipment supplier, the towers and stations, along with their foundations would be procured through the design-build contractor.

Modifications to this process might include the Owner engaging a Construction Manager at Risk or a Construction Manager to oversee the design-build contractor. Architecture would be handled through the design-build contractor with preliminary design concepts being approved by the Owner.

As SCJ looks to the future of the Clearwater Gondola project, SCJ offers the following outline of potential project phases. Depending on the nature of the financing and ownership, some of these tasks may need to be advanced sooner or to a higher level.

Table 39 - Timeline & Budgeting

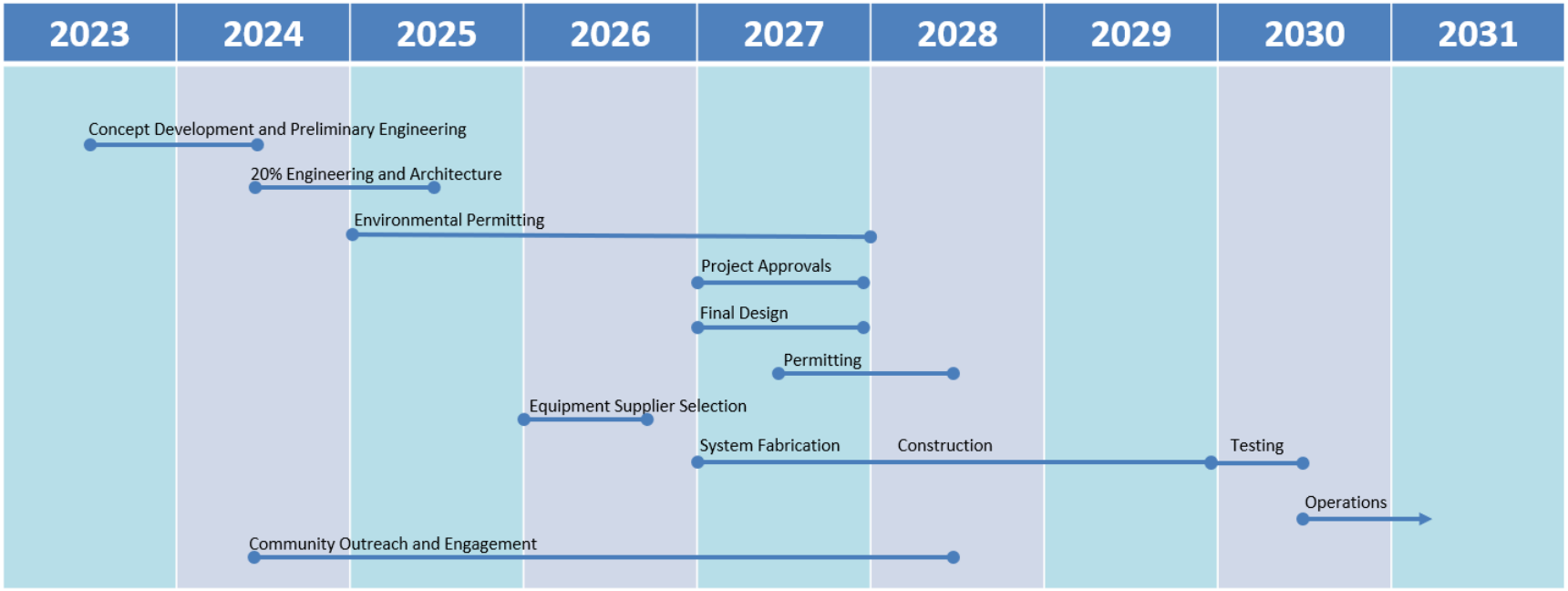
Phase	Duration	Estimated Cost
Conceptual Project Development & Prelim. Engineering	1 year	$1.5M
20% Engineering & Architecture	1 year	$1.5M
Environmental Permitting	3 years[13]	$2.5M
Selection of Gondola Supplier	9 months[14]	$0.3M
Project Approvals	1 year	$0.2M
Final Design		$2.0M
Permitting	1 year[1]	$0.5M
System Fabrication & Construction	3 years[1]	
Commissioning and Acceptance Testing	0.5 year	$0.5M
Community Outreach & Engagement	2024-2028	$0.5M
Start Operation	Q3 2030	-
Total Professional Services Fees:		$9.5M

See Figure 7 for the above phases in graphic form.

[13] Overlaps previous phase 6 months.

[14] Overlaps tail end of environmental permitting.

Figure 45 – Conceptual Project Timeline



**This schedule is aggressive and does not include litigation.*

6. PUBLIC ENGAGEMENT

For the Clearwater Gondola project to advance, the project must be generally supported by the community. Even if the project does not receive public funds, the project must be permitted by the City of Clearwater and other entities, and general public acceptance is critical for this political process. It is, therefore, critical to ask: "Does the public view a potential gondola project favorably"?

6.1 USER EXPERIENCE

In order to support the public and stakeholders in understanding the nature of the Clearwater Gondola project and what a typical user experience would be like, the following narratives were prepared for the key user groups:

1. Employees using transit to get to their place of work (2 trips per shift)
2. Visitors staying on the Beach and using transit to go Downtown
3. Visitors parking Downtown and using transit to go to the Beach

See Appendix E for the narratives of these three journeys.

6.2 PUBLIC QUESTIONNAIRE

TBARTA was supported by DigiSphere on a public social media questionnaire. The full results of this questionnaire can be seen in Appendix F. Overall, the results were very favorable for a gondola project between Downtown Clearwater and Clearwater Beach. The results were even favorable for public spending on such a project. The following summarizes the results:

- 8,306 Responses:
  - 17% Clearwater Residents
  - 9% Clearwater Beach Employees
  - 33% Pinellas County Residents (non-CW)
  - 48% Florida Residents (outside Pinellas)
  - 2% From Outside of Florida
- 76% Familiar/Very Familiar with aerial gondolas
- 73% Likely/Very Likely to use a gondola to:
  - 31% to travel to the Beach
  - 38% to travel back-and-forth
- 78% said Causeway traffic prevented trips
- 69% of CW residents possibly/definitely open to City tax dollars being used for the project
- 69% of Pinellas County residents possibly/definitely open to County tax dollars being used for the project

7. CONCLUSION

This study concludes with the following findings:

1. Aerial gondolas are well-suited to the Tampa Bay Area
2. Suitable gondola alignments exist between Downtown Clearwater and Clearwater Beach
3. The routes are technically feasible
4. The project is financially viable (if costs are controlled)
5. The public is very supportive of the project

The optionality-based alignment described in this report achieves the primary project objectives that were identified in the referenced SWOT analysis:

- Create a singular unified economic and entertainment district between Downtown Clearwater and Clearwater Beach
- Alleviate congestion or perception of congestion on the Memorial Causeway
- Improve employee access to Beachside employment centers
- Disaggregate activity at the Beach and minimize travel friction
- Provide convenient access to the Aquarium; Downtown Clearwater and Coachman Park; and Clearwater Beach

It was determined in this study that two of the purpose and needs of the project should be deemphasized:

- The statement “to relieve hotel, restaurant and beach capacity constraints” was found to be partially appropriate. While Beachside restaurants do experience capacity constraints, the quantity of hotels in Clearwater are approximately suitable for the current demand.
- The desire to connect the gondola to the PSTA transit hub was not met by the gondola alignment documented in this study. The complexity of a gondola connection to this facility at Court Street and S. Myrtle Avenue would be beyond the reasonable scope of this project.

7.1 RECOMMENDATIONS & NEXT STEPS

Two possible paths

SCJ believes that there are two possible paths for the realization of a gondola project between Downtown Clearwater and Clearwater Beach:

Path #1 – Public Project: In this scenario, TBARTA, the City of Clearwater, Florida Department of Transportation (FDOT) or another entity take on the project as a public-private-partnership (PPP). In this case, the City would designate station locations Downtown and at Clearwater Beach Marina for project advancement. One or more of these entities would fund the project development, put out a tender for the PPP and likely contribute to the capital cost of the project. This scenario represents a significant cost to the public sector and it has extended timelines.

Path #2 – Private Project: In this scenario, the City of Clearwater would signal interest in a gondola project and possibly advance the design to a preliminary-level. A private investor would then propose to the City, TBARTA, FDOT or another entity through an Unsolicited Proposal Process (UP) to implement a gondola project. This type of project could be combined with a development in Downtown Clearwater. In this case, TBARTA, Clearwater, FDOT or another entity would act as lead-agency for environmental permitting process. The City and FDOT would facilitate permitting on their lands. This arrangement represents a significant cost savings for the public sector and decreased timelines.

Recommendations

SCJ offer the following recommendations for the advancement of this project:

- City needs to:
  - Select a Marina station location
  - Select a Downtown station location (engage with developer?)
- The project needs to engage with the Aquarium (integration)
- Preliminary station designs should be prepared (size, massing and circulation)
- The Unsolicited Proposal (UP) mechanisms should be reviewed by the project team
- The project team needs evaluate the necessity for a referendum and the requirements
- The project team needs to determine the available financial tools to advance the project
- The project team needs to determine project path:
  - Public-led tendering process or
  - Private-sector led unsolicited bid process

APPENDIX A

CONCEPTUAL PLAN & PROFILE DRAWINGS

ALIGNMENT LEGEND:

- WEST 1 AND EAST 7A
- WEST 2 AND EAST 7B
- WEST 3
- WEST 4

PRELIMINARY

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8730 TALLON LANE NE, SUITE 200, LACEY, WA 98516
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SCJALLIANCE.COM

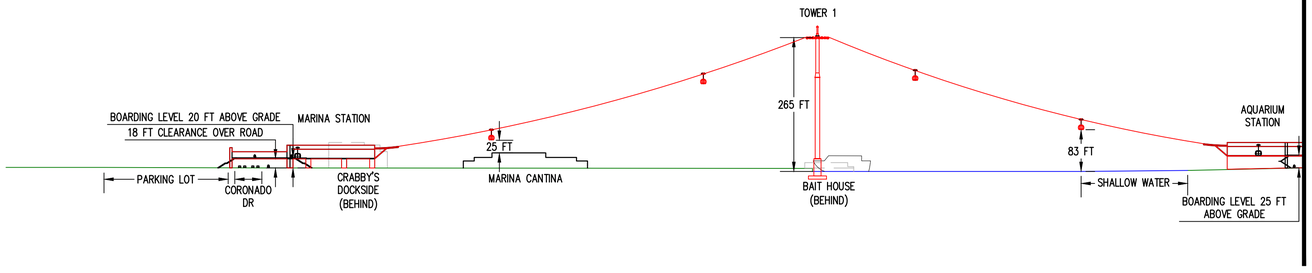
HORIZONTAL SCALE:	NTS
DATE:	AUGUST 2022
JOB No.:	00-502901
DRAWING FILE No.:	00-502901_CLEARWATER P&P_A7.DWG

CLEARWATER ALIGNMENT 7 PLAN & PROFILE

PINELLAS AERIAL GONDOLA

EXHIBIT No: **EX-02**

SHEET No: **1**



0 150 300

SCALE IN FEET

LEGEND

- GONDOLA SUPPORT TOWER
- GONDOLA ROW LINE
- STRUCTURE WITHIN ROW
- STRUCTURE OUT OF ROW
- ROADWAY CROSSING
- ROADWAY OUT OF ROW

PRELIMINARY

NOTE:

THIS STATION LOCATION DEMONSTRATES ONE POSSIBILITY FOR A GONDOLA IN THE CLEARWATER MARINA. OTHER OPTIONS EXIST. SHOULD A FUTURE PARKING GARAGE BE CONSTRUCTED IN THE MARINA, CONSIDERATION FOR GONDOLA CLEARANCE IS REQUIRED.

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HORIZONTAL SCALE: SEE SCALE BAR
DATE: AUGUST 2022
JOB No.: 00-502901
DRAWING FILE No.: 00-502901_CLEARWATER P&P_A7.DWG

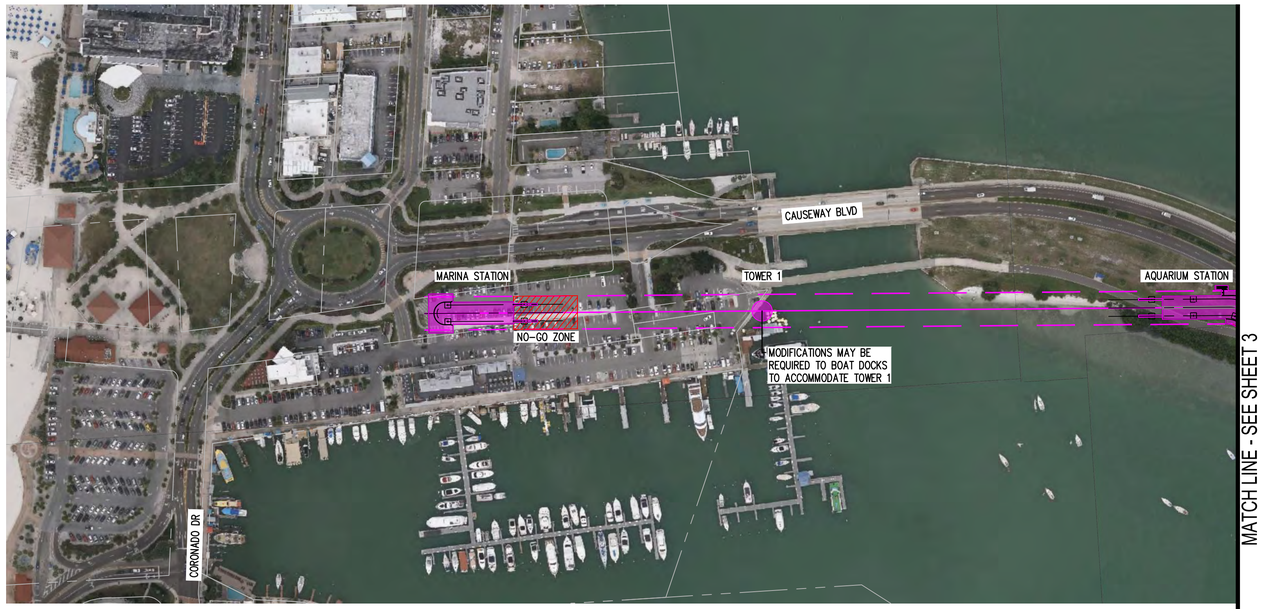
CLEARWATER ALIGNMENT 7 PLAN & PROFILE

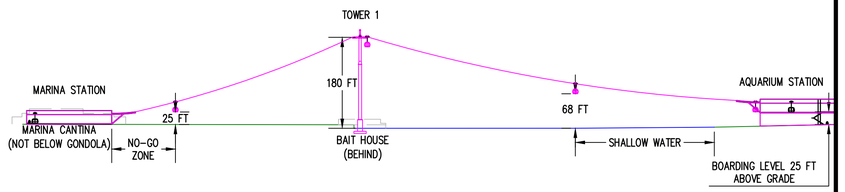
WEST OPTION #1

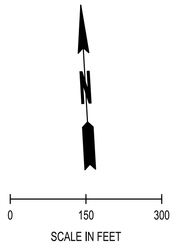
PINELLAS AERIAL GONDOLA

EXHIBIT No: **EX-02**

SHEET No: **2A**







PRELIMINARY

NOTE:

THIS STATION LOCATION DEMONSTRATES ONE POSSIBILITY FOR A GONDOLA IN THE CLEARWATER MARINA. OTHER OPTIONS EXIST. SHOULD A FUTURE PARKING GARAGE BE CONSTRUCTED IN THE MARINA, CONSIDERATION FOR GONDOLA CLEARANCE IS REQUIRED.

LEGEND

- GONDOLA SUPPORT TOWER
- GONDOLA ROW LINE
- STRUCTURE WITHIN ROW
- STRUCTURE OUT OF ROW
- ROADWAY CROSSING
- ROADWAY OUT OF ROW

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HORIZONTAL SCALE: SEE SCALE BAR
DATE: AUGUST 2022
JOB No.: 00-502901
DRAWING FILE No.: 00-502901_CLEARWATER P&P_A7.DWG

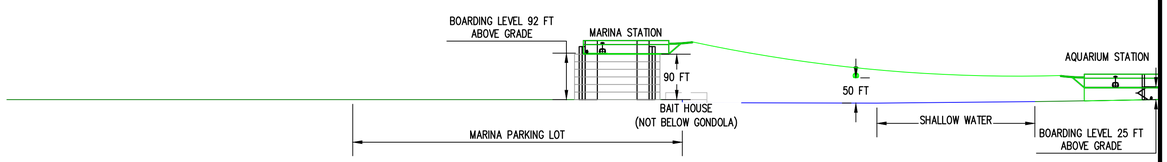
CLEARWATER ALIGNMENT 7 PLAN & PROFILE

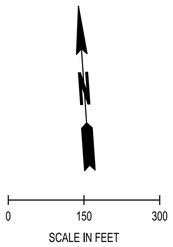
WEST OPTION #2

PINELLAS AERIAL GONDOLA

EXHIBIT No: **EX-02**

SHEET No: **2B**





LEGEND

- GONDOLA SUPPORT TOWER
- GONDOLA ROW LINE
- STRUCTURE WITHIN ROW
- STRUCTURE OUT OF ROW
- ROADWAY CROSSING
- ROADWAY OUT OF ROW

PRELIMINARY

NOTE:

THIS STATION LOCATION DEMONSTRATES ONE POSSIBILITY FOR A GONDOLA IN THE CLEARWATER MARINA. OTHER OPTIONS EXIST. THE GARAGE SHOWN ON THIS PLAN IS CONCEPTUAL AND NOT BASED ON ANY EXISTING DESIGNS. THE GONDOLA STATION WOULD NEED TO BE PLANNED IN CONCERT WITH A FUTURE GARAGE PROJECT. A SHORTER GONDOLA STATION IN THE MARINA IS POSSIBLE, BUT A TOWER WOULD BE REQUIRED IN THE WATER BETWEEN THE MARINA STATION AND THE AQUARIUM STATION.

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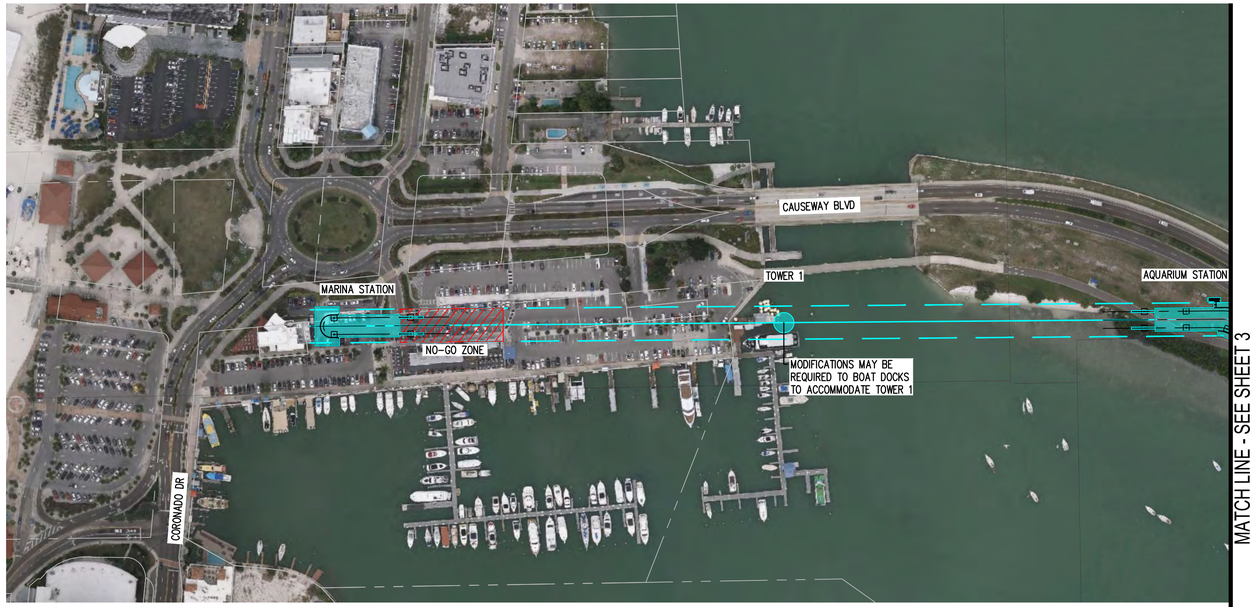
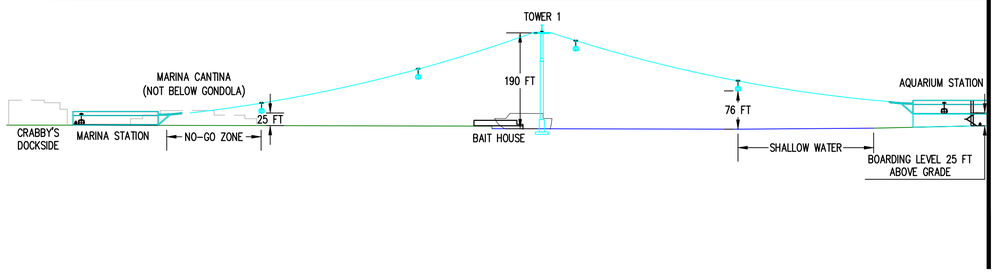
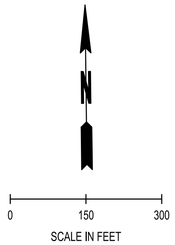
HORIZONTAL SCALE: SEE SCALE BAR
DATE: AUGUST 2022
JOB No.: 00-502901
DRAWING FILE No.: 00-502901_CLEARWATER P&P_A7.DWG

CLEARWATER ALIGNMENT 7 PLAN & PROFILE
WEST OPTION #3
PINELLAS AERIAL GONDOLA

EXHIBIT No: **EX-02**
SHEET No: **2C**







PRELIMINARY

NOTE:

THIS STATION LOCATION DEMONSTRATES ONE POSSIBILITY FOR A GONDOLA IN THE CLEARWATER MARINA. OTHER OPTIONS EXIST. SHOULD A FUTURE PARKING GARAGE BE CONSTRUCTED IN THE MARINA, CONSIDERATION FOR GONDOLA CLEARANCE IS REQUIRED.

LEGEND

- GONDOLA SUPPORT TOWER
- GONDOLA ROW LINE
- STRUCTURE WITHIN ROW
- STRUCTURE OUT OF ROW
- ROADWAY CROSSING
- ROADWAY OUT OF ROW

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DATE: AUGUST 2022
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DRAWING FILE No.: 00-502901_CLEARWATER P&P_A7.DWG

CLEARWATER ALIGNMENT 7 PLAN & PROFILE
WEST OPTION #4
PINELLAS AERIAL GONDOLA

EXHIBIT No: **EX-02**
SHEET No: **2D**

LEGEND

- GONDOLA SUPPORT TOWER
- GONDOLA ROW LINE
- STRUCTURE WITHIN ROW
- STRUCTURE OUT OF ROW
- ROADWAY CROSSING
- ROADWAY OUT OF ROW

PRELIMINARY

NOTE:

A PEDESTRIAN BRIDGE BETWEEN THE GONDOLA STATION AND THE MARINA WILL BE REQUIRED. COORDINATION WILL BE REQUIRED WITH THE AQUARIUM TO DETERMINE A SUITABLE LANDING LOCATION FOR THE BRIDGE AND PEDESTRIAN FLOW BETWEEN THE GONDOLA AND THE AQUARIUM.

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HORIZONTAL SCALE: SEE SCALE BAR
DATE: AUGUST 2022
JOB No.: 00-502901
DRAWING FILE No.: 00-502901_CLEARWATER P&P_A7.DWG

CLEARWATER ALIGNMENT 7 PLAN & PROFILE
CAUSEWAY ISLAND SECTION
PINELLAS AERIAL GONDOLA

EXHIBIT No: **EX-02**
SHEET No: **3**

PRELIMINARY

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HORIZONTAL SCALE:	NTS
DATE:	AUGUST 2022
JOB No.:	00-502901
DRAWING FILE No.:	00-502901_CLEARWATER P&P_A7.DWG

CLEARWATER ALIGNMENT 7 PLAN & PROFILE

DOWNTOWN ALIGNMENT OPTIONS

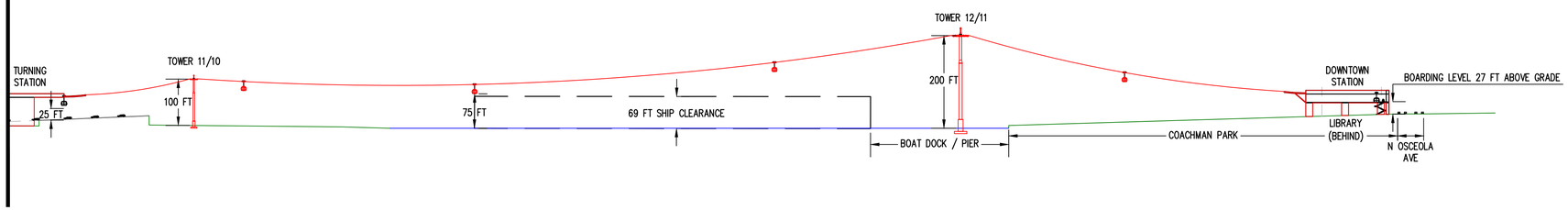
PINELLAS AERIAL GONDOLA

EXHIBIT No: **EX-02**

SHEET No: **4A**

0 150 300

SCALE IN FEET



LEGEND

- GONDOLA SUPPORT TOWER
- GONDOLA ROW LINE
- STRUCTURE WITHIN ROW
- STRUCTURE OUT OF ROW
- ROADWAY CROSSING
- ROADWAY OUT OF ROW

PRELIMINARY

NOTE:

THIS STATION LOCATION DEMONSTRATES ONE POSSIBILITY FOR A GONDOLA STATION DOWNTOWN. OTHER OPTIONS EXIST AS DECRIBED ON SHEET 4A.

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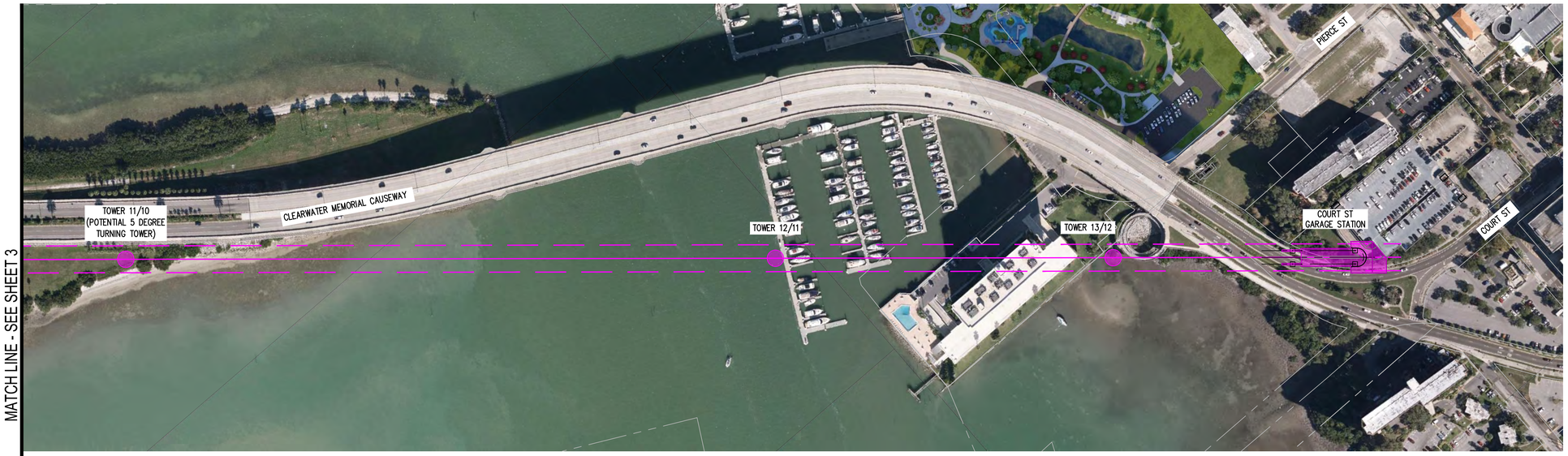
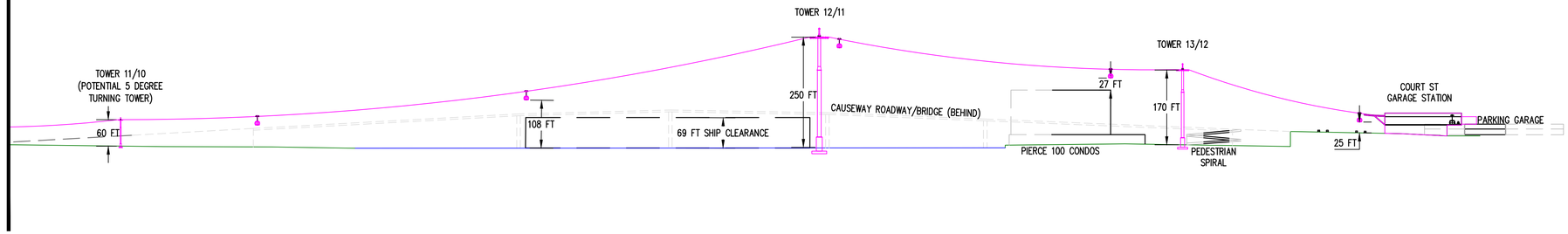
HORIZONTAL SCALE: SEE SCALE BAR
DATE: AUGUST 2022
JOB No.: 00-502901
DRAWING FILE No.: 00-502901_CLEARWATER P&P_A7.DWG

CLEARWATER ALIGNMENT 7 PLAN & PROFILE
LIBRARY OPTION
PINELLAS AERIAL GONDOLA

EXHIBIT No: EX-02
SHEET No: 4B





0 150 300

SCALE IN FEET

LEGEND

- GONDOLA SUPPORT TOWER
- GONDOLA ROW LINE
- STRUCTURE WITHIN ROW
- STRUCTURE OUT OF ROW
- ROADWAY CROSSING
- ROADWAY OUT OF ROW

PRELIMINARY

NOTE:

THIS STATION LOCATION DEMONSTRATES ONE POSSIBILITY FOR A GONDOLA STATION DOWNTOWN. OTHER OPTIONS EXIST AS DECRIBED ON SHEET 4A.

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HORIZONTAL SCALE: SEE SCALE BAR
DATE: AUGUST 2022
JOB No.: 00-502901
DRAWING FILE No.: 00-502901_CLEARWATER P&P_A7.DWG

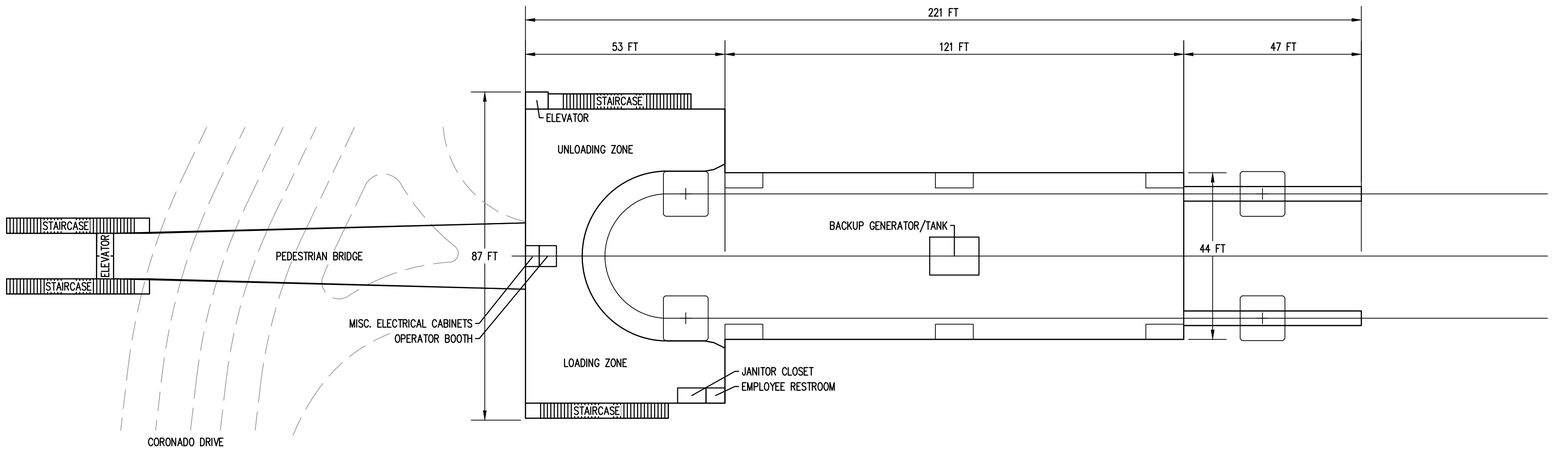
CLEARWATER ALIGNMENT 7 PLAN & PROFILE
COURT ST GARAGE OPTION
PINELLAS AERIAL GONDOLA

EXHIBIT No: **EX-02**
SHEET No: **4C**

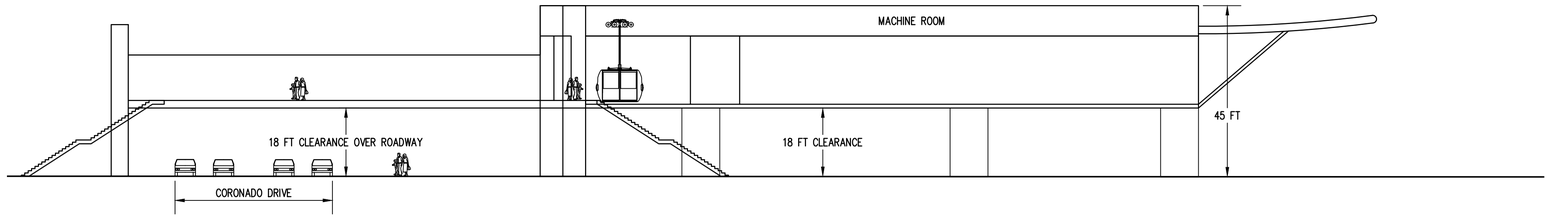
APPENDIX B

CONCEPTUAL STATION & TOWER DRAWINGS

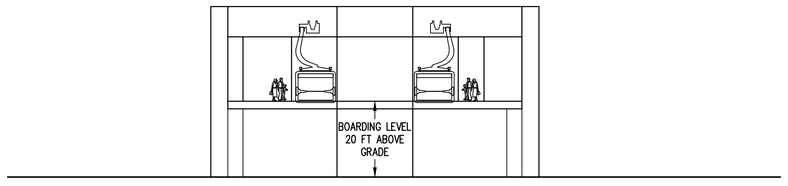
PRELIMINARY



PLAN



SIDE ELEVATION



END ELEVATION

0 20 40

SCALE IN FEET

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JOB No.:	00-502901
DRAWING FILE No.:	_00-502901_MARINASTATION1_ELEVATED.DWG

STATION LAYOUT

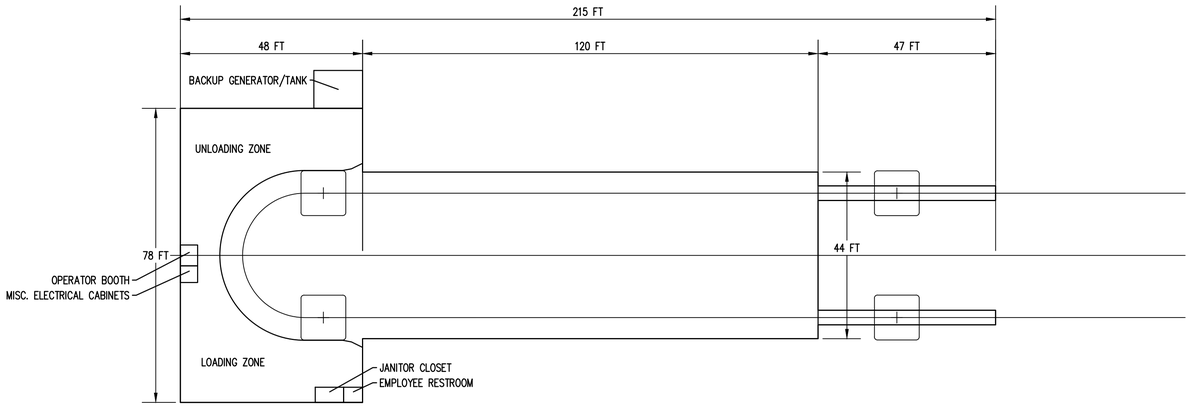
MARINA STATION - WEST OPTION #1 ELEVATED STATION W/ PEDESTRIAN BRIDGE

PINELLAS AERIAL GONDOLA

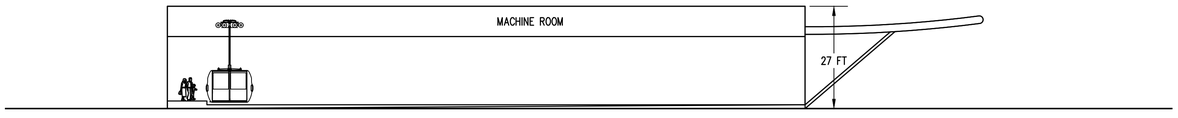
EXHIBIT No: **EX-03**

SHEET No: **1**

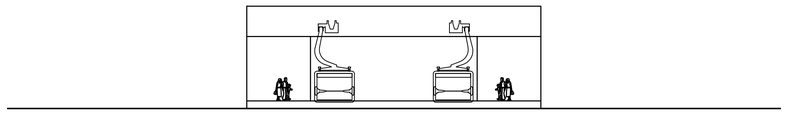
PRELIMINARY



PLAN



SIDE ELEVATION



END ELEVATION

0 20 40

SCALE IN FEET

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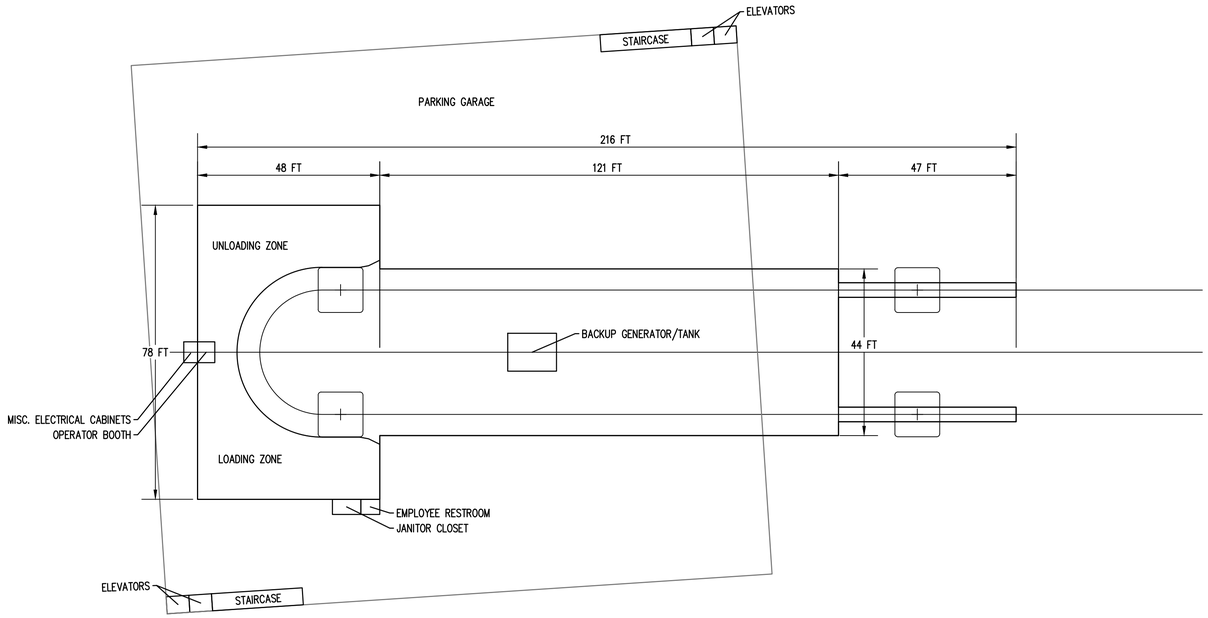
HORIZONTAL SCALE: SEE SCALE BAR
DATE: JULY 2022
JOB No.: 00-502901
DRAWING FILE No.: _00-502901_MARINASTATION2&4_ATGRADE.DWG

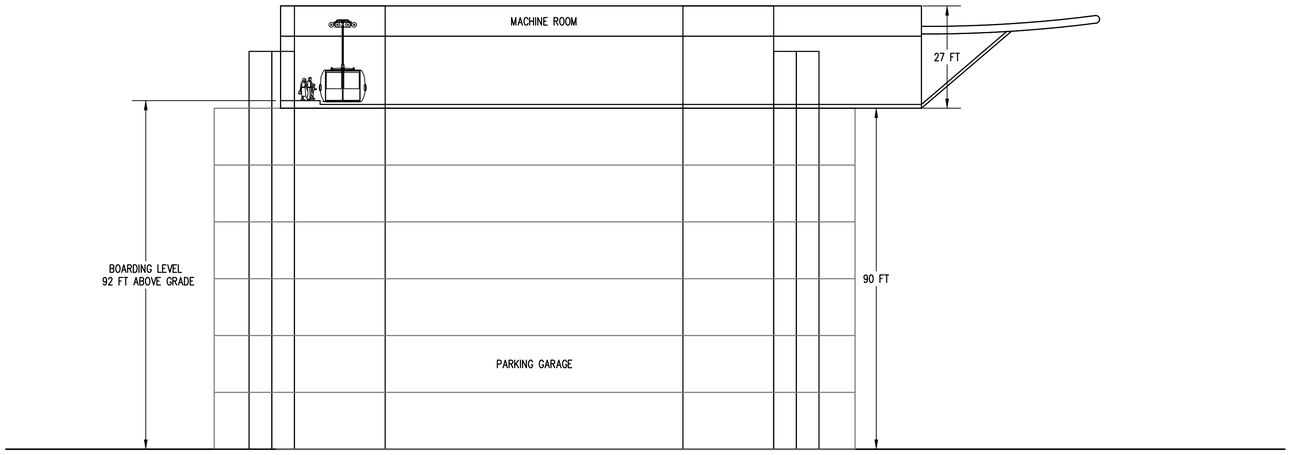
STATION LAYOUT
MARINA STATION - WEST OPTION #2 & 4 AT - GRADE STATION
PINELLAS AERIAL GONDOLA

EXHIBIT No: **EX-03**
SHEET No: **2**

PRELIMINARY



PLAN



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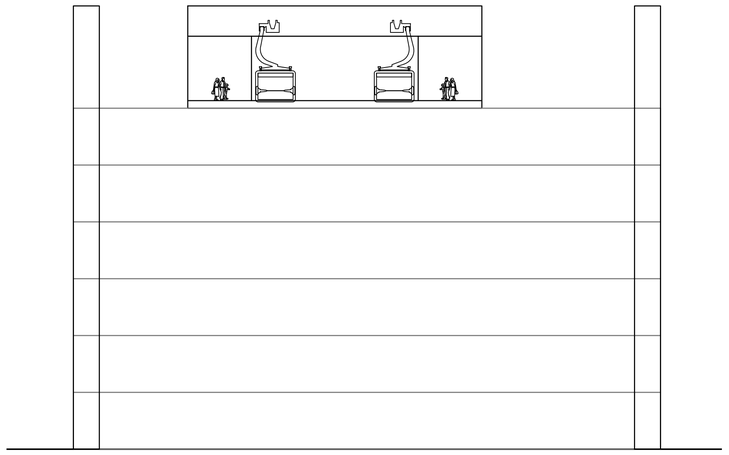

END ELEVATION

0 20 40

SCALE IN FEET

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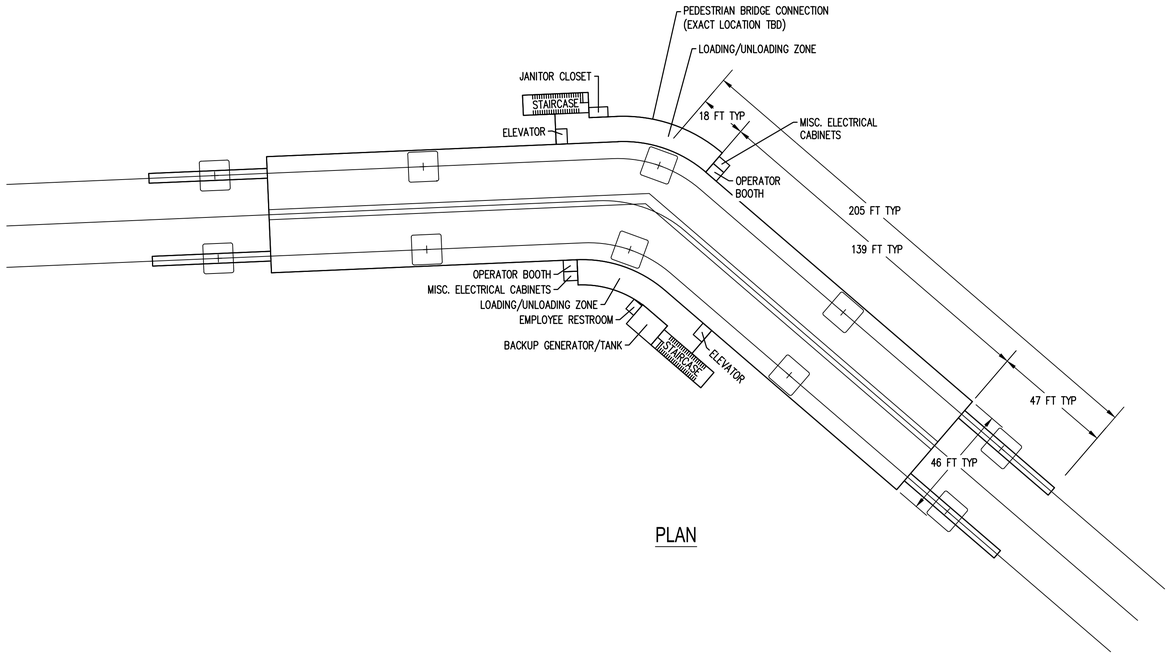
DATE: JULY 2022
JOB No.: 00-502901
DRAWING FILE No.: _00-502901_MARINASTATION3_GARAGE.DWG

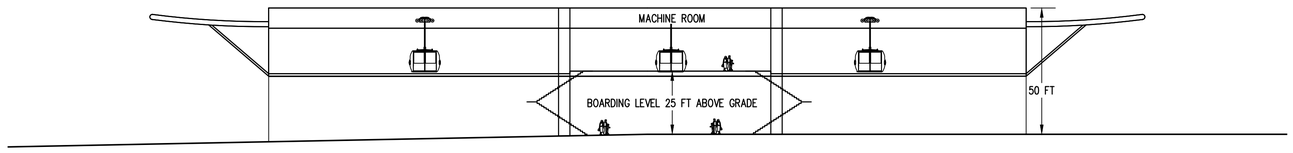
STATION LAYOUT
MARINA STATION - WEST OPTION #3 STATION ON PARKING GARAGE
PINELLAS AERIAL GONDOLA

EXHIBIT No: **EX-03**
SHEET No: **3**

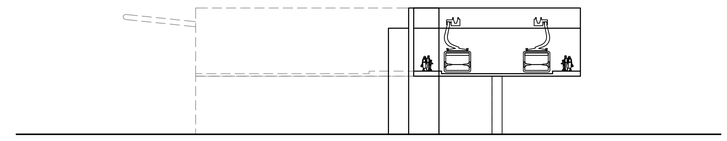
PRELIMINARY



PLAN



SIDE ELEVATION



END ELEVATION

0 30 60

SCALE IN FEET

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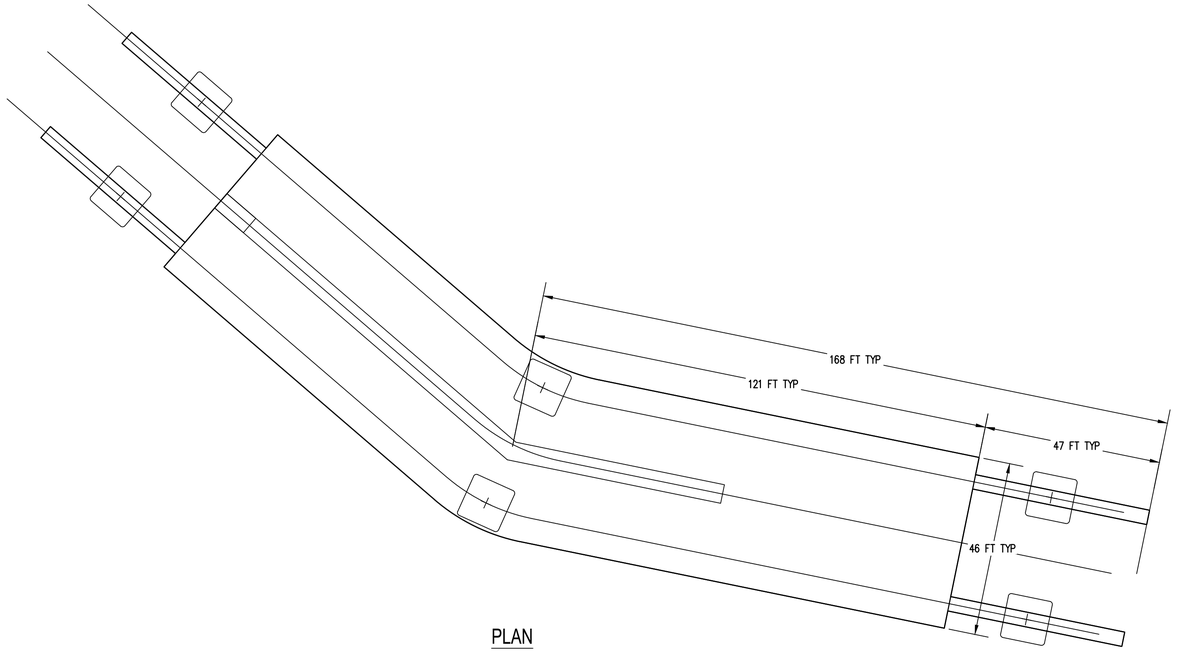
HORIZONTAL SCALE: SEE SCALE BAR
DATE: JULY 2022
JOB No.: 00-502901
DRAWING FILE No.: _00-502901_AQUARIUM.DWG

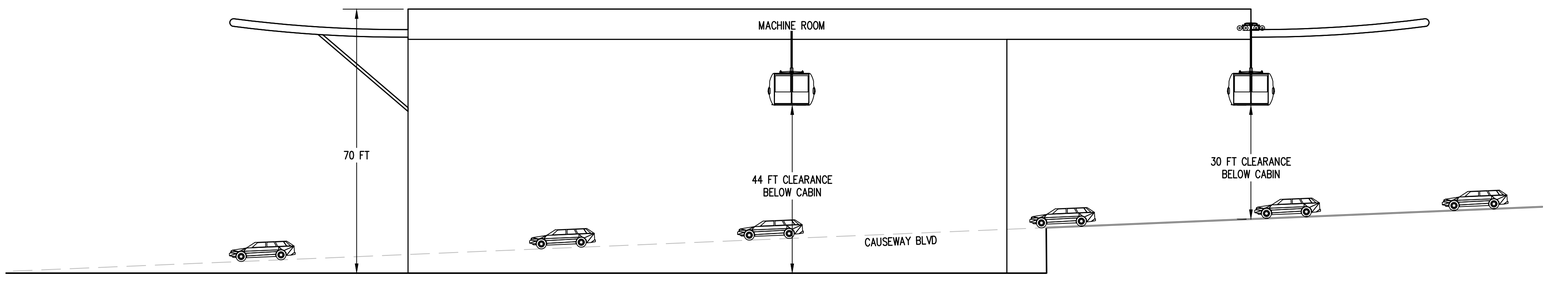
STATION LAYOUT
ELEVATED AQUARIUM TURNING STATION (WEST ANGLE POINT)
PINELLAS AERIAL GONDOLA

EXHIBIT No: **EX-03**
SHEET No: **4**

PRELIMINARY



PLAN



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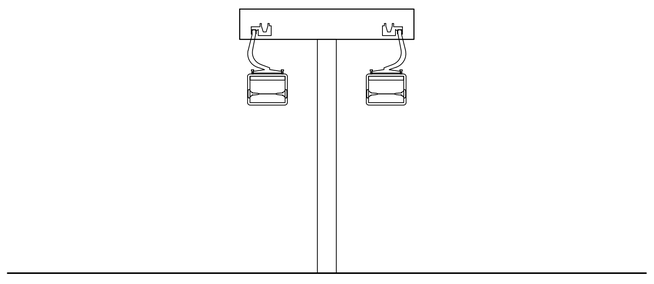

END ELEVATION

0 20 40

SCALE IN FEET

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HORIZONTAL SCALE:	SEE SCALE BAR
DATE:	JULY 2022
JOB No.:	00-502901
DRAWING FILE No.:	_00-502901_TURNINGSTATION.DWG

STATION LAYOUT

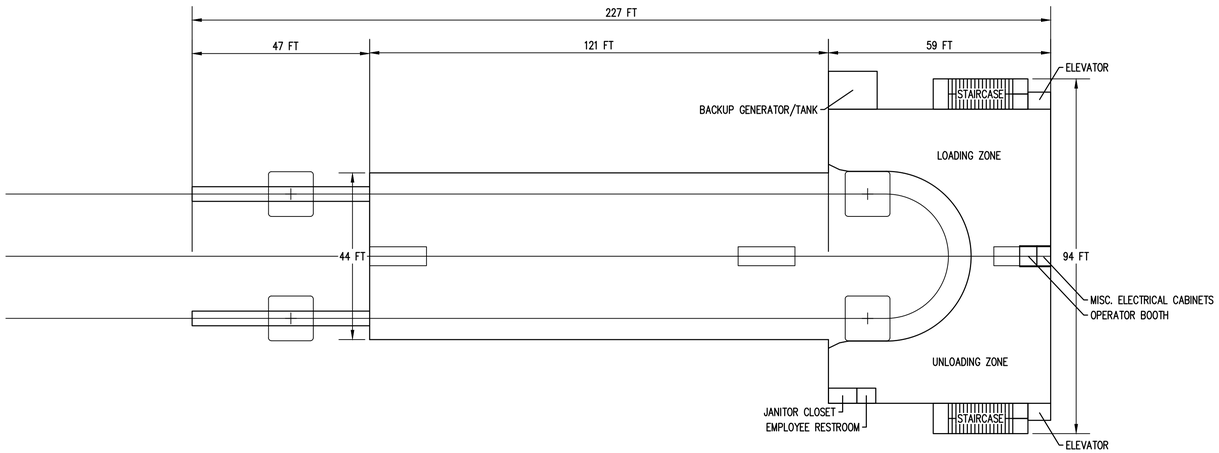
ELEVATED NON-BOARDING TURNING STATION AT EAST ANGLE POINT (IF REQUIRED)

PINELLAS AERIAL GONDOLA

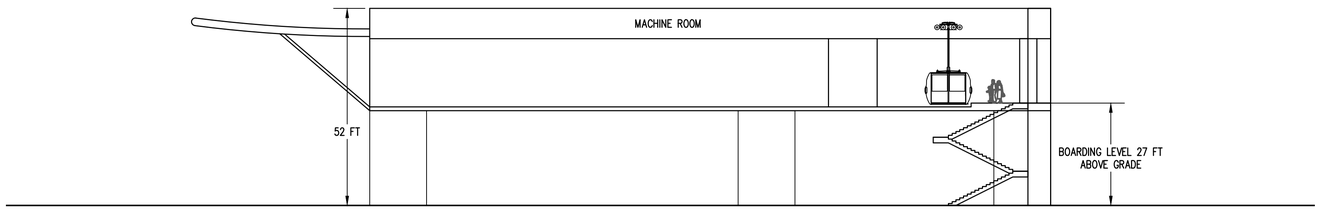
EXHIBIT No: **EX-03**

SHEET No: **5**

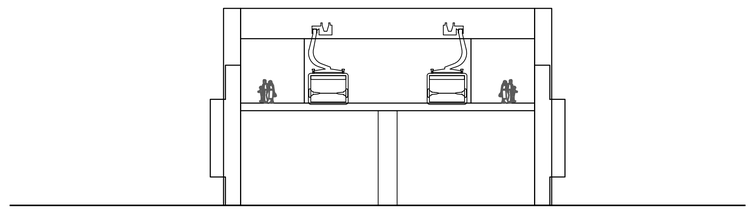
PRELIMINARY



PLAN



SIDE ELEVATION



END ELEVATION

0 20 40

SCALE IN FEET

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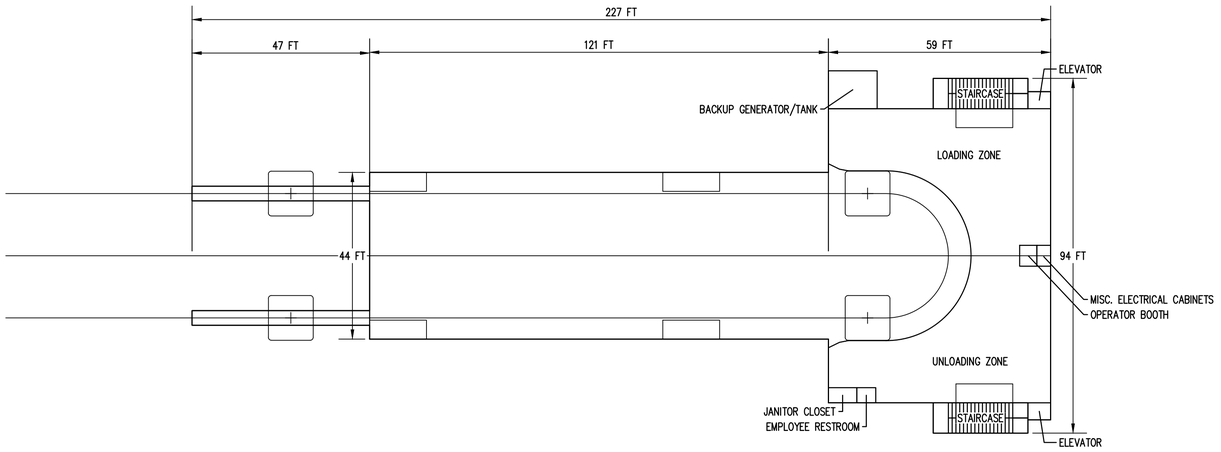
HORIZONTAL SCALE: SEE SCALE BAR
DATE: JULY 2022
JOB No.: 00-502901
DRAWING FILE No.: _00-502901_7A LIBRARY STATION_STRADDLE.DWG

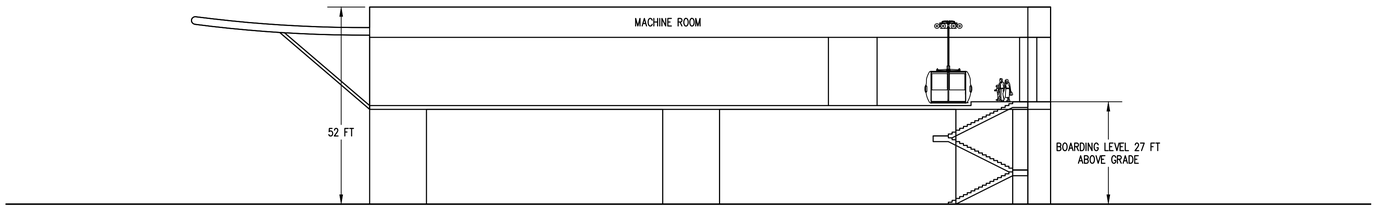
STATION LAYOUT
ELEVATED LIBRARY STATION MAST-TYPE
PINELLAS AERIAL GONDOLA

EXHIBIT No: **EX-03**
SHEET No: **6**

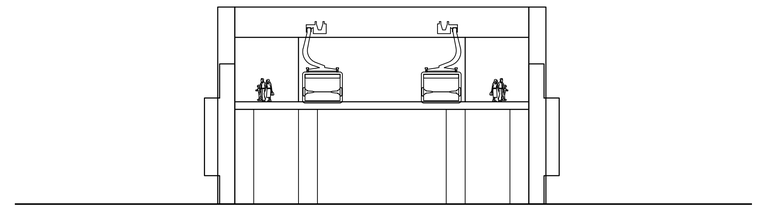
PRELIMINARY



PLAN



SIDE ELEVATION



END ELEVATION

0 20 40

SCALE IN FEET

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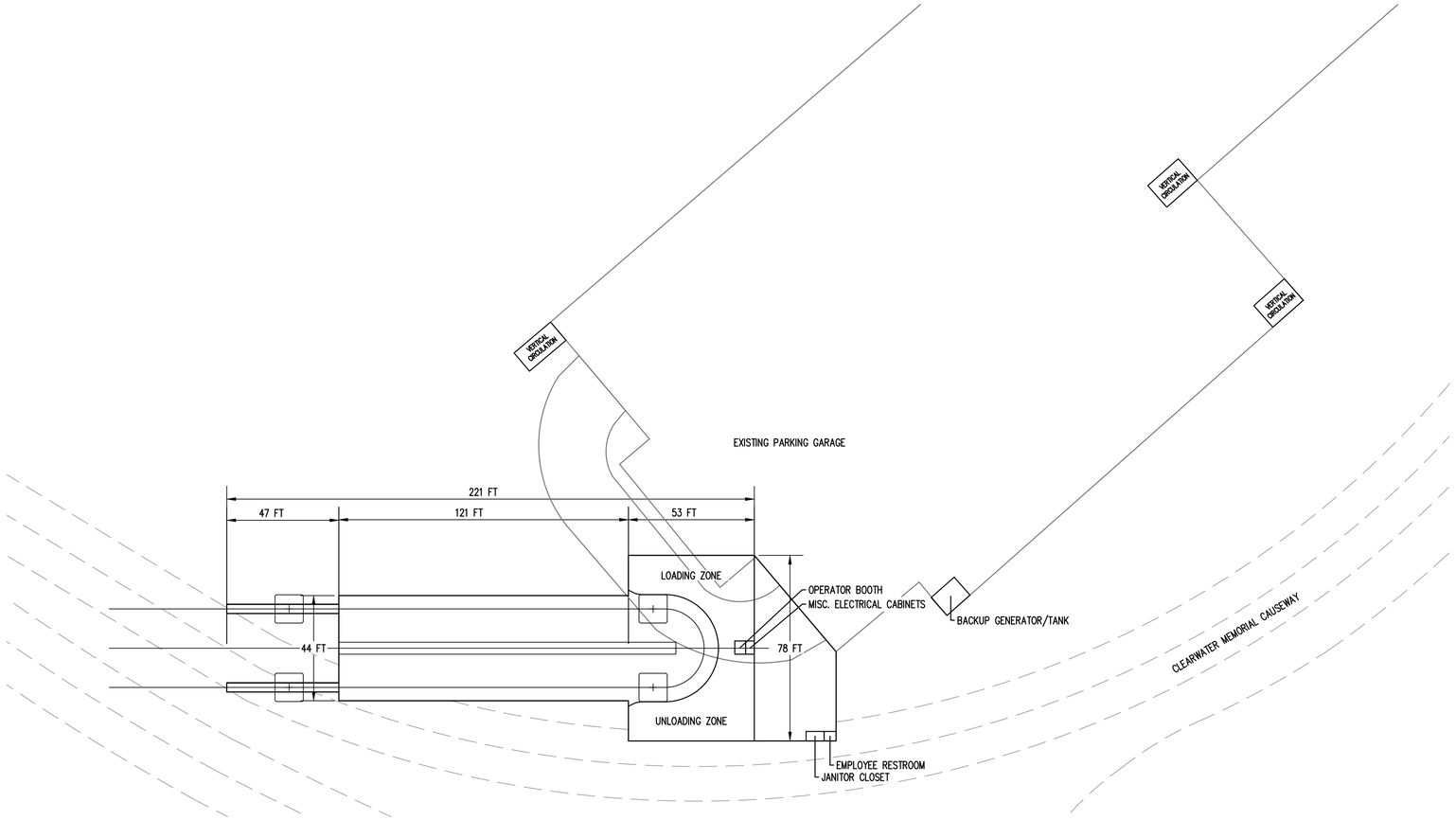
HORIZONTAL SCALE:	SEE SCALE BAR
DATE:	JULY 2022
JOB No.:	00-502901
DRAWING FILE No.:	_00-502901_7A LIBRARY STATION_ELEVATED.DWG

STATION LAYOUT
ELEVATED LIBRARY STATION STRADDLE-TYPE
PINELLAS AERIAL GONDOLA

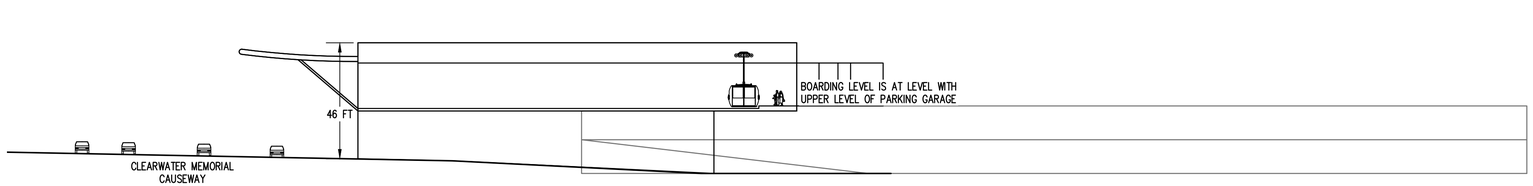
EXHIBIT No: **EX-03**

SHEET No: **7**

PRELIMINARY



PLAN



SIDE ELEVATION

END ELEVATION

0 30 60

SCALE IN FEET

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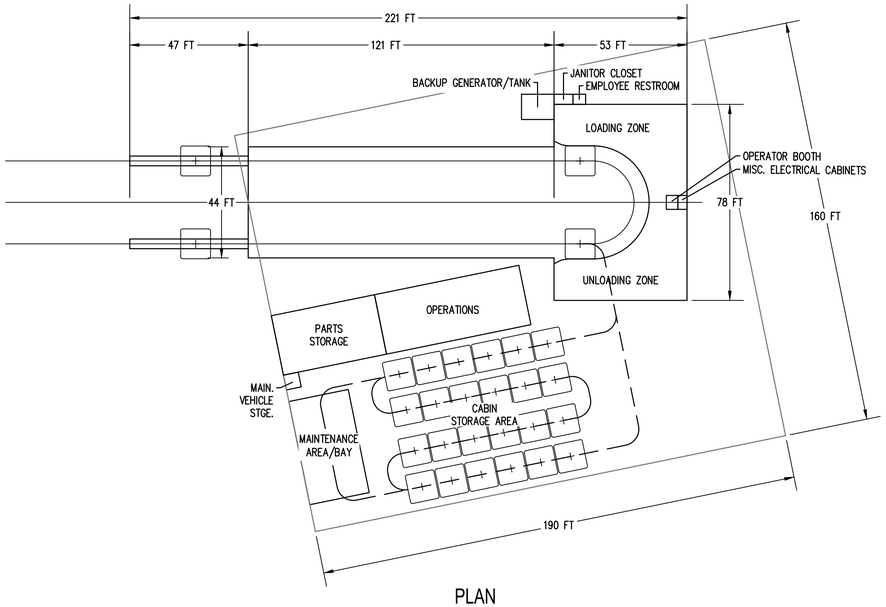
HORIZONTAL SCALE: SEE SCALE BAR
DATE: JULY 2022
JOB No.: 00-502901
DRAWING FILE No.: _00-502901_7B PARKING GARAGE STATION.DWG

STATION LAYOUT
PARKING GARAGE STATION
PINELLAS AERIAL GONDOLA

EXHIBIT No: EX-03
SHEET No: 8

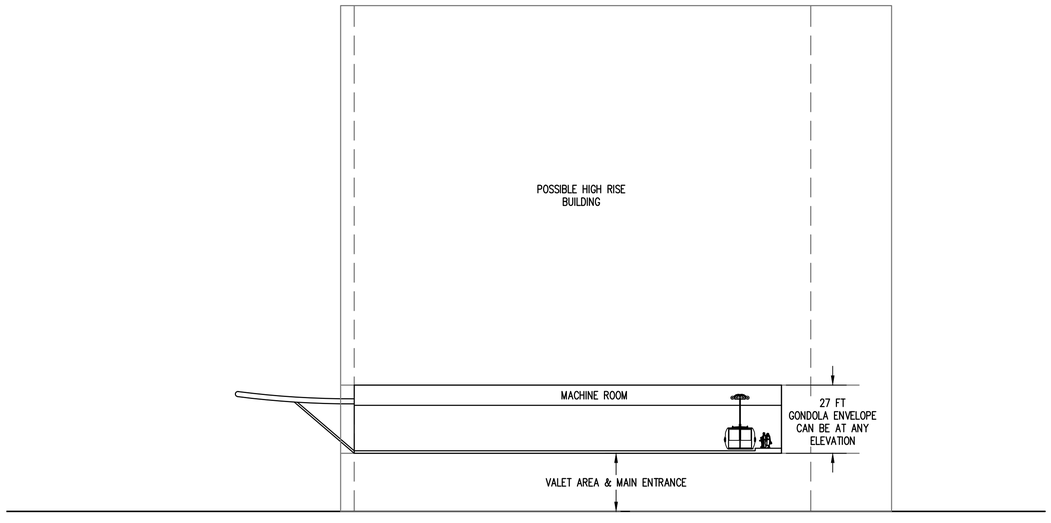
PRELIMINARY



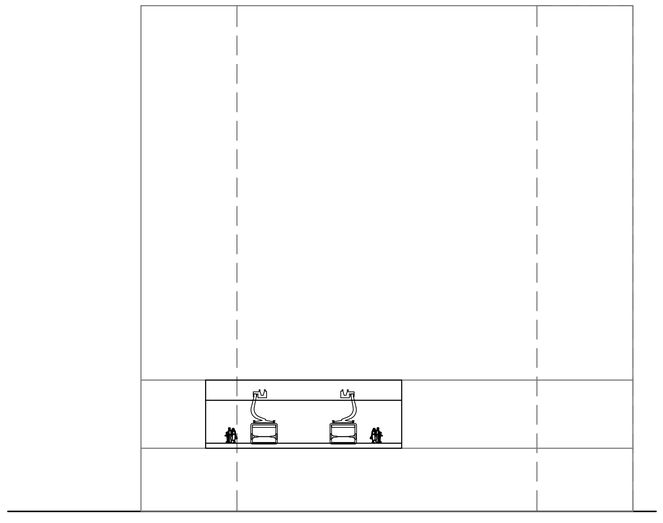
PLAN

NOTE:

VERTICAL CIRCULATION WOULD NEED TO BE COORDINATED WITH THE OVERALL BUILDING DESIGN AND IS NOT SHOWN



SIDE ELEVATION



END ELEVATION

0 30 60

SCALE IN FEET

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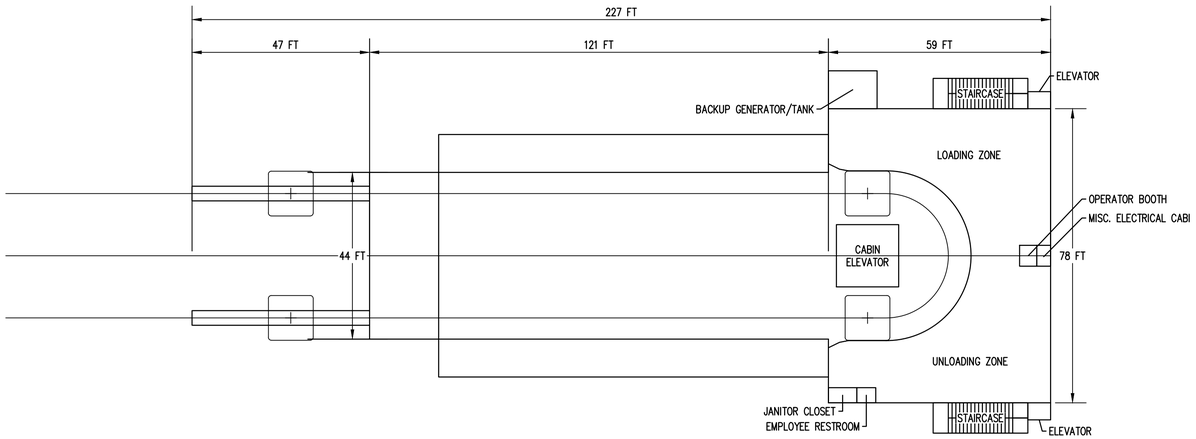
HORIZONTAL SCALE: SEE SCALE BAR
DATE: JULY 2022
JOB No.: 00-502901
DRAWING FILE No.: _00-502901_7A VALET STATION.DWG

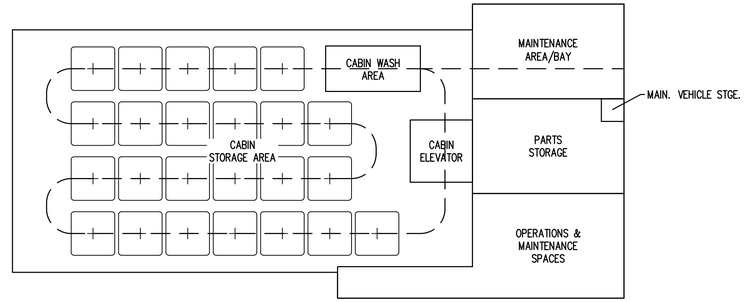
STATION LAYOUT
VALET & BUILDING STATION W/ INTEGRAL OPERATIONS, MAINTENANCE & CABIN STORAGE AREAS
PINELLAS AERIAL GONDOLA

EXHIBIT No: EX-03
SHEET No: 9

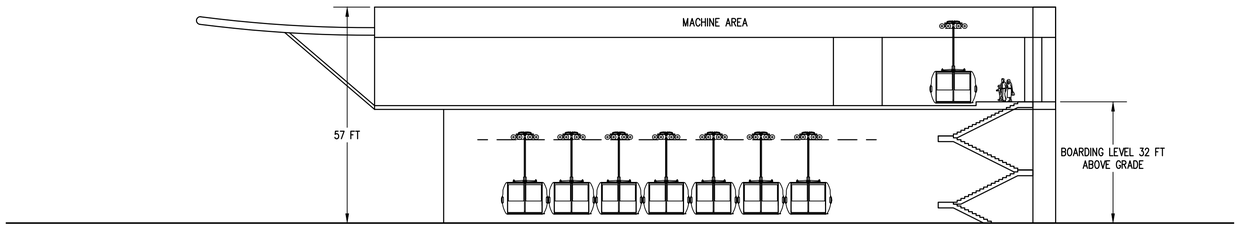
PRELIMINARY



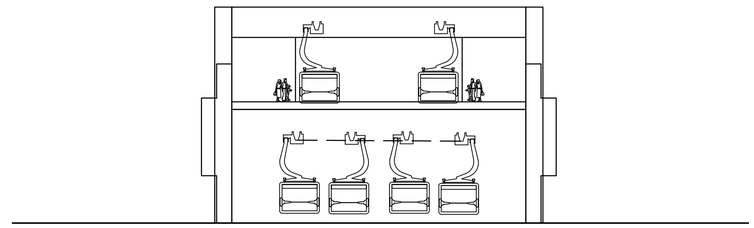
PLAN
(BOARDING LEVEL)



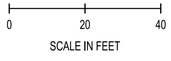
PLAN
(CABIN STORAGE AND O&M LEVEL)



SIDE ELEVATION



END ELEVATION



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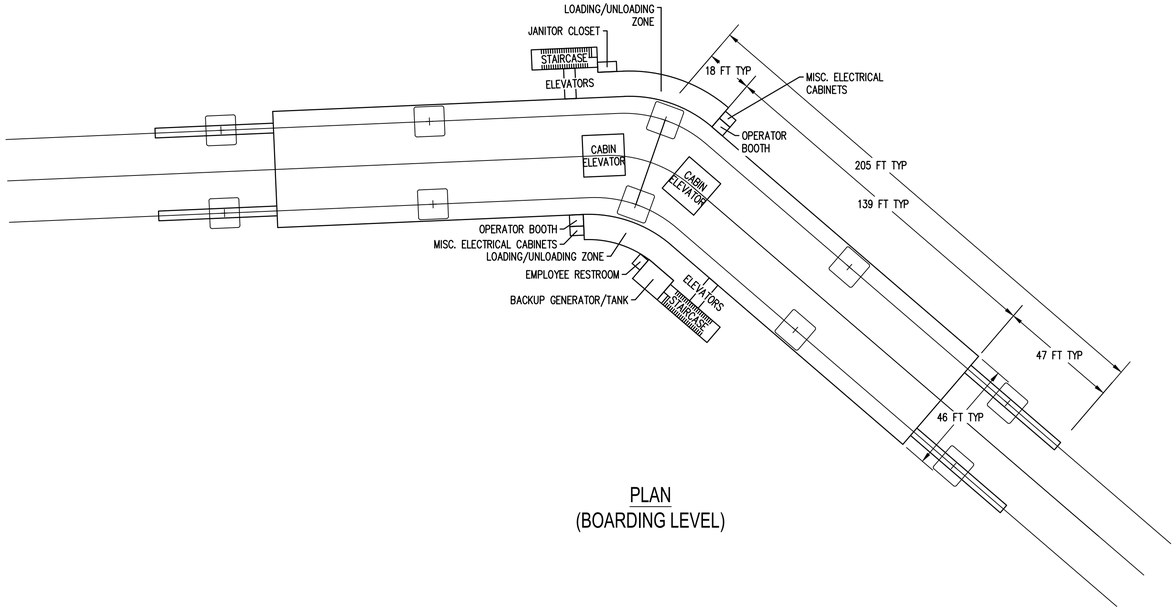
HORIZONTAL SCALE: SEE SCALE BAR
DATE: JULY 2022
JOB No.: 00-502901
DRAWING FILE No.: _00-502901_END STATION W CABIN STORAGE.DWG

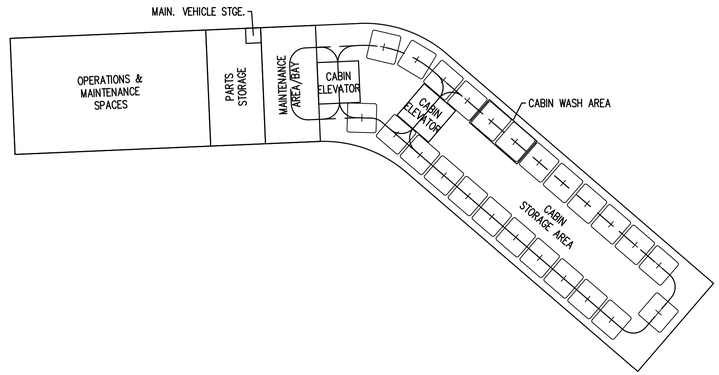
STATION LAYOUT
END STATION WITH CABIN STORAGE AT GROUND LEVEL
PINELLAS AERIAL GONDOLA

EXHIBIT No: **EX-03**
SHEET No: **10**

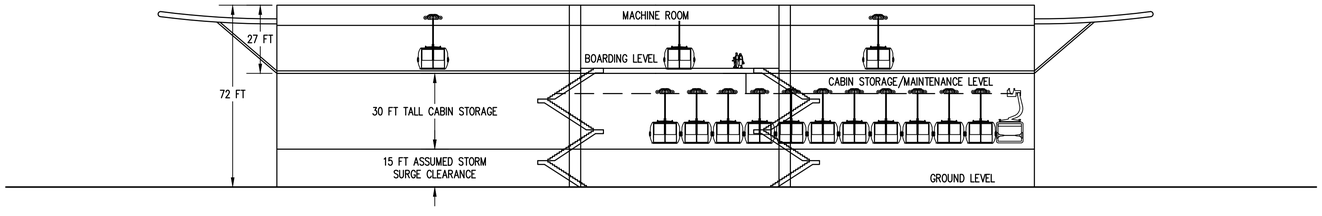
PRELIMINARY



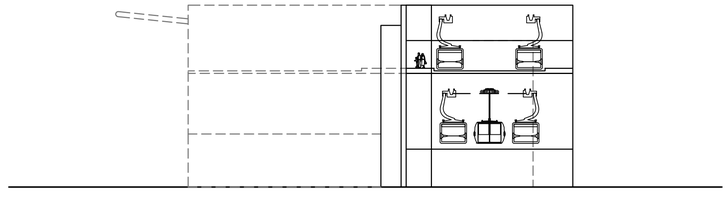
PLAN
(BOARDING LEVEL)



PLAN
(CABIN STORAGE LEVEL)



SIDE ELEVATION



END ELEVATION

0 30 60

SCALE IN FEET

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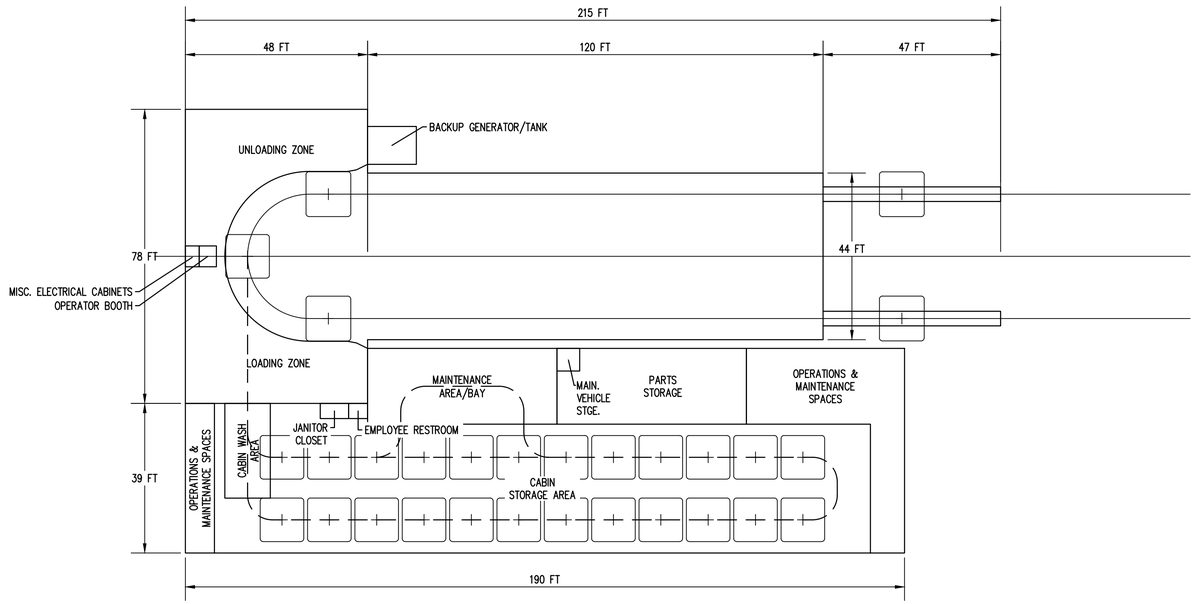
HORIZONTAL SCALE: SEE SCALE BAR
DATE: JULY 2022
JOB No.: 00-502901
DRAWING FILE No.: _00-502901_INTERMEDIATE STATION W CABIN STORAGE.DWG

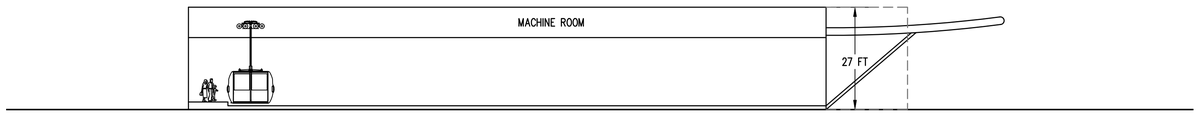
STATION LAYOUT
TYPICAL INTERMEDIATE STATION WITH CABIN STORAGE
PINELLAS AERIAL GONDOLA

EXHIBIT No: **EX-03**
SHEET No: **11**

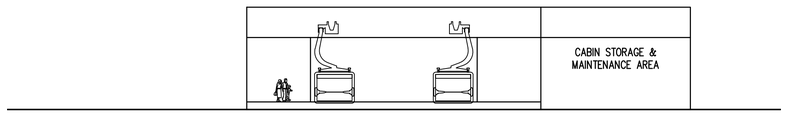
PRELIMINARY



PLAN



SIDE ELEVATION



END ELEVATION

0 20 40

SCALE IN FEET

SCJ ALLIANCE
CONSULTING SERVICES
8730 TALLON LANE NE, SUITE 200, LACEY, WA 98516
P: 360.352.1465 F: 360.352.1509
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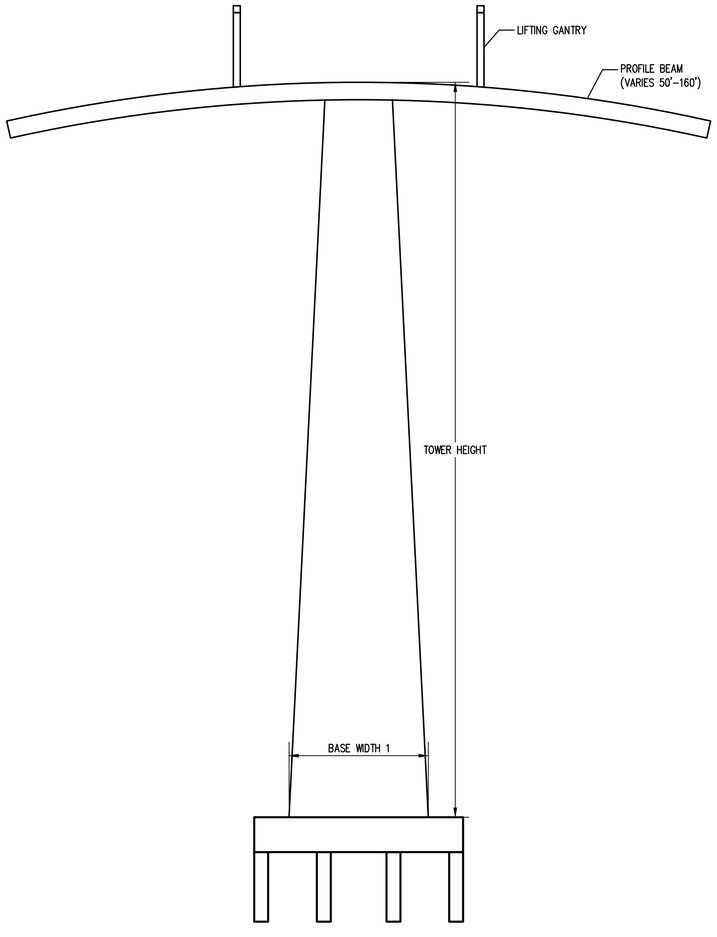
HORIZONTAL SCALE: SEE SCALE BAR
DATE: JULY 2022
JOB No.: 00-502901
DRAWING FILE No.: _00-502901_END STATION_ATGRADE_WITH CABIN STORAGE.DWG

STATION LAYOUT
AT-GRADE END STATION WITH CABIN STORAGE
PINELLAS AERIAL GONDOLA

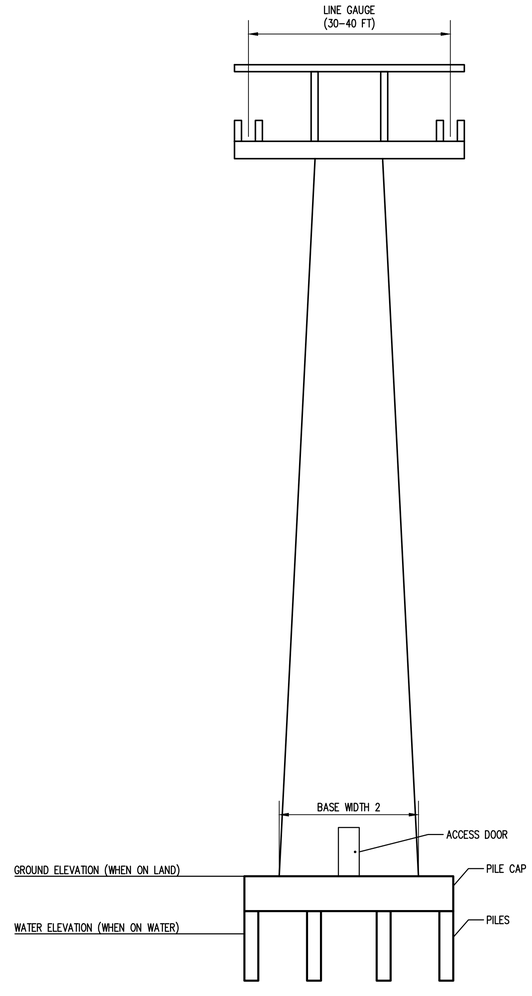
EXHIBIT No: EX-03
SHEET No: 12

Aug 01, 2022 4:20:01pm – User: emily.carlton
G:\SHARED DRIVES\2029.001 PINELLAS AERIAL GONDOLA FEASIBILITY STUDY_CADD_00-502901_END STATION_ATGRADE_WITH CABIN STORAGE.DWG

PRELIMINARY



VIEW ACROSS LINE



VIEW ACROSS LINE

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P: 360.352.1465 F: 360.352.1509
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HORIZONTAL SCALE:	NTS
DATE:	JULY 2022
JOB No.:	00-502901
DRAWING FILE No.:	00-502901_EX-04_TOWER CONCEPT.DWG

TOWER CONCEPT
PINELLAS AERIAL GONDOLA

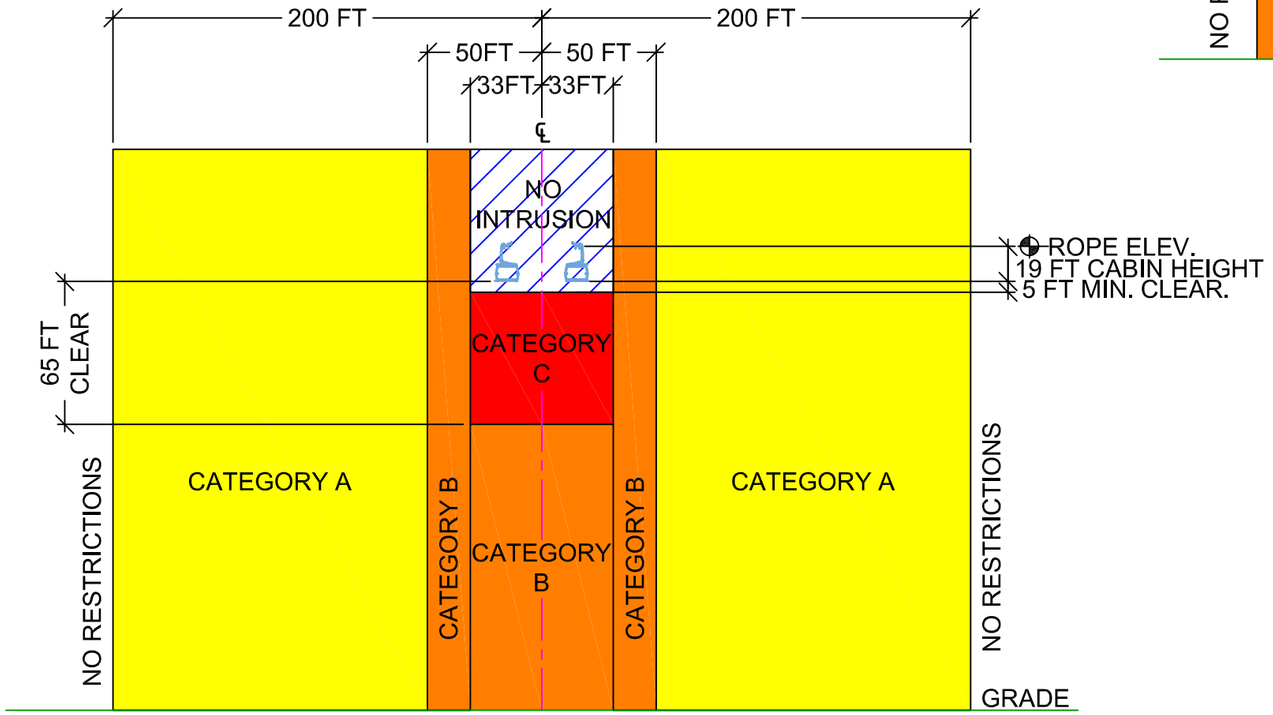
EXHIBIT No: **EX-04**

SHEET No: **1**

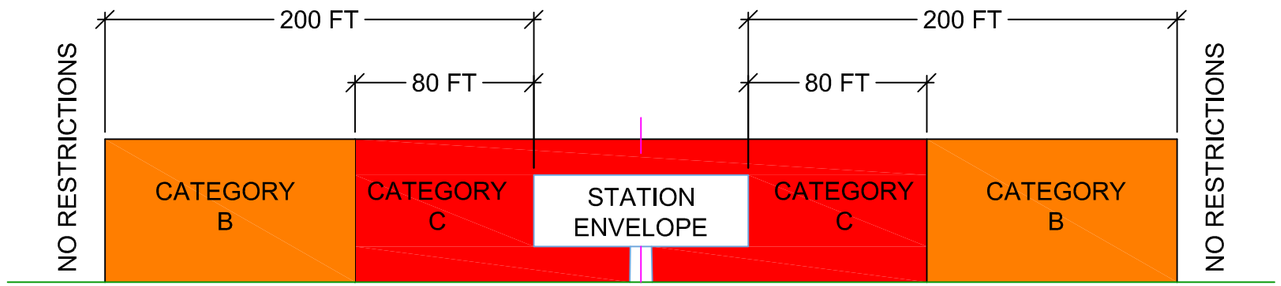
APPENDIX C

FIRE MITIGATION CLEARANCE DIAGRAMS

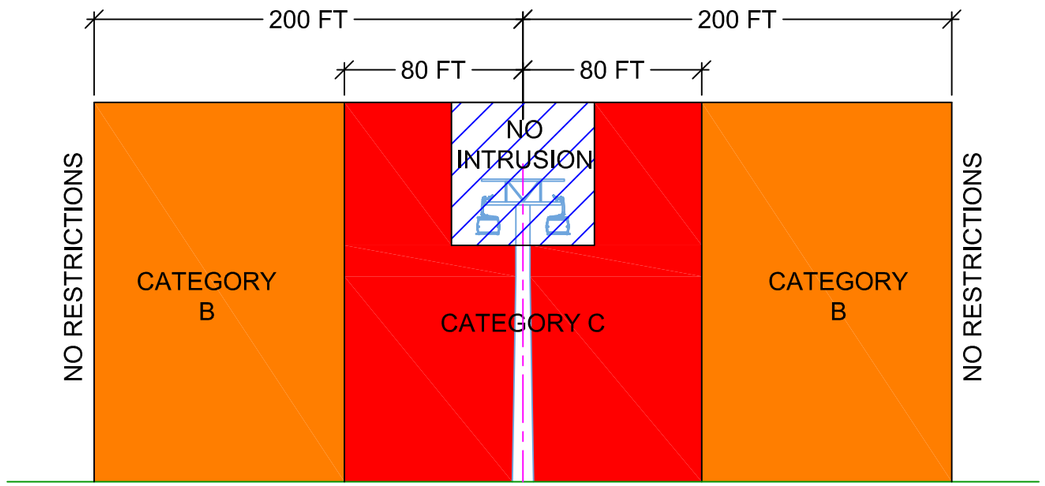
CLEARANCES ALONG THE LINE



CLEARANCES AT A STATION



CLEARANCES AT A TOWER



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HORIZONTAL SCALE: N.T.S.
DATE: AUG 2022
JOB No.: 00-502901
DRAWING FILE No.:

CLEARWATER GONDOLA
UNCONTROLLED STRUCTURE CLEARANCES

EXHIBIT No: EX-99
SHEET No: 1 OF 1

APPENDIX D

RIDERSHIP STUDY

AERIAL CABLE CAR RIDERSHIP: PINELLAS COUNTY

Date July 18, 2021

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WHAT TRANSPORTATION CAN BE.

CLEARWATER
BRIGHT AND BEAUTIFUL · BAY TO BEACH

TBARTA
Tampa Bay Area Regional Transit Authority
+
FORWARD PINELLAS

st.petersburg

APPROACH

1. Streetlight Data
   a) Understand the potential for all types of travelers to use the Gondola based on observed travel demands.
   b) Apply a choice model (logit) using parameters derived from FTA's STOPS model.
2. STOPS Analysis – Understand the potential for traditional commuter type travelers to use the Gondola based on an established transit ridership forecasting approach.

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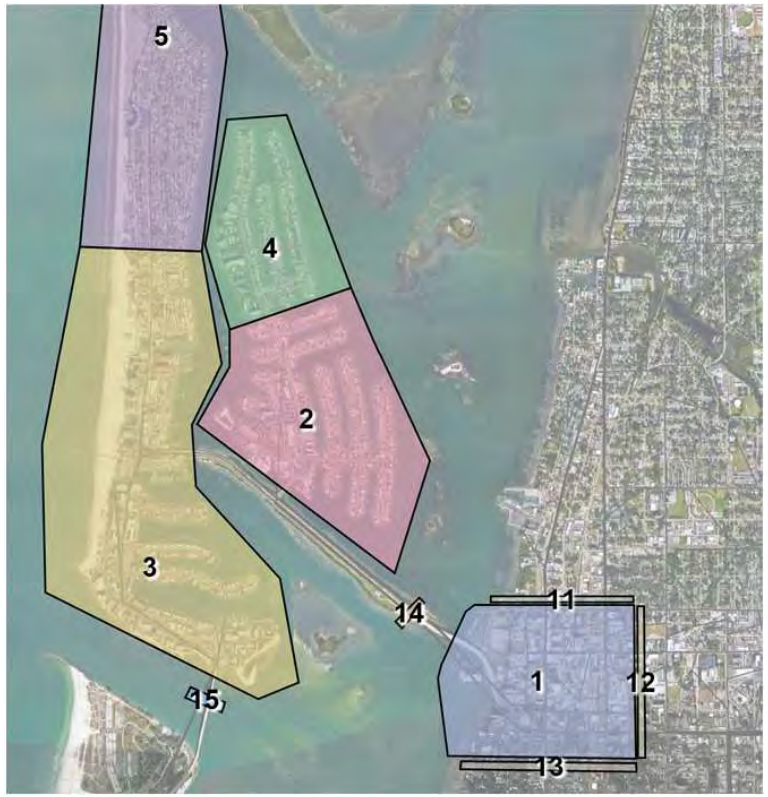
WHAT IS STREETLIGHT DATA

- Location records from smart phones and navigation devices in connected cars and trucks is processed to produce Origin – Destination (O-D) trip tables.
- O-D vehicle trip tables are normalized to observed ground counts.
- Data is processed monthly and is available from Jan 2016 to March 2022.
- This analysis uses year 2019 data (pre-covid).

HOW WILL IT BE USED ?

- Zone system is defined to capture the travel demands pertinent to the proposed Gondola System (vehicle trips).
- Using a network-based approach, develop travel times and costs for using the Gondola and for driving.
- Apply a logit model to estimate probabilities of using the Gondola for each O-D pair using industry standard parameters.

ANALYSIS ZONES



1 - Clearwater CBD
2 - Aquarium
3 - Clearwater Beach
4 - Diamond Isle
5 - Clearwater Beach Island
11 - North Region Cutline
12 - East Region Cutline
13 - South Region Cutline
14 - Causeway Cutline
15 - Sand Key Bridge Cutline

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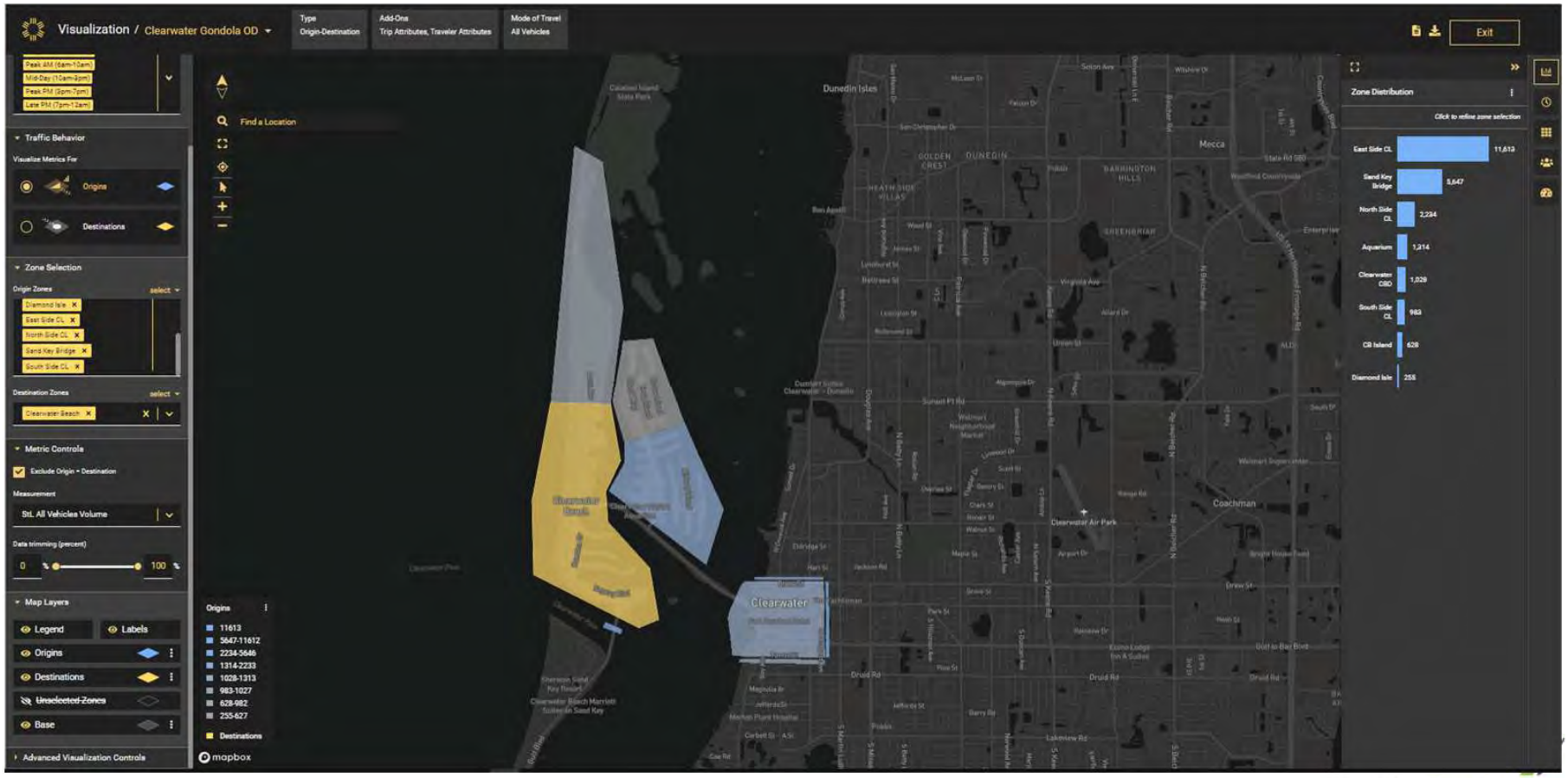
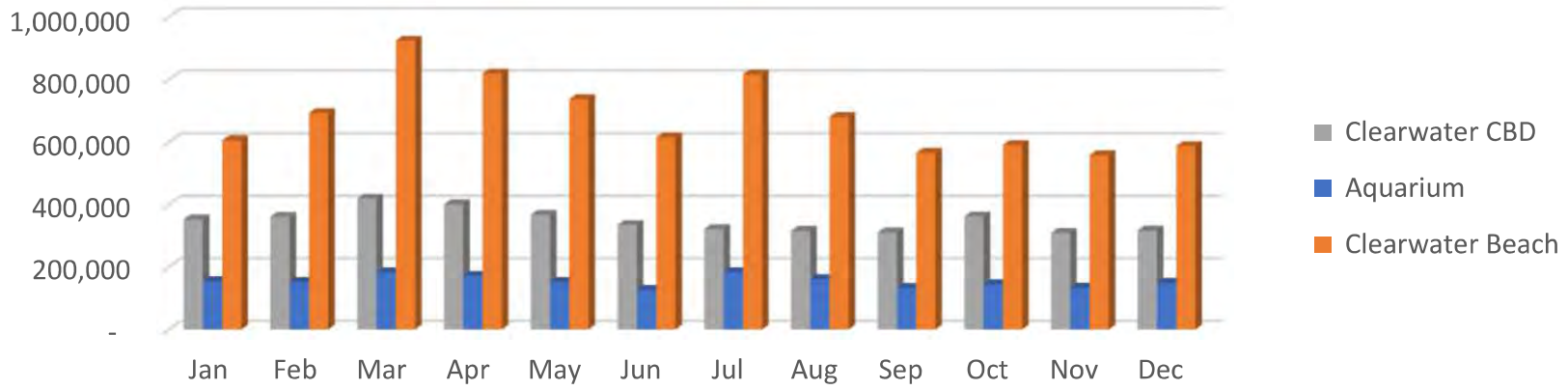
DAILY VEHICLE TRIPS TO BEACH ZONE



2019 MONTHLY VEHICLE TRIPS (ONE-WAY)



Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Aquarium	154,318	151,956	182,621	171,570	152,179	126,810	182,931	160,890	132,780	145,080	133,260	149,327	**1,843,722**
CB Island	62,775	64,988	66,991	64,290	67,022	44,340	60,233	51,522	50,760	45,570	45,870	46,035	**670,396**
Clearwater Beach	605,120	692,356	923,180	818,220	736,467	613,890	815,610	679,396	564,750	589,558	556,920	586,117	**8,181,584**
Clearwater CBD	352,315	360,668	418,407	400,320	366,699	334,380	321,222	315,518	310,170	361,150	308,640	316,355	**4,165,844**
Diamond Isle	51,925	50,540	48,918	46,680	48,639	31,410	37,355	41,137	41,910	45,229	44,790	43,896	**532,429**
East Side CL	816,354	835,268	1,019,094	929,910	898,008	749,190	902,038	848,129	771,870	814,122	745,500	766,537	**10,096,020**
North Side CL	401,016	403,872	443,021	404,850	403,093	359,820	385,919	380,711	366,990	397,420	361,530	354,299	**4,662,541**
Sand Key Bridge	235,848	241,052	301,599	283,800	254,975	228,720	280,147	239,475	206,280	223,107	216,300	212,536	**2,923,839**
South Side CL	324,787	328,664	348,626	328,050	330,677	278,280	308,481	308,729	286,830	319,610	291,630	299,026	**3,753,390**
Total	**3,004,458**	**3,129,364**	**3,752,457**	**3,447,690**	**3,257,759**	**2,766,840**	**3,293,936**	**3,025,507**	**2,732,340**	**2,940,846**	**2,704,440**	**2,774,128**	**36,829,765**

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2019 ANNUAL VEHICLE TRIPS (ONE-WAY)

Annual Trips	Aquarium	CB Island	Clearwater Beach	Clearwater CBD	Diamond Isle	East Side CL	North Side CL	Sand Key Bridge	South Side CL	Total
Aquarium	-	37,762	458,471	69,442	106,532	689,647	157,832	109,435	153,699	1,782,820
CB Island	32,009	-	217,205	14,648	9,347	224,542	66,391	53,855	49,548	667,545
Clearwater Beach	433,215	223,292	-	272,389	84,688	4,392,728	768,753	1,713,969	369,150	8,258,184
Clearwater CBD	87,384	18,949	339,244	-	25,750	2,134,528	784,081	89,941	778,354	4,258,231
Diamond Isle	83,230	8,954	84,139	22,667	-	204,135	36,444	17,746	53,332	510,647
East Side CL	753,991	214,965	4,091,695	2,188,175	199,158	-	1,166,209	644,954	773,781	10,032,928
North Side CL	165,973	65,408	778,828	739,922	36,140	713,506	-	213,702	1,472,140	4,185,619
Sand Key Bridge	133,552	55,745	1,868,932	82,022	21,372	709,655	227,388	-	103,386	3,202,052
South Side CL	154,368	45,321	343,070	776,579	49,442	1,027,279	1,455,443	80,237	-	3,931,739
Total	1,843,722	670,396	8,181,584	4,165,844	532,429	10,096,020	4,662,541	2,923,839	3,753,390	36,829,765

Switch	Aquarium	CB Island	Clearwater Beach	Clearwater CBD	Diamond Isle	East Side CL	North Side CL	Sand Key Bridge	South Side CL
Aquarium	-	1.00	1.00	1.00	-	1.00	1.00	-	1.00
CB Island	1.00	-	-	1.00	-	1.00	1.00	-	1.00
Clearwater Beach	1.00	-	-	1.00	1.00	1.00	1.00	-	1.00
Clearwater CBD	1.00	1.00	1.00	-	1.00	-	-	-	-
Diamond Isle	-	1.00	1.00	1.00	-	1.00	1.00	-	1.00
East Side CL	1.00	1.00	1.00	-	1.00	-	-	-	-
North Side CL	1.00	1.00	1.00	-	1.00	-	-	-	-
Sand Key Bridge	-	-	-	-	-	-	-	-	-
South Side CL	1.00	1.00	1.00	-	1.00	-	-	-	-

Annual Trips	Aquarium	CB Island	Clearwater Beach	Clearwater CBD	Diamond Isle	East Side CL	North Side CL	Sand Key Bridge	South Side CL	Total
Aquarium	-	37,762	458,471	69,442	-	689,647	157,832	-	153,699	1,566,853
CB Island	32,009	-	-	14,648	-	224,542	66,391	-	49,548	387,138
Clearwater Beach	433,215	-	-	272,389	84,688	4,392,728	768,753	-	369,150	6,320,923
Clearwater CBD	87,384	18,949	339,244	-	25,750	-	-	-	-	471,327
Diamond Isle	-	8,954	84,139	22,667	-	204,135	36,444	-	53,332	409,671
East Side CL	753,991	214,965	4,091,695	-	199,158	-	-	-	-	5,259,809
North Side CL	165,973	65,408	778,828	-	36,140	-	-	-	-	1,046,349
Sand Key Bridge	-	-	-	-	-	-	-	-	-	-
South Side CL	154,368	45,321	343,070	-	49,442	-	-	-	-	592,201
Total	1,626,940	391,359	6,095,447	379,146	395,178	5,511,052	1,029,420	-	625,729	16,054,271

YEAR 2019 ANNUAL VISITORS (PERSONS)

Annual Visitors	Aquarium	CB Island	Clearwater Beach	Clearwater CBD	Diamond Isle	East Side Cutline	North Side Cutline	Sand Key Bridge	South Side Cutline	Total
Aquarium		52,867	641,859	97,219		965,506	220,965		215,179	**2,193,594**
CB Island	44,813			20,507		314,359	92,947		69,367	**541,993**
Clearwater Beach	606,501			381,345	118,563	6,149,819	1,076,254		516,810	**8,849,292**
Clearwater CBD	122,338	26,529	474,942		36,050					**659,858**
Diamond Isle		12,536	117,795	31,734		285,789	51,022		74,665	**573,539**
East Side CL	1,055,587	300,951	5,728,373		278,821					**7,363,733**
North Side CL	232,362	91,571	1,090,359		50,596					**1,464,889**
Sand Key Bridge										
South Side CL	216,115	63,449	480,298		69,219					**829,081**
Total	**2,277,716**	**547,903**	**8,533,626**	**530,804**	**553,249**	**7,715,473**	**1,441,188**		**876,021**	**22,475,979**

Assumptions

- Persons/Vehicle = 2.8
- Trips/Person/Day = 2.0

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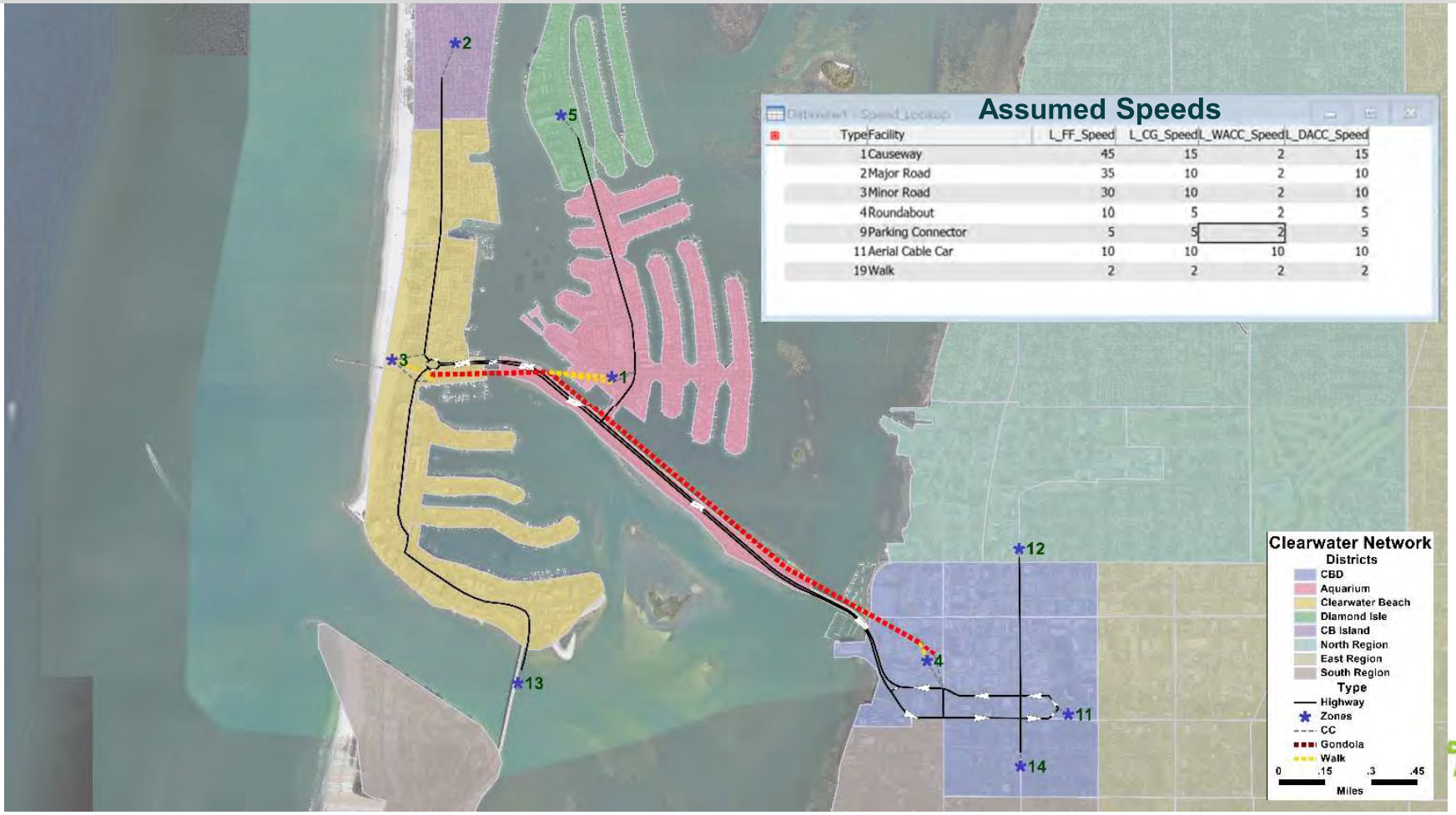
YEAR 2019 ANNUAL PERSON TRIPS (ONE-WAY)

Annual Person Trips	Aquarium	CB Island	Clearwater Beach	Clearwater CBD	Diamond Isle	East Side CL	North Side CL	Sand Key Bridge	South Side CL	Total
Aquarium	-	105,734	1,283,719	194,438	-	1,931,012	441,930	-	430,357	4,387,188
CB Island	89,625	-	-	41,014	-	628,718	185,895	-	138,734	1,083,986
Clearwater Beach	1,213,002	-	-	762,689	237,126	12,299,638	2,152,508	-	1,033,620	17,698,584
Clearwater CBD	244,675	53,057	949,883	-	72,100	-	-	-	-	1,319,716
Diamond Isle	-	25,071	235,589	63,468	-	571,578	102,043	-	149,330	1,147,079
East Side CL	2,111,175	601,902	11,456,746	-	557,642	-	-	-	-	14,727,465
North Side CL	464,724	183,142	2,180,718	-	101,192	-	-	-	-	2,929,777
Sand Key Bridge	-	-	-	-	-	-	-	-	-	-
South Side CL	432,230	126,899	960,596	-	138,438	-	-	-	-	1,658,163
Total	4,555,432	1,095,805	17,067,252	1,061,609	1,106,498	15,430,946	2,882,376	-	1,752,041	44,951,959

transpogroup

TRANSPORTATION NETWORK



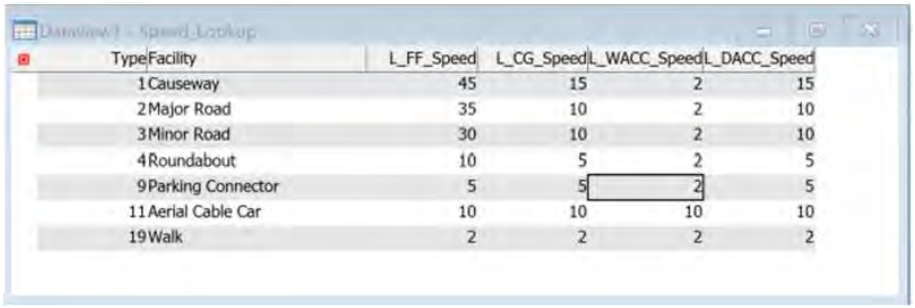
Type	Facility	L_FF_Speed	L_CG_Speed	L_WACC_Speed	L_DACC_Speed
1	Causeway	45	15	2	15
2	Major Road	35	10	2	10
3	Minor Road	30	10	2	10
4	Roundabout	10	5	2	5
9	Parking Connector	5	5	2	5
11	Aerial Cable Car	10	10	10	10
19	Walk	2	2	2	2

ASSUMPTIONS – SENSITIVITY TEST #3

- Trips/Person/Day = 2.00
- Persons/Vehicle = 2.80*
- Parking Cost
  - Beach Zone = $25.00
  - Aquarium Zone = $10.00
  - Clearwater CBD = $5.00
- Gondola Cost/Person/Day = $15.00
- Car Terminal Time
  - 25 minutes at beach
  - 2 minutes all other
- Gondola Terminal Time
  - 5 min (WACC)
  - 7.5 min (DACC)

- Car Travel Time Coefficient = -0.10
- Car Terminal Time Coefficient = -0.15
- Gondola IVTT Coefficient = -0.10
- Gondola OVTT Coefficient = -0.15
- Value of Time = $16.20/hour
- Gondola ASC = 0.0

Note: Parameters derived from FTA's STOPS model.



Type	Facility	L_FF_Speed	L_CG_Speed	L_WACC_Speed	L_DACC_Speed
1	Causeway	45	15	2	15
2	Major Road	35	10	2	10
3	Minor Road	30	10	2	10
4	Roundabout	10	5	2	5
9	Parking Connector	5	5	2	5
11	Aerial Cable Car	10	10	10	10
19	Walk	2	2	2	2

* Source: Clearwater/Clearwater Beach Visitor Profile and Occupancy: 2017 through 2021; Winter Season 2021 (January, February, March, April)

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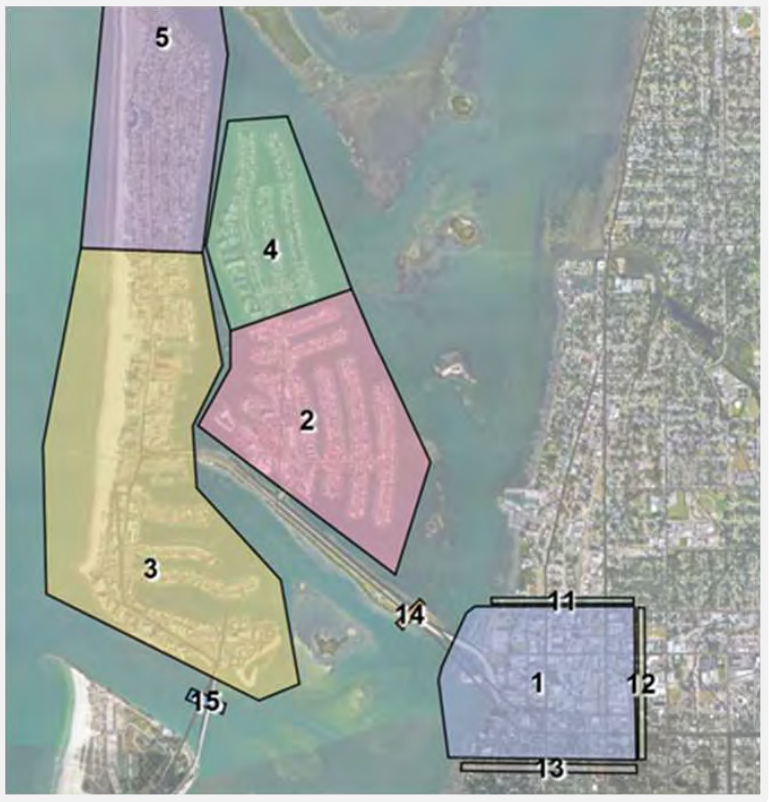
ASSUMPTIONS (CONT.)

- Walk Access only from the following Zones:
  - 3 - Clearwater Beach (25 min)
  - 2 - Aquarium (20 min)
  - 1 - CBD (10 min)
  - 4 - Diamond Isle (30 min)
  - 5 - Clearwater Beach Island (30 min)



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YEAR 2019 INITIAL FORECASTS (ONE WAY TRIPS)

Probabilities - Gondola		Aquarium	CB Island	Clearwater Beach	Clearwater CBD	Diamond Isle	East Side CL	North Side CL	Sand Key Bridge	South Side CL
	Zone #	2	5	3	1	4	12	11	15	13
Aquarium	2		0.0%	0.9%	0.2%		0.4%	0.4%		0.4%
CB Island	5	0.0%			0.0%		0.1%	0.1%		0.1%
Clearwater Beach	3	0.9%			4.5%	0.1%	8.8%	8.8%		8.8%
Clearwater CBD	1	0.2%	0.0%	4.1%		0.0%				
Diamond Isle	4		0.0%	0.1%	0.0%		0.1%	0.1%		0.1%
East Side CL	12	0.4%	0.1%	8.9%		0.1%				
North Side CL	11	0.4%	0.1%	8.9%		0.1%				
Sand Key Bridge	15									
South Side CL	13	0.4%	0.1%	8.9%		0.1%				

Annual Gondola Trips		Aquarium	CB Island	Clearwater Beach	Clearwater CBD	Diamond Isle	East Side CL	North Side CL	Sand Key Bridge	South Side CL	Total
	Zone #	2	5	3	1	4	12	11	15	13	
Aquarium	2	-	3	11,811	395	-	7,968	1,824	-	1,776	23,777
CB Island	5	3	-	-	6	-	753	223	-	166	1,150
Clearwater Beach	3	11,437	-	-	34,633	132	1,086,154	190,083	-	91,277	1,413,717
Clearwater CBD	1	456	6	39,187	-	8	-	-	-	-	39,657
Diamond Isle	4	-	0	128	8	-	412	73	-	108	728
East Side CL	12	8,943	667	1,023,237	-	412	-	-	-	-	1,033,260
North Side CL	11	1,969	203	194,767	-	75	-	-	-	-	197,013
Sand Key Bridge	15	-	-	-	-	-	-	-	-	-	-
South Side CL	13	1,831	141	85,794	-	102	-	-	-	-	87,868
Total		24,638	1,020	1,354,924	35,042	729	1,095,287	192,203	-	93,326	2,797,169

Notes: Sensitivity Test #3. Estimates do not include recreational riders or induced travel.

transpogroup

GROWTH DISTRICTS

ANNUAL PERSON TRIPS YEAR 2049 (+ 30 YEARS)

TBARTA Travel Model 9.2 Land Use based Growth Estimates:

Population growth applied to trip origins/Employment growth applied to destinations

Zone_ID	Zone	DU_Fac	Pop_Fac	Emp_Fac	2015_DU	2015_Pop	2015_Tot_Emp	2045_DU	2045_Pop	2045_Tot_Emp
1	CBD	1.48	1.49	1.14	1367	1,693	8,974	2,028	2,528	10,195
2	Aquarium	1.00	1.00	1.05	1583	1,993	1,099	1,588	1,999	1,152
3	Beach	1.23	1.22	1.03	2136	1,706	4,747	2,617	2,074	4,866
4	Diamond Isle	1.00	1.00	1.00	849	1,013	60	852	1,016	60
5	CB Island	1.00	1.00	1.02	1091	1,214	211	1,094	1,217	216
11	North	1.04	1.04	1.12	22778	39,932	15,933	23,783	41,482	17,770
12	East	1.41	1.45	1.41	1307040	2,723,035	1,495,738	1,849,064	3,947,292	2,112,128
13	South	1.08	1.07	1.07	141263	227,763	102,217	152,481	244,668	109,795

Annual Person Trips	Zone_ID	Prod_GF	Aquarium	CB Island	Clearwater Beach	Clearwater CBD	Diamond Isle	East Side CL	North Side CL	Sand Key Bridge	South Side CL	Total
Aquarium	2	1.00	-	106,791	1,302,975	208,048	-	2,326,869	468,445	-	445,420	4,858,548
CB Island	5	1.00	91,866	-	-	43,885	-	757,605	197,048	-	143,590	1,233,995
Clearwater Beach	3	1.22	1,376,757	-	-	899,973	263,210	16,174,024	2,518,435	-	1,183,495	22,415,895
Clearwater CBD	1	1.49	310,738	66,587	1,196,853	-	89,765	-	-	-	-	1,663,942
Diamond Isle	4	1.00	-	25,322	239,123	67,910	-	688,751	108,166	-	154,556	1,283,829
East Side CL	12	1.45	2,638,969	743,349	14,206,365	-	683,112	-	-	-	-	18,271,794
North Side CL	11	1.04	485,637	188,637	2,257,044	-	103,216	-	-	-	-	3,034,533
Sand Key Bridge	15	1.07	-	-	-	-	-	-	-	-	-	-
South Side CL	13	1.07	458,164	132,609	1,008,626	-	143,283	-	-	-	-	1,742,682
Total			5,362,130	1,263,295	20,210,985	1,219,817	1,282,586	19,947,250	3,292,094	-	1,927,061	54,505,217

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YEAR 2019 & 2049 ESTIMATED ONE-WAY GONDOLA TRIPS

2019

Annual Gondola Trip	Aquarium	CB Island	Clearwater Beach	Clearwater CBD	Diamond Isle	East Side CL	North Side CL	Sand Key Bridge	South Side CL	Total
Aquarium	-	3	11,811	395	-	7,968	1,824	-	1,776	23,777
CB Island	3	-	-	6	-	753	223	-	166	1,150
Clearwater Beach	11,437	-	-	34,633	132	1,086,154	190,083	-	91,277	1,413,717
Clearwater CBD	456	6	39,187	-	8	-	-	-	-	39,657
Diamond Isle	-	0	128	8	-	412	73	-	108	728
East Side CL	8,943	667	1,023,237	-	412	-	-	-	-	1,033,260
North Side CL	1,969	203	194,767	-	75	-	-	-	-	197,013
Sand Key Bridge	-	-	-	-	-	-	-	-	-	-
South Side CL	1,831	141	85,794	-	102	-	-	-	-	87,868
Total	24,638	1,020	1,354,924	35,042	729	1,095,287	192,203	-	93,326	2,797,169

2049

Annual Person Trips	Aquarium	CB Island	Clearwater Beach	Clearwater CBD	Diamond Isle	East Side CL	North Side CL	Sand Key Bridge	South Side CL	Total
Aquarium	-	3	11,988	423	-	9,602	1,933	-	1,838	25,787
CB Island	3	-	-	6	-	907	236	-	172	1,324
Clearwater Beach	12,981	-	-	40,867	146	1,428,293	222,398	-	104,512	1,809,197
Clearwater CBD	579	8	49,376	-	10	-	-	-	-	49,972
Diamond Isle	-	0	130	8	-	496	78	-	111	823
East Side CL	11,179	824	1,268,814	-	505	-	-	-	-	1,281,322
North Side CL	2,057	209	201,584	-	76	-	-	-	-	203,926
Sand Key Bridge	-	-	-	-	-	-	-	-	-	
South Side CL	1,941	147	90,083	-	106	-	-	-	-	92,277
Total	28,739	1,191	1,621,975	41,304	843	1,439,298	224,645		106,633	3,464,628

Notes: Sensitivity Test #3. Estimates do not include recreational riders or induced travel.

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INTERIM YEAR FORECASTS – GONDOLA TRIPS (ONE-WAY)

Destination	2019	2025	2030	2035	2040	2045
Clearwater Beach	1,354,924	1,408,334	1,452,842	1,497,351	1,541,859	1,586,368
East Side CL	1,095,287	1,164,090	1,221,425	1,278,760	1,336,095	1,393,430
North Side CL	192,203	198,691	204,098	209,505	214,912	220,319
South Side CL	93,326	95,988	98,206	100,423	102,641	104,859
Clearwater CBD	35,042	36,294	37,338	38,382	39,425	40,469
Aquarium	24,638	25,458	26,142	26,825	27,509	28,193
CB Island	1,020	1,054	1,082	1,111	1,139	1,168
Diamond Isle	729	752	771	790	809	828
Sand Key Bridge	-					
Total	2,797,169	2,930,661	3,041,904	3,153,147	3,264,390	3,375,634

Notes: Sensitivity Test #3. Estimates do not include recreational riders or induced travel.

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COACHMAN PARK RIDERSHIP ESTIMATE

Projected Annual Visitors

Coachman Park	Aquarium	CB Island	Clearwater Beach	Clearwater CBD	Diamond Isle	East Side CL	North Side CL	Sand Key Bridge	South Side CL	Total
Aquarium				16,330						16,330
CB Island				3,445						3,445
Clearwater Beach				64,056						64,056
Clearwater CBD	20,550	4,456	79,778	-	6,055	-	-	-	-	110,839
Diamond Isle				5,330						5,330
East Side CL				-						-
North Side CL				-						-
Sand Key Bridge				-						-
South Side CL				-						-
Total	20,550	4,456	79,778	89,161	6,055	-	-	-	-	200,000

Probabilities - Gondola	Aquarium	CB Island	Clearwater Beach	Clearwater CBD	Diamond Isle	East Side CL	North Side CL	Sand Key Bridge	South Side CL
Aquarium		0.5%	3.6%	4.4%		3.0%	3.1%		3.0%
CB Island	0.5%			0.9%		1.9%	2.0%		1.9%
Clearwater Beach	3.7%			6.3%	0.6%	4.4%	4.6%		4.4%
Clearwater CBD	4.0%	0.8%	5.8%		0.7%				
Diamond Isle		0.1%	0.6%	0.7%		1.2%	1.2%		1.2%
East Side CL	3.0%	1.8%	4.4%		1.2%				
North Side CL	3.1%	1.8%	4.5%		1.3%				
Sand Key Bridge									
South Side CL	3.0%	1.8%	4.4%		1.2%				

Coachman Park	Aquarium	CB Island	Clearwater Beach	Clearwater CBD	Diamond Isle	East Side CL	North Side CL	Sand Key Bridge	South Side CL	Total
Aquarium				712						712
CB Island				32						32
Clearwater Beach				4,067						4,067
Clearwater CBD	825	33	4,609	-	41	-	-	-	-	5,509
Diamond Isle				39						39
East Side CL				-						-
North Side CL				-						-
Sand Key Bridge				-						-
South Side CL				-						-
Total	825	33	4,609	4,850	41	-	-	-	-	10,359

STOPS APPROACH

The gondola is expected to serve distinctive travel markets:

1. **Commuters and other 'day-to-day' travelers** – these trips will be estimated by developing a locally calibrated STOPS ("Simplified Trips-on-Project Software") model with data from the regional travel model and local transit agency.
2. **Special market segments of tourists and attendees of events -** to estimate gondola ridership for the non-traditional market segments, observed data inputs, targeted origin-destination and location-based services data for major attractors will be utilized.

The following slides present initial ridership forecasts for commuters and other 'day-to-day' travelers (type 1).

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WHY STOPS

- Includes Gondola mode
- Data readily available
- Self “calibrates”
- Methodology developed by FTA

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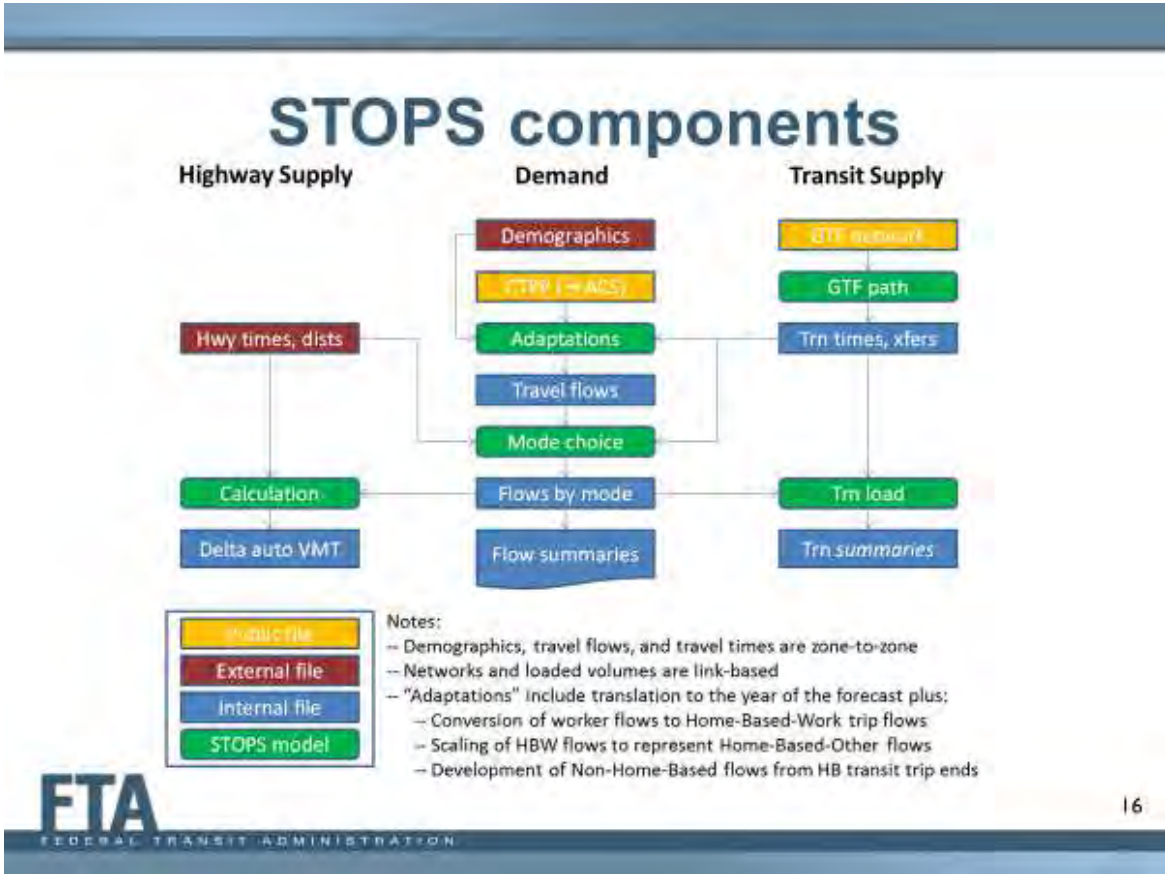
STOPS Model Structure



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INPUT DATA

General Transit Feed Specification (GTFS) data

Maintained by local transit agencies

Up to 20 separate directories can be imported

Travel demand: Census Transportation Planning Package (CTPP)

Tabulations from the 2000 Census — Journey-to-Work (JTW) data

To be pulled directly from FTA STOPS website on a state level

Land Use: Base and Future Year

Population & Employment from the Regional Travel Model (TBRPM v9.2)

Zone-to-zone highway travel times and distances

Peak and Off-Peak travel data from the Regional Travel Model (TBRPM v9.2)

Station locations

Park-and-ride details

Operating plan

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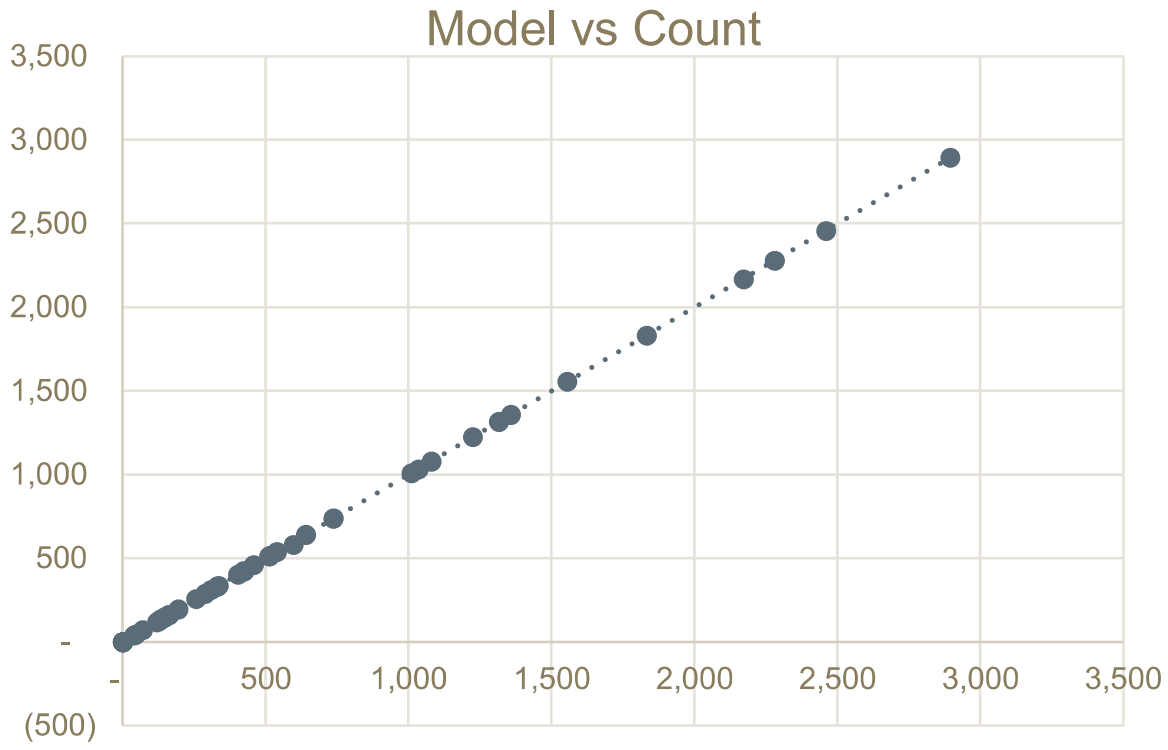
ROUTE LEVEL CALIBRATION



Route Name	Count	Model	Diff
52	2,894	2,895	1
JT	597	582	(15)
CAT	1,832	1,831	(1)
60	1,224	1,225	1
61	458	458	0
62	422	422	(0)
65	257	257	0
66	126	126	(0)
67	309	311	2
68	194	194	0
19	1,358	1,358	(0)
JT NB	162	162	(0)
34	2,280	2,279	(1)
20	424	424	(0)
22	134	134	0
23	539	539	(0)
5	149	149	0
4	2,171	2,168	(3)
7	515	515	(0)
14	1,079	1,079	0
9	1,034	1,032	(2)
813	39	40	1
814	45	45	(0)
32	127	127	(0)
76	288	288	0
75	403	403	(0)
74	736	737	1
73	330	330	0
15	512	512	(0)
79	1,010	1,009	(1)
78	737	738	1
11	641	640	(1)
38	335	335	(0)
59	1,316	1,317	1
58	119	119	0
16	145	145	0
JT SB	161	161	0
18	2,459	2,457	(2)
SCBT	1,555	1,555	0
90	70	70	0
	29,186	29,166	(20)

CLEARWATER ALTERNATIVES

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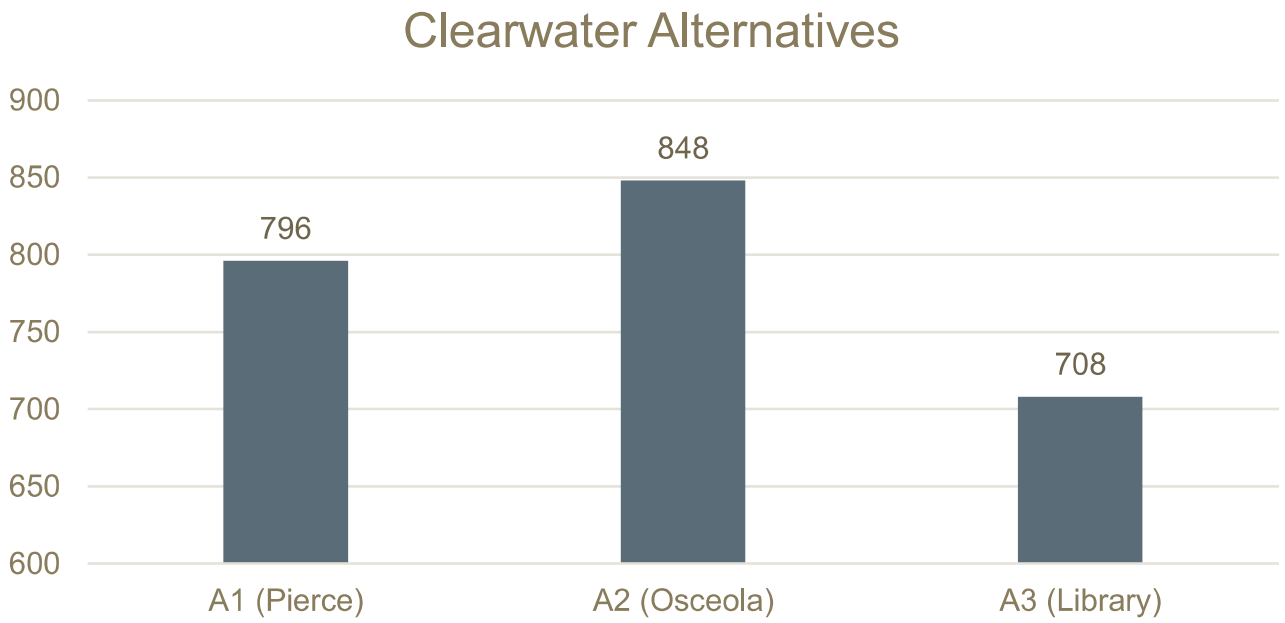
INITIAL FORECASTS – CLEARWATER
COMMUTERS AND OTHER 'DAY-TO-DAY' TRAVELERS



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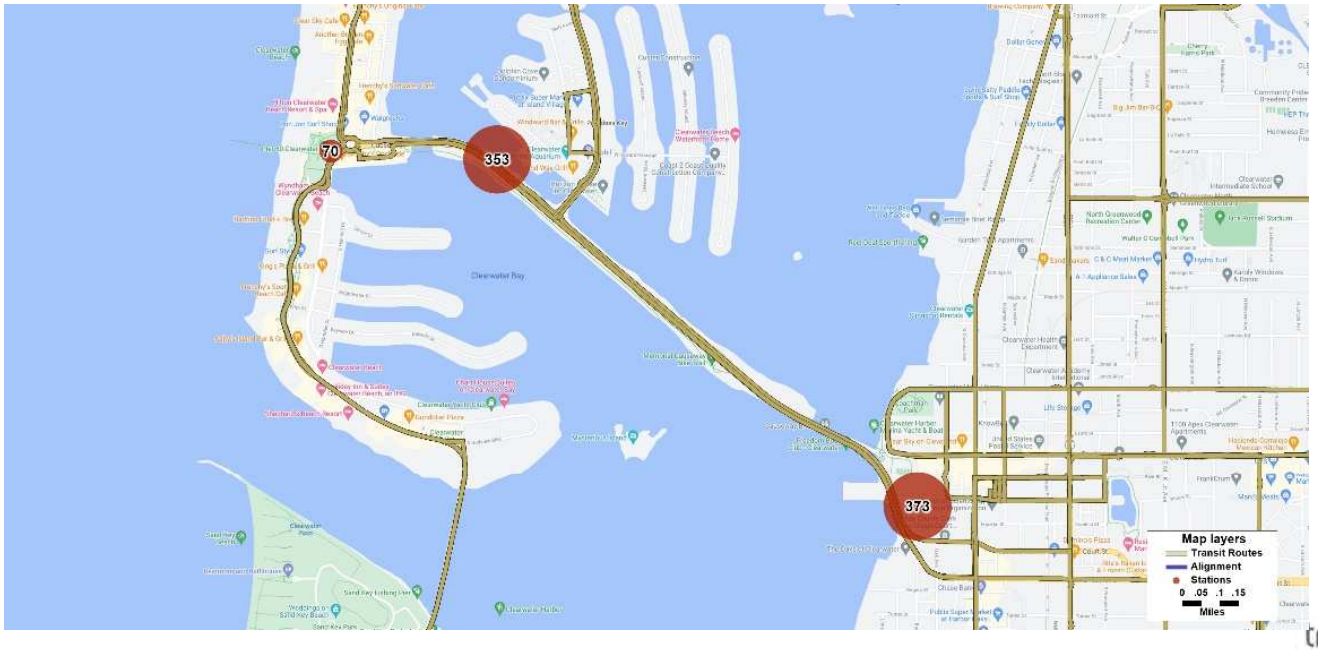
CLEARWATER – A1 ALTERNATIVE

Alternative	Station Name	(Station ID)	Walk	KNR	PNR	XFER	Total
A1	Pierce St	CW-6	124	23	18	208	373
	Aquarium	CW-3	304	22	26	1	353
	Clearwater Beach*	CW-2	2	8	8	52	70
	Total		**430**	**53**	**52**	**261**	**796**

* It is assumed that the 2 proposed Clearwater Beach stations are not significantly different in terms of ridership for the STOPS analysis.



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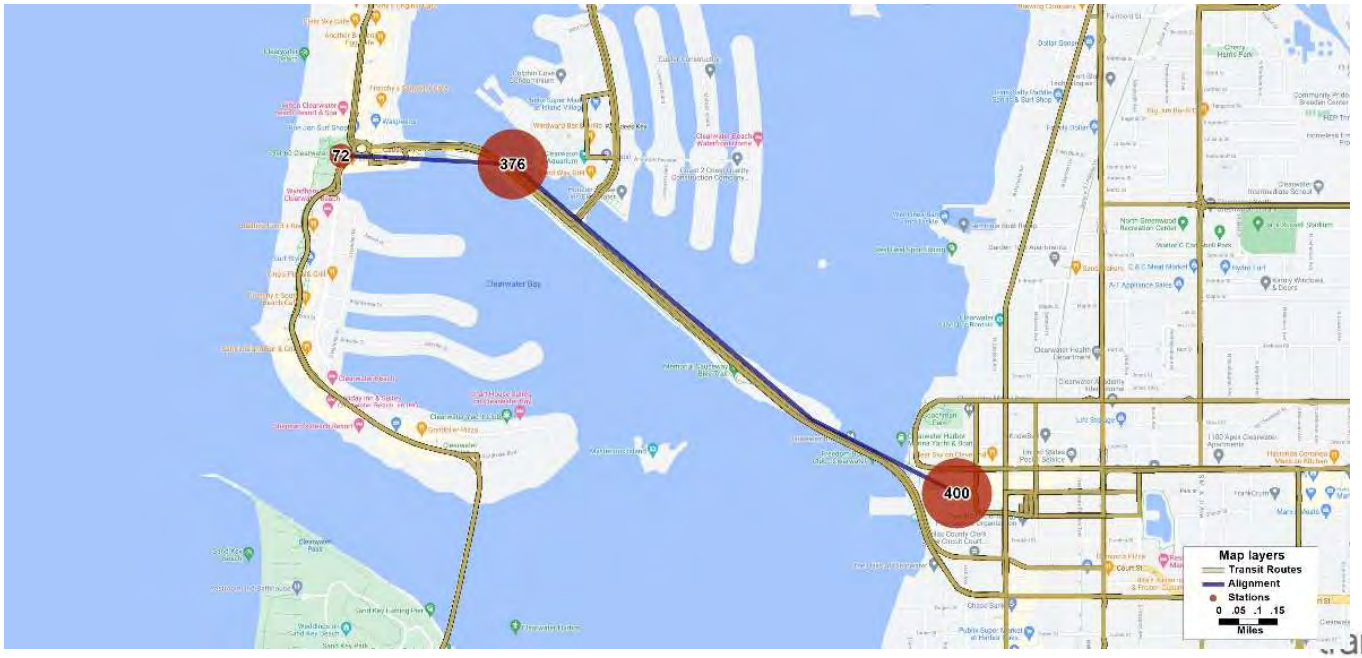
CLEARWATER – A2 ALTERNATIVE

Alternative	Station Name	(Station ID)	Walk	KNR	PNR	XFER	Total
A2	Osceola	CW-5	120	23	18	239	400
	Aquarium	CW-3	328	21	26	1	376
	Clearwater Beach*	CW-2	2	7	8	55	72
	Total		**450**	**51**	**52**	**295**	**848**

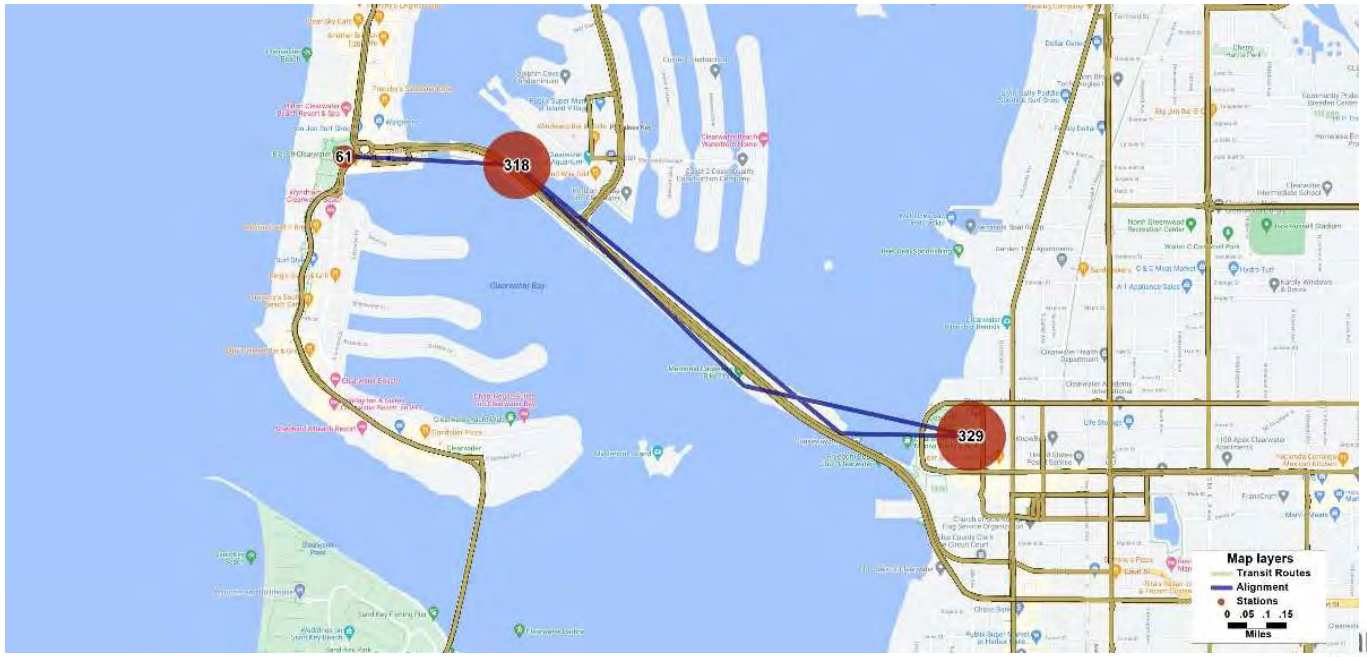
* It is assumed that the 2 proposed Clearwater Beach stations are not significantly different in terms of ridership for the STOPS analysis.



CLEARWATER – A3/4 ALTERNATIVE

Alternative	Station Name	(Station ID)	Walk	KNR	PNR	XFER	Total
A3 & A4	Library	CW-4	118	24	19	168	329
	Aquarium	CW-3	275	19	24	0	318
	Clearwater Beach*	CW-2	2	7	8	44	61
	Total		**395**	**50**	**51**	**212**	**708**

* It is assumed that the 2 proposed Clearwater Beach stations are not significantly different in terms of ridership for the STOPS analysis.



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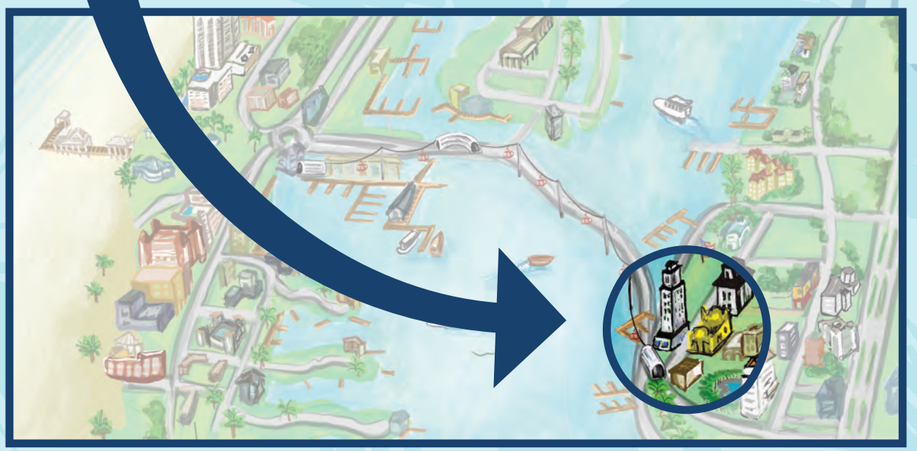
APPENDIX E

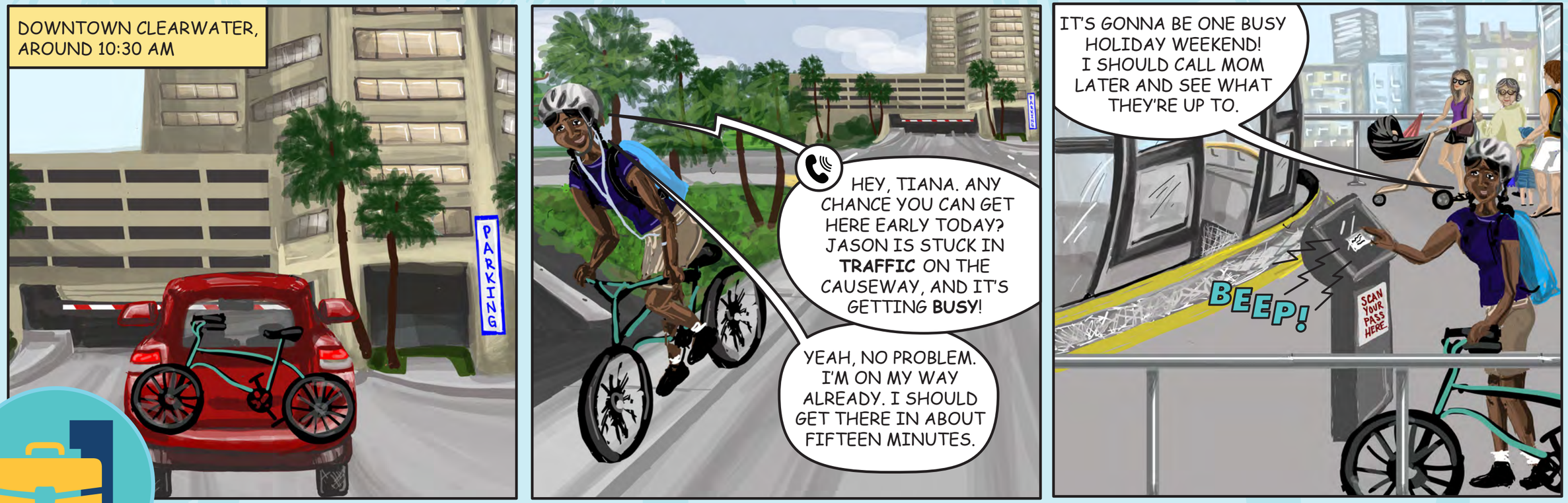
USER EXPERIENCE NARRATIVES

Downtown Clearwater

CLEARWATER BEACH GONDOLA *expands the transit options for workers and commuters moving between Downtown Clearwater and Clearwater Beach.*

As a commuter, you can get to the gondola station on foot, by bike, by bus, or by parking your car in one of the many public parking facilities in the area. The gondola station is only a short walk away!

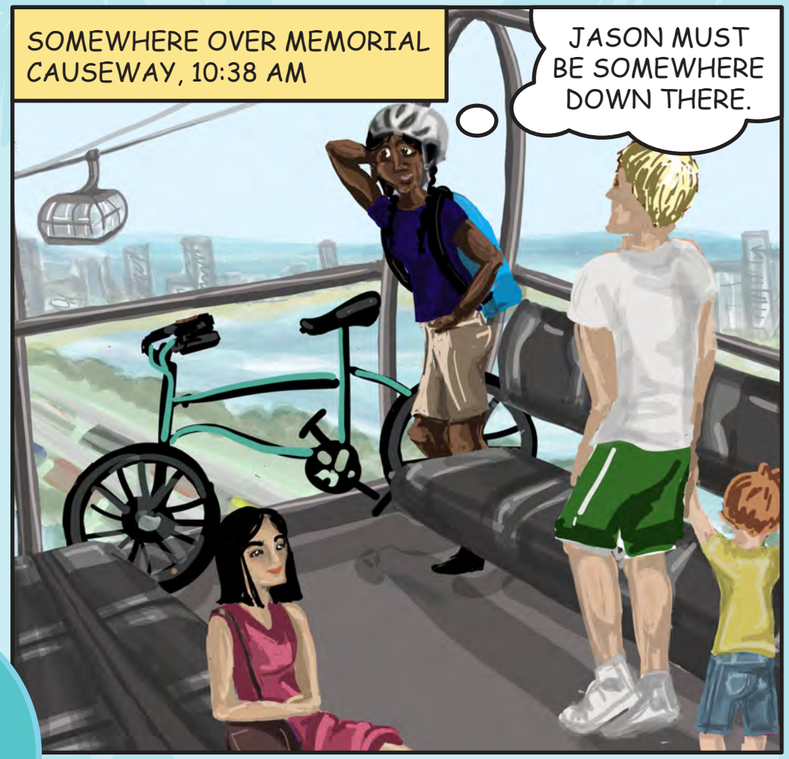




Riding The Gondola

Cabins on the **CLEARWATER BEACH GONDOLA** *are spacious and designed to have plenty of room for seated and standing passengers. The cabins can also accommodate bikes, scooters, strollers, and wheelchairs.*

Whatever day of the week it is and whichever direction you're headed, you never have to worry about surface traffic on Memorial Causeway. The gondola is predictable and reliable, and will always get you there on time.

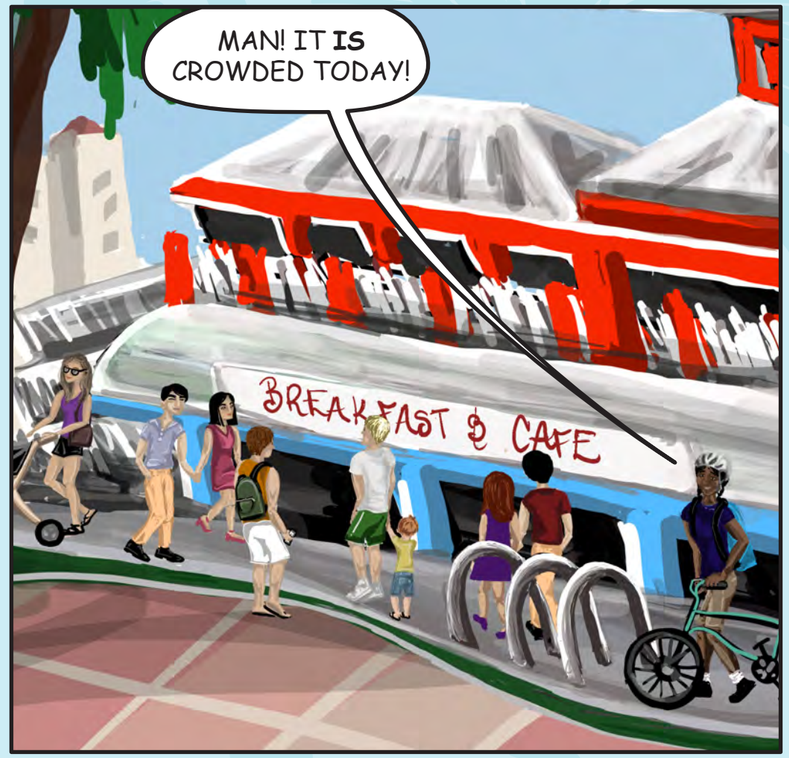


2

Getting To Work

Both Downtown Clearwater and Clearwater Beach are significant employment hubs for the city, and many commuters can benefit from the **CLEARWATER BEACH GONDOLA** *as their preferred mode of transportation across the bay.*

Whether you're a business professional with offices in downtown, or a food and beverage worker at a beachside hotel, this gondola is a great option to have!

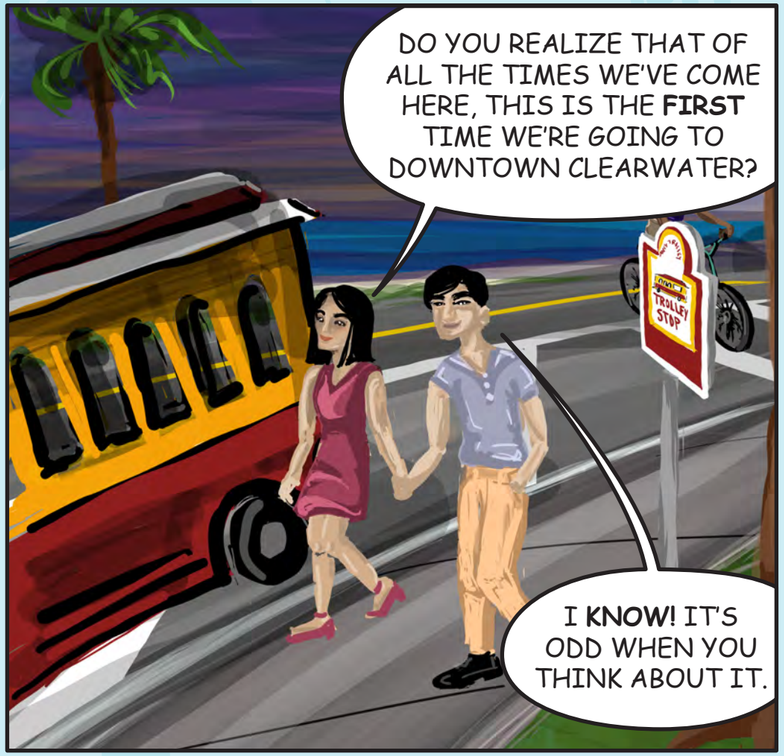


3

Clearwater Beach

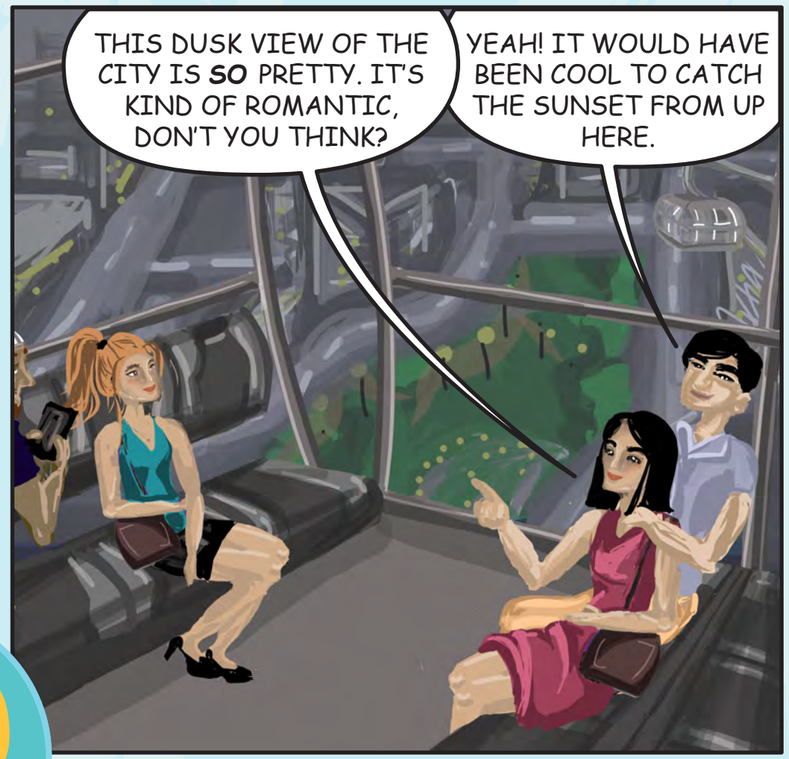
Tourists and residents of Clearwater Beach can take the **CLEARWATER BEACH GONDOLA** *to downtown and enjoy a great selection of shopping and dining. Downtown Clearwater and Coachman Park have a variety of indoor and outdoor venues for art, culture, history, and music.*

Ride a bike or take the Jolley Trolley from wherever you're staying in Clearwater Beach, and it will take you right to the beach gondola station.



Riding The Gondola

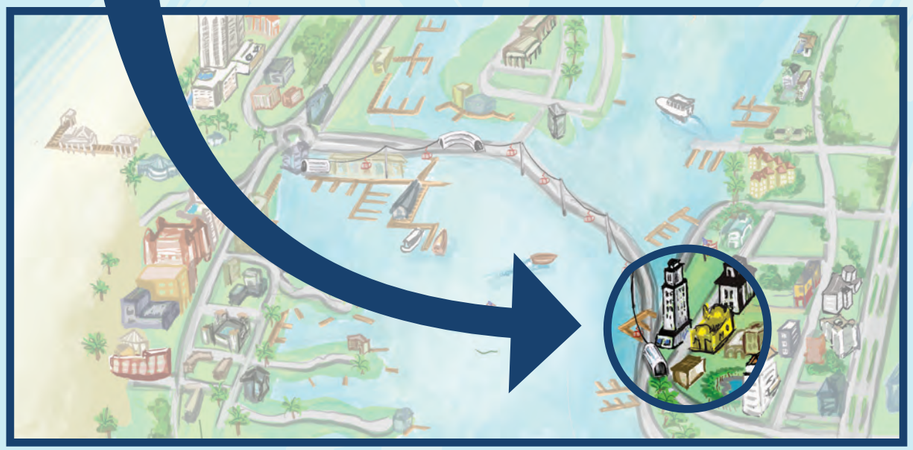
The ride on **CLEARWATER BEACH GONDOLA** *offers way more than just a convenient connection between the beach and downtown. Take a seat in the glass-wrapped gondola cabins and enjoy a smooth ride with great views towards downtown and the beach at any time of the day!*

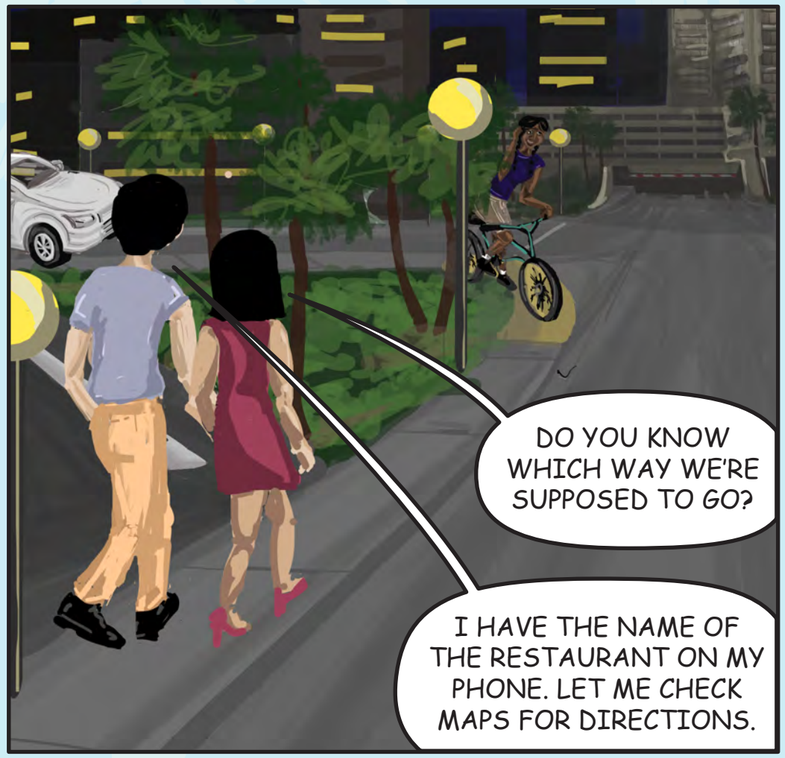


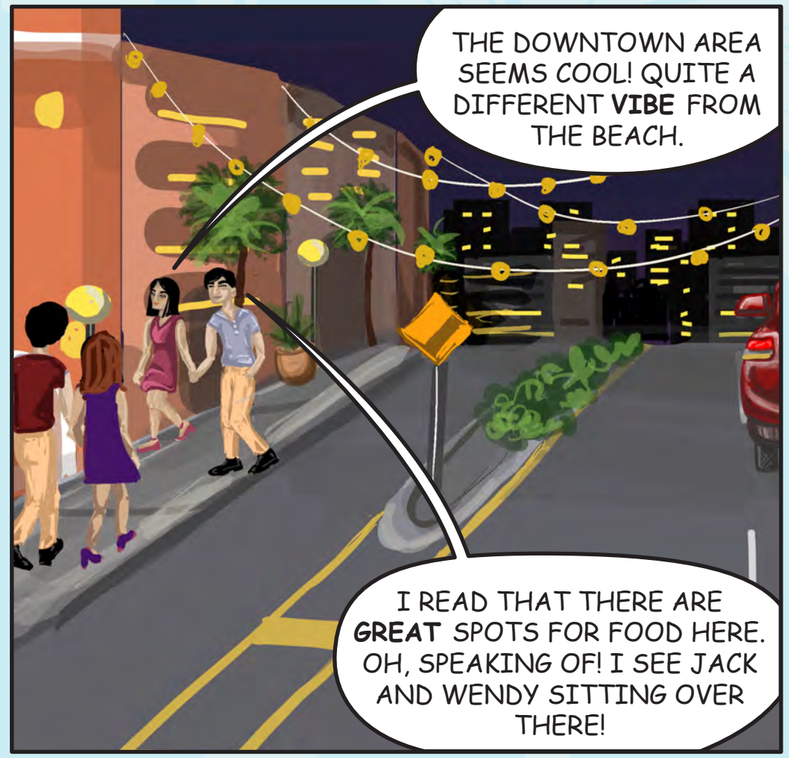
2

Downtown Clearwater

The **CLEARWATER BEACH GONDOLA** *downtown station is located within walking distance to most of the attractions in Downtown Clearwater. Stroll around Cleveland Street District and take in the stunning views of Clearwater in the evening. Catch a movie at the historic Capitol Theater, or watch a live concert at Coachman Park. Whatever you like to do for fun, Downtown Clearwater is just a 12-minute gondola ride away!*

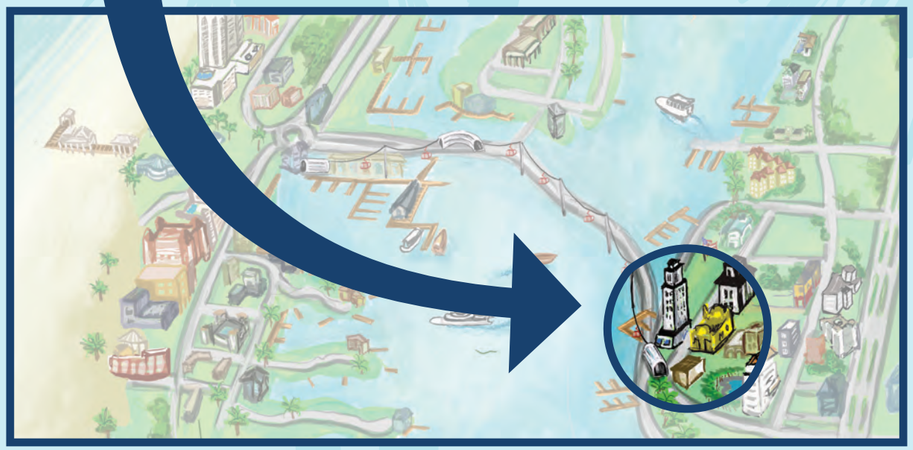






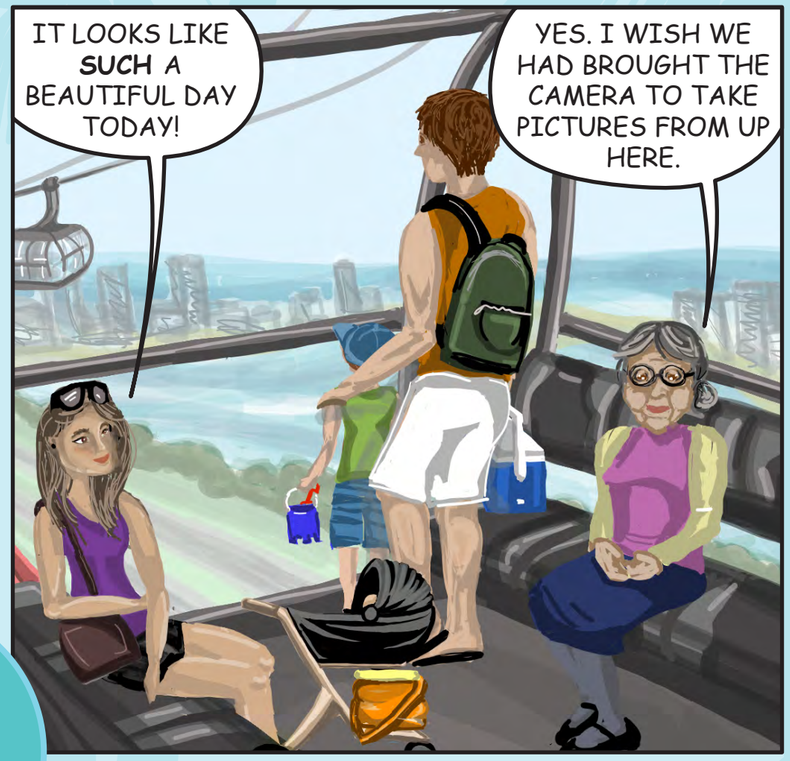
Downtown Clearwater

The new **CLEARWATER BEACH GONDOLA** *will provide a convenient connection for families and tourists of all needs who want to enjoy a fun and relaxing, congestion-free day at the beach. Just park your car at one of the many public parking structures in Downtown Clearwater. Enjoy the valet service, and take a short walk to the nearby gondola station!*



Riding The Gondola

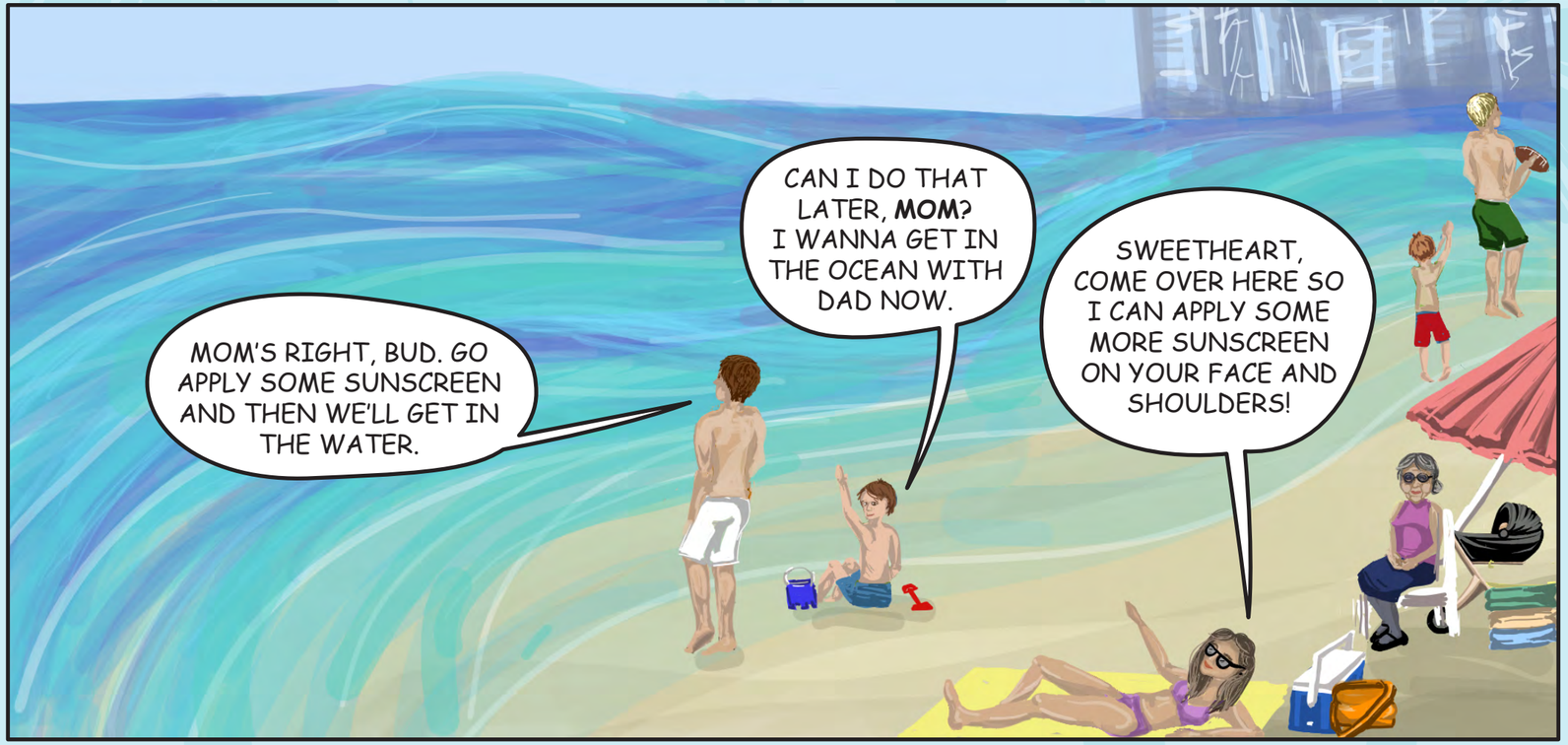
Riders on the **CLEARWATER BEACH GONDOLA** *can experience a smooth journey to the beach by air, flying over the backed up traffic on Memorial Causway.*
Sit in the spacious gondola cabins and enjoy the panoramic spectacular views towards downtown and the beach. Give yourself a moment to take it all in, and maybe snap a picture or two!



Getting To The Beach

Arrive at the **CLEARWATER BEACH GONDOLA** *beach station, and take an easy stoll to the beach, nearby shops, or your favorite restaurant. You don't need to worry about parking your car at the beach.*

Whenever you're ready to go back, return to the beach gondola station. A gondola cabin will be right there to take you and your family back to Downtown Clearwater.



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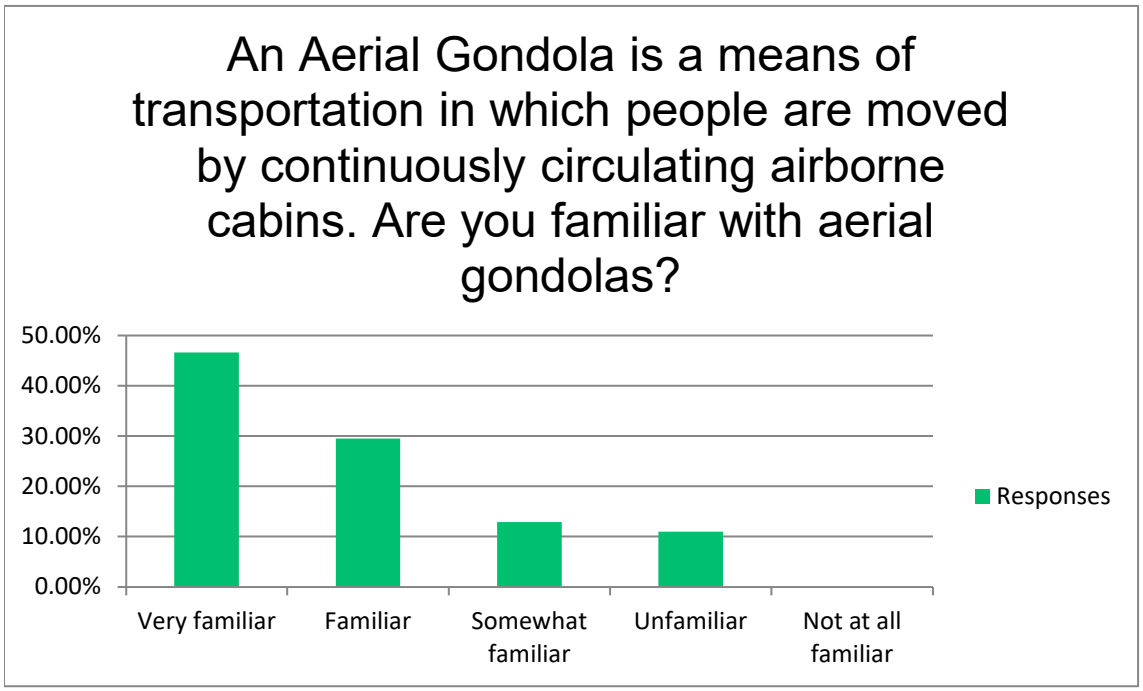
APPENDIX F

PUBLIC QUESTIONNAIRE RESULTS

TBARTA Gondola Questionnaire

An Aerial Gondola is a means of transportation in which people are moved by continuously circulating airborne cabins. Are you familiar with aerial gondolas?

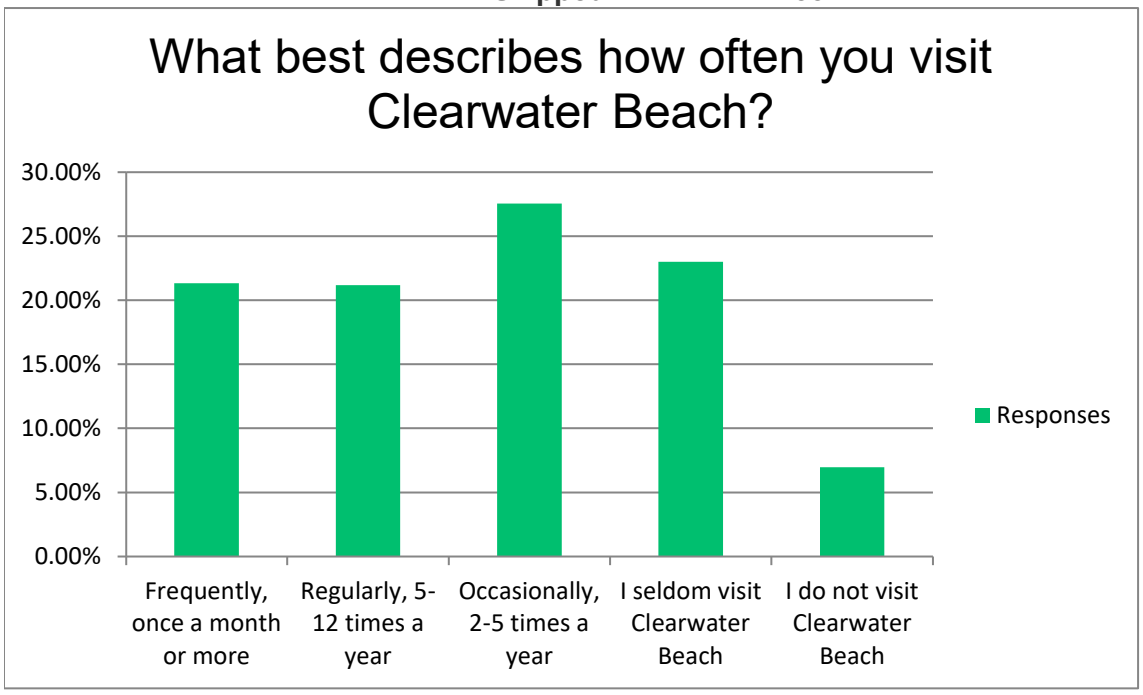
Answer Choices	Responses	
Very familiar	46.60%	3871
Familiar	29.51%	2451
Somewhat familiar	12.92%	1073
Unfamiliar	10.97%	911
Not at all familiar	0.00%	0
	Answered	**8306**
	Skipped	**50**



TBARTA Gondola Questionnaire

What best describes how often you visit Clearwater Beach?

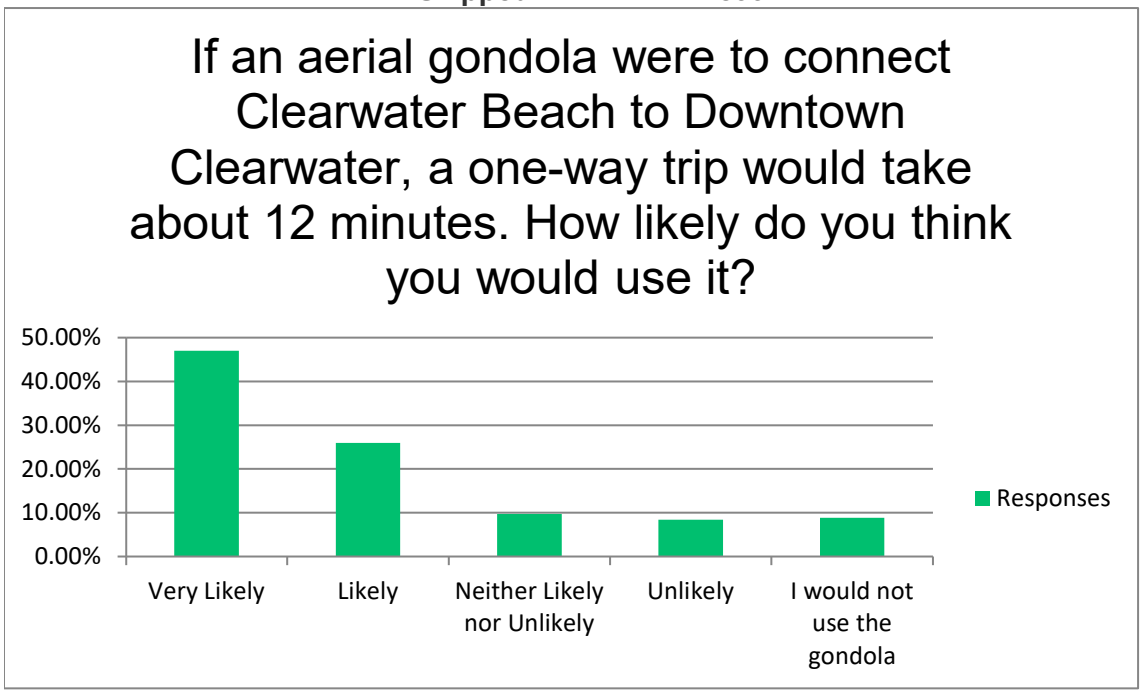
Answer Choices	Responses	
Frequently, once a month or more	21.32%	1663
Regularly, 5-12 times a year	21.18%	1652
Occasionally, 2-5 times a year	27.54%	2148
I seldom visit Clearwater Beach	22.99%	1793
I do not visit Clearwater Beach	6.96%	543
	Answered	**7799**
	Skipped	**557**



TBARTA Gondola Questionnaire

If an aerial gondola were to connect Clearwater Beach to Downtown Clearwater, a one-way trip would take about 12 minutes. How likely do you think you would use it?

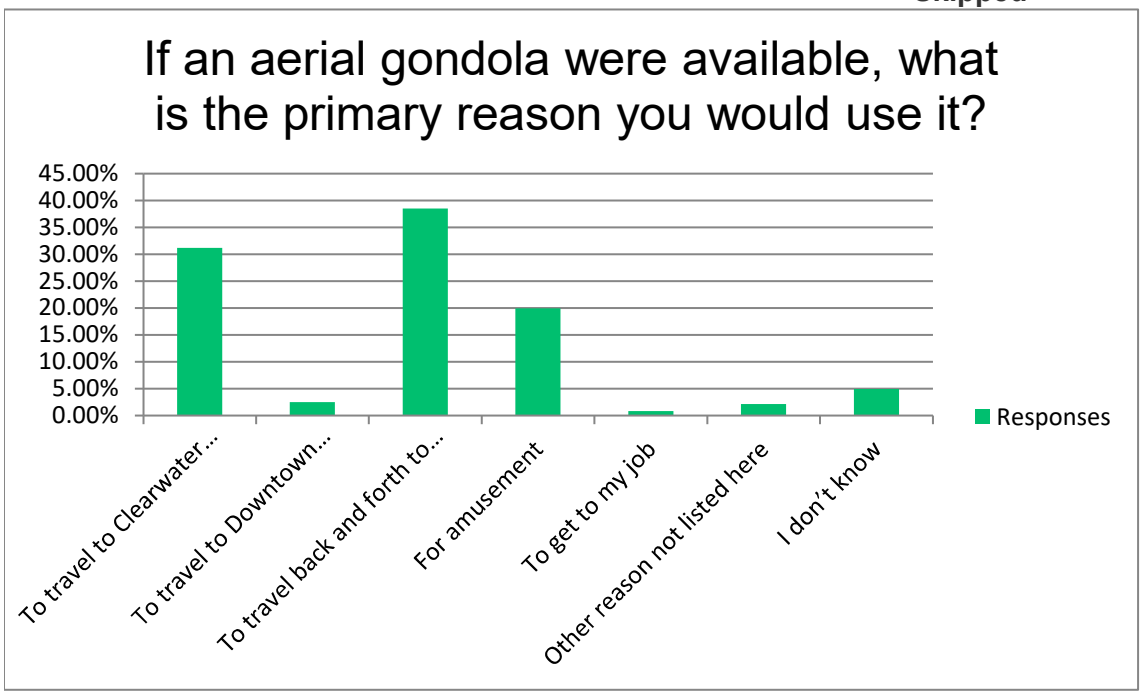
Answer Choices	Responses	
Very Likely	47.03%	3507
Likely	25.98%	1937
Neither Likely nor Unlikely	9.72%	725
Unlikely	8.41%	627
I would not use the gondola	8.86%	661
Answered		**7457**
Skipped		**899**



TBARTA Gondola Questionnaire

If an aerial gondola were available, what is the primary reason you would use it?

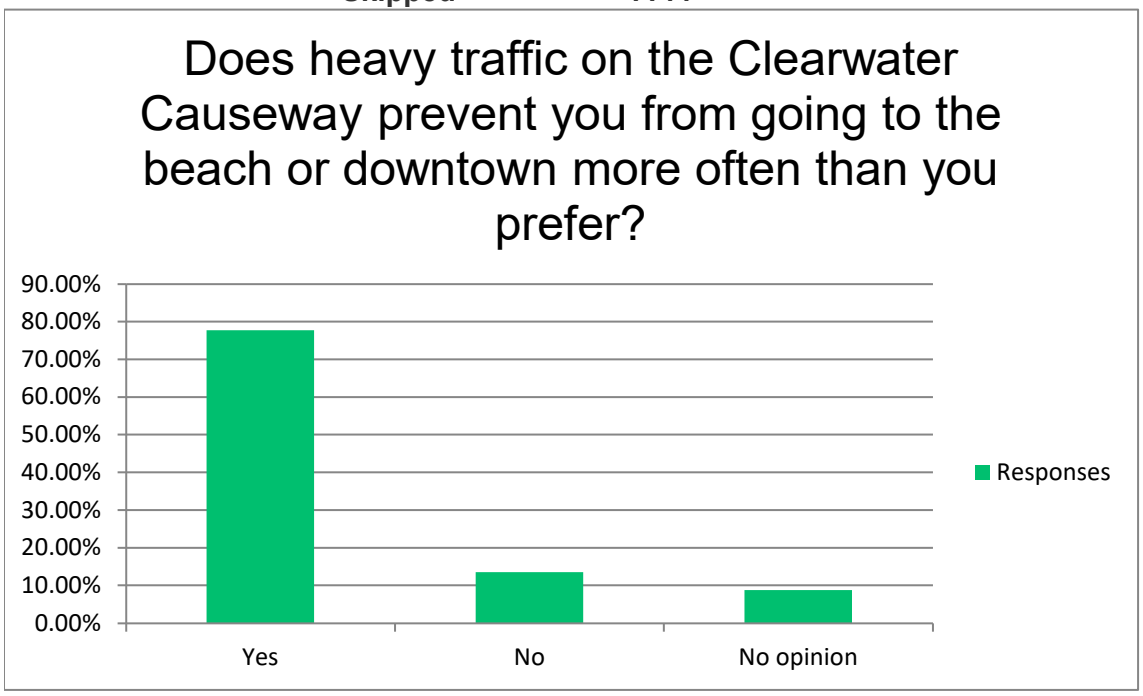
Answer Choices	Responses	
To travel to Clearwater Beach attractions	31.16%	2063
To travel to Downtown Clearwater attractions	2.48%	164
To travel back and forth to both beach and downtown destinations	38.46%	2546
For amusement	19.95%	1321
To get to my job	0.86%	57
Other reason not listed here	2.15%	142
I don't know	4.94%	327
	Answered	**6620**
	Skipped	**1736**



TBARTA Gondola Questionnaire

Does heavy traffic on the Clearwater Causeway prevent you from going to the beach or downtown more often than you prefer?

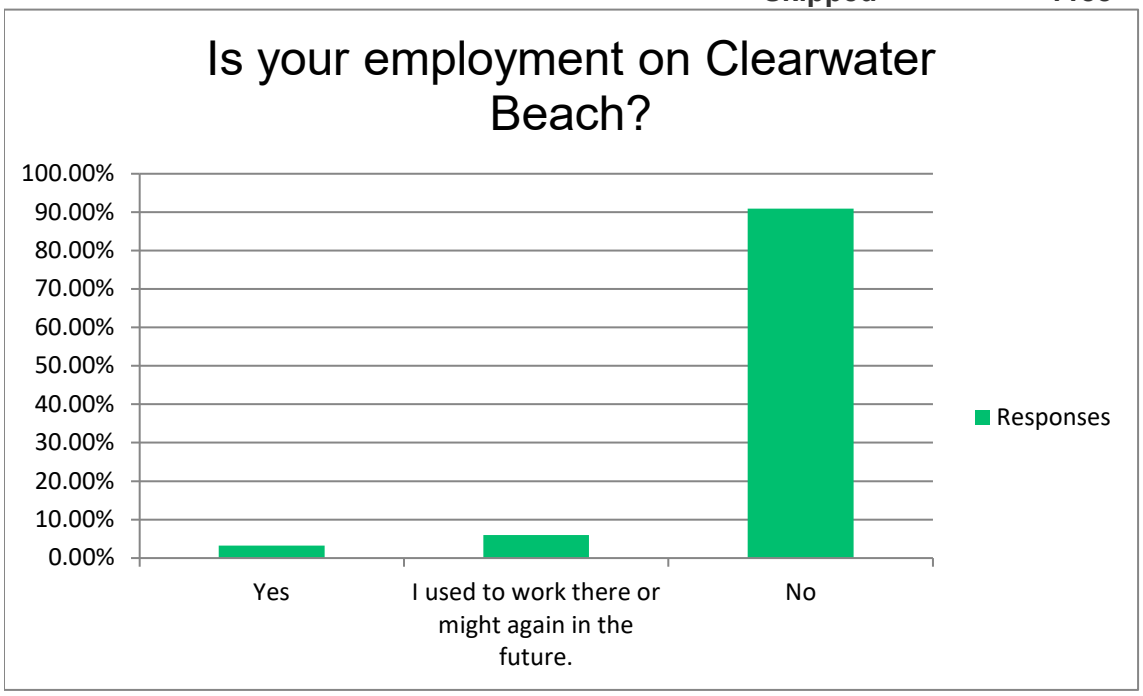
Answer Choices	Responses	
Yes	77.77%	5609
No	13.49%	973
No opinion	8.74%	630
Answered		**7212**
Skipped		**1144**



TBARTA Gondola Questionnaire

Is your employment on Clearwater Beach?

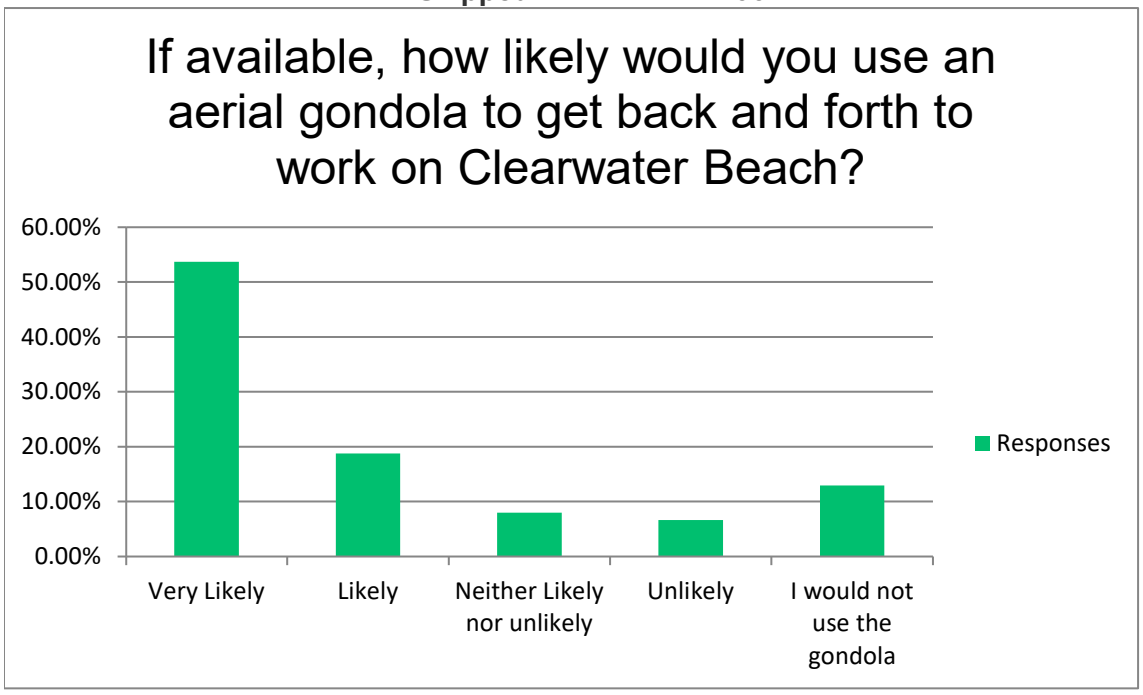
Answer Choices	Responses	
Yes	3.19%	229
I used to work there or might again in the future.	5.94%	426
No	90.86%	6513
	Answered	**7168**
	Skipped	**1188**



TBARTA Gondola Questionnaire

If you answered "Yes" to being employed on Clearwater Beach, if available, how likely would you use an aerial gondola to get back and forth to work on Clearwater Beach?

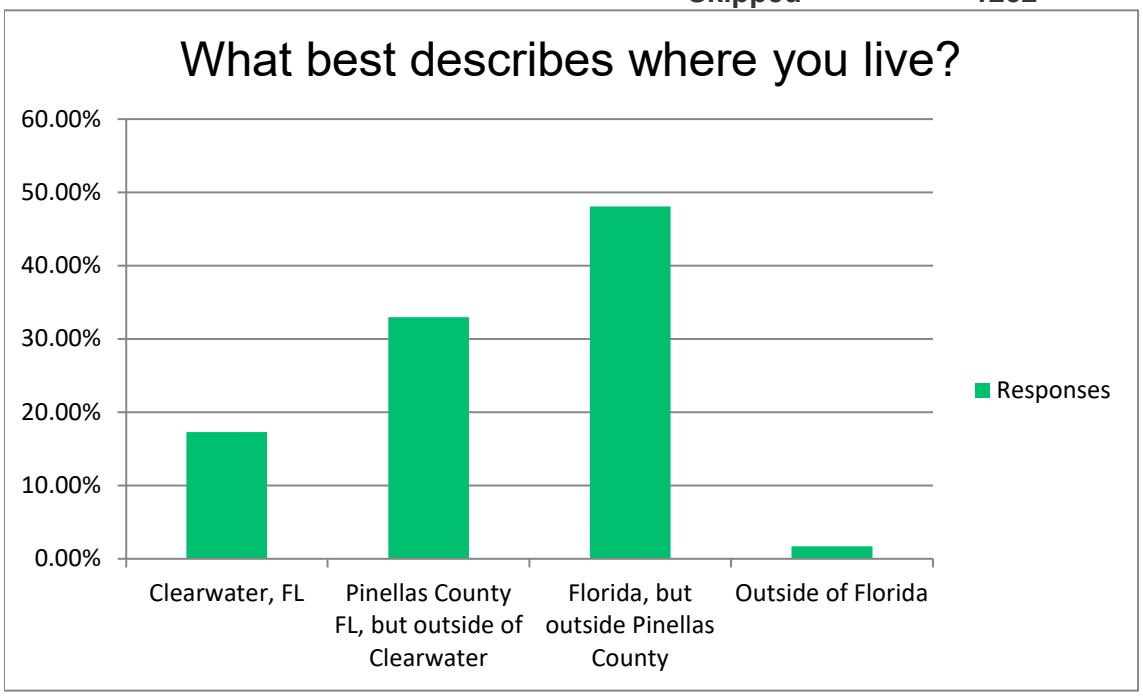
Answer Choices	Responses	
Very Likely	53.69%	349
Likely	18.77%	122
Neither Likely nor unlikely	8.00%	52
Unlikely	6.62%	43
I would not use the gondola	12.92%	84
	Answered	**650**
	Skipped	**7706**



TBARTA Gondola Questionnaire

What best describes where you live?

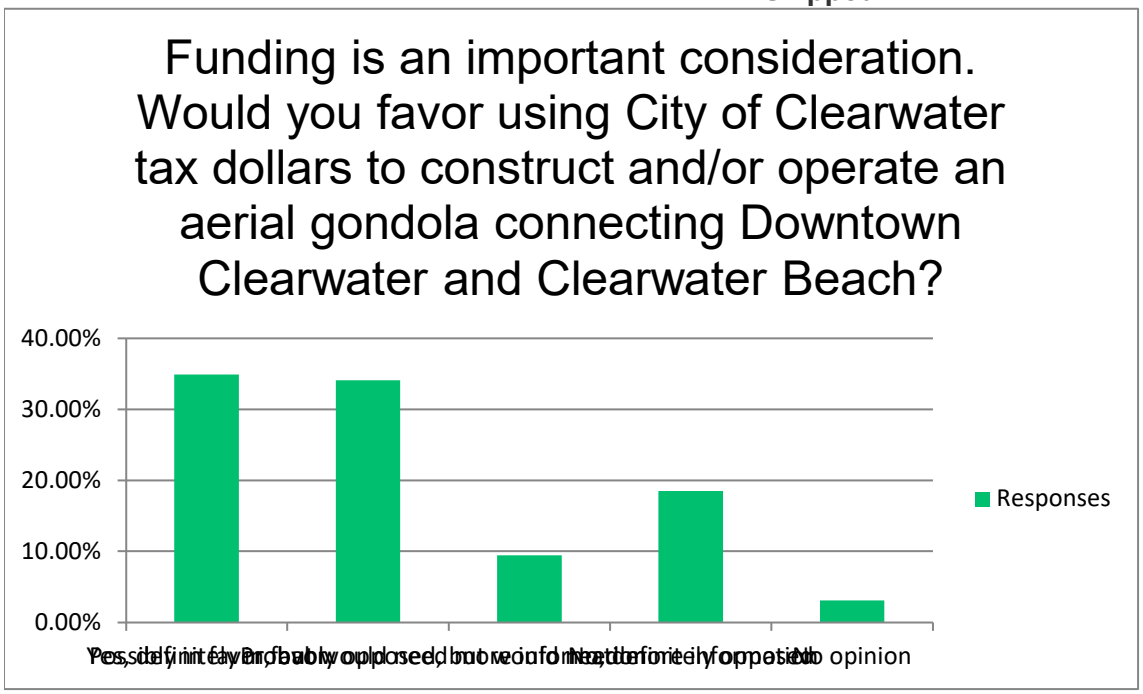
Answer Choices	Responses	
Clearwater, FL	17.29%	1228
Pinellas County FL, but outside of Clearwater	32.95%	2341
Florida, but outside Pinellas County	48.09%	3416
Outside of Florida	1.68%	119
	Answered	**7104**
	Skipped	**1252**



TBARTA Gondola Questionnaire

Funding is an important consideration. If you answred "Yes" to Clearwater resident, would you favor using City of Clearwater tax dollars to construct and/or operate an aerial gondola connecting Downtown Clearwater and Clearwater Beach?

Answer Choices	Responses	
Yes, definitely in favor	34.90%	430
Possibly in favor, but would need more information	34.09%	420
Probably opposed, but would need more information	9.42%	116
No, definitely opposed	18.51%	228
No opinion	3.08%	38
	Answered	**1232**
	Skipped	**7124**



TBARTA Gondola Questionnaire

If you answred "Yes" to Pinellas County resident, would you favor using Pinellas County tax dollars to construct and/or operate an aerial gondola connecting Downtown Clearwater and Clearwater Beach?

Answer Choices	Responses	
Yes, definitely in favor	30.80%	1092
Possibly in favor, but would need more information	38.11%	1351
Probably opposed, but would need more information	10.13%	359
No, definitely opposed	18.14%	643
No opinion	2.82%	100
	Answered	**3545**
	Skipped	**4811**