KEY WEST INTERMODAL CENTER FEASIBILITY STUDY

July 2024

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

The City of Key West currently experiences traffic congestion, insufficient parking capacity, and a high cost of living. Key West Transit (KWT) has proposed a transportation center, Key West Intermodal Center (KWIC) that would help to alleviate these issues and allow the agency to implement service and facility plans. This intermodal facility would include a public parking garage, on-site employer-provided housing, commercial/retail space, and access to expanded public transit and multimodal transportation options. The new site would not only serve the surrounding community, but also address KWT's own concerns of employee retention and establishing a steady revenue source to offset costs.

This study determined that the KWIC is a feasible project and that the ideal site for this project would be at the site of the Key West Transit Facility located at 5701 College Road in Key West. The results of a Title VI analysis and preliminary environmental scan determined that this site would have the least impact on the surrounding community and environment compared to the two other sites considered. This site also offers convenience for the transit agency's vehicles, the public accessing transportation, and employees that will live on-site in the employer-provided housing.

Potential site amenities and features of the KWIC were determined by Key West Transit. Funding opportunities were identified to assist in offsetting costs to KWT. Following this, a risk assessment was conducted to identify potential risks and screen out some amenities and features. This assessment includes three site scenarios with varying focuses and site space utilization.

After the risk assessment was completed, local stakeholders identified by KWT were contacted and provided information on the KWIC project. Interviews were held with several stakeholders and possible collaborations between entities, additional amenities, and potential issues were discussed. Overall, the KWIC project was supported by the stakeholders. The risk assessment and stakeholder engagement informed the implementation strategies for the KWIC which were organized into initial, secondary, and tertiary recommendations.

INTRODUCTION

Project Description

The Key West Intermodal Center (KWIC) is a proposed transportation center for Key West Transit (KWT). Development of the center was prompted by the desire to enhance community mobility. The intermodal facility would enable visitors to access multiple transportation modes, as well as offer vehicle parking to reduce congestion and improve safety. The agency is also examining the inclusion of on-site employer-provided housing to help with employee retention for the agency. Additionally, the KWIC would ideally be a destination for residents and tourists with its various amenities, such as retail, community spaces, and other resources.

Project Purpose and Need

The goal of the Key West Intermodal Center (KWIC) Feasibility Study is to evaluate the feasibility of a new intermodal center for Key West Transit, located on their current property as an extension of the agency's existing facility. The study includes the consideration of potential alternative project locations; it also establishes the need and risks of the project and provides site recommendations and next steps. This information was determined by an initial assessment of existing conditions, examination of potential features and amenities, environmental and resiliency scan, stakeholder engagement, providing funding strategies, conducting a risk assessment, and providing implementation recommendations.

The need for the Key West Intermodal Center (KWIC) project is multifaceted.

Alleviate traffic congestion.

The city is a popular destination and has limited space. Traffic congestion in the area fluctuates seasonally and throughout the day in certain areas (i.e., school pick-up hours, peak commuter periods). Through the promotion of transit and alternative transportation modes, as well as the inclusion of a public parking garage, the KWIC can assist in reducing the number of single occupancy vehicles on the road. These mitigation strategies are aimed at local residential commuters and visitors.

Address insufficient parking.

Most parking is concentrated in downtown Key West, where congestion is a considerable concern. In addition, the amount of parking cannot accommodate the volume of residents and visitors in the area. The KWIC would include a parking garage as a means to promote the use of public transit, increase parking capacity in the area, and provide an economic benefit to KWT. This will also help address traffic congestion by reducing the need for individuals to drive vehicles downtown.

Provide on-site employer-provided housing.

Key West has limited affordable housing, which is exacerbated by the high cost of living. This results in very long commuter travel for agency employees, making it difficult to retain staff. Establishing on-site employer-provided housing as part of the KWIC can attract new transit staff, as well as promote transit employee retention, helping to position the agency for success and growth.

Establish an economic engine.

Consistent revenue sources need to be established to sustain, as well as continuously improve and expand, Key West Transit service. Establishing commercial spaces and residential units as part of the KWIC can provide ongoing sources of revenue as a means to offset costs while providing valuable resources to the community.

EXISTING CONDITIONS

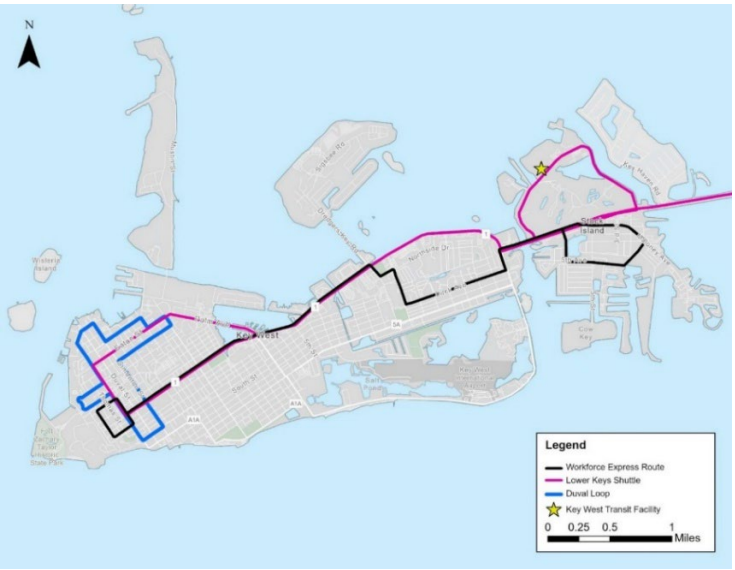
Transportation Inventory

The City of Key West Department of Transportation (DOT) operates the local public transportation agency, Key West Transit (KWT), as described in this section. All KWT services are handicap accessible and available seven days a week, except for Thanksgiving, Christmas, and New Year's Day.[1] Paratransit services are managed by Monroe County Transit (MCT). Its door-to-door services are available throughout the Keys, from Key West to Key Largo. Transportation Disadvantaged (TD) riders are provided service by the Guidance/Care Center.[2]

KEY WEST TRANSIT

KWT operates three fixed bus routes, the Workforce Express, Duval Loop, and Lower Keys Shuttle **(Figure 1)**. These fixed bus routes were consolidated from six in their last Transit Development Plan (TDP) in 2019.[3] The agency also introduced an on-demand microtransit service known as Key West Rides in November 2022. KWT currently operates 8 buses and provided 213,884 Annual Unlinked Trips (UPT) during 2022. These trips accumulated over 543,075 vehicle revenue miles (VRM). This averages to approximately $6.32 of operating expenses spent per vehicle revenue mile.[4]

Figure 1: Key West Transit Fixed Routes



Source: Transportation (KWDoT). (n.d.). **Bus Fares.** City of Key West.

[1] Transportation (KWDoT). (n.d.). **Public Transportation.** City of Key West.
[2] Tindale Oliver. (2019). **City of Key West Transit Development Plan.** City of Key West.
[3] Ibid.
[4] National Transit Database. (2022). **City of Key West Department of Transportation.** United States Department of Transportation.

KWT offers One Way, One Day, 7-Day, and 31-Day bus passes, provided at full fare, reduced, and senior rates. Reduced rates are offered to students under 21 years old, disabled/disadvantaged, military, and seniors ages 60 and older. The Duval Loop is a free bus route for everyone.[5] The full fare structure is shown in **Table 1.**

Table 1: Key West Transit Fares

PASS TYPE	FARE TYPE	CITY	KEYS
ONE WAY	Full	$2	$4
	Reduced	$1	$2
	Seniors	Free to residents; $0.50 to others	$1
ONE DAY PASS	Full	$4	$8
	Reduced	N/A	N/A
	Seniors	N/A	N/A
7-DAY PASS	Full	$8	$25
	Reduced	$5	$15
	Seniors	$3.75	$15
31-DAY PASS	Full	$25	$75
	Reduced	$15	$45
	Seniors	$15	$45

Source: Transportation (KWDoT). (n.d.). **Bus Fares.** City of Key West.

Workforce Express

In June of 2023, Key West Transit began operating a fixed route called the Workforce Express. This is primarily a commuter service that operates four early morning trips with roughly hourly headways. These trips circulate in both directions between Stock Island and Bahama Village. Morning commuter trips begin at 6:05 AM and are complemented by four late afternoon trips beginning at 3:45 PM. Each trip takes roughly 30 minutes and follows a simple and direct route for commuters.[6] The Workforce Express utilizes the rolling stock and staff previously assigned to the North and South bus routes.

Duval Loop

The Duval Loop is a free bus route that circulates Key West's historic Old Town from 8am to 10pm seven days a week. Twenty-minute headways are provided from 10am to 5pm, with 30-minute headways in the morning and evenings. It encourages a park-and-pay model for residents and tourists alike to enjoy downtown. Eighteen stops bring riders to various

[5] Transportation (KWDoT). (n.d.). **Bus Fares.** City of Key West.
[6] City of Key West. (n.d.). **Transportation (KWDoT).**

destinations around the central Duval Street.[7] Riders can park their car at one of 300 spaces in the Park N Ride Garage for a rate of $5 per hour, with a daily maximum of $40. Monthly permits for continuous parking cost $268.75, while employee permits are $25. City residents can apply for a permit which allows four hours of parking once per day at the garage or four reserved lots for $39.13 annually.[8]

Lower Keys Shuttle

The Lower Keys Shuttle is the fixed-route service that connects Key West to Marathon, roughly the halfway point of the Florida Keys. It runs both north and south, seven days per week from approximately 5 AM to 10 PM.[9] Once in Marathon, riders can transfer to the Miami-Dade Transit Route 301 to the Upper Keys and Florida mainland.[10]

Key West Rides

Key West Rides is KWT's on-demand service that can be taken between any two bus stops within Key West and Stock Island. Introduced in November 2022, it replaced the North and South fixed-route lines to streamline travel and connections to the Lower Key Shuttle and Duval Loop. It functions similarly to rideshare services like Uber, where requests are made in a mobile application, but costs the same as regular KWT bus fare. Between December 2022 and May 2024, the service has provided 107,988 UPTs, accumulating 271,169 VRMs.[11] Those with wheelchairs or other large mobility aids can also ride by selecting the wheelchair icon in the app. Rides are shared among passengers headed to similar areas and can be picked up in as little as 15 minutes, with service running from 6 AM to 8 PM seven days a week.[12]

FERRY AND WATER TAXIS

Key West Express is privately owned and operated ferry service that offers daily ferry rides to and from Key West to Fort Myers Beach or Marco Island. Round trip fare prices range from $185 for adults to $85 for children aged 4 or younger. Seniors aged 62+ cost $175.00 while juniors aged 5-12 cost $135.00. Boarding begins at 7:00AM for the Ft. Myers Beach to Key West route, while the return trip boarding begins at 5:00PM. Marco Island to Key West boarding also begins at 7:00AM, with a slightly earlier return trip boarding at 4:00PM.

There is currently no ferry or water taxi service from Stock Island to Key West. The Key West Express operates from Fort Myers Beach and Marco Island to 100 Grinnell Street in Key West. Ferries typically depart Fort Myers at 8:00am for Key West and leave Key West at 6:00pm.[13] Sunset Marina on Stock Island does not currently operate a ferry or water taxi service to Key West but could be a future partner in ferry operations.[14]

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[7] Transportation (KWDoT). (n.d.). **Duval Loop.** City of Key West.
[8] Transportation (KWDoT). (2024). Parking Garage. City of Key West.
[9] Transportation (KWDoT). (n.d.). **Lower Keys Shuttle Schedule.** City of Key West.
[10] Monroe County Florida. (n.d.). **Bus Routes.**
[11] Key West Transit, email to Elizabeth Bechtel, June 27, 2024.
[12] Transportation (KWDoT). (2023). **Key West Rides On-Demand Bus Service.** City of Key West.
[13] Key West Express. (n.d.) **Key West Express.**
[14] Sunset Marina (n.d.) **Sunset Marina Key West.**

BICYCLE AND PEDESTRIAN INFRASTRUCTURE

In 2022, approximately 66.4% of commuters in Key West travelled to work by car, 4.8% walked, 11.7% cycled to work. 7.5% took a taxicab, motorcycle, or other means, 9.3% worked from home.[15]

Key West is nationally recognized as a great place to walk and bike. According to PeopleForBikes City Ratings, Key West is ranked as the top place for biking in the state of Florida. Key West's bicycle network received a score of 66 out of 100, well above the average city network score of 27. The bike network score considers the network's connectivity to key destinations, core services and transit. [16] Key West's bicycle network provides access to recreational amenities, jobs, schools, and residential areas. Key West has a Walk Score of 63. Walk Score accounts for pedestrian friendliness by analyzing population density and road metrics such as block length and intersection density.[17]

Key West's compact size and flat terrain makes the city conducive to walking and biking. The existing bike network includes the Florida Keys Overseas Heritage Trail on US 1/Roosevelt Boulevard and a few bicycle lanes (**Figure 2**). While there are some bicycle facilities, they are not well connected to each other. Most bicycle trips on Key West and Stock Island require sharing lanes with motor vehicles. The Key West Bicycle and Pedestrian Master Plan notes that North and South Roosevelt Boulevard, Flagler Avenue, and US 1 are some of the most difficult routes to walk and bike.[18]

[15] United States Census Bureau (2022) Commuting Characteristics by Sex, 2022: ACS 5-Year Estimates.
[16] PeopleforBikes. (2023). City Ratings: Key West Florida, United States.
[17] Walk Score. (2024). **WalkScore.**
[18] City of Key West (2019) **Key West Bicycle and Pedestrian Master Plan.**

Figure 2: Existing Trails and Bicycle Lanes in Key West

Source: Florida Department of Transportation

The Key West Transit facility on Stock Island is located along College Road. College Road has 5-foot sidewalks that alternate between the east and west sides of the street. Portions of College Road include designated 4-foot-wide bicycle lanes (**Figure 3**). College Road has a posted 25mph speed limit and 5,100 Annual Average Daily Traffic (AADT), which is relatively low compared with nearby roadways.[19] The 2019 *Key West Bicycle Pedestrian Master Plan* identifies College Road as a 'High Stress' route for cycling. On western College Road near US 1, there was an average of 200 cyclists and pedestrians each weekday and 157 per day on weekends.[20]

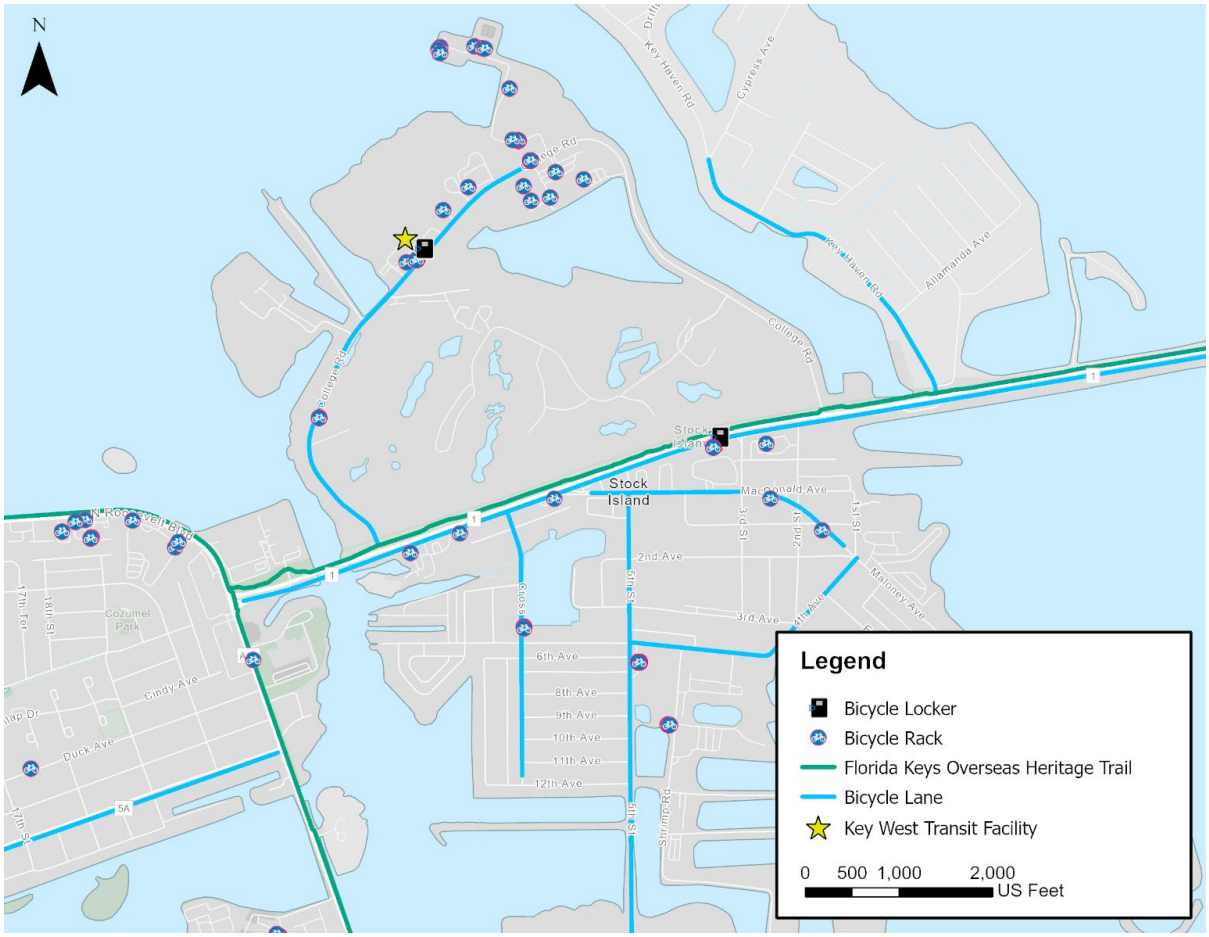
College Road connects to US 1 at two intersections. US 1 has very high levels of vehicle traffic (approximately 40,000 AADT) as well as high volumes of people walking and cycling on the popular Florida Overseas Heritage Trail (US Bike Route 1) that links into the island of Key West.[21] In 2022 there was an average of 30,000 bicyclists and 9,000 pedestrians per month using the Florida Overseas Heritage Trail at Cow Bridge. Cow Bridge connects Stock Island to the island

[19] Florida Department of Transportation (2022). Annual Average Daily Traffic. FDOT Featured Datasets.
[20] Florida Department of Transportation. (2022). Short-Term Non-Motorized Volume Counts.
[21] Florida Department of Transportation (2022). Annual Average Daily Traffic. FDOT Featured Datasets.

of Key West. Cow Bridge is a 5-minute bike ride from the proposed Key West Intermodal Center.[22]

Bicycle parking, bicycle lockers and bicycle repair stations are located throughout the city of Key West. The Key West Transit facility has 6 bicycle racks with 12 bicycle parking spaces, a bicycle locker with two parking spaces and a bicycle repair station.[23]

Figure 3: Existing Trails, Bicycle Lanes, and Bicycle Parking on Stock Island



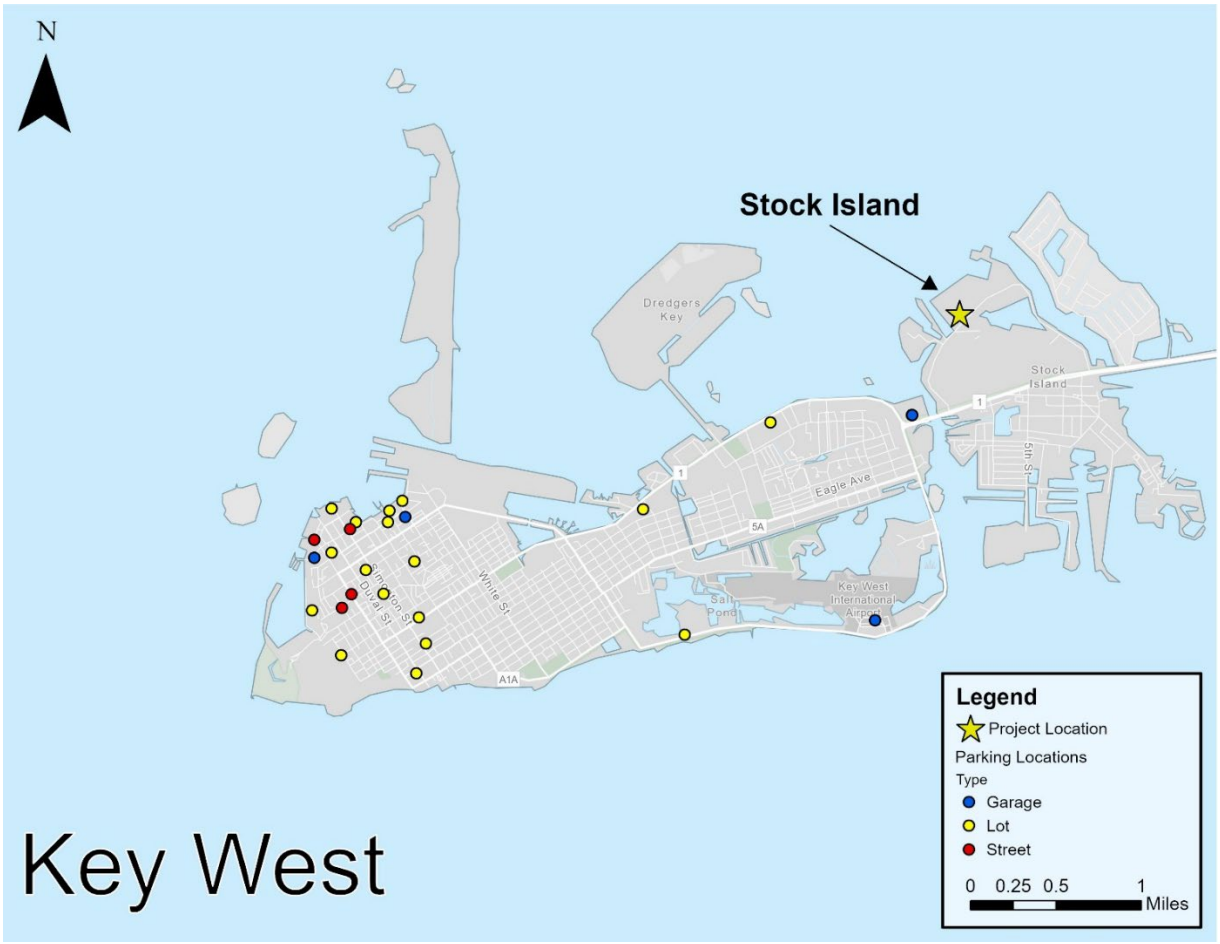
Source: Florida Department of Transportation, City of Key West

[22] Florida Department of Transportation (2024). **Statewide Non-Motorized Traffic Monitoring Program**. FDOT Featured Datasets.
[23] City of Key West. (n.d.). **Key West Bicycle Racks**. Car-Free Key West.

Parking Inventory

Most of Key West's public parking is concentrated in downtown Key West. Due to this, many drivers have to travel into downtown to look for parking which can cause traffic congestion. The city also has an insufficient parking capacity. A combination of these factors establishes the need for the KWIC to include a parking garage as it increases the area's parking capacity and provides a parking opportunity before entering the Triangle. **Figure 4** shows the current parking types and locations in Key West.

Figure 4: Parking Inventory of Key West



Land Use and Zoning

The Key West Transit Facility is located in Monroe County, FL, in the City of Key West along College Road. Directly adjacent to the property on the northeast side is the Florida Keys Society for the Prevention of Cruelty to Animals (SPCA), followed by Gerald Adams Elementary School located on Parcel 00072080-000901, owned by the School Board of Monroe County Florida. Southwest of the property on Parcel 00072080-002500 are the Sunset Marina Residences of Key West A Condominium (**Figure 5**).

Figure 5: Aerial Photo of KWT Facility

Source: Key West Transit. (2016).

The City of Key West Comprehensive Plan 2030 contains information on the Future Land Use within the city (**Figure 6**).[24] The Future Land Use (FLU) category for the project site is Public Services (PS). Residential density is not applicable to the property, as residential housing is not a permitted use within the land use or zoning district. The maximum intensity is a FAR of 0.8. Allowable uses within this FLU category include public and semi-public facilities and other similar activities.

[24] City of Key West Municode Library. (2023). **Comprehensive Plan.** City of Key West.

Figure 6: City of Key West – 2030 Future Land Use (FLU) Map

Source: City of Key West Municode Library. (2023). **Comprehensive Plan.** City of Key West.

The current zoning district of this site is mostly Public Services (PS). A small portion of the site is zoned as Conservation (C); however, this is mainly where the mangrove forest is located. The intent of this district is "to provide a management framework for implementing comprehensive plan policies for areas located outside of Old Town which are designated 'PS' or 'M" on the future land use map".[25]

The maximum intensity of public and semi-public institutional structures and buildings should not exceed 0.8, including floor area allocated to all uses.

[25] City of Key West Land Development Code. Chapter 122, Article IV, Division 13. **http://bit.ly/41TvPPB**.

Permitted uses within the PS zoning district include the following:

- Community centers, clubs, and lodges
- Educational institutions and day care
- Golf course facilities
- Hospitals and supportive care facilities
- Nursing homes, rest homes, and convalescent homes
- Parks and recreation, active and passive
- Business and professional offices
- Medical services
- Parking lots and vehicular storage facilities
- Veterinary medical services with or without outside kennels
- Government-operated transit facilities
- Governmental administration buildings
- Essential public services and facilities inclusive of, but not limited to, drainage facilities and emergency services (i.e., staging areas responsive to declared emergency, with the exception of shelters for the homeless, which are regulated as a conditional use)
- Other similar activities such as uses critical to government function, uses for essential public services, uses to serve social and cultural needs not otherwise listed.
- Government maintenance facilities and garages

There are setbacks and space limitations on this site based on the City's Land Development Code.[26] **Table 2** exhibits the principal building setback restrictions.

Table 2: Key West's Building Setback Requirements

SETBACK REQUIREMENTS	
Front Setback	20 feet
Side Setback	15 feet
Side Street Setback	15 feet
Rear Setback	20 feet
Building Coverage	40% (max)
Impervious Surface	60% (min)
Residential Open Space	35%
Commercial Open Space	20%
Residential Units	N/A
Parking	Allowed

[26] City of Key West Code of Ordinances. Sec 122-1144 – Building Setbacks. City of Key West.

SETBACK REQUIREMENTS	
Max Building Height	25 feet

Source: City of Key West Code of Ordinances. **Sec 122-1144 – Building Setbacks**. City of Key West.

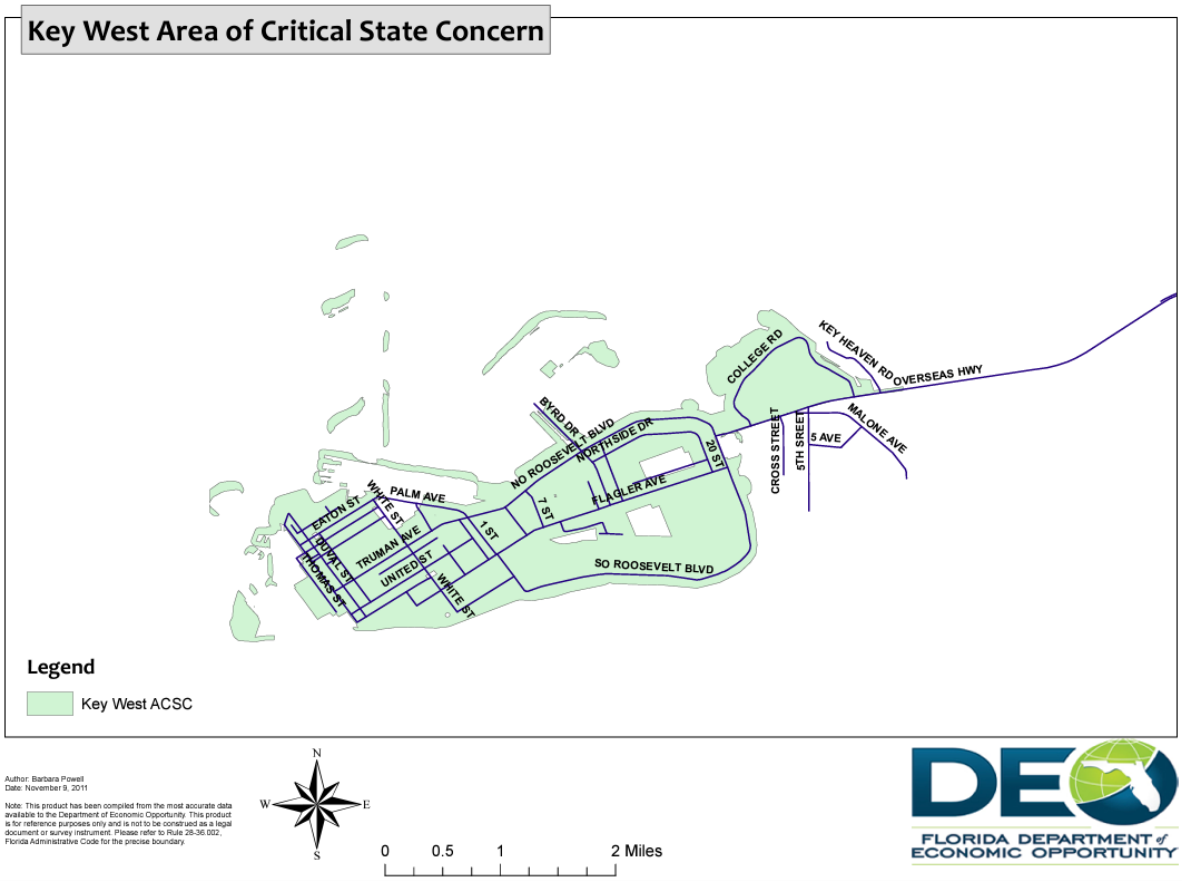
The maximum building height in this zoning district is 25 feet. The total building coverage of this parcel is restricted to 40%. The maximum impervious surface area is 60%. Open space for residential is 35% and for commercial space is 20%. Parking lots and vehicular storage facilities are permitted within this zoning district. The current zoning district does not allow for housing, with the exception of nursing homes, rest homes, convalescent homes, and a conditional use for shelters for the homeless.

AREA OF CRITICAL STATE CONCERN

This property is located within an Area of Critical State Concern. Created by the Florida Environmental Land and Water Management Act of 1972., the Area of Critical State Concern Program "is intended to protect resources and public facilities of major statewide significance, within designated geographic areas, from uncontrolled development that would cause substantial deterioration of such resources."[27] The Department of Commerce (DOC) is responsible for reviewing all local development projects within these designated areas, as well as the review and approval of comprehensive plan amendments and land development regulations proposed and adopted by local governments within the designated areas. The DOC may appeal to the Florida Land and Water Adjudicatory Commission "any local development orders that are inconsistent with state guidelines and local comprehensive plans and regulations."[28]

[27] Florida Commerce. (n.d.). **Florida Areas of Critical State Concern.** Florida Jobs.
[28] Ibid.

Figure 7: Key West Area of Critical State Concern



Source: Florida Commerce. (2011). Key West Area of Critical State Concern. Florida Department of Economic Opportunity.

Socioeconomic Overview of Key West

To understand the needs of the community, the socioeconomic makeup of the Key West was examined. With a small geographic area and a high cost of living, there are limited housing options for residents. Many employed in Key West cannot afford to live in the area due to this, causing them to live elsewhere and commute into the Key West.

EMPLOYMENT

According to the Key West Chamber of Commerce, as of May 2024, Monroe County's largest employers of the largest employers are listed in **Table 3**.

Table 3: Monroe County's Largest Employers

PUBLIC SECTOR	
Employer	**Number of Employees**
US Armed Services: Incl. Civilians Supports & Contractors	14,570
Monroe County Schools	1,701
Monroe County Government	612
Monroe County Sheriff's Office	540
City of Key West (incl. police, fire & EMS)	520
PRIVATE SECTOR	
Employer	**Number of Employees**
Ocean Reef Club	1,241
Publix Stores: Key West, Marathon, & Key Largo	756
Ocean Properties: Opal Resort & Marina/Sunset Key, Barbary Beach House, Havana Cabana, The Laureate	645
Lower Keys Medical Center, Key West (Includes LKMC & Keys Medical Group)	523
Spottswood Properties	415
Casa Marina/Beach Resort	359

Source: Key West Chamber of Commerce. (2024). Community Information. Greater Key West Chamber of Commerce.

As of April 2024, the unemployment rate in Monroe County is the lowest in Florida at 2.0%.[29] However, most people employed in Key West cannot afford to reside there. According to local stakeholders, many of those that are employes in the City of Key West commute from other islands along U.S. Highway 1 such as Stock Island, Cudjoe Key, and Big Pine Key. Policies, programs, and projects to encourage non-residents to mode switch can help to

[29] Bureau of Workforce Statistics and Economic Research. (2024). Florida's April Figures Released. Florida Commerce.

alleviate traffic along U.S. Highway 1, as well as reduce long commutes for employees from off-island.

COST OF LIVING

The cost of living in Key West is high above averages elsewhere in the U.S. The total cost of housing, food, childcare, transportation, health care, taxes, and other necessities is 48.2% higher in Key West than the national average. As of the 2020 census, the national median individual income is $39,080, while the median household income is $73,029.[30] A minimum annual income of $122,000 for an individual, and $194,000 for a family is recommended to live comfortably in Key West.[31]

The City of Key West employed 495 employees in 2022, with the average salary being $68,616 and the median salary $63,906. The Monroe County School Board, offers yearly salaries in the range of $61,500 to $98,000 for positions varying from teachers to school bus drivers, making the Monroe County School District one of the highest paying public-school districts in the United States.[32]

Housing Availability and Costs

Of the 14,482 housing units in the city as of 2022, 36% are owner occupied; 41% are renter occupied; and 23% are vacant.[33] The most common housing type is single-family detached housing (41%), followed by complexes of 20 or more units (16%).[34] Only 11% of the housing stock was built from 2000 to 2022.[35] As of April 2024, the median home listing price in Key West is $1,149,000, up 43.6% from the previous year.[36] See **Table 4** for the median home value by neighborhood. At that point in time, 18 homes were available for sale within the city of Key West, with homes remaining on the market 211 days on average—down 42.2% from 2023. With little change in market housing, the decrease in time on the market demonstrates a growth in demand for housing in the city.[37]

[30] United States Census Bureau. (2020). **2020 Census.** United States Government.
[31] Bestplaces. (n.d.) **Key West, FL Cost of Living**.
[32] Medina, Dani. (2023). **The Florida Keys Wants to Pay You Up to $98K to Work in Paradise.** Fox35 Orlando.
[33] United States Census Bureau. (2022). **ACS 2022 5-Year Estimates: Table DP04: Selected Housing Characteristics.** United States Government.
[34] Ibid.
[35] Ibid.
[36] Rocket Homes. (2024). **Key West Housing Market Report.**
[37] Ibid.

Table 4: Neighborhoods and Median Home Value

NEIGHBORHOOD	HOME VALUE (MEDIAN)
New Town	$837,065
Midtown	$1,118,131
The Meadows	$1,589,932
White Street Gallery District	$1,388,685
Casa Marina	$2,205,486
Old Town	$1,332,381
Historic Seaport	$1,804,976
Upper Duval	$1,301,218

Source: Zillow. (2024). Key West Housing Market.

Affordable Housing

The US Department of Housing and Urban Development (HUD) defines affordable housing as lodging for which the occupant pays no more than 30% of their gross income for housing costs, including utilities.[38] The Florida Housing Coalition (FHC) defines it further as "safe and decent" housing, costing no more than "30% of a [low-income family's] income on either rent or mortgage payments."[39] This is based off the assumption that more than this percentage would burden a low-income family, leaving them less likely to afford other necessities. However, other factors must also be considered in defining "low income" and what is truly affordable in each community and/or income bracket. For the FHC, a family is eligible for affordable housing if they are at or below 80% of the area median income (AMI), based on family size.[40]

As part of the city's 2021 strategic plan, Key West Forward, a community input survey was conducted. Of the 3,776 residents who responded, 54.81% listed affordable housing as one of their top three areas of concern—the highest of all topics surveyed.[41] Gentrification has contributed to the housing crisis, as well. The booming tourism economy has driven up property values and rents, displacing locals as many homes and businesses were bought out for tourists and vacation rental services.[42]

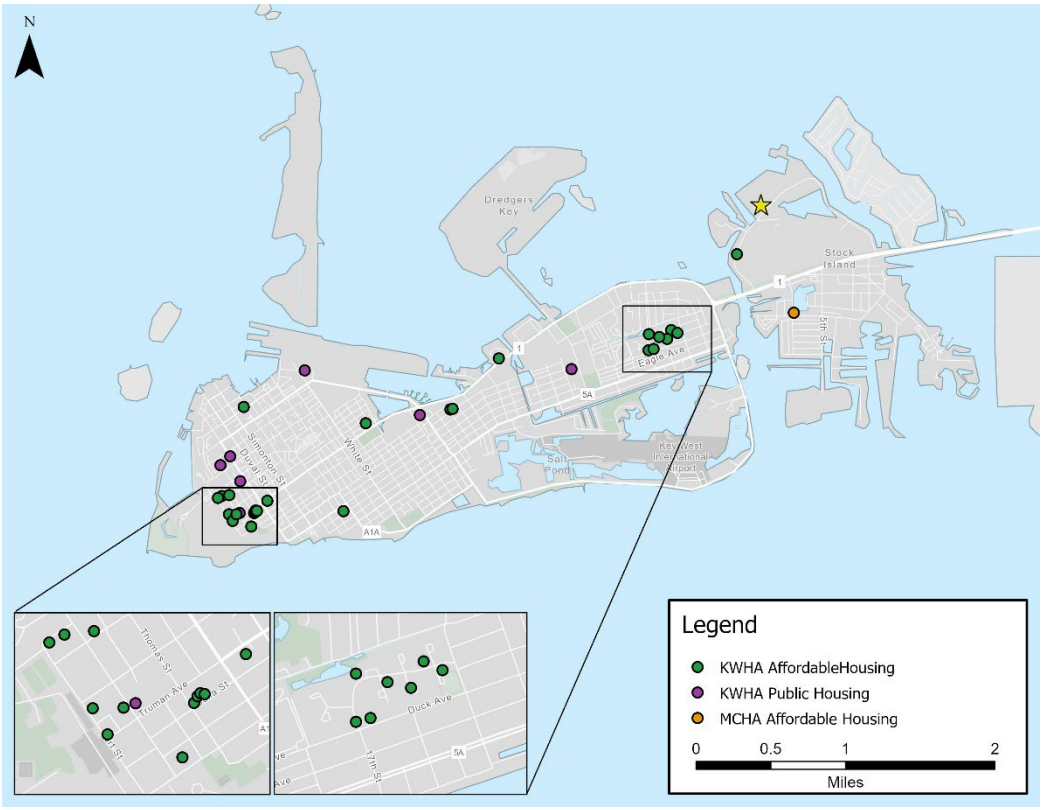
[38] United States Department of Housing and Urban Development. (2011). Glossary of Terms to Affordable Housing.
[39] Florida Housing Coalition. (n.d.). Affordable Housing in Florida. Florida Housing Finance Corporation.
[40] Ibid.
[41] Elisa Levy Consulting (2021). Key West Forward: The Strategic Plan for the City of Key West 2021-2024. City of Key West Florida.
[42] Leone, Stephanie. (2020). In Key West, Protests Highlight Gentrification of Historic Black Community. Denver Daily Post.

Key West's public housing needs are supported by the Key West Housing Authority (KWHA), created by the city in 1938. KWHA's role is to own, manage, develop, and administer federal, state, and local affordable employer-provided housing programs for very low-income to moderate-income families in the community.

The KWHA currently owns and operates 503 affordable housing units with income range requirements for low to moderate-income families (**Figure 8**: Inventory of Affordable Housing in Key West). The income-based rental price brackets are significantly lower than market-rate rentals. The affordable housing units are located throughout Key West and vary in style from apartments to townhouses to single-family homes.[43]

The KWHA also collects vulnerable population data across characteristics such as poverty, minority status, limited English proficiency (LEP), 65 or older, no car households, and no car commutes as signs of housing vulnerability. This data concluded that Old Town and Stock Island housed the most vulnerable populations.[44]

Figure 8: Inventory of Affordable Housing in Key West



[43] Monroe County Housing Authority. (2024). **Affordable Housing**. Monroe County Florida.
[44] Housing Authority of the City of Key West, Florida. (2024). About the KWHA.

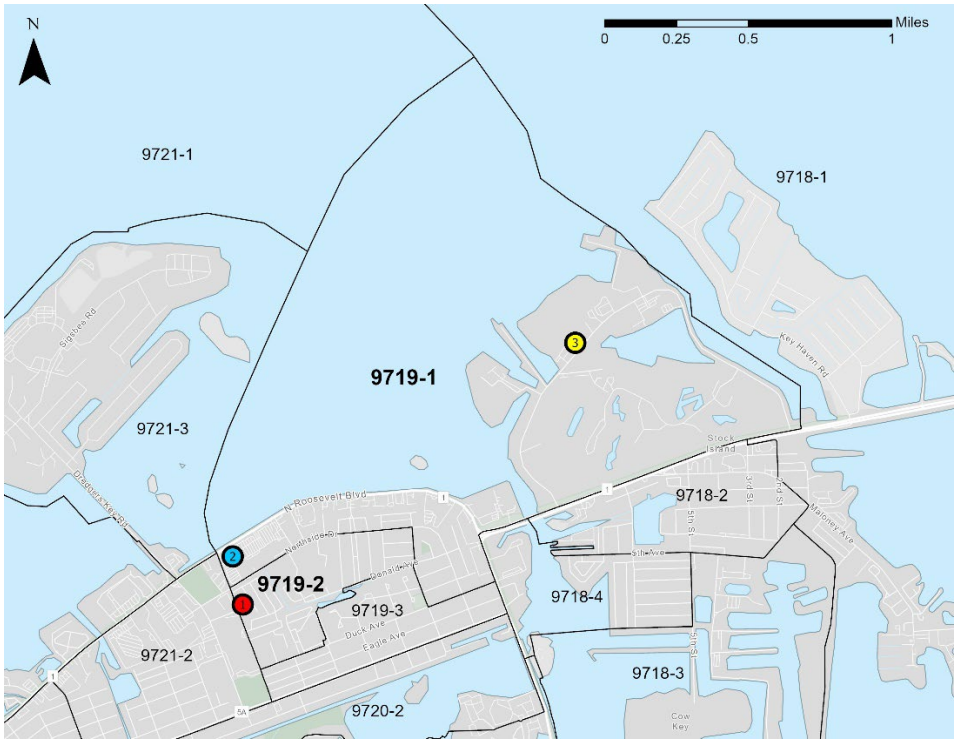
SITE SELECTION THROUGH TITLE VI ANALYSIS

The purpose of this Title VI Analysis is to review and recommend the best location identified by the Key West Department of Transportation (KWDoT) to ensure that the final location is selected without regard to race, color, or national origin. The three locations identified as potentially feasible sites are described below and shown in **Figure 9**.

1. **Site 1**
   Glynn R. Archer Jr. Drive/14th Street and Glynn Archer Jr. Street
   - Plot of vacant land located across from the Key West Conch Baseball Field and surrounded by Poinciana Mobile Home Park
2. **Site 2**
   3216 N. Roosevelt Blvd
   - At the Sears town Shopping Center, in the location of the previous Sears Store
3. **Site 3**
   5701 College Rd
   - Part of the property site of Key West Transit's facility, in the location of the existing parking lot.

The potential sites will hereafter be referred to as Site 1, Site 2, and Site 3.

Figure 9: Potential Sites for Key West Transit Intermodal Center



Title VI Compliance

Under Title VI of the Civil Rights Act of 1964, all programs or activities that receive federal financial assistance, such as the Federal Transit Administration (FTA), must not actively or indirectly facilitate discrimination on the basis of race, gender, or nationality. As a recipient of federal funding from the FTA, Key West Transit must adhere to these requirements. Due to this, a Title VI analysis has been conducted for all projects that may have potential discriminatory effects.

KWT has determined that constructing a new intermodal center falls under the provisions in Chapter III-13 of FTA Circular 4702.1B:

> 13. DETERMINATION OF SITE OR LOCATION OF FACILITIES. Title 49 CFR Section 21.9(b)(3) states, "In determining the site or location of facilities, a recipient or applicant may not make selections with the purpose or effect of excluding persons from, denying them the benefits of, or subjecting them to discrimination under any program to which this regulation applies, on the grounds of race, color, or national origin; or with the purpose or effect of defeating or substantially impairing the accomplishment of the objectives of the Act or this part." Title 49 CFR part 21, Appendix C, Section (3)(iv) provides, "The location of projects requiring land acquisition and the displacement of persons from their residences and businesses may not be determined on the basis of race, color, or national origin." For purposes of this requirement, "facilities" does not include bus shelters, as these are transit amenities and are covered in Chapter IV, nor does it include transit stations, power substations, etc., as those are evaluated during project development and the NEPA process. Facilities included in this provision include, but are not limited to, storage facilities, maintenance facilities, operations centers, etc.

KWT is required to conduct a Title VI equity analysis. Per guidance in the FTA Circular, this analysis must:

- Include outreach to persons potentially impacted by the siting of the facility;
- Compare impacts of various siting alternatives;
- Determine if cumulative adverse impacts might result due to the presence of other facilities with similar impacts in the areas; and
- Occur before the selection of the preferred site.

COMMUNITY OUTREACH

On February 15, 2024, KWT released an online survey for the City of Key West's 2025-2034 Transportation Development Plan (TDP). This TDP will encompass a roadmap for the city's transit service for the next 10 years, with the goal of improving and expanding mobility and accessibility endeavors. KWT expects to receive responses from a diverse subset of existing riders and non-riders; in turn, this input will be used to inform a strategic plan that reflects the collective vision for community improvement and the transit agency's growth.

The TDP online survey link was also distributed by the local news outlet, the Key West Citizen via keysnews.com. Using a major local news source to distribute the survey allows KWT to diversify their respondent base. Unlike solely posting the link on their website and distributing the survey to existing transit riders, utilizing a popular local news site ensures that people with diverse travel habits, interests, and inclinations will respond.

In addition, in early June 2024, Rod Delostrinos, Director of Transportation, discussed the KWIC project as part of a monthly spot that KWT has on 102.5 Keys Talk Radio. The agency regularly shares updates with the community on the show.

SITE SELECTION PROCESS

KWT determined that the ideal location for the new intermodal transit facility should be located so as to serve the largest portion of Key West's population along with residents of Stock Island, Key Haven, and Naval Air Station Key West (NASKW). Building this facility within the city of Key West's jurisdiction would serve the highest density of riders in the agency's service area and provide improved transportation services aligning with the city's car-free initiatives.

The following criteria were used to evaluate site selection options:

1. **Property Ownership**
   Minimize purchase price and avoid potential conflicts with current owners.
2. **Land Use Connectivity**
   Minimize walking distance for transit users by maximizing points of interest and transit generators within a ¼ mile of the site.
3. **Site Layout**
   Maximize the number of conflicts to current traffic while allowing for site accessibility and maximize sense of personal safety and security.
4. **Operations**
   Minimize conflicts to current traffic while allowing for site accessibility and maximize sense of personal safety and security.
5. **Transit System Compatibility**
   Minimize changes to current bus routes.
6. **Environment, Historical, and Cultural Resources**
   Minimize impacts to sensitive resources.
7. **Economic Development**
   Act as a potential attraction to future development.
8. **Public Support**
   Input from the public.

ALTERNATIVES EQUITY ANALYSIS AND CUMULATIVE IMPACTS

After site criteria was used to narrow down potential locations to three properties in the Key West area, the area's demographics were analyzed to ensure that the potential project locations did not result in a discriminatory burden on the basis of race, color, or national origin.

The three sites identified are all located in the City of Key West and the 9719 census tract. The three sites are located in adjacent census block groups. The demographics of the projects' block groups are outlined in **Table 5**.

Table 5: City of Key West Demographics by Block Group

	TOTAL POPULATION	% WHITE	% MINORITY	% FOREIGN BORN	% EARNING INCOME BELOW POVERTY LEVEL	CENSUS BLOCK GROUP
City of Key West	**26,444**	**67.5%**	**32.5%**	**22.1%**	**10.6%**	**-**
Site 1	2,899	30.7%	69.3%	41.5%	10%	9719-2
Site 2	2,339	70.5%	29.5%	3.8%	0%	9719-1
Site 3	2,339	70.5%	29.5%	3.8%	0%	9719-1

Source: US Census Bureau. (2020). Monroe County Block Census Tract. US Federal Government.

As exhibited in **Table 5**, demographic trends vary greatly between the two census blocks. The demographic makeup of block group 9719-1, hereafter referred to as Block 1, differs greatly from block group 9719-2, hereafter referred to as Block 2. Building an intermodal facility in Block 2 would have vastly different discriminatory effects than in Block 1.

Block 2, containing Site 1, is significantly more diverse than Block 1, where Site 2 and Site 3 are located. There is a higher concentration of minority and foreign-born populations in Block 2 compared to the city average. Minority populations comprise of 69.3% of the population compared to the city average of 32.5%. The foreign-born population is 41.5% compared to the city average of 22.1%. Poverty levels are roughly the same as the city average, around 10%. Selecting Site 1 for the location of the new intermodal center would represent a high discriminatory burden.

As previously mentioned, Block 1, where Site 2 and Site 3 are located, is notably less diverse compared to Block 2, containing Site 1. The minority population is lower than the city average: 29.5% compared to 32.5%. Foreign-born residents represent 3.8% of the population compared to the city average of 22.1%. Poverty levels are 0%, far below the city average, however, this is likely not entirely representative of the whole block group population, only the sample group. Locating the new intermodal center in Block 1 would present a low discriminatory burden.

BENEFITS AND BURDENS ANALYSIS

Determining factors that would be classified as a benefit or burden for the selection of sites were considered at the community and project level, with the former reflecting a broader assessment of the locations that are being analyzed. Factors including population demographics, the interruption and displacement of local businesses, and matters of proximity were considered when making the following assumptions.

Overall, all of the sites would be impacted by the construction phase, as well as the operations of the KWIC once it has been established. All sites have adjacent neighbors; however, Site 3 has the least residential properties near the site, compared to Site 1 and Site 2. Residents located near Site 1 and Site 2 would be more impacted by an increase in noise and traffic associated with the KWIC construction and implementation. However, businesses located near Site 3 would be impacted by this as well. **Table 6** exhibits the potential impacts that each potential site would experience.

Table 6: Potential Site Impacts

	WHO WOULD BE IMPACTED BY THIS SITE SELECTION?	WOULD SITE SELECTION REQUIRE THE DISPLACEMENT OF RESIDENTS OR BUSINESSES?
Site 1	Adjacent neighbors (Minimal impact)	No; vacant lot
Site 2	Adjacent neighbors (Minimal to moderate impact)	Underutilized parking lot; nearby buildings would not be affected
Site 3	Adjacent neighbors (Minimal to moderate impact)	Underutilized parking lot; nearby buildings would not be affected

POPULATION

Regarding the demographics of the block groups previously identified, Block 1 is characterized as having a smaller minority and foreign-born population and has virtually no population that lives under the poverty line. Due to this, Site 2 and Site 3 may be more appropriate for new construction, as any impacts can be better addressed by the more affluent and majority population of Block 1 as opposed to Block 2.

BUSINESSES

Based on the assessment, there would be no displacement of businesses at any of the three sites. All sites are in either vacant lots or large parking areas. Site 1 is currently vacant although may sometimes be used for events at the adjacent baseball field. Overall, locating the multimodal center at Site 1 would likely not influence any adjacent businesses negatively. Similarly, Site 2, would not affect the adjacent Sears business as it has been closed since 2020. Only the parking lot of the vacant Sears would be used, but the potential location of an intermodal center may cause difficulty if a potential tenant were to rent the old Sears building in the future.

COMMUNITY

At the community level, the most significant difference is access to KWT's facility at 5701 College Road (Site 3). Site 1 and Site 2 are located in downtown Key West while Site 3 is both the only location on Stock Island but is also conveniently located at the existing City of Key West's Department of Transportation Facility. Site 1 and Site 2 are closer to Key West's downtown and accompanying commercial, residential, and historic core. Locating the intermodal center at Site 1 or Site 2 could enhance transportation options for residents and tourists alike. In contrast, Site 3 would be convenient for residents of Stock Island, Key Haven, and the nearby NASKW. The College of the Florida Keys is also located on Stock Island and a nearby intermodal center could connect residents throughout the Keys with a crucial education opportunity. Both Key Haven and Stock Island are primarily residential in nature. A nearby intermodal center could serve as means of connecting residents with employment and leisure opportunities in Key West. All sites currently have adjacent sidewalk access that can be altered to meet ADA accessibility needs and improve connectivity.

At the project vicinity level, Site 1 is a vacant lot flanked by mobile homes that would not require any modifications or removal. This site is already located in a high traffic area and the addition of an intermodal transit center could produce increased traffic volume and wait times in the surrounding area. Site 2, as a large, lightly used parking lot, borders U.S. Highway 1, the major arterial for the Florida Keys. Similar to Site 1, the construction of an intermodal transit facility could cause difficulties in the form of increased traffic volume and congestion in and around a major roadway. In contrast, Site 3 is a large parking lot located adjacent to the City of Key West Transit Facility. There are no adjacent homes or businesses that would be affected by the construction of an intermodal center in the area. However, the Stock Island landfill borders the lot and could cause health or hygiene issues if managed improperly. College Road runs alongside Site 3 and could be useful in transporting riders to the nearby College of the Florida Keys and the Lower Keys Medical Center.

The following pages provide summaries of both positive and adverse community impacts associated with each potential site.

Figure 10: Site 1 - 14th Street and Glenn Archer Jr. Street

Source: Google Street View. (2024).

Table 7: Site 1 Benefits and Burdens

POTENTIAL POSITIVE COMMUNITY IMPACTS (BENEFITS)	POTENTIAL ADVERSE COMMUNITY IMPACTS (BURDENS)
• Placing a transit center on a former parking lot will activate the space, providing additional foot traffic and neighborhood engagement. • Infill of existing surface parking would increase the utility of valuable land near commercial areas. • Transit buses already successfully navigate the streets adjacent to the site, so traffic on those streets would not be significantly impacted. • Location adjacent to a popular arterial may increase desirability for potential commuters as they already use U.S. Highway 1 for many of their trips. • Location besides key amenities such as the Department of Motor Vehicles, grocers, and retail increases the likelihood of using transit for regular trips. • Ample cycling infrastructure such as bike lanes and large sidewalks in the area.	• Removing the parking lot may prompt some cars to park on neighboring streets due to decreased supply. • Unusual amounts of increased traffic and congestion could hinder accessibility and throughput of a critical roadway. • Difficult for pedestrians and cyclists to cross U.S. Highway 1 to access intermodal center due to a shortage in safe crossing areas.

Figure 11: Site 2 – 3215 N. Roosevelt Blvd

Source: Google Street View. (2024).

Table 8: Site 2 Benefits and Burdens

POTENTIAL POSITIVE COMMUNITY IMPACTS (BENEFITS)	POTENTIAL ADVERSE COMMUNITY IMPACTS (BURDENS)
• Placing an intermodal center on an empty lot will activate the space, generating additional foot traffic and neighborhood engagement. • Location adjacent to a dense residential neighborhood allows for walkable transit access for a large population subgroup. • Transit buses already successfully navigate the streets adjacent to the site, so traffic on those streets would not be significantly impacted. • Located adjacent to the nearby sports stadium, so could be used to shuttle fans to sports events. • Existing bike lanes on street could be converted to protected bike lanes.	• Construction processes would hinder accessibility and throughput of a critical roadway. • Potential drainage issues as a portion of the land is used to contain runoff. • Increased traffic and noise from the facility has the potential to impact adjacent residential area. • Conflicts with nearby businesses such as private medical centers, orthodontists, and accountants who do not generally benefit from additional vehicular or foot traffic.

Figure 12: Site 3 - 5701 College Road (Key West Transit Facility)

Source: Google Street View. (2024).

Table 9: Site 3 Benefits and Burdens

POTENTIAL POSITIVE COMMUNITY IMPACTS (BENEFITS)	POTENTIAL ADVERSE COMMUNITY IMPACTS (BURDENS)
• Placing a transit center on a former parking lot will accommodate additional modes of mobility. • Infill of existing surface parking would increase the utility of valuable land. • Transit buses already successfully navigate the streets adjacent to the site, so traffic on those streets would not be significantly impacted. • Location adjacent to a popular arterial could increase desirability for potential commuters. • Location near key education and medical locations increases the likelihood of using transit for regular trips.	• Removing parking lot may cause difficulty for KWT's vehicle storage. • Difficult for pedestrians and cyclists to cross roadway and access intermodal center due to infrequent crosswalks or signals.

Conclusions

All sites offer various benefits and drawbacks. Following a thorough review of each site, it has been determined that Site 3, 5701 College Road, offers the best opportunity to meet each Title VI site selection criteria.

Site 3 offers exemplary connectivity with existing transportation networks including major streets, pedestrian walkways, bicycle facilities, and existing KWT transit routes. Additionally, the site layout allows for flexibility in offering amenities to visitors, residents, transit riders, KWT employees, college students and the surrounding community. Lastly, this site is consistent with land use and developments plans previously completed by the City of Key West and the Monroe County Planning Commission, and the city's Bicycle and Pedestrian Master Plan.

Site 3 Site Selection Criteria

- ✓ Property Ownership
- ✓ Land Use Connectivity
- ✓ Site Layout
- ✓ Operations
- ✓ Transit System Capability
- ✓ Environment, Historical, and Cultural Resources
- ✓ Economic Development

POTENTIAL FACILITY FEATURES AND AMENITIES

To address the needs of the project, research was conducted related to features and amenities suggested by Key West Transit and additional options identified by the study team. Multimodal transportation connections, site technology amenities and features, and transit-oriented development (TOD) opportunities are explored in the following sections.

Transit-Oriented Development (TOD) Opportunities

Transit-oriented development (TOD) is the intersection of people, public space, activities, and buildings, with connections to transportation, enabling accessibility to resources and the surrounding community.[45] Successful TOD enables the following:

- walking
- cycling
- connected network
- transit connections
- balanced mix of uses and activities
- compact and dense building
- mode shift[46]

EMPLOYER-PROVIDED HOUSING

Most people who work in the city cannot afford to live in it which has led to a shortage of workers.[47] KWT is not alone in seeking affordable housing solutions to attract employees. The Monroe County Sheriff's Office (MCSO) received widespread support for its own workforce housing, breaking ground in December 2022.[48] It is a 24-unit affordable housing compound on Stock Island and is privately funded by local real estate developer SPGL. The complex is slated to open by summer 2024 and will be primarily for employees of the MCSO and Key West Police Department.[49]

Benefits

Employer-Provided Housing Support

Local businesses seem eager to support affordable housing initiatives to alleviate the labor crisis as shown in the Chamber of Commerce's 2023 Workforce Housing Survey. Two-thirds of the 190 businesses surveyed believe that both businesses and government are responsible for workforce housing development.[50] While only 22.52% of respondents currently offer company-

[45] Institute for Transportation and Development Policy. (n.d.). **What is TOD?**
[46] Ibid.
[47] Elisa Levy Consulting (2021). **Key West Forward: The Strategic Plan for the City of Key West 2021-2024**. City of Key West Florida.
[48] Miles, Mandy. (2023). **Sheriff's Employee Housing Takes Shape on Trumbo Road.** Keys Weekly.
[49] Ibid.
[50] Key West Chamber of Commerce (2023). **Workforce Housing Survey 2023.**

owned housing, over 80% "support government action that assist[s] employers in the effort to provide more employer sponsored employee housing."[51]

Source of Revenue

Including employer-provided housing as part of the KWIC would be hugely beneficial to KWT, as well as the City of Key West as it increases the overall inventory of affordable housing in the area. This is especially pertinent in that affordable housing was identified as the largest area of concern among residents in the city's strategic plan.[52] The units would increase local affordable housing stock and potentially be a source of revenue, in addition to many initial funding opportunities. For its own operations, affordable housing would improve local transit through employee life improvements, attracting and retaining talent who might otherwise be cost-burdened by high rent or long commutes. By attracting pedestrians and, subsequently, businesses, TOD creates more socially and economically vibrant communities.

Challenges

Management of Employer-Provided Housing

The nature of employer-provided housing and the selected parcel present some challenges. KWT will have to consider if the residential units will be managed by a third party and how employment will be linked to the lease.

Current Site Zoning

The future site of the KWIC is zoned as Public Service (PS), which does not currently permit residential use. Rezoning will need to be pursued and secured to determine the feasibility of implementation.

Space Constraint

Space may also be a constraint depending on the desired number of units and the space utilization of other amenities. For example, 36,000 square feet (sf) would be required for 40 average, 2-bedroom, 1-bathroom apartments. The number and size of units may also be influenced by the cost per square foot. On average, commercial buildings, including apartment complexes, cost between $240 and $680 per square foot to build in the Southern United States.[53]

RETAIL – CONVENIENCE STORE, CAFÉ, RESTAURANT

Retail offerings at KWIC could include food services such as a convenience store, with 'grab and go' food offerings, a café, coffee shop, or a full-service restaurant. A convenience store, café, or restaurant at the Key West Intermodal Center could serve tourists, residents, students, and nearby workers. Food service retail in this location may be compatible with existing zoning regulations, as food retail supports public transit operations.

[51] Ibid.
[52] Elisa Levy Consulting (2021). **Key West Forward: The Strategic Plan for the City of Key West 2021-2024**. City of Key West Florida.
[53] Carlson, Jennifer. (2023). **Cost to Build an Apartment Complex.** HomeGuide.

Benefits

Improved Passenger Experience

Offering food, beverage, and options to transit passengers, particularly those transferring from a long-distance car or bus journey to Key West, meets the needs of hungry travelers, in an area that is currently lacking any dining or market options. It also caters to Stock Island residents who may be in need of a meal or snack on their journey around the area.

Site Attractive to Retailers

An intermodal transit center is an attractive location for retailers, due to consistent foot traffic and a captive audience.[54]

New Revenue Stream

Aligning food and retail offerings with the needs of the potential customer base can lead to successful tenancies, generating rent revenue for transit agencies. Rent revenue estimates will be dependent on the type and square footage of retail and dining venues offered.

Challenges

Walkability

Creating a walkable retail district will require balancing the needs of transit operations with walkable urban design. There is a lack of dedicated, safe, and attractive walking and cycling facilities on College Road. Improvements to walking and cycling infrastructure are essential. These improvements will help create a vibrant environment that supports street-level retail and restaurants.[55]

Flooding

Flooding and storm surge present a challenge to ground-floor retail. A However, this can be mitigated by adhering to building requirements relative to the flood elevation in the project study. Stationary food services such as a kiosk, food truck, or coffee cart can also be viable, and can enable rotating vendors.

Attracting and Retaining Tenants Through Market Analysis and Management

To be successful, retail and dining options need to meet the needs of the surrounding community, as well as provide well-designed leasable spaces that meet the needs of potential tenants. Without conducting a detailed market analysis, Key West Transit runs the risk of opening a dining and retail offering that is underutilized and does not meet visitors' needs.

A market analysis conducted by Key West Transit, or a private entity, can inform the best uses for the site. The market analysis will explore competing and complementary uses in the area. It would also provide insights into the potential customer base - estimating the number of passengers per day, customer demographics and peak travel times. It is critical to understand the market to determine the best type of food service suited to the area - such as a cafe, coffee shop, restaurant, or a 'grab and go' style convenience store.[56]

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[54] Raine, Alden (2021). TCRP Research Report 224: Guide to Joint Development for Public Transportation Agencies. Transit Cooperative Research Program.
[55] Raine, Alden (2021). TCRP Research Report 224: Guide to Joint Development for Public Transportation Agencies. Transit Cooperative Research Program.
[56] Sound Transit. (2021) Integrating Retail into the Sound Transit Experience. Sound Transit.

Key West Transit will need to determine the footprint of the desired retail space - ranging from 150 sf for a 'grab and go' store or up to 2,000 sf for a larger restaurant. Industry best practice suggests that a 'turnkey' retail or restaurant space is the most attractive option for potential tenants. Turnkey spaces are fully renovated, with finished walls, ceilings, and basic mechanical systems. [57] Management of the retail space is another key consideration. Retail spaces in transit centers are often managed by a third party, which would be an additional cost for the agency to consider.

Transit patrons do not typically linger, so there may be more demand for a 'grab and go' style service such as a convenience store or café, rather than a full-service restaurant.[58] This type of food service can also be attractive to KWT employees and nearby workers and residents.

GREENSPACE / GREEN ROOF

A greenspace is a public or private communal space, consisting of land instead of buildings. These include parks, recreational space, community gardens, botanical gardens, rooftop gardens, or green roofs with low-laying plant ground cover.[59] The use of the greenspace may be influenced by the desired use, location, costs, and the level of maintenance that the space requires.

Figure 13: Rooftop Garden

Source: Anderson, Michaela. (n.d.). **Rooftop Gardens: A Solution to Reduce Energy Consumption.** USA Projects.

[57] Plotch, Philip. (2023) **Seven Effective Strategies to Improve Retail at Transit Stations (Part 1)** Eno Center for Transportation.
[58] Ibid.
[59] (2023). **Green Streets and Community Open Space** . United States Environmental Protection Agency.

Benefits

Environmental

In general, greenspace reduces air pollution which improve the local air quality. Depending on the type of greenspace implemented, it can create a biodiverse wildlife habitat which can result in bee and pollinator habitats and bird sanctuaries. These spaces can also assist with temperature regulation, reducing the urban heat island effect. Stormwater management is also enabled through the reduction of building runoff, with the space trapping it and filtering out pollutants.[60]

Figure 14: Rooftop Soccer Fields

Source: SoccerGround USA. (n.d.). **Fleet Fields at Lincoln Yards, Chicago.**

Social and Community

Greenspace enables social interaction and a sense of community. The design of the space can provide flexible use spaces and a mix of communal and private areas, offering a variety of interaction and use types. Greenspace such as a turf field can enable recreation and therefore promote health and mental well-being.[61]

Economic

Creating a destination can help to support transit-oriented development and therefore create economic benefits for the site. This space could also be a source of revenue if KWT decides to lease out the space for events.

Challenges

Design and Planning

Codes and regulations may hinder installation and maintenance of the green space. The design of the area will also influence on how the greenspace will be accessed and if it will be open to the public or if it will be private. Depending on location and orientation, privacy will need to be provided for residential units. Additionally, if the space is poorly designed, it can result in underutilized areas. Resources may be wasted if the space is underutilized due to not meeting the community's/resident's needs and wants.

Resources and Costs

There will be varying maintenance costs depending on the type of greenspace. The greenspace types that are able to be implemented will be influenced by not only the community's wants, but also resource availability and access such as a water source, skilled maintenance labor, and maintenance equipment and materials.[62]

[60] Wolf, K.L., S. Krueger, and K. Flora. (2015). **Reduced Risk - A Literature Review. In: Green Cities: Good Health**. College of the Environment, University of Washington.
[61] National Recreation and Park Association. (n.d.). **Mental Health Benefits of Parks and Recreation.** Park Pulse.
[62] Hounsell, Dan. (2020). **The Cost of Maintenance: One Duke Greenspace.** Facilities Net.

Environmental Stresses

Extreme weather and temperature can affect the health and viability of plants or any recreational area such as turf field. Depending on the type of plants, they may require regular management of pests and diseases.

Safety and Security

A lack of safety and security measures may result in underuse of the area and wasted resources. The area may be vulnerable to vandalism and misuse, especially depending on who is allowed to use the space and safety and security measures. Assets and actions such as installing lighting, gates and fencing, locks to restrict access, and implementing operational hours can help create a safe and secure place.[63]

COMMUNITY CENTER

A community center or events space can meet a variety of needs. Typically, events spaces include meeting rooms or a large conference room to host meetings, banquets, events, and company parties. Some event spaces also offer an on-site full-service catering kitchen.

Benefits

New Revenue Stream

Offering a dedicated conference room, meeting area, or banquet space would provide Key West Transit with a source of revenue that can also accommodate the agency's own meeting needs. There is an opportunity to develop an events space on the top floor of KWIC, adjacent to a green roof, which could create a larger, more attractive area for event rentals, which would increase event revenues.

Resource For Local Non-Profits and Community Groups

Providing local non-profits or community groups with low or no-cost event space would help to build stronger relationships with community partners and reinforce Key West Transit role as a valued community asset.

Space for Government Meetings

A large conference room could help serve the needs of Key West government agencies. A complimentary, well-resourced meeting room was cited by stakeholders as a valuable new amenity. Additionally, hosting public meetings at an intermodal center provides easy access for government officials and members of the public, which may bolster meeting attendance, especially by the public.

Challenges

Lack of Use

Underutilization of the space due to similar or competing facilities or a lack of attractiveness due to a size constraint and/or missing amenities could hamper the ability of this amenity to provide an additional source of revenue to Key West transit and may result in revenue losses.

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[63] Tal, Johnathan. (n.d.). **Park Security.** Parks and Rec Business.

Management

An events space would also likely require event management and operations staff to coordinate reservations, event set up and operations, which would be an additional cost to Key West Transit.

One example is the MTA Transit-Community Center in Shelton, Washington. They have a 5,200 sf gymnasium with a sound system, projector and screen, podium and microphones, and tables and seating to accommodate 240 people. There is a 2,500 sf atrium. There is also an adjacent 800 sf conference room.[64] Another example is Manteca Transit Center in Manteca, California. The rental of community rooms is managed by the City of Manteca's Public Works department. The center offers two community rooms. One is 2,225 sq ft for 200 guests for banquet style events. A smaller room is 940 sf and accommodates 50 guests. Manteca Transit Center and the MTA Transit-Community Center both provide large scale catering kitchens and outdoor patios for additional informal gathering space.[65]

EMPLOYEE AND RESIDENT AMENITIES

The potential amenities explored for this site were childcare, a gym/fitness center, and communal space. By providing such amenities, the overall quality of life of the employees and residents can improve.

Childcare

Offering on-site childcare can provide some cost savings, as well as convenience. Transit operator schedules and the high cost of childcare can pose challenges for transit operators who have children, which may make the provision of on-site childcare attractive to current and prospective employees.

Benefits

Supportive of Employee Attraction and Retention

There is a potential for the childcare to be employee-sponsored, childcare that is partially or fully subsidized by the employer. KWT could be eligible for a tax break if employee-sponsored childcare was offered.[66] Before deciding to offer an on-site childcare facility at the Key West Intermodal Center, consider conducting an employee survey to determine if there is demand for the service.

Challenges

Space Utilization

Space utilization will need to be considered when determining implementation.[67] Regarding space utilization, a minimum of 45 sf of outdoor space is required per child aged 1 or older in Florida[68] Due to the orientation and space utilization of the other amenities and buildings on

[64] Mason Transit Authority (n.d.). **Mason Transit Authority | Event Space.**
[65] City of Manteca, California (n.d.). **Manteca Transit Center Rental.**
[66] Marble, Jess. (2023). **What is Employer-Sponsored Child Care?.** Care.
[67] TransitCenter. (2022) **Transit Center | Bus Operators in Crisis.** TransitCenter.
[68] Florida Department of Children and Families. (2021). **Child Care Facility Handbook October 2021.**

the site, as well as the number of children, there may not be sufficient space for the required outdoor space.

Staffing Requirements

Initial staffing requirements include undergoing 30 hours of department-approved training, 10 hours of yearly in-service training, and passing a competency exam. Additional staffing requirements vary depending on the age and number of the children the facility services and the type and time of childcare service.[69]

Gym/Fitness Center

A small gym/fitness center would offer recreational amenities for Key West Transit employees to improve their health and wellness. Typical fitness center amenities include cardio equipment, strength training equipment, showers, and towel service.

Benefits

Employee Health Benefits

improvements to the overall wellness of transit operators, leading to better recruitment and retention of employees.[70] This could also lead to reduced insurance premiums.

Minimal Space Utilization

Since Key West Transit's employer is small, the fitness center would not require much space and would have low staffing and maintenance needs.

Challenges

Lack of Use

To make sure a gym/fitness center meets the needs of Key West Transit employees, it is recommended to conduct an employee survey. This survey will help determine if there is a desire for a fitness center and which types of equipment would be most popular. This can help to ensure use of the space prior to implementation.

Space Utilization

If there is a strong demand for a fitness center, the next step would be to determine the space requirements and location within the Key West Intermodal Center. Operating hours and costs will also need to be considered.

Transit agencies across the country incorporate employee gyms within their facilities. King County Metro operates seven employee fitness centers for their employees and offers online fitness classes.[71] CapMetro in Austin, Texas promotes its fitness center as an employee benefit, with tailored programs to improve employee health. CapMetro also offers financial incentives for weight loss, smoking cessation, physical activity, and healthy eating. The agency also offers a bike loan program.[72] Pinellas Suncoast Transit Authority's on-campus wellness center offers

[69] Childcare Center. (n.d.). **Florida Childcare Licensing and Regulation.**
[70] Clogston, Frankie. (2019). **TCRP Research Report 217: Improving the Health and Safety of Transit Workers with Corresponding Impacts on the Bottom Line.** Transit Cooperative Research Board.
[71] King County. (n.d.). **Workout at Work.**
[72] CapMetro. (n.d.). **Benefits with CapMetro.**

strength training machines, cardio equipment, locker rooms and towel service. PSTA also has outdoor fitness equipment with an outdoor walking track.[73]

Communal Space

Offering a communal space for the residents can help to promote socialization, offers on-site entertainment, and can be used for resident events. Spaces can include game rooms, movie rooms, workspaces, and/or open, indoor space.

Benefits

Flexible Space Utilization

Similar to the gym/fitness center, the space utilization can be flexible depending on the equipment desired for the space. Use of the space may be influenced by the residential developer or after implementation by the management company.

Supportive of Social Connections

Communal spaces promote socialization and establishing connections. This can help people to feel a sense of belonging, which may influence them to stay in Key West. It is also free entertainment without having to leave the KWIC which many residents may see as beneficial.

Challenges

Lack of Use

There is the risk of lack of use by residents, however, this equipment would only really require initial capital funding to provide the proper equipment, dependent on use. To help combat this, it is suggested to have a flexible space, potentially with multiple entertainment choices.

FARMER'S MARKET

A farmers' market is a public and recurring gathering of farmers or their representatives selling their produce directly to consumers.[74] Farmers markets vary in size and offerings, carrying a variety of items from fruits and vegetables, to baked goods, meat, eggs, and dairy as well as flowers, crafts, and prepared foods. Farmers markets often operate independently, but sometimes operate with assistance from city and non-profit partnerships.

Benefits

Access to Fresh Produce

A regular farmers market offers the community fresh, locally sourced, and affordable produce. Many farmers market vendors accept EBT/SNAP payments, which helps make fresh produce more affordable to residents with lower incomes. Farmers markets are growing in popularity at transit centers. Atlanta's 'MARTA Market' operates seven farm stands at their transit stations year-round. Each of these stands is open one day per week. The MARTA Market is a collaboration between several local non-profits, including the Atlanta Community

[73] PSTA. (n.d.). **Benefits.**
[74] Farmers Market Coalition. (2024) **About Farmers Markets.** Farmers Market Coalition.

Food Bank. The markets accept EBT/SNAP payments and SNAP dollars are matched at the market.[75]

Supportive of TOD

A well-organized farmers market often becomes a weekly destination for customers and can even expand to offer other activities like live music and cooking demonstrations. Businesses surrounding farmers markets may also benefit from the increased foot traffic on market days.[76]

Collaboration with College Road Community

There is an opportunity to work with neighboring groups and businesses to enhance the success of a farmers markets including the hospital, college, marina, apartments, and elementary school. In addition, special events could be planned with the SPCA and Botanical Gardens.

Challenges

Space Utilization

Locating the market in a parking lot near the center would compete for space with bus operations and present conflicts. An alternative location could be the center's rooftop, but this may be challenging for some vendors to access. It would also be less visible to transit customers and nearby residents.

Lack of Need

Key West currently has a farmer's market that operates every Thursday throughout the year at Truman Waterfront Park—Keys Artisan Market. The market offers a variety of products, including produce, prepared food, and artisan crafts. The market is managed by Daily Plan-it, a local event planning company.[77] This market may offer a useful model for Key West Transit to follow. Daily Plan-it could be considered a potential development partner for another Key West farmer's market.

Site Technologies

One of the amenities suggested by Key West Transit was a parking garage, specifically using an automated parking system (APS). Having a parking garage at Key West Transit's facility helps to address the parking shortage in downtown Key West and promotes the use of Key West's transit services which decreases congestion in downtown. Currently, parking is mostly concentrated in downtown Key West (**Figure 4**). Additionally, the implementation of public EV chargers was explored. Both of these amenities help the KWIC address traffic congestion and establish the facility as a destination. To help offset costs and gain funding, green energy sources were also considered.

AUTOMATED PARKING GARAGE

An automated parking system (APS) is a parking solution that enables vertical, multi-story, high-density parking, using automated mechanical systems. These parking systems and structures are also known by other names such as a smart parking system, robotic parking

[75] MARTA (2023). **The Fresh MARTA Market.**
[76] Alonzo, Anne. (2013). **Farmers Markets as Community Centerpieces**. United States Department of Agriculture.
[77] Daily Plan-it (n.d.). **Truman Waterfront Market Key West**.

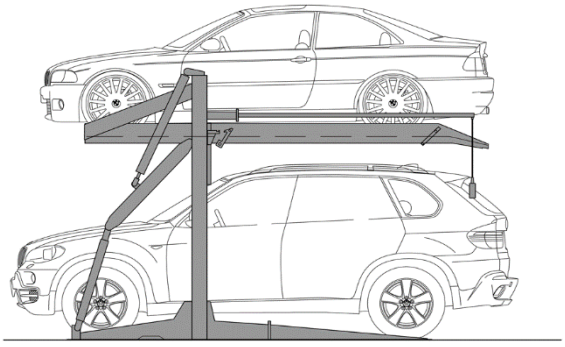
garage, car parking system, automated parking facility, mechanical parking, and an automated vehicle storage and retrieval system.[78]

They may operate using wireless sensor-based systems, global positioning systems (GPS), vision-based systems, or vehicular communications systems using roadside units (RSU) located within the parking garage. These technologies offer a variety of abilities including parking guidance, route negotiation, intelligent parking methods (i.e., parallel and perpendicular parking), parking garage detecting and monitoring, location of vehicles and parking space recognition availability, and antitheft protection.[79]

The vehicle transport process using an APS are listed below.

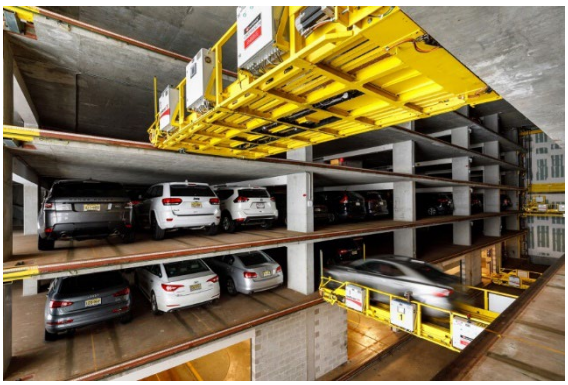
1. Vehicle owners drive their vehicle to the entrance of the parking garage and drop-off their vehicle at the designated location.
2. Using mechanical or computerized technology and machinery, the vehicle is transported and taken to an available parking space. Here the vehicle is then either automatically parked or parked by a garage attendant.
3. For vehicle pick-up, the same operational steps occur in reverse.[80]

Figure 15: Example Schematic of Vehicle Parking



Source: ParkPlus. (n.d.). Building Codes for High-Density Parking Systems.

Figure 16: Inside an Automated Parking Garage



Source: Ukmar, Stefano. (n.d.). Designing Future Ready Buildings. Architect Magazine.

Benefits

Space Efficiency

With more vehicles able to fit in a compact area, there is greater space efficiency compared to non-automated parking garages. Parking systems that are fully automatic do not require a parking attendant to park the vehicles and therefore no one has to enter or exit the vehicle. Due to this, vehicles can be parked closer together and, in some cases, even stacked. This enables the parking garage to occupy less space compared to a conventional parking garage,

[78] Hearst Autos Research. (n.d.). What is an Automatic Parking System? . Car and Driver.
[79] Faheem, S.A. Mahmud, G.M. Khan, M. Rahman, and H. Zafa. (2013). A Survey of Intelligent Car Parking System. Journal of Applied Research and Technology (JART), Volume 11.
[80] Hearst Autos Research. (n.d.). What is an Automatic Parking System? Car and Driver.

while having more parking spaces, making it ideal for areas with limited parking and land area.[81] In addition, APS garages can enable less EV charging stations to be provided due to the automated shuffling ability of parked vehicles within the garage. Vehicles waiting to be charged can be cycled in, with already charged vehicles cycled out.[82]

Emissions Reduction

APS-equipped garages enable a reduction in emissions. In conventional parking garages, drivers are required to drive around, sometimes for multiple parking garage levels, to find a space. This process uses vehicle fuel, therefore producing harmful vehicle fume emissions. Additionally, vehicles are often turned off while being transported using an APS.[83]

Timesaving

Without the need for pedestrian amenities such as stairwells, elevators, pedestrian walkways, and exit routes, construction costs and time may be shorter compared to a conventional parking garage.[84] Since they are not required to park their own vehicle or spend time finding a parking space, users experience a saving in time when using a parking garage with APS. Using a consumer application or website can further enable time savings and convenience for users with parking spaces being able to be reserved and paid for.[85]

Safety and Security

With limited personnel access to the garage, there is increased safety and security in parking garages with APS. Without the need for parking attendants and vehicle owners parking the vehicles, the garage space is more limited on walkability and not as accessible. This can prevent potential vehicle-pedestrian incidents, vehicles from being carjacked or damaged, and other violent crimes towards people.[86]

Challenges

Costs

The overall cost will be influenced by construction expenses. Due to APS-enabled parking garages having a multitude of various components that make up the systems and structures, there may be high up-front costs regarding obtaining multiple permits and approvals and specialized technical expertise during the design and engineering phase, as well as the construction phase. However, compared to conventional parking garages, parking garages utilizing APS offer significant cost savings with reduced construction costs attributed to the level of excavation and not needing ramps and loading areas. With the efficient utilization of space, overall construction and development costs are lower.

Maintenance and operational costs are influenced by the level of automation and technology integration and any future upgrades. A fully automated parking system requires automated pallets to transport the vehicles, retrieval systems, and kiosk technology. Repairing or addressing technical issues with any of the systems or technology may require a specialist

[81] Hearst Autos Research. (n.d.). **What is an Automatic Parking System?** . Car and Driver.
[82] Utron. (n.d.). **Mechanical Parking and Integrated Electric Vehicles Charging Solutions**.
[83] Hearst Autos Research. (n.d.). **What is an Automatic Parking System?** . Car and Driver.
[84] Ibid.
[85] Diaz Ogas, Mathias Gabriel, Fabregat, Ramon, and Aciar, Silvana. (2020). **Survey of Smart Parking Systems.** Applied Sciences.
[86] Hearst Autos Research. (n.d.). **What is an Automatic Parking System?** . Car and Driver.

which could be costly. Overall, the cost of maintenance for an APS is generally lower compared to conventional parking garages. The cost of operations will be influenced by the level of customer support and system maintenance.[87]

Code and Regulation Adherence

Locations of where automated and mechanical parking systems can be used is determined by local zoning and planning codes. The type and size of the automated or mechanical parking garage that is allowed is also determined at a local level, adhering to the authority having jurisdiction (AHJ) for specific permitting requirements. While the International Building Code (IBC) does address some general aspects, automated and mechanical parking systems and structures do not have a national standard building code. Additionally, the number of parking spaces is influenced by the zoning codes, dictating the size and type of automated parking stalls allowed. Vehicles must fit within the determined vehicle envelope.[88]

Pinellas Park, Florida is similar to Key West as it has many bodies of water sprinkled throughout the area and experiences flooding due to its location.[89] In 2006, a robotic parking garage was constructed in Pinellas Park and was then rebuilt in 2019 to include updated machinery, automation, electronics, and software. This 4-level (35.5 feet) parking facility contains 114 parking spaces, with a building footprint of 97.2 feet by 72 feet. Operated by Robotic Parking Systems, the parking garage is often utilized by the company for research, development, and testing.[90]

ELECTRIC VEHICLE SERVICE EQUIPMENT (EVSE)

There is a desire at Key West Transit to introduce electric buses into their fleet. The use of public EV charging stations is also explored in this section as a source of revenue.

There are electric vehicles (EV) that only operate using batteries, battery electric vehicles (BEVs), and others that are plug-in hybrids, plug-in hybrid electric vehicles (PHEV), using both an electric motor and internal combustion engine. Electric vehicle service equipment (EVSE) provides electricity to the vehicle to recharge its battery.

The following iterative steps should be followed to plan EVSE implementation.[91]

Project Development and Scoping

EV charging needs should be assessed, helping to determine installation types, project partners, and the model of ownership. Requirements to adhere to permitting and regulatory compliance should be identified which will influence overall costs and planning scope.

[87] SpacePlus. (2023). **Automated Parking System Cost: What to Expect.** SpacePlus.
[88] ParkPlus. (n.d.). Building Codes for High-Density Parking Systems. ParkPlus.
[89] Pinellas Park Fire Department. (n.d.). **Flood Protection.** City of Pinellas Park.
[90] Robotic Parking Systems, Inc. (n.d.). **Pinellas Park, Florida.** Robotic Parking Systems, Inc.
[91] Office of the Under Secretary for Policy. (2023) **EV Infrastructure Project Planning Checklist.** United States Department of Transportation.

Utility Planning

The amount of power needed for EV charging/use should be identified and communicated with the local utility company. This will determine grid capacity and electricity rates and pricing.

Installation Planning

To plan for installation, the procurement process needs to be determined, as well as network connection needs for charging. Installation needs and costs will be determined after selecting the necessary equipment and network provider.

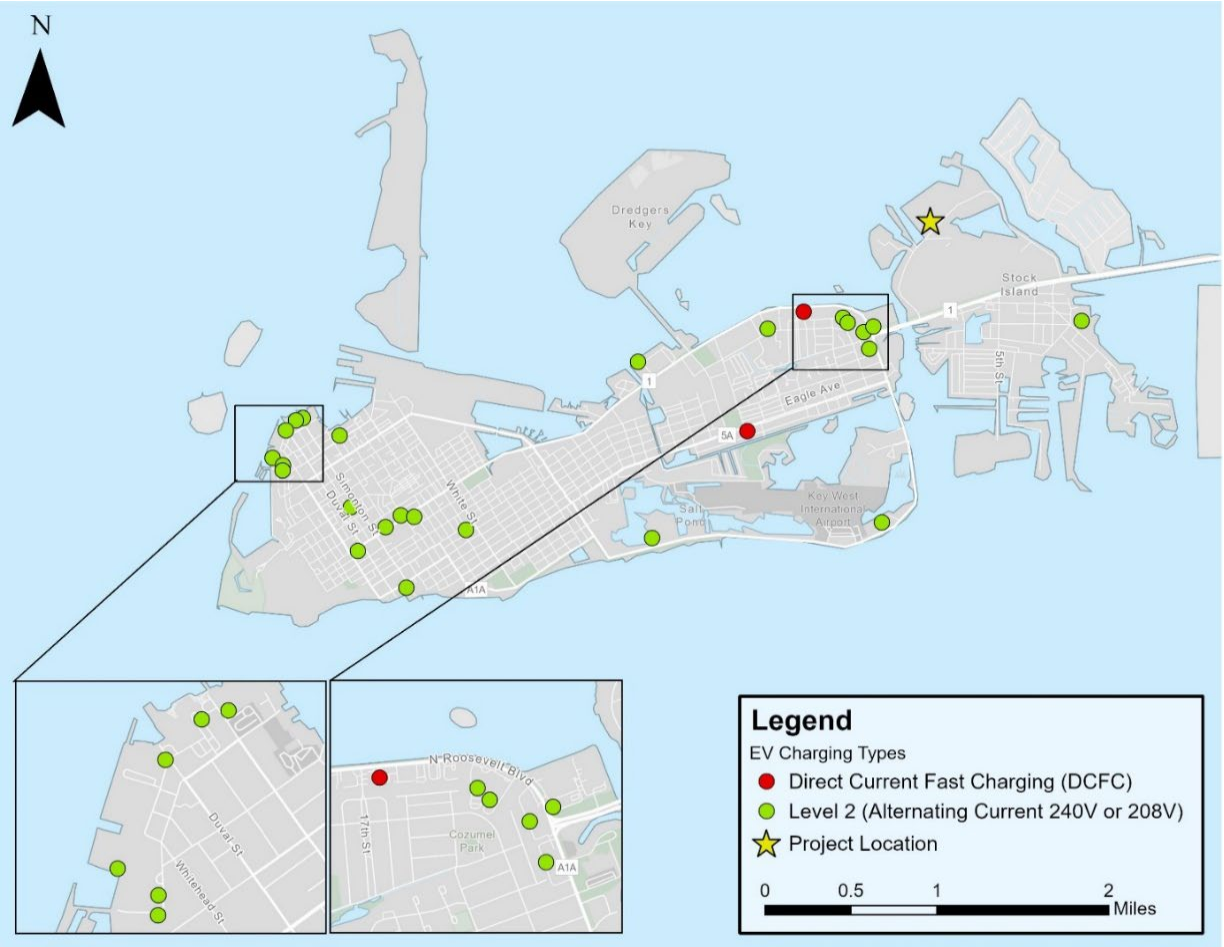
Operational Planning

Operations and maintenance costs need to be assessed, which will influence pricing and payment. For transit agency use in particular, bus routes to be electrified now and in the future should be identified, helping to inform what battery storage is needed and how much charge time is needed. From this, the charger type and the necessary infrastructure can be determined.

Public EV Chargers

A potential source of revenue for the Key West Intermodal Center are public EV charging stations. As exhibited below in Figure 17. there are not many EV charging stations near Key West Transit's facility, with a large concentration in downtown Key West.

Figure 17: EV Charging Stations in Key West



Source: PlugShare. [Key West, FL | EV Station (plugshare.com)](); Joint Office of Energy and Transportation. [Electric Vehicle Charging Stations.]()

EVS have three levels of charging, with multiple types of vehicle charger connector types due to vehicles having different charge ports (**Table 10**).

Table 10: Electric Vehicle Service Equipment (EVSE) Charging Station Types

EV CHARGING STATION TYPES		
LEVEL 1	**LEVEL 2**	**LEVEL 3**
• Common for residential • Uses common residential 120-volt (120V) Alternating Current (AC) outlet. • Charging hours from empty to 80% charged: » 40 – 50+ for Battery Electric Vehicle (BEV) » 5 – 6 hours for Plug-In Electric Vehicle (PHEV)	• Common for residential, workplace, and public charging • Higher rate AC charging in residential applications at 240V and 208V in commercial applications. • Charging hours from empty to 80% charged: » 4 – 10 hours for BEVs » 1 – 2 hours for PHEVs	• Offers rapid charging along heavy-traffic corridors at public locations such as grocery stores, retail store, coffee shops, etc. • Charging hours from empty to 80% charged: » 20 – 60 minutes for BEVs » Most PHEVs currently cannot use a DCFC

Source: U.S. Department of Transportation. (n.d.). **Charger Types and Speeds**.

Benefits

On-site public EV charging stations could offer convenience for residents of the facility's' residential units, patrons of the other potential locations on site, and transit users that may charge their vehicle, using transit to travel elsewhere.

Revenue Source

On-site public EV charging stations can provide a source of revenue to the transit agency, especially with other TOD at the site which may be patronized while charging the vehicle. TOD such as a café or store can increase the duration of a visitor's stay, therefore increasing the use of EV charging stations, overall boosting revenue. Charging fees are structured in two ways: the amount of electric consumption or charging duration. Memberships or subscriptions can also be offered, creating a steady income. Members could be offered discounted charging rates, priority access, etc. as an incentive to subscribe.[92]

Range Confidence in Users

Many EV users experience range anxiety. This means that drivers are worried that they will not be able to reach their trip destination on a single charge and find an EV charger when needed. This may provide a barrier to long trips.[93] However, with the addition of more EV chargers, this may help to remedy this concern, especially in an area that experiences extreme inclement weather resulting in evacuations or power outages. An added benefit of encouraging the use of EVs, are that some EV batteries can serve as a power source, which can be helpful during inclement weather.[94]

Figure 18: Examples of Commercial EV Charging Stations

Source: Charging Michigan. (n.d.). Installation: Multi-Family/Commercial.; Southwest Energy Efficiency Project. (2020). EV Infrastructure Building Codes: Adoption Toolkit. Atlas EV Hub.

Environmental Impact

Overall, EVs produce significantly lower greenhouse gas emissions and other air pollutants compared to conventional vehicles. This benefit is even greater if using renewable energy source like solar. This can help to reduce air pollution in the surrounding area, leading to health benefits. According to the American Lung Association, if the nation transitioned to an all-electric transportation system by 2050, approximately 6,300 lives would be saved every year, as well as avoiding 93,000 asthma attacks annually.[95]

[92] Tecophase. (2023) How Do Commercial Charging Stations Profit and Break Ev. Tecophase
[93] Mildner, Markus. (2023). The 3 Biggest Reasons for Range Anxiety – Fact or Fiction? . Forbes.
[94] Office of the Under Secretary for Policy. (2023). Individual Benefits of Rural Vehicle Electrification. United States Department of Transportation.
[95] Office of the Under Secretary for Policy. (2023). Benefits to Communities. United States Department of Transportation.

Challenges

The selection of the EV charger type procured and used should be determined based on its voltages which will influence the vehicle charging and dwell time and estimated upfront and operational and maintenance costs.

Infrastructure and Operating Costs

The number of circuits and EVSE units installed, indoor or outdoor installations, electrical upgrades, required ventilation, and if DC fast charging EVSE is used all influence the cost and time length of installation. A higher electricity rate will be charged if the fleet must be charged during peak electricity hours. Rates will be lower if the fleet is able to be charged overnight.[96]

Permitting and Regulations

Local, state, and national codes and regulations must be adhered to when installing EVSE which may influence if and where panels can be installed.

Selection of Charging Speed

The charging speed plays a significant part in servicing EV drivers and therefor the generation of revenue. Due to enabling faster charging, Level 2 chargers have the ability to increase the number of users benefitting from the charger, resulting in a quicker return on investment. Revenue can be maximized by offering different charging options, either on-site or varying from EV chargers in the surrounding area.[97]

Battery Electric Bus (BEB) Chargers

Key West Transit has an interest in procuring and introducing battery electric buses (BEBs) into their current fleet. There is a preference to have on-site charging on the first floor of the new facility. Storing and charging buses on the first floor of the new facility will enable the buses to be protected from inclement weather.

BEBs operate using only electricity and have onboard battery packs that require charging. Depending on the size of the battery packs, the vehicles are considered either long-/extended-range or fast-charge. The larger battery packs are long-/extended-range (250 – 660 kWh), requiring longer charging at low charge, once or twice a day. Fast-charge battery packs are smaller (50 -250 kWh) and require high-powered charging more frequently. BEBs have three types of charging infrastructure. In addition to the capacity of the battery pack, weather, operator driving behavior, route topography, and ridership load will affect the average range of BEBs.

[96] National Renewable Energy Laboratory. **Plug-In Electric Vehicle Handbook for Fleet Managers (Brochure), Clean Cities, Energy Efficiency & Renewable Energy (EERE).** United States Department of Energy, Office of Energy and Efficiency and Renewable Energy.
[97] Tecophase. (2023) **How Do Commercial Charging Stations Profit and Break EV**. Tecophase.

The three types of BEB chargers are plug-in charging, overhead conductive charging, and wireless inductive charging (**Figure 19**, **Figure 20**, and **Figure 21**).[98]

Plug-In Charging

Plug-in charging equipment for BEBS is often installed at depots where buses can be charged for multiple hours or overnight.

This type offers both AC and DC Fast charging options, charging at low power (40 – 125 kW). BEBs with larger batteries (250 – 660 kW) require longer charging time at low power.

Figure 19: Plug-In Charging

Source: Valley Transportation Authority. (2022). **Federal Funds Boost VTA's Zero Emission Bus Technology.**

Figure 20: Overhead Conductive Charging

Source: MassTransit. (2020). **ETS Installs In-Depot Pantographs to Charge Electric Buses.**

Overhead Conductive Charging

Overhead conductive charging is also known as pantograph charging.

This type of charging requires physical contact between the overhead charger and onboard battery to establish a flow of electric current. It uses a higher charging power level at 165 – 600kW, therefore transit buses can be recharged in 5 – 10 minutes.

[98] Office of the Under Secretary for Policy. **Electric Bus Basics.** United States Department of Transportation.

Wireless Inductive Charging

Wireless inductive charging uses floor-mounted charging pads that are recharged using two coils that establish a magnetic field between them and the onboard battery.

Using this type of charging equipment, BEBs more time to charge due to having a lower power level than conductive charging (50 – 250 kW).

Figure 21: Wireless Inductive Charging

Source: Buchholz, Kami. (2022). **WAVE Inductive Charging Purpose-Built for Large EVs.** SAE.

Benefits

The benefits of using EV transit buses can be experienced by both the transit agency and the public.

Cost Savings

The cost of electricity is lower compared to conventional fuel, reducing the fleet's overall fuel costs. Fuel costs can be even lower if the local utility offers lower rates for charging vehicles during off-peak times, which can be enabled with on-site charging infrastructure. With fewer fluids to change and less moving vehicle components, vehicle maintenance is reduced due to EVs generally needed less maintenance compared to conventional vehicles.[99]

Improves Local Air Quality

Overall, EVs produce significantly lower greenhouse gas emissions and other air pollutants compared to conventional vehicles. This benefit is even greater if using renewable energy source like solar. This can help to reduce air pollution in the surrounding area, leading to health benefits. According to the American Lung Association, if the nation transitioned to an all-electric transportation system by 2050, approximately 6,300 lives would be saved every year, as well as avoiding 93,000 asthma attacks annually.[100]

Noise Reduction

BEBs generate approximately 5 decibels (dBA) less exterior noise during acceleration compared to diesel powered buses, and compared to biogas powered buses, 7 dba less. Using BEBs reduces the number of people affected by transit noise.[101]

[99] National Renewable Energy Laboratory. **Plug-In Electric Vehicle Handbook for Fleet Managers (Brochure), Clean Cities, Energy Efficiency & Renewable Energy (EERE).** United States Department of Energy, Office of Energy and Efficiency and Renewable Energy.
[100] Office of the Under Secretary for Policy. (2023). **Benefits to Communities.** United States Department of Transportation.
[101] Boren, Sven. (2020). **Electric Buses' Sustainability Effects, Noise, Energy Use, and Costs**. International Journal of Sustainable Transportation.

Challenges

In contrast to the benefits of using EV transit buses, the challenges of their use are only experienced by the transit agency.

Selection of Vehicles and Chargers

This will be dependent upon multiple factors. Chargers can be installed on-site or along the route, depending on the charger type. How many BEBs in service will influence how many chargers are needed. The type of battery pack used by the BEB will determine how long charging will take.[102]

Utility Costs

Utility costs will be dependent on the type of charger selected, how many chargers are installed, and how many hours charging is used – all influenced by the number of BEBs that will be in use. With the installation and use of solar panels, utility costs could potentially decrease. Once the type and number of chargers needed is determined, the local power utility company should be contacted to understand the electricity rates and utility bill costs once deployed.[103]

Predicting Fleet Performance

There needs to be an understanding of how battery degradation over time, impacting the vehicle's range. Anticipating this will help to ensure the operability of the BEB before the end of its vehicle life and deter operational challenges and associated costs.[104]

GREEN ENERGY

Initial research helped to determine that solar panels were the most feasible green energy to implement on the site. Utilizing solar power is a much more cost-effective and space efficient option for green energy compared to windmills. Placement of windmills is often dictated by noise pollution and height of the system, inclusive of the rotor blades.[105] The size of the windmill required to power the KWIC is too large for the site, as well as too tall considering the surrounding entities such as the hospital and Navy that have height restrictions. Solar panels were determined to be the most space efficient and a proven green energy in the area.

[102] Office of the Under Secretary for Policy. (2023). **Electric Bus Basics.** United States Department of Transportation.
[103] BetterFleet. (2023). **Integrating Electric Fleet Planning and Charge Management Systems**
[104] BetterFleet. (2023). **Integrating Electric Fleet Planning and Charge Management Systems**
[105] Gaughan, Richard. (2018). **How Much Land is Needed for Wind Turbines?** Sciencing.

Solar Panels

Solar panels harness solar energy, a sustainable and renewable energy source, producing electricity.[106] Due to the large size of commercial buildings, a commercial solar panel may have 96 cells or more, compared to residential homes only having 60 – 72 cells. Roof installation is recommended for commercial buildings due to usually having vast, flat roofs, however, other options include installing solar panels at parking lots, creating open-air solar garages. Ground-mounted solar panels that are able to tilt to capture optimal sunlight are also another option.[107]

Figure 23: Single Slope Solar Canopy

Source: Kirby Building Systems. (n.d.). **Fitzgerald Parking Garage Solar Canopy Building.** Nucor Company.

Figure 22: Photovoltaic Parking Canopy

Source: Virginia Tech University. (n.d.). **Photovoltaic Parking Garage.** Wiley Wilson.

Benefits

The benefits of using solar panels at commercial properties include cost savings and positive environmental impacts.

Cost Savings

Using solar panels offers savings in electricity consumption which can be especially beneficial if deploying EV buses and using EV chargers on site. Savings will be determined by the size of the energy system, as well as the number of hours of direct daily sunlight. Additionally, there are incentives for installing and using solar panels.[108,109]

Environmental

For each kilowatt-hour (kWh) of solar generated, greenhouse gas emissions and other pollutants are substantially reduced.[110] Producing and using solar power also reduces water consumption due to using half of the water needed for gas-fired power plants and compared to nuclear and coal power plants, uses seven times less water.[111]

[106] Office of Energy Efficiency and Renewable Energy. (n.d.). **Benefits of Residential Solar Electricity.** United States Department of Energy.
[107] Zito, Barbara; Saddler, Lowe. (2023). **A Complete Guide to Commercial Solar Panels.** Forbes.
[108] Office of Energy Efficiency and Renewable Energy. (n.d.). **Benefits of Residential Solar Electricity.** United States Department of Energy.
[109] Zito, Barbara; Saddler, Lowe. (2023). **A Complete Guide to Commercial Solar Panels.** Forbes.
[110] Office of Energy Efficiency and Renewable Energy. (n.d.). **Benefits of Residential Solar Electricity.** United States Department of Energy.
[111] Solar. (n.d.). **5 Ways that Solar Energy Benefits the Environment.** Electrum.

Challenges

The main challenges with using commercial solar panels are high upfront costs and the site's electrical grid load which influences ongoing costs.

Upfront Costs

According to one source, for large buildings, the installation of solar panels can cost around a million dollars. This is attributed to the size of the building, number of solar panels, and the energy needs to produce enough power for the building. Due to its size and electrical power needs, commercial buildings generally have 96 cells or more.[112]

Electrical Load

The electrical load of the building is determined by combining all of the energy requirements of the building/site. This will influence how much voltage is needed from all of the solar panels that will be installed, which will then inform the number of panels are needed.[113]

[112] Zito, Barbara; Saddler, Lowe. (2023). **A Complete Guide to Commercial Solar Panels.** Forbes.
[113] Maers, John. (n.d.). **What is Electrical Load? - Electrical Load for Solar Power Energy.** Solwiser.

Multimodal Transportation Amenities and Connections

The existing Key West Transit facility on College Road has limited access to multimodal transportation options. Because of the available space, location north of downtown Key West, and close vicinity of the Key West Transit Facility, it is an ideal location for accommodating new features and amenities that can help increase transit ridership and support transit-oriented development. New amenities such as bike and scooter share may prove to be a popular addition for tourists and residents. A potential new trail on College Road with upgraded bicycle and pedestrian crossings on College Road and along the Overseas Heritage Trail may also help attract visitors. Adding a new local ferry terminal at Sunset Marina is another opportunity to offer seamless car-free travel into downtown Key West.

BICYCLE AND PEDESTRIAN PROPOSED IMPROVEMENTS

Bicycle Storage and Repair Shop

New bicycle and pedestrian amenities at the Intermodal Center could include additional bicycle lockers and a bicycle repair shop. Bicycle lockers could be installed with the City of Key West's existing bicycle parking program. Including a bicycle repair shop would benefit transit patrons but may not be necessary if a bicycle repair station is provided on site. A bicycle repair station, **Figure 24**, often has tools, secured by cables to prevent theft, such as Allen wrenches, tire levers, tire pump, and screwdrivers to perform minor repairs. It is unlikely that bicyclists traveling on the Florida Overseas Heritage Trail would divert their journey to Key West to stop at the KWIC for bicycle repairs, as there are already several bicycle repair shops within Key West itself as well as free bicycle repair stations throughout Key West. However, if a bicycle/pedestrian trail were established along College Road, bicyclists may be more inclined to utilize the KWIC for bicycle repairs.

Figure 24: KWT's Bike Repair Station

Bicycle/Pedestrian Improvements

Infrastructure improvements to the walking and cycling environment around the proposed intermodal center would improve connectivity to Lower Keys Medical Center, College of Key West, Sunset Marina, and the popular Overseas Heritage Trail.

It is recommended to advance the proposals set forward in the 2019 Key West Bicycle Pedestrian Master Plan and several additional crossing improvements. These are summarized in the list below and shown in **Figure 25**.

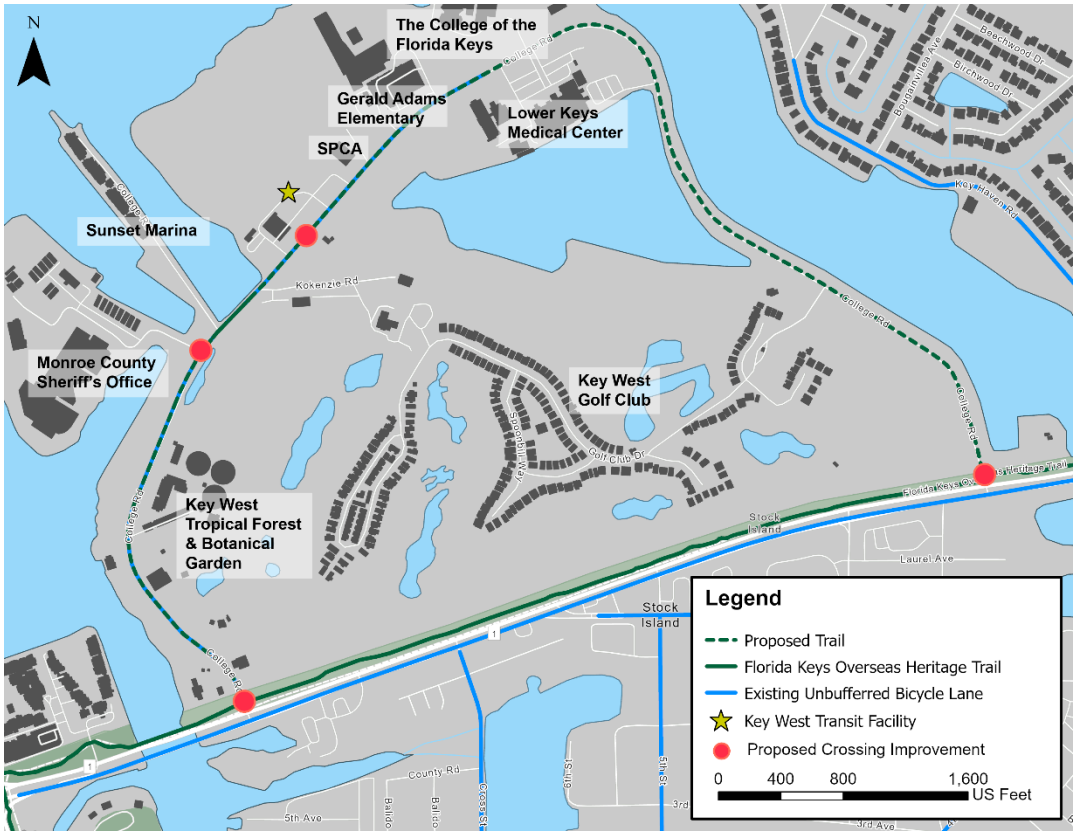
- Install minimum 10-foot-wide shared use path/trail along entirety of College Road, replacing or expanding the current 4-foot-wide bike path already along College Road
- Investigate feasibility of installing two bicycle/pedestrian crossings on College Road to facilitate crossings to Key West Intermodal Center and to Sunset Marina
- Improve two trail crossings at U.S. 1/A1A/Overseas Highway and College Road
  - W. College Rd/Overseas Hwy
    - Install curb ramps

- Reduce turning radii (to create more waiting space at corner)
- Install high visibility crosswalk
- Install pedestrian refuge (at least 6 ft. width)

» E. College Rd/Overseas Hwy

- Install curb ramps
- Reduce turning radii (to create more waiting space at corner),
- Install pedestrian signals and actuators
- Install high visibility crosswalk

Figure 25: Proposed Improvements



Source: Florida Department of Transportation, City of Key West. Recommended Improvements are for illustrative purposes only.

Investing in these improvements supports the implementation of Key West's Bicycle and Pedestrian Master Plan and will help lead to improved safety outcomes for people walking and cycling.

Benefits

Facilitating First and Last Mile Connections

Providing walking and cycling connections supports transit use for residents and visitors to the College Road area, including visitors to the KWIC, Lower Keys Medical Center, Gerald Adams Elementary School, Key West Golf Club, and Key West Tropical Forest and Botanical Garden.

Transit Passenger Safety

Safe pedestrian access to transit is critical to supporting transit use and supporting multimodal networks. Safety of transit passengers while using and accessing transit is critical to the system's success.[114]

Supportive of Transit-Oriented Development

Transit-oriented development's mixed use, compact character is underpinned by a pedestrian oriented public realm. Ensuring that the area is bicycle and pedestrian friendly, with well-designed circulation patterns on-site and on the surrounding streets will help to support retail uses on the site.[115]

Challenges

Right-of-way and Utilities

College Road is approximately 28 feet wide with narrow designated bike lanes (approximately 4-foot-wide). Adding a 10-foot-wide trail along College Road may be challenging due to the limited width of the roadway and limited width of the right-of-way currently used for sidewalks and drainage. Additionally, utility poles may limit the width available for constructing a shared use path.

Environmental Constraints

Many areas along College Road are designated as Mangrove Conservation Areas (CM Zoning). This may limit the ability of the City of Key West to use additional lands beyond the designated right-of-way to construct a shared use path.

FDOT Coordination

Some improvements to trail crossings on U.S. 1/Overseas Highway may require coordination with FDOT. Coordination is essential early in the design process to ensure that crossing improvements can be made prior to the new intermodal center's opening.

Funding and Timescales

If not already in process, the City of Key West should look to secure funding for upgrades to the Overseas Highway Trail Crossings as well as securing funding for design and construction of a new trail/shared use path on College Road. Having these improvements constructed prior to the opening of Key West Intermodal Center will be critical to the center's success.

SHARED MICROMOBILITY

Shared micromobility is defined by NACTO as 'Shared-use fleets of small, fully or partially human-powered vehicles such as bikes, e-bikes, and e-scooters.' These vehicles are generally rented through a mobile app or kiosk, are picked up and dropped off in the public right-of-way and are meant for short point-to-point trips.[116] A shared micromobility hub could include bikes, e-bikes and e-scooters. This would need to be developed in conjunction with a shared micromobility program for the entirety of Key West. Key West's Strategic plan indicates Key

[114] FHWA. (2022). Improving Safety for Pedestrians and Bicyclists Accessing Transit. FHWA.
[115] Raine, Alden (2021). TCRP Research Report 224: Guide to Joint Development for Public Transportation Agencies. Transit Cooperative Research Program.
[116] NACTO. (2019). Guidelines for Regulating Shared Micromobility. National Association of City Transportation Officials.

West would like to promote and regulate recreational rental vehicles to reduce traffic volumes. This initiative began in 2021 and is ongoing.[117]

Benefits

Complement Transit Use

Shared micromobility can complement and support transit use. Data shows a linkage between users of docked bike-share and transit trips. There is an opportunity for public private partnerships with micromobility operators to ensure collaboration that meets the agency's unique needs.[118]

Supports Multimodal Opportunities

Offering access to shared micromobility provides another transportation option for visitors and residents, reducing reliance on private automobiles for local transportation.

Challenges

Securing and regulating micromobility service providers will need to be carefully evaluated as part of the *City of Key West's Mobility Plan*. Challenges of providing micromobility options on site include: [119]

Regulation, Permit Enforcement, Insurance Bonds, and Fees

Shared micromobility services should only operate in the public right-of-way with legal permission from the city, with permits setting out requirements on insurance, bonds, and fees, as well as conditions that allow the city to suspend, revoke, and modify permits on certain grounds. Ordinance 21-12 of the City of Key West does establish some restrictions on micromobility devices. They are categorized as part of Recreational Rental Devices which requires securing a permit through the Key West Licensing Department, as well as a conditional use being approved by the Planning Board.[120]

Fleet Size, Relocation, and Distribution

To maintain a fleet with responsive availability, ensure there are requirements for a minimum and maximum number of vehicles available for public use, which may involve dynamic fleet caps. Also, operators should be required to remove damaged or inoperable vehicles from the public right-of-way within set time periods.

Vehicle Maintenance and Customer Service

There is a need to ensure vehicle standards meet those of the Consumer Product Safety Commission along with federal, state, and city safety standards. It will be necessary to require information on battery safety practices. And to ensure there is a system in place for issue reporting and mitigation to ensure quick removal of damaged vehicles from the operating fleet.

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[117] Elisa Levy Consulting. (2021) Key West Forward: The Strategic Plan for the City of Key West - 2021-2024. City of Key West.
[118] National Academies of Sciences, Engineering, and Medicine. (2021) Transit and Micromobility. The National Academies Press.
[119] NACTO. (2019). Guidelines for Regulating Shared Micromobility. National Association of City Transportation Officials.
[120] The City of Key West. (2021). City of Key West Code of Ordinances: Ordinance 21-12.

MARINA CONNECTION

There is an opportunity to provide a safe, convenient, and attractive connection to Sunset Marina for visitors, tourists, and workers to easily access downtown Key West via ferry. Sunset Marina is less than a ten-minute walk from the proposed intermodal center. **Figure 26** outlines recommended improvements.

Benefits

Supports Multimodal Connections

Providing a dedicated trail connection between the KWIC and Sunset Marina would support the use of a potential ferry service between Stock Island and Key West. In addition, coordination between the marina and KWT could result in the ability to provide connections via transit shuttle or microtransit modes. The KWIC can support this connection by providing live ferry departure times within its facility, as well as installing dedicated wayfinding signage to support and encourage a seamless pedestrian connection to Sunset Marina. Supporting a potential new ferry service will help advance another car-free alternative to visiting Key West.

Challenges

Lack Of Pedestrian Facilities on Sunset Marina Road

The existing narrow sidewalk on College Road abruptly ends before reaching Sunset Marina Road. This creates a challenge for pedestrians with disabilities or other mobility needs from conveniently accessing the marina and its amenities. Installing a sidewalk, trail, or other connection to support potential ferry service within the marina requires early coordination between landowners and the City of Key West/ in order to determine the best alignment for a new sidewalk or trail.

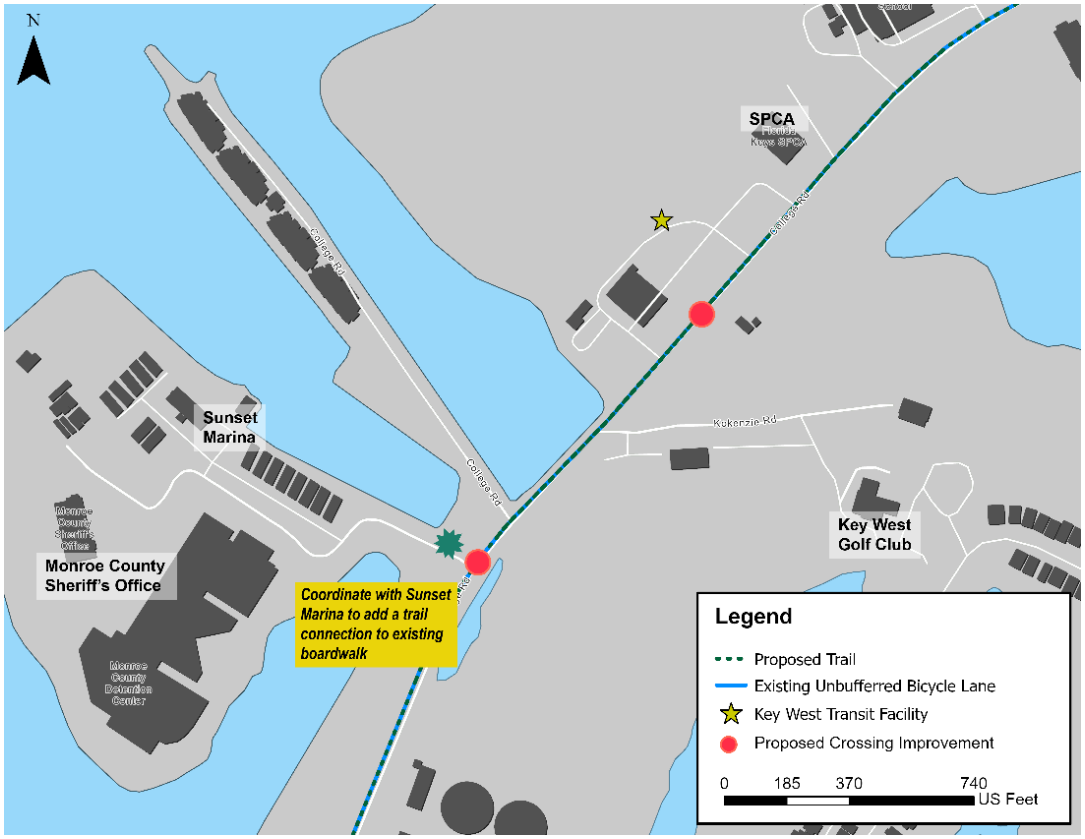
Right-of-way Constraints

There is limited space to widen the existing sidewalk on the northern side of College Road to create a shared use path/trail. Without a sufficiently wide path to ensure a safe and comfortable multimodal connection it is unlikely that KWIC patrons would walk over to Sunset Marina to utilize a potential ferry service.

Public Access Concerns

Sunset Marina residents and other users of the area may raise concerns about increased public access if a ferry service is provided. Consideration of the needs of stakeholders and residents of this area will need to be considered when developing ferry service hours of operations and determining points of public access, particularly on the Sunset Marina boardwalk. In addition, there will be security considerations associated with designing public access to the sight.

Figure 26: Recommended Bicycle/Pedestrian Improvements



Source: Florida Department of Transportation, recommended Improvements are for illustrative purposes only

ENVIRONMENTAL SCAN

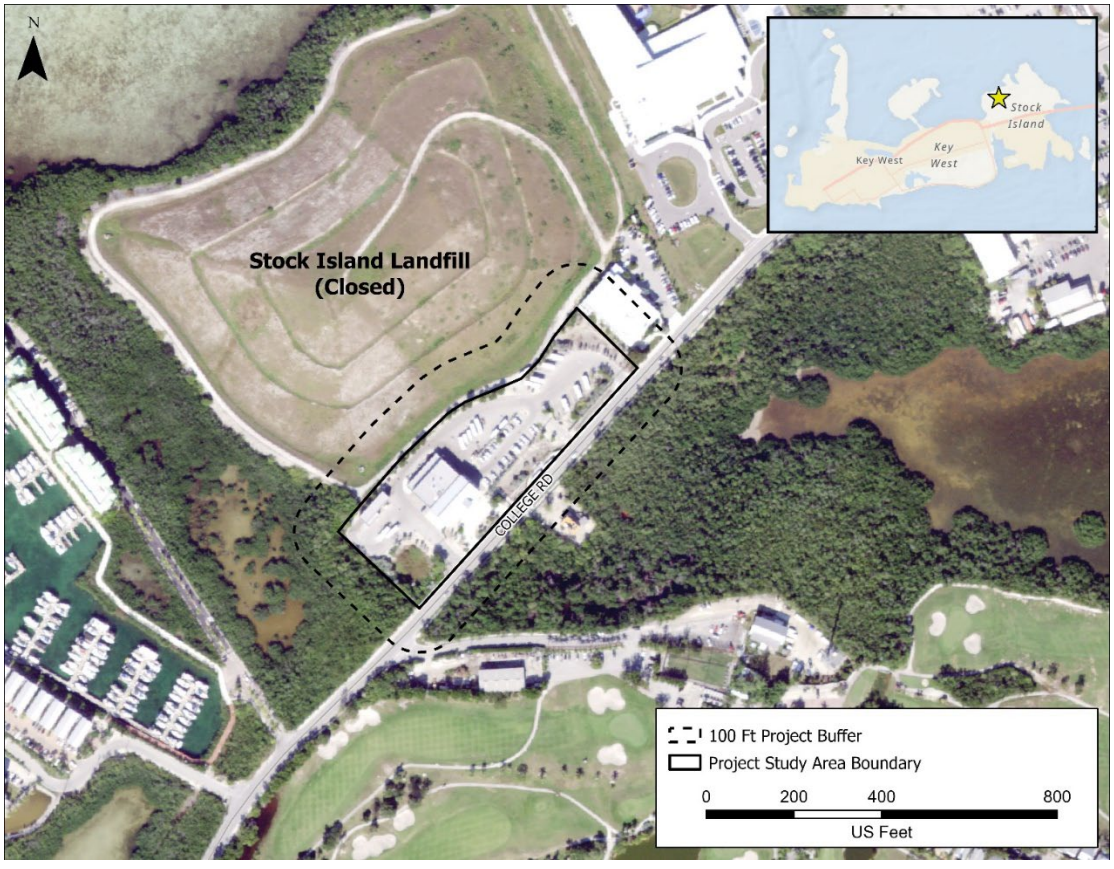
To determine the feasibility to implement the KWIC at this location, an initial environmental scan was conducted of the site at Key West Transit Facility. However, a more thorough environmental scan will need to be completed adhering to the National Environmental Policy Act (NEPA) in order to enter into the Project Development and Environment (PD&E) phase with FDOT.

Existing Environmental Conditions

A preliminary environmental scan was conducted for the project study area (**Figure 27**) reviewing the existing environmental conditions related to soils, land use, land cover, wetlands and surface waters, and the presence of protected species. This scan evaluated the potential for impacts to the natural environment that could result from the implementation of the project. Mitigation strategies and permits that may be required as the project progresses are included. The complete **Environmental Scan** is located in **Appendix C: Environmental and Resiliency Scan Technical Memorandum**.

The project study area consists of a 3.89-acre area on Stock Island that is bordered to the northwest by the closed Stock Island Landfill, to the northeast by the Florida Keys Society for the Prevention of Cruelty to Animals (SPCA) facility, to the southeast by College Road, and to the southwest by mangrove wetlands.

Figure 27: Project Limits Map



METHODS

The existing condition soil and land cover within the project study area were evaluated by reviewing the following data and mapping resources:

- South Florida Water Management District (SFWMD) land use, cover, and forms classification system (FLUFCS) data
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) soils data
- USDA NRCS, Soil Survey of Monroe County, Keys Area, Florida[121]
- Google Earth aerial photography

No field reconnaissance of the project study area was conducted as part of this planning-level assessment. Field investigations will be conducted during project development.

[121] USDA NRCS, *Soil Survey of Monroe County, Keys Area, Florida*, Webpage accessed January 1, 2024: https://palmm.digital.flvc.org/islandora/object/uf%3A117083#page/UNNUMBERED/mode/1up

SOILS

Based on a review of the USDA NRCS Soil Survey for Monroe County, the soils within the project study area appear to be generally suitable for the proposed project except for areas with hydric soil. There are two soil map unit types within the project study area. "Udorthents-urban land complex," is not considered a hydric soil and covers 3.84 acres of the project study area. This map unit type corresponds to areas of constructed uplands where crushed limestone or coral bedrock has been placed over native soil material to create uplands suitable to use for construction. The other map unit type, "Islamorada muck, tidal;" is a designated hydric soil and is only mapped for 0.05 acres of the project study area.[122]

Based on the aerial photography, it appears that the entire project study area can be characterized as built-up land (Udorthents), and, as such, all the soils would be generally suitable for the proposed project. If more detailed future studies do find remnant hydric soils within the project study area, construction within those areas may require prior authorization from the U.S. Army Corps of Engineers (USACE) and the South Florida Water Management District. Geotechnical investigation of construction areas is also recommended to confirm suitability of the soils at the site for construction.

LAND USE AND LAND COVER

In Florida, land use and vegetative cover area described using the Florida Land Use, Cover and Forms Classification System[123] (FLUCFCS) which was developed by the Florida Department of Transportation (FDOT) and is widely used by various state and local agencies. South Florida Water Management District (SFWMD) FLUCFCS maps and data, and Google Earth aerial photography were used to evaluate upland community types within the project study area**.**

The two FLUCFCS classes present in the project study area are Wetlands and Transportation, Communication, and Utilities. The dominant land use is solid waste disposal (FLUCFCS 8350) within the Transportation, Communication, and Utilities class. The solid waste disposal land use type covers 3.87 acres of the project study area. The only other FLUCFCS type in the project study area is mangroves (6120) within the Wetlands class. The mangroves type covers 0.02 acres of the project study area.

SURFACE WATERS, WETLANDS, AND FLOODPLAINS

Wetlands are areas that are characterized by a high water-table during at least part of the year, which over time develops characteristically hydric soils and favors the establishment of plant communities that are adapted to surviving and competing in wet soil conditions. These areas are important because they provide many functions including, but not limited to, nutrient cycling, flood storage, wildlife habitat, and groundwater recharge.

Floodplains are areas of lower elevation adjacent to surface waters that provide temporary storage capacity for surface water that overflows from its normal channels or banks during

[122] Ibid.
[123] Florida Department of Transportation. (January 1999). *Florida Land Use, Cover, and Forms Classification System Handbook*. Retrieved from: https://www.nwfwater.com/content/download/4688/32122/fluccmanual.pdf.

times of high precipitation either locally, upstream of the floodplain, or as the result of tidal surges associated with tropical storms.

No field reconnaissance of the project study area was conducted as part of this planning-level assessment. Existing wetlands and waters within the project study area were determined by conducting a literature review of SFWMD FLUCFCS data, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping, and Google Earth aerial photography. Field investigations should be conducted during project development.

Wetlands and Surface Waters

Based on the review of NWI maps, FLUCFCS maps, and Google Earth aerial photography, the project study area contains one small area of potential wetlands, approximately 0.02 acres or 0.6%. According to the FLUCFCS data, wetlands mapped within the project study area are limited to a small area mapped as mangrove habitat in the westernmost corner of the project study area, as well as a very small area of wetlands overlapping the project study area boundary in the same general area. At least a portion of the area mapped as mangrove wetlands according to the FLUCFCS data overlaps the existing paved parking lot at the project study area. No mapped surface waters occur within the project study area.

A field wetland delineation of the project study area will need to be conducted during future phases of project planning and evaluation to verify the wetland in the southwestern corner of the project study area.

Special Designations

An Outstanding Florida Water (OFW) (32.302.700 F.A.C) is a water designated worthy of special protection because of its natural attributes.[124] This special designation applied to certain waters is intended to protect existing good water quality. The two OFWs near the project study area are the Florida Keys National Marine Sanctuary (FKNMS) and of the Florida Keys which were designated as Special Waters in FAC 62-302.700(9). **However, the project study area is not within the boundary of the FKNMS and does not encroach on the Florida Keys Special Water designated area, therefore they will not affect the project.**

Floodplains

Flood zones are geographic areas that the Federal Emergency Management Agency (FEMA) has defined according to flood risk and are depicted on a community's Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map. Flood hazard areas are identified on FIRMs as Special Flood Hazard Areas (SFHA). SFHA are areas that will be inundated by a flood event having a 1% chance of being equaled or exceeded in any given year. The 1% annual chance flood is also referred to as the base flood or 100-year flood.

The entire project study area is within the 100-year floodplain, with 0.03 acres being within zone VE, which is 100-year floodplains that are subject to wave velocity and tidal surge from tropical storms, and the remainder, 3.86 acres, being within zone AE, which is 100-year floodplains not characterized as being subject to wave velocity. The "E" designation for each of

[124] Florida Department of Environmental Protection. *Outstanding Florida Waters*. Webpage accessed January 12, 2024: https://floridadep.gov/dear/water-quality-standards/content/outstanding-florida-waters.

the zones indicates that the base flood elevation has been determined. Due to the project's location in an open basin immediately adjacent to the waters of the Gulf of Mexico, it is unlikely that flood storage compensation will be required despite being located within the 100-year floodplain.

Building floor elevations may be required to meet elevation requirements relative to the base flood elevation in the project study area. Considerations for sea level rise and climate change should also be considered for any proposed new construction within Zones VE and AE.

BIOLOGICAL RESOURCES

Biological resources include fish, wildlife, plants, and their respective habitats. Typical types of biological resources include:

- Terrestrial and aquatic plants and animal species.
- Game and non-game species.
- Special status species including state or federally listed threatened or endangered species, marine mammals, species of special concern, candidate species for listing, or migratory birds.
- Environmentally sensitive or USFWS-designated Critical Habitats.

The Endangered Species Act of 1973 (ESA), as amended, establishes the protection of fish, wildlife, and plants that are listed as threatened or endangered and their respective habitats. Federal species of concern or species proposed for listing are not protected under the ESA, but since they could become listed, they are given special consideration. Critical habitats as defined by the ESA are specific areas that are essential to the conservation of the listed species. These areas, once designated, are protected under Section 7 of the ESA against destruction or adverse modification. Documentation regarding species listed under the ESA that are either known to occur or may potentially occur within or near the project study area were reviewed using the following documents and resources:

- USFWS's Information for Planning and Consultation (IPaC) report for the project study area (**APPENDIX D: USFWS iPaC Report**)
- FNAI Biodiversity Matrix review for the project study area (**APPENDIX E: FNAI Biodiversity Matrix for the Project Study Area**)
- Audubon EagleWatch Program[125]

No field survey was conducted at the project study area to verify potential occurrence of listed species.

[125] Audubon. *Bald Eagle Nest Location*. Webpage accessed January 26, 2024 : https://cbop.audubon.org/conservation/about-eaglewatch-program.

LISTED SPECIES

The FNAI Biodiversity Matrix lists three species of mammals, four species of birds, eight species of reptiles, two species of fishes, one species of snail, four species of insects, thirteen species of plants that are potentially in the project study area.

- Puma
- Florida Panther
- West Indian Manatee
- Florida Burrowing Owl
- Eastern Black Rail
- White-Crowned Pigeon
- Roseate Tern
- American Alligator
- Loggerhead Sea Turtle
- Green Sea Turtle
- American Crocodile
- Leatherback Sea Turtle
- Eastern Indigo Snake
- Hawksbill Sea Turtle
- Florida Keys Mole Skink
- Gulf Sturgeon
- Key Silverside
- Stock Island Tree Snail
- Florida Leafwing Butterfly
- Miami Blue Butterfly
- Monarch Butterfly
- Bartram's Hairstreak Butterfly
- Blodgett's Silverbush
- Big Pine Partridge Pea
- Wedge Spurge
- Cape Sable Thoroughwort
- Florida Semaphore Cactus
- Florida Prairie-clover
- Florida Pineland Crabgrass
- Sand Flax
- Key Tree Cactus
- Florida Royal Palm
- Bahama Sachsia
- Everglades Bully
- West Indies Mahogany

POTENTIAL IMPACTS

Based on the results of the desktop review conducted for the KWIC, the project study area is unlikely to contain wetlands or surface waters subject to the jurisdiction and permitting authority of the United States, or wetlands or other Waters of the United States subject to federal CWA Section 404 permitting by the USACE. This should be verified by conducting a field wetland delineation as part of future evaluations of the project study area as the project is advanced.

While the project study area does not appear to contain wetlands or surface waters, it is located adjacent to mangrove wetlands at the southwest end of the project study area that are classified as OFW as Special Waters that are waters of the Florida Keys per FAC 62-302.700(9). No direct impacts to these waters are anticipated. However, it should be noted that no ERP will be issued for a project proposing discharge within an OFW or which could significantly degrade an OFW unless it is demonstrated that the action is in the public interest and that the water quality within OFW will only be temporarily lowered during construction for a period of 30 days or less. Due to the proximity of OFWs to the project study area, the proposed project would be reviewed with respect to its potential to degrade water quality in the adjacent OFW.

Due to the history of disturbance, the degree of existing development, the lack of natural upland habitat, and lack of aquatic habitat, the project study area is unlikely to provide suitable

habitat for any of the protected species listed in the IPaC report and the Biodiversity Matrix. This should be verified by conducting a general protected species survey within the limits of the project study area as the project proceeds to future stages of planning and evaluation. **Table 11** summarizes the resources that would potentially be impacted, as well as the recommended actions in response to the resource impacted.

Table 11: Summary of Potential Impacted Resource

Potentially Impacted Resource	Likelihood of Involvement	Requirement	Recommendation
Federal Listed Species	Very Low	Conduct general protected species survey	USFWS Coordination - Implement recommendations if needed
State Listed Species	Very Low		FWC Coordination - Implement recommendations if needed
Other Species with Special Status (Bald Eagle)	Very Low		USFWS Coordination - Implement recommendations if needed

PERMITS

The project study area is within the jurisdiction of the USACE, SFWMD, and Monroe County. **Table 12** provides a list of permits that may be required for the project. Coordination with permitting agencies during subsequent project development will need to occur to ensure all required agreements and permits are in place.

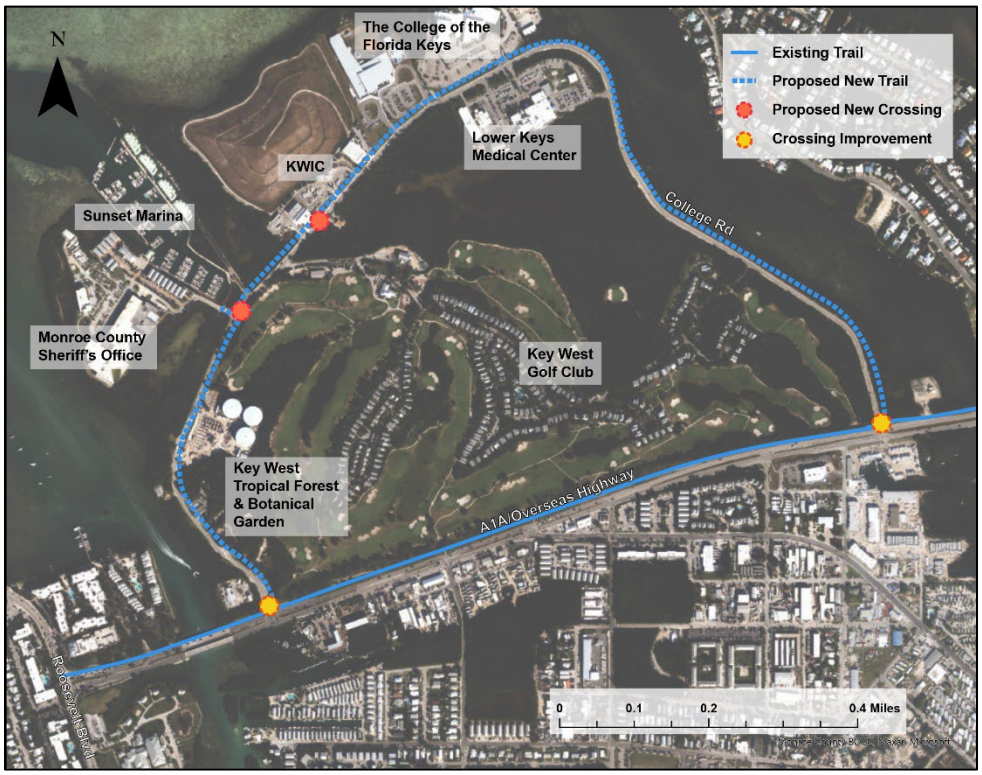
Table 12: Permitting Requirements

Permit	Issuing Agency	Jurisdiction	Commenting Agencies
Section 404 Dredge and Fill Permit	USACE	Retained Section 404 Waters	USFWS and NMFS
Environmental Resource Permit	SFWMD	State Water Quality	National Historic Preservation Office and FFWCC
Building Permit	City of Key West	City Limits	Coordinate with City Building Department for details / requirements
National Pollutant Discharge Elimination System	FDEP	Stormwater Discharge from Construction Activities	If project requires less than 1 acre of disturbance will not be required.

KWIC TRAFFIC DISCUSSION

As part of the feasibility study, a high-level assessment of traffic conditions on College Road with recommendations for future phases of the project was completed. It includes current conditions and describes qualitative observations the study team collected during stakeholder discussions. **Figure 28** exhibits the existing and proposed bicycle and pedestrian trails and crossings determined during the study. During the next phase of the KWIC, a more detailed evaluation of future traffic conditions with proposed mitigation strategies based on the preferred design may be warranted.

Figure 28: Existing and Proposed Bicycle/Pedestrian Trails on Stock Island



Study Area and Network Characteristics

Key West Transit is located on Stock Island northeast of downtown Key West. Situated on College Road, a two-lane urban collector with two termini at U.S. Highway 1/AIA. College Road is the single access point for multiple businesses and amenities used by a variety of area residents and visitors. U.S. Highway 1 is the main thoroughfare for Stock Island and Key West and serves as the hurricane evacuation route. College Road is approximately 1.7 miles long and 28 feet wide with 10-foot travel lanes and four-foot shoulders on either side. There are 5 intersections:

- College Road and U.S. Highway 1 (North)
- College Road and Gold Club Drive

- College Road and Kokenzie Road
- College Road and Sunset Marina Road
- College Road and U.S. Highway 1 (South)

and 26 driveways including those providing access to:

- The Lower Keys Medical Center (LKMC)
- The College of the Florida Keys (CFK)
- Gerald Adams Elementary School
- The Florida Keys SPCA
- Key West Transit
- Sunset Marina
- Keys Overnight Temporary Shelter (KOTS)
- The Monroe County Sheriff's Office
- Key West Tropical Botanical Gardens
- And single-family and multi-family residences.

Currently, all five intersections are unsignalized however, FDOT is installing a signal at College Ave (North) and US-1. This new signal will improve wait times for drivers turning onto U.S. Highway 1, particularly those turning left.

Factors and Observations

To adequately plan for the future intermodal center, effects on local traffic should be identified along with mitigation factors if warranted. One of the major proposed benefits of the KWIC is to divert visitors and residents before they reach downtown Key West and encourage them to forego driving their cars into already congested areas by using one of the alternative modes provided at the center. In addition, the plan proposes between 18-54 residences that are largely one-bedroom and inclusion of one to several commercial spaces for businesses to serve residents, employees, transit customers, and others. These new uses will bring more people and vehicles to College Road regularly.

In discussions with the various stakeholders interviewed for this project, several existing concerns were noted regarding traffic congestion on College Road.

1. Traffic from Pick Up and Drop Off at Gerald Adams Elementary School. This issue is not unique to Key West and has in fact been causing increased congestion all over the state. During the morning and afternoon when school starts and lets out, College Road becomes inundated with vehicles, making it difficult for others to access the area during those times. In addition, parents have been regularly observed parking in lots dedicated to other businesses and facilities, such as the SPCA.

2. It can be difficult to turn from College Road onto U.S. Highway 1, especially when trying to make a left turn, causing backups and delays. This should be at least partially

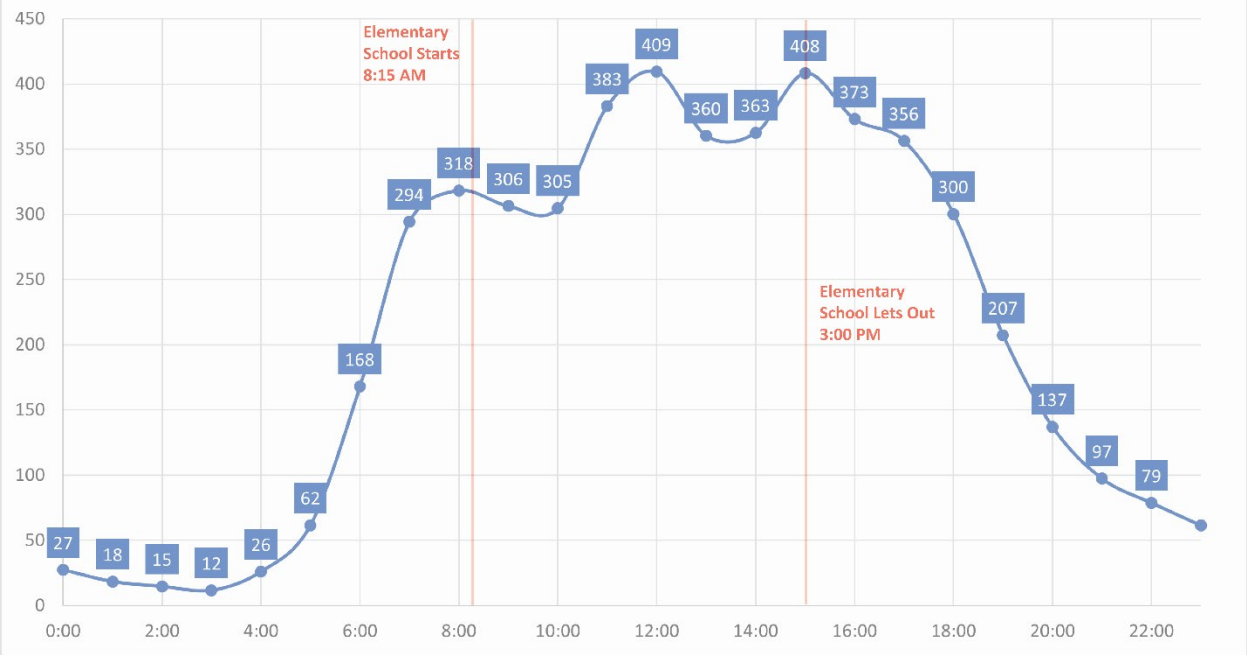
alleviated with the implementation of a signal at U.S. Highway 1 and College Road (North).

3. When there are backups on U.S. Highway 1, drivers will turn onto College Road in an attempt to circumvent the congestion. These drivers often end up stuck on College Road struggling to turn left back onto U.S. Highway 1, causing circulation issues.

Traffic Conditions

Existing traffic volumes on College Road (**Figure 29**) indicate AM and PM peak volumes that coincide with pickup and drop off times for the elementary school. However, there are other contributing factors including regular peak traffic for commuters. In addition, the largest peak occurs at midday, which is not likely attributed to elementary school traffic. These 24-counts counts were collected March 21st – 23rd, 2023 by the Florida Department of Transportation.

Figure 29: Average Total Combined Vehicles per Hour on College Road (2023)



Recommendations for Future Study

Future phases of planning and design for the KWIC should include an examination of both current and forecast traffic conditions based on the selected uses at the site. This should include a formal traffic study, with field observations and traffic counts. Camera-collected traffic data will also provide valuable information on traffic issues caused by pick-up and drop off at the school and other driver behavior that can be difficult to account for with movement counts alone. It would be useful to note changes in traffic flow attributed to the new signal at College Road and U.S. Highway 1.

Suggestions for the future study include:

- Traffic and turning movement counts (recorded by camera for a minimum three-day period so that trends and anomalies can be observed by traffic analysts)
- Field Observations
- Origin-Destination Analysis (to determine the existing external and internal circulation)
- Crash Data & Safety Analysis (to identify any critical issues on College Road and U.S. Highway 1)
- Outreach to College Road stakeholders to understand employee shift change, class schedules, and other significant influences on traffic
- Effects of new signalized intersection on traffic
- Travel Demand Modeling – suggest using an activity-based model (ABM) (determine trip generation and potential effects of the new activities at the KWIC on local traffic)
- Potential Mitigation Strategies

FUNDING OPPORTUNITIES

Funding opportunities that align with this project have been identified. These are organized by the project site components that they could help fund.

Formula grants require an application to be submitted, as well as meeting other specified requirements. This type of grant is not competed for and, instead, the awarded grant amount is calculated using a formula that considers factors such as the area's population, current census data, violent crimes, etc. The allocated funds will be received, administered, and managed by the designated recipient, a State Administering Agency, such as the state, cities and counties, or transit agencies. Statutes or congressional appropriation acts specify how funds are distributed, allocated among eligible recipients, and eligibility requirements.[126]

Discretionary grants are competitive grants, with eligible applicants varying by program. Applications are solicited and competed for, and then awarded based on eligibility, evaluation criteria, and department or program priorities.[127]

Project Planning, Design, and Construction

Funding from the following grants can be used towards the overall planning, design, and construction of the project.

INNOVATIVE FINANCE AND ASSET CONCESSIONS GRANT PROGRAM

A new program offered through the USDOT's Build America Bureau, the Innovative Finance and Asset Concession Grant Program is designed to assist public entities in exploring innovative financing and delivery opportunities for Transportation Infrastructure Finance and Innovation Act (TIFIA) eligible projects.[128,129,130] The grant project offers a total budget of $100 million for five years. In the current round of rewards, $572 million is available for three fiscal years, however no more than $4 million can be awarded to grantees in a single state. This funding can be used to fund technical, financial, and legal advisory services for alternative project delivery by state and local governments.[131,132]

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[126] Office of Justice Programs. (n.d.). **Grants 101 | Types of Funding.** United States Department of Justice.
[127] Office of the Under Secretary for Policy. (2023). **Overview of EV Federal Funding and Financing Programs.** United States Department of Transportation.
[128] Build America Bureau. (2024). **Program Overview: Highlights of TIFIA.** United States Department of Transportation.
[129] Build America Bureau. (2024). **Innovative Finance and Asset Concession Grant Program.** United States Department of Transportation.
[130] Build America Bureau. (2024). **Innovative Finance and Asset Concession Grant Program: Frequently Asked Questions.** United States Department of Transportation.
[131] Build America Bureau. (2024). **Program Overview: Highlights of TIFIA**. United States Department of Transportation.
[132] Build America Bureau. (2024). **Innovative Finance and Asset Concession Grant Program.** United States Department of Transportation.

The grant is eligible to public entities that own, control, or maintain assets that would benefit from public-private entity partnerships (P3). Two grant types are available through the IFAC grant program: technical assistance grants that build organizations capacity to develop, review or enter into asset concession for advancing TIFIA-eligible projects; expert services grants which support project development for identified assets, including hiring professional services to explore opportunities.[133]

Project types that are eligible for this grant program include:

- Identifying appropriate assets
- Planning and design
- Soliciting and negotiating contracts or cession agreements
- Cost/benefit analysis
- Lifecycle cost analysis
- Securing financial expertise or legal services
    - » Pre-construction or pre-development activities.

PILOT PROGRAM FOR TRANSIT-ORIENTED DEVELOPMENT PLANNING – SECTION 2005(B)

The Pilot Program for Transit-Oriented Development (TOD) Planning – Section 2005(b) is a Federal Transit Administration (FTA) grant opportunity to state or local government authorities that seek to improve their communities by improving transportation planning. The specific measures involve an integration of land use and transportation planning with new fixed guide ways or core capacity transit capital investments. For FY2024, the program offers $10.5 million in grants.[134]

Grants are available to assist in financing both comprehensive and/or site-specific planning associated with projects that seek to:

- Drive economic development and ridership.
- Facilitate the propagation of multimodal connectivity opportunities for communities.
- Increase access to transit hubs (pedestrians and bicycle traffic).
- Enable and encourage mixed-use development in communities.
- Identify infrastructure needs.
- Projects that require private sector participation for success.[135]

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[133] Build America Bureau. (2024). **Program Overview: Highlights of TIFIA**. United States Department of Transportation.
[134] Federal Transit Administration. (2024). **Pilot Program for Transit-Oriented Development Planning – Section 20005(b).** FTA.
[135] Federal Transit Administration. (2024). **Fiscal Year 2023 Transit-Oriented Development (TOD) Planning Projects.** FTA.

REBUILDING AMERICAN INFRASTRUCTURE WITH SUSTAINABILITY AND EQUITY (RAISE)

Previously known as the Better Utilizing Investments to Leverage Development (BUILD) and Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants, this discretionary grant provides funding to public entities such as the State, municipalities, counties, port authorities, tribal governments, MPOs, or others. This is uncommon, as most Federal programs only provide funding to specific entities such as State DOTs and transit agencies.[136] RAISE grants provide funding support towards surface transportation projects that will have a significant local or regional impact and projects that align with the U.S. DOT's strategic goals: improve safety, economic strength and global competitiveness, equity, and climate and sustainability. Funding can be awarded for capital projects and planning projects (planning, preparation, or design). Projects are scored based on the following merit criteria: safety, environmental sustainability, quality of life, mobility and community connectivity, economic competitiveness and opportunity, state of good repair, partnership and collaboration, and innovation.[137]

Projects are either considered Urban or Rural. This project would be designed Urban since it is located within a Census-designated urban area that had a population over 200,000 in the 2020 Census.

The following are eligible projects:

- Highway, bridge, or other road projects (refer to Title 23, United States code);
- Public transportation projects (refer to Chapter 53, Title 49 of United States code);
- Passenger and freight rail transportation projects;
- Port infrastructure investments;
- Surface transportation components of an airport projects eligible for assistance (refer to Part B of Subtitle VII);
- Intermodal projects;
- Projects replacing or rehabilitating a culvert to prevent stormwater runoff (improving the habitat for aquatic species);
- Projects investing in surface transportation facilities located on Tribal land; and
- Any other surface transportation infrastructure project that the Secretary deems to be necessary to advance the U.S. DOT's goals.

[136] Office of Infrastructure Finance and Innovation. (2023). **About RAISE Grants.** United States Department of Transportation.
[137] Office of the Secretary. (2023). **Notice of Funding Opportunity for Fiscal Year (FY) 2024.** United States Department of Transportation.

In FY2024, the most recent round of this grant funding, there was a minimum of $5 million in funding towards capital grants for urban projects, with planning grants not having a minimum. The maximum grant award for both funding grants was $25 million.[138]

TRANSPORTATION INFRASTRUCTURE FINANCE AND INNOVATION ACT (TIFIA) PROGRAM

The Transportation Infrastructure Finance and Innovation Act (TIFIA) program provides credit assistance for qualified projects for regional and/or national significance. The program is designed to "fill market gaps and leverage substantial private co-investment through supplemental, subordinate investment in critical improvements to the nation's transportation system." The program offers low interest rate credit that does not accrue until proceeds are drawn.[139]

TIFIA is a federal program through USDOT that provides credit assistance for qualified regional and national surface transportation projects in the United States, such as, but not limited to highways, city passenger railways, intermodal freight transfer facilities, and port terminal projects.[140]

TIFIA offers several credit assistance types[141]:

- Secure (Direct) Loan: combines construction and permeant financing, offering flexible repayment terms. Loan repayments can begin up to five years after substantial project completion, allowing for initial construction and operations.
- Loan Guarantee: full-faith-and credit is guarantee by the federal government, helping to ensure borrower repayments to non-federal lenders. No later than five years after substantial project completion, loan repayments to lender must begin.
- Standby Line of Credit: acts as a secondary funding source during the first 10 years of project operations, available up to 10 years after substantial completion.

Several key benefits over other credit options[142]:

- Low Interest Rate: TIFIA offers favorable terms compared to the financial market.
- Flexible Amortization: Repayment periods of up to 35 years (or up to 75 years for some projects under the New Bipartisan Infrastructure Law).
- Deferrable Repayments: Loan repayments can start after substantial project completion.

[138] Office of the Secretary. (2023). **Notice of Funding Opportunity for Fiscal Year (FY) 2024.** United States Department of Transportation.
[139] Build America Bureau. (2024). **Program Overview: Highlights of TIFIA.** United States Department of Transportation.
[140] Ibid.
[141] Ibid.
[142] Ibid.

- Leveraging Private Investment: TIFIA fills market gaps and encourages private co-investment in critical transportation improvements.

Active Transportation

Funding from the following grant can be used towards developing and improving the active transportation infrastructure that is part of this project by providing funding for planning and design and construction.

ACTIVE TRANSPORTATION INFRASTRUCTURE INVESTMENT PROGRAM (ATIIP)

This is a new, discretionary grant program series created through the Bipartisan Infrastructure Law (BIL) which provides funding for state, local, and U.S. territory governments; federally recognized tribes; and planning & programming organizations focused on the construction of transportation facilities in active transportation networks and spines. The program consists of two types of grants: planning and design, and construction.[143] Both of these grant types are focused on the design and construction of safe and connected facilities within active transportation networks or active transportation spines.

ATIIP projects seek to improve safety, efficiency, and reliability in communities by enhancing connectivity between active transportation modes and public transit and contribute to environmental protection efforts and quality of life in historically disadvantaged areas. ATIIP will distribute up to $44,550,000 for its two categories of grants.[144,145]

Eligible uses of these funds are for projects that address the following[146]:

- Assist communities plan, design, and construct safe and connected active transportation networks such as sidewalks, bikeways, recreation areas, and medical facilities within an applicant's community or metropolitan region.
- Projects focused on the creation of trails, pedestrian facilities, bike paths and critical routes that connect two or more communities, metropolitan regions, or states.
- Projects that seek the Improvement to overall transportation networks by integrating active transportation facilities with transit service to improve access to public transportation.

Transportation Technology

Funding from the following grant can be used towards the deployment, installation, or operation of transportation technology.

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[143] Federal Highway Administration (FHA). (2024). **Bicycle and Pedestrian Program.** United States Department of Transportation.
[144] Ibid.
[145] Active Transportation Infrastructure Investment Program (ATIIP): General Grant Program Information. (2024). **Active transportation Infrastructure Investment Program (ATIIP).** United States Department of Transportation.
[146] Ibid.

ADVANCED TRANSPORTATION TECHNOLOGY AND INNOVATION (ATTAIN) PROGRAM

The Advanced Transportation Technology and Innovation (ATTAIN) Program is a discretionary grant series from the United States Department of Transportation's (USDOT) and Federal Highway Administration (FHWA) that provides funding to deploy, install, and operate advanced transportation technologies.[147] The goal of the program is to improve safety, mobility, efficiency, system performance, intermodal connectivity, and infrastructure return on investment for communities and regional stakeholders.[148,149]

Funding for this program comes from the BIL through a set-aside of the Highway Research and Development, Technology and Innovation Deployment and Intelligent Transportation System Research Programs. The program currently has an annual award amount of up to $12,000,000 , with an annual program funding amount of $120,000,0000. Eligible applicants for this program are state or local governments; transit agencies; metropolitan planning organizations (MPO's); Political subdivisions of a state or local government (such as publicly owned toll or port authorities); Consortiums of research and/or academic institutions.[150]

Eligible projects covered by the ATTAIN grants include:

- Planning
- Construction
- Equipment and materials
- Operations and maintenance
- Technology demonstration and deployment
- Technical assistance
- Workforce development, and training/education
- Research and development
- Climate and sustainability
- Accessibility

The types of projects that ATTAIN seeks to address include the following:

- Advanced transportation technologies
  - » Those that enhance traveler awareness, transportation system management, and that improve emergency management (evacuation and response efforts).
- Integrated corridor management systems
- Advanced parking reservation or variable pricing systems

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[147] Grants.gov. (2023). **FY23-FY24 Advanced Transportation Technology and Innovation (ATTAIN) Program.** United States Department of Transportation , Federal Highway Administration.
[148] Ibid.
[149] United States Department of Transportation. (2024). **Advanced Transportation Technologies and Innovative Mobility Deployment**. United States Department of Transportation.
[150] Ibid.

- Electronic pricing, toll collection, and payment systems
- Enhanced traffic efficiency and pricing
  - » HOV vehicle toll lanes
  - » Cordon pricing
  - » Congestion pricing

Green Infrastructure and Transportation

Funding from the following grants can be used towards .

CONGESTION MITIGATION AND AIR QUALITY (CMAQ) IMPROVEMENT PROGRAM

This formula grant provides funding to each State based upon the severity of the state's ozone and carbon dioxide (CO2) levels. For most CMAQ-funded projects, the federal share has generally been 80%. Projects must be included in the local Metropolitan Planning Organization's (MPO) current transportation plan and Transportation Improvement Program (TIP) or State Transportation Improvement Program (STIP) in areas without an MPO. Additionally, all projects funded through CMAQ must complete all NEPA requirements.

The following are eligible projects:

- Capital Investment
  - » Establish new or expand current transportation projects/programs that enable a reduction in emissions, including capital investment in transportation infrastructure, efforts towards congestion relief, retrofitting diesel engines, and other capital projects.
- Operating Assistance
  - » Limited to new transit services, intermodal facilities, strategies for travel demand management, and the incremental cost of expanding existing transit services, CMAQ funds used for operating assistance is intended to help start up new transportation systems that demonstrate air quality benefits, as well as cover the agency's costs as much as possible, ultimately replacing the CMAQ funding.
  - » Includes all costs of new transportation services such as fuel, labor, administrative costs, and maintenance.
- Emission Reduction
  - » The FHWA defines emission reduction as the contribution to attainment, reduction in pollution, air quality benefits, overall helping to improve the air quality.
  - » CMAQ-funded projects/programs must reduce CO2 transportation emissions.
- Planning and Project Development

SECTION 5339 – GRANTS FOR BUSES AND BUS FACILITIES

The Grants for Buses and Bus Facilities is a formula program that includes two grants: the Bus and Bus Facilities Competitive Program and the Low or No-Emission Vehicle Program.[151] Both programs require the inclusion of a Zero-Emission Transition Plan per the Bipartisan Infrastructure Law if the project is related to zero-emission vehicles.[152] To be more competitive, it is recommended that agencies only apply for one funding opportunity.[153]

Bus and Bus Facilities Competitive Program

This grant provides federal resources to states, designated recipients, and local government entities operating fixed route bus service or allocate funding to fixed route bus operators. Eligible activities include projects replacing, rehabilitating, and purchasing buses, vans, and related equipment. Additionally, funding can be used towards the construction of bus-related facilities, as well as any changes or innovations to modify low or no-emission vehicles or facilities. Any proposed project related to zero-emission vehicles must also allocate 5% of the awarded funding towards workforce development and training per the agency's Zero-Emission Transition Plan. In Fiscal Year 2024, there was $394 million in dedicated funding.[154]

Low or No-Emission Vehicle Program

State and local governmental authorities are provided funding towards purchasing or leasing zero and low-emission transit buses with this grant. Additional eligible activities include the acquisition, construction, and leasing of facilities required to support the vehicles. In Fiscal Year 2024, there was $1,125 million in dedicated funding.[155]

Activities supporting eligible projects can also receive CMAQ funding. These include studies that are part of project development under NEPA, such as preliminary engineering.[156]

UNITED STATES DEPARTMENT OF AGRICULTURE'S (USDA) FARMERS MARKET PROMOTION PROGRAM (FMPP)

The Farmers Market Promotion Program (FMPP), administered by the United States Department of Agriculture's Agricultural Marketing Service (AMS), offers grants to support projects related to local and regional agriculture markets. The FMPP funds projects that develop, coordinate, and expand direct producer-to-consumer markets that increase access to local and regionally produced agricultural products. Eligible applicants must be domestic

[151] Federal Transit Administration. (2021). **Fact Sheet: Buses and Bus Facilities Program.** United States Department of Transportation.
[152] Federal Transit Administration. (2022). **Zero-Emission Fleet Transition Plan.** United States Department of Transportation.
[153] Federal Transit Administration. (2021). **Fact Sheet: Buses and Bus Facilities Program.** United States Department of Transportation.
[154] Federal Transit Administration. (2021). **Bipartisan Infrastructure Law Fact Sheet: Grants for Buses and Bus Facilities.** United States Department of Transportation.
[155] Federal Transit Administration (n.d.). **Low or No Emission Vehicle Program - 5339(c).** United States Department of Transportation.
[156] Federal Highway Administration. (2008). **The Congestion Mitigation and Air Quality (CMAQ) Improvement Program**. Federal Transit Administration.

entities located within the United States, District of Columbia, or include private agricultural businesses and cooperatives, community supported agriculture (CSA) networks and associations, food councils, economic development corporations, local governments, nonprofit and public benefit corporations, producer networks or associations, regional farmer's market authorities, and tribal governments.[157]

FMPP offers four types of grant projects, which provide funds for 24 or 36 months. These projects target specific areas of focus as it relates to market development. The first is a 36-month Community Development Training and Technical Assistance (CTA) project grant, which provides $100,000 to $500,000. Second, Capacity Building (CB) projects that which applicants can request $50,000 to $250,000 also over a 36-month time frame. With both of the 24-month grant projects, the Turnkey Marking and Promotion and the new Turnkey Recruitment and training projects, applicants may request $50,00 to $100,000. Each of the above listed types of projects requires a 25% matching fund contribution.[158]

Eligible projects are those that assist in the development, coordination, and/or expansion of[159]:

- Farmers markets
- Roadside stands
- Community supported agriculture (CSA) programs
- Agritourism activities
- Other direct producer-to-consumer market opportunities.

[157] Agricultural Marketing Service. (2024). **Farmers Market Promotion Program**. United States Department of Agriculture.
[158] Ibid.
[159] Ibid.

RISK ASSESSMENT

This assessment analyzes the potential risks posed by the proposed Key West Intermodal Center (KWIC) and associated transportation and community elements, helping to screen out more impractical options, and inform short-term, mid-term, and long-term implementation strategies. Risk is estimated by the combination of likelihood and severity of an event. Risk likelihood is the probability and rate that a consequence is expected to occur. Risk severity examines potential internal and external causes and determines the level of impact. (**Figure 30**) These helped to determine the categories of potential consequences used within a risk matrix.

Figure 30: Example of a Basic Risk Assessment Matrix

			LIKELIHOOD		
			Very Likely	Possible	Not Likely
			3	2	1
SEVERITY	Major Effect	3	9	6	3
	Moderate Effect	2	6	4	2
	Minor Effect	1	3	2	1

Methodology

A detailed risk inventory was compiled for each amenity type group. The risks were then categorized into Safety and Security, Environmental, Financial, or Regulatory. Risks such as resilience, where the facility will need to withstand a Category 5 hurricane, were also considered.

The potential risk's severity was assessed against the likelihood associated with each amenity category using a risk matrix (see **Appendix A: Risk Matrix of Potential KWIC Features and Amenities**). Risks were scored high, medium, or low. For example, when a high regulatory risk is likely to occur and would have major impacts on the project it would receive the highest rating. Mitigation strategies were then identified to reduce the likelihood and severity of the potential risks, necessary resources to help mitigate risk, if risk was acceptable, or if the risk could be transferred/shared. High-scoring risks need to be mitigated to be successfully included in the facility, whereas low-scoring risks need minimal or no effort to be successfully incorporated into the facility.

A secondary screening was used to determine the space utilization and associated requirements of the potential amenities and site uses, such as required parking.

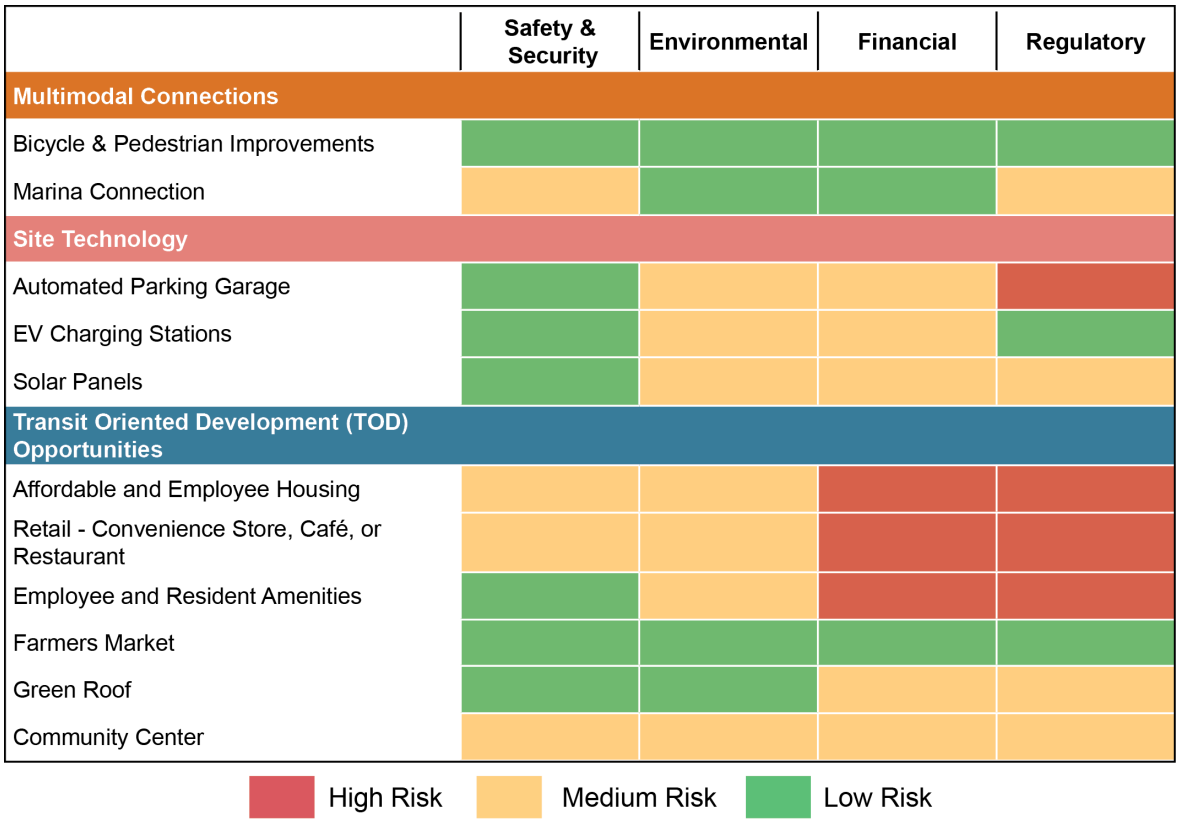
Three site design options were then developed with varying focuses: Conch Community Hub; Stock Island, Live, Work Play; and Heron Transfer Hub. These options were developed to provide potential site component packages. Site renderings were designed for each design option providing a visualization of space orientation and utilization.

The results of the risk assessment helped to determine which amenities are feasible to implement as part of the KWIC. Implementation strategies were then developed, incorporating risk mitigation strategies. Short-term strategies include the initial steps necessary to complete for project implementation and overall success. Mid-term strategies include tasks that are not necessary for initial project start up and can be re-examined after construction of the KWIC. Long-term strategies were identified as optional site enhancements that may be explored after the KWIC has been established for a few years.

Summary of Risk Categories and Amenities

Amenities were grouped into three types: Multimodal Transportation Amenities and Connections, Site Technology, and Transit-Oriented Development (TOD) Opportunities. **Figure 31** summarizes the ranking of each amenity for each risk category. High-risk aspects related to each amenity are in red, medium risk in yellow, and low risk in green. In the following sections, an overview of the highest scoring risks, or those that are most likely to happen with the greatest impact, and related mitigation strategies are provided for each amenity group.

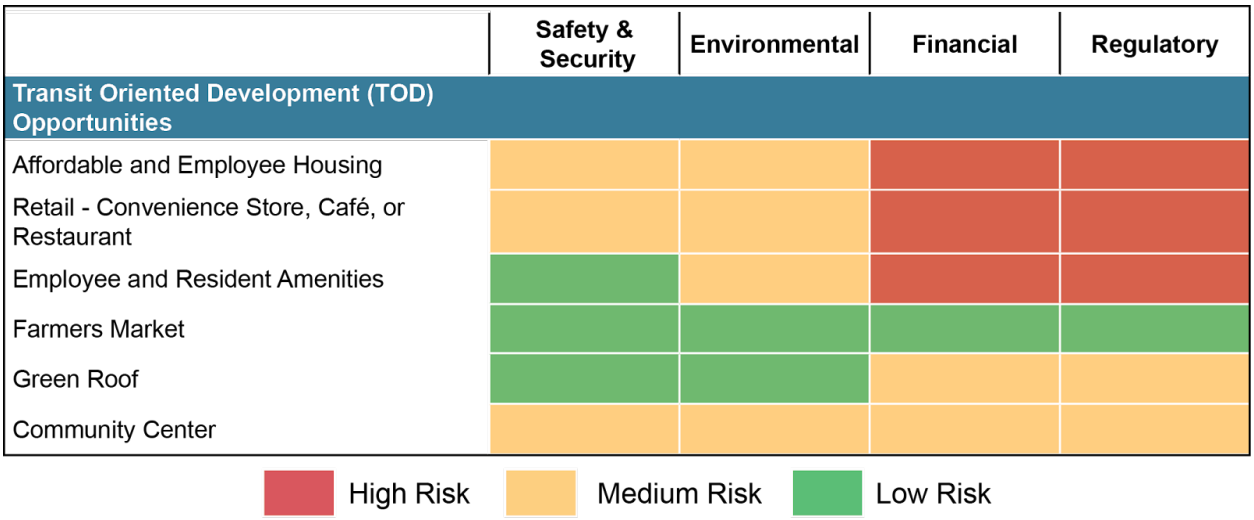
Figure 31: Risk Matrix of Potential Site Amenities



TRANSIT-ORIENTED DEVELOPMENT (TOD) OPPORTUNITIES

Developing residential, commercial, and community space, as well as other TOD amenities at the intermodal center involves high financial and regulatory risks. Mixed-use development is not permitted under the current zoning code, although this could be changed through re-zoning. Determining the potential demand for housing and commercial space on site will help refine the estimated space utilization and ensure that the facility adequately meets public demand. State or federal funding will most likely need to be secured for construction. **Figure 32** exhibits where the Transit-Oriented Opportunities amenities scored on the risk matrix.

Figure 32: Matrix of Transit-Oriented Development Opportunities



Safety and Security

Residential, commercial, and community spaces pose the greatest potential security risks. These amenities score high due to the need for residents to have 24/7 access to the site, while limiting public access to residential areas. There are safety and security issues associated with commercial operations and providing residential space, including but not limited to potential loitering or theft.

Potential site-wide solutions include a security system with security lights and video recording. Additionally, having residents access the housing section of the site using personal identification scan cards can help to increase safety and security.

Environmental Impacts

The environmental risks posed by the transit-oriented development opportunities are a mix of low and medium risk. The proposed amenities would need to be constructed to account for storm surge impacts and would need to go through the required environmental permitting as part of the design and construction process. The severity and likelihood of runoff will depend on the type of green roof or green space implemented.

Financial

Commercial buildings, inclusive of apartment complexes, cost on average between $240 and $680 per square foot to build in the Southern United States.[160] This cost may influence the number of housing units implemented, floors in the parking garage, and what additional amenities will be included in the KWIC. Using a phased approach to construction and implementation can help to spread out the project costs and allow for revenue of some of the amenities to be used towards later phases.

Housing, retail, and employee and resident amenities (gym, childcare) will require substantial investment, from initial construction costs to operations. There is also the risk of retail space being underutilized, which would create an ongoing financial burden for Key West Transit. Regarding greenspace, the capital cost and ongoing operating and maintenance costs will depend on the type, size, and location that it is implemented.

Employing a third-party management operator for retail and other amenities is a recommended first step after the project construction is completed. This would shift responsibility for managing and leasing the space from Key West Transit/City of Key West to a third-party with commercial retail expertise. A third-party or additional staff should also be employed to manage the rental of the proposed community space. The farmers' market is low-cost for Key West Transit as it would be run by a third-party and would not require fixed infrastructure.

Regulatory Barriers

The current zoning code does not permit residential or commercial use at the proposed KWIC location. Affordable and employee housing, retail, and employee and residential amenities scored high-risk on the matrix. Operating a childcare facility would also require a high-level of regulatory compliance, with the gym also requiring specific gym insurance. Utilizing a third-party company is an option for management activities. The green roof/greenspace and community center scored medium due to zoning issues, and, specifically, code regulations providing green roof/greenspace requirements. Implementing a farmer's market is low risk. Requirements for this program and its temporary structures is minimal. There is also the potential to coordinate with the existing Key West Farmer's Market.

Additionally, as an Area of Critical State Concern, the Florida Keys is regulated by the Rate of Growth Ordinance (ROGO), limiting the number of building permits that are issued each year to approximately 250. This helps to limit development and population of the area, which is helpful in the event of a hurricane evacuation and protecting natural resources. Due to this ordinance, the building permit process can be lengthy therefore it is imperative to file early and ensure the property will meet the ROGO criteria. Before a building application can be issued for the property, it needs to earn a set number of points. This can be done passively by acquiring an average of two points annually while waiting for a permit to be issued. Points can be actively earned by fund donation, land aggregation, land donation, or environmental propositions. A breakdown of evaluation point criteria for the Florida Keys is provided on Monroe County's website.[161]

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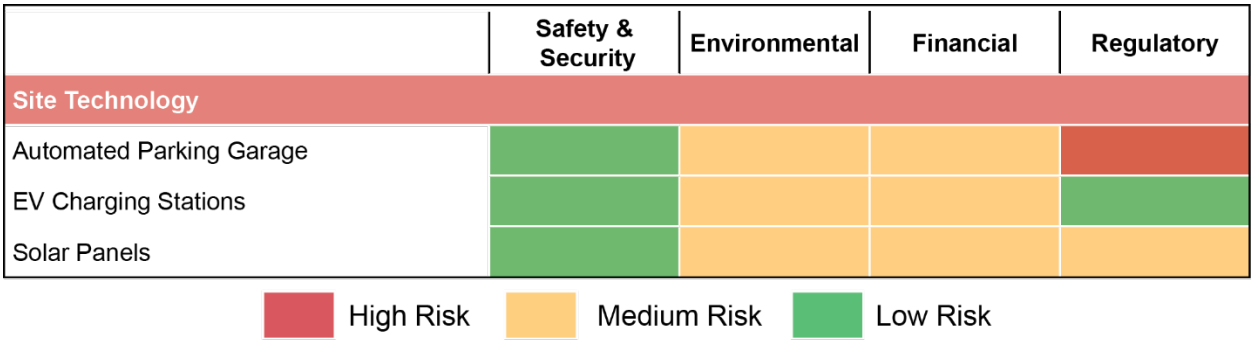
[160] Carlson, Jennifer. (2023). **Cost to Build an Apartment Complex.** HomeGuide.
[161] Monroe County, Florida. (2020). **ROGO/NROGO System.**

SITE TECHNOLOGY

The implementation of technological site amenities can attract visitors, provide cost savings, and sources of revenue. The Automatic Parking System (APS) garage, Electric Vehicle (EV) and Battery Electric Bus (BEB) charging stations, and solar panels all scored low on the matrix regarding safety and security. These amenities also scored medium on the matrix for environmental and financial risks, influenced by size, type, and location decisions. For regulatory risks, EV charging stations scored low, solar panels scored medium, and APS garage scored high, influenced by local and county zoning and code requirements and regulations. **Figure 33** exhibits where the Site Technology amenities scored on the risk matrix.

Figure 33: Matrix of Site Technologies



Safety and Security

The location of solar panels and EV charging stations will influence the level of likelihood and severity of safety and security risks. The ability for the public to be able to access the solar panels and BEB chargers and enter the APS garage can increase the likelihood and severity of risk.

Proper security measures and minimal access points can help to deter such risks. These may include installing EV chargers on the second floor of the building helping to deter security and environmental risks, installing security gates controlling public access based on time and location, installing solar panels on the roof to minimize access, and choosing to install catenary (or ceiling secured) BEB chargers to minimize environmental and public access. The installation of an APS garage would have less potential safety and security risks compared to a regular garage as it is inaccessible to the public and does not require operating personnel.

Environmental Impacts

The installation locations of the selected site technologies will influence the level of severity and likelihood of risk to the equipment and overall site. Environmental impacts such as storm surge and saltwater can negatively impact these technologies.

The equipment would need to be installed in locations that help to minimize impacts from the environment such as storm surge and saltwater. EV charging stations may be placed on the ground floor for easy access but placed on an internal wall to provide maximum protection against environmental elements. To help minimize environmental impacts to solar panels, this equipment could be installed at an angle on a roof or exterior wall instead of lying flat across a roof. These placements would also utilize minimal space.

Financial

The locations and upkeep of the proposed technologies are the main influences of the financial risk. The location, selected types, and quantity of solar panels and EV and BEB chargers will influence the cost of installation and operations and maintenance. Likewise, size, type, and vendor influence the cost of installation and operations and maintenance of the APS garage.

Solar panels may have a high upkeep cost with frequent cleanings needed due to saltwater buildup. EV and BEB chargers and the APS garage may have high upfront capital costs due to the expensive technology and equipment. However, revenue from public EV stations and the parking garage, electric savings from the solar panels, and operating and maintenance savings due to utilizing an APS instead of a conventional parking garage can help offset the high initial costs. Additionally, APS garages require an average of 50% less land area compared to a conventional parking garage, providing 6 times more parking capacity.[162]

Regulatory Barriers

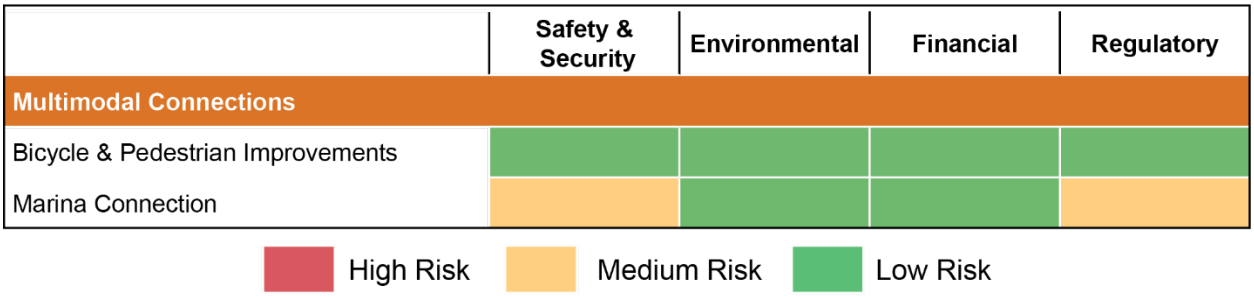
The current zoning code does not explicitly permit the proposed site technologies. The lack of guidance by the local zoning code may require pursuing a variance or exception by submitting an application to the Planning Director. National codes and regulations for these technologies may influence the location on the site or the ability to implement at the site. However, the installation of EV chargers is supported by the City of Key West's 2021 Strategic Plan.[163]

[162] Robotic Parking Systems. (n.d.). **Frequently Asked Questions - Automatic Parking**.
[163] Elisa Levy Consulting. (2021) **Key West Forward: The Strategic Plan for the City of Key West - 2021-2024**. City of Key West.

MULTIMODAL TRANSPORTATION AMENITIES AND CONNECTIONS

Overall, improving bicycle and pedestrian connections to the proposed KWIC is considered a 'low risk' activity and would further establish the site as an intermodal center with expanded multimodal connections. The proposed trail connection to U.S. 1/Overseas Highway will likely require external funding and coordination with FDOT and the adjacent landowners. Establishing the proposed pedestrian connection to Sunset Marina will likely require approval from the marina owner, which is considered a 'medium risk' activity. **Figure 34** exhibits where the Multimodal Transportation Amenities and Connections amenities scored on the risk matrix.

Figure 34: Matrix of Multimodal Transportation Amenities and Connections



Safety and Security

The proposed improvements should be carefully designed to minimize conflicts between ongoing transit operations and bicyclists, pedestrians, and the associated bicycle/pedestrian infrastructure. The addition and expansion of bicycle/pedestrian amenities and connections can be considered low risk due to minimal upkeep and security required once the initial infrastructure is installed.

To help avoid vehicle-pedestrian conflicts, separate entrances into the KWIC for transit vehicles and micromobility users is recommended. Expanded and improved trails and crossing infrastructure will ultimately create a safer environment for bicyclists and pedestrians accessing the KWIC or traveling to nearby locations along College Road. To ensure the safety of users, proper crossing signage and painting will need to be installed. This enables bicyclists and pedestrians to have a dedicated facility, separated from motor vehicles, and increased visibility while crossing roadways.

Regarding a trail connection between Key West Transit and Sunset Marina, the installation of security cameras along the trail may persuade Sunset Marina to agree to the trail connection. Sunset Marina may be open to establishing connections to public transit but could also be reluctant to allow increased public access to their site. However, the addition of security measures may help to mitigate concerns.

Environmental Impacts

The southwestern corner of the project study area is identified as Mangrove. This area is at least partially occupied by a parking lot of the existing facility on the site. Further investigation will be needed to determine the exact permit guidance for this exception. The proposed trail connection to the marina on the southwest side of the site would need to be constructed

sensitively adjacent to mangrove conservation areas and wetlands. Based on the environmental scan completed for the site, this improvement scored as a medium risk.

The impact of the trails on the surrounding environment will also depend on the type of materials used. Water runoff will be influenced by the type of trail surface (porous, non-porous) installed. It may be determined that some trail connections and/or improvements are feasible, but not all proposed improvements. Bicycle/pedestrian amenities will have a low environmental impact.

Financial

Funding for the proposed bicycle/pedestrian improvements is considered low risk since after the initial capital funding, these amenities require minimal and maintenance. There are also multiple grants available for multimodal street improvements and bicycle/pedestrian amenities and infrastructure. Additionally, efforts could be coordinated with the city's Car-Free Key West and the Bicycle and Pedestrian Master Plan implementation initiatives.

The capital and operating and maintenance costs will be determined by the materials of the trail surface, crossing signage, associated trail and crossing infrastructure, and which related bicycle/pedestrian amenities are implemented. The suggested security lighting could potentially be solar powered using panels attached to the signs, enabling additional cost savings.

Regulatory Barriers

The addition of trails and roadway crossings scored at medium level on the risk matrix. While allowable, implementing a trail connection between the KWIC to Sunset Marina would require the marina's approval and coordination.

The addition of new bicycle/pedestrian trails and roadway crossings have minimal regulatory barriers; however, they must adhere to the city codes and roadway design standards. If a trail connection is established between the KWIC and Sunset Marina, the two entities should agree to written terms regarding use and maintenance of the trail connection between the two properties.

Secondary Screening

After the initial risk screening based on safety and security, environmental, financial, and regulatory factors, another analysis was used to determine the space utilization of each amenity. This secondary screening assisted with amenities being filtered out or becoming a lower priority. **Table 13** exhibits the average space utilization of each amenity.

Table 13: Amenity Space Requirements

AMENITY	ESTIMATED SPACE UTILILATION
Bicycle / Pedestrian Improvements	**College Road:** new 10 ft wide trail (length will need to be determined after discussions with property owners) **College Road / Overseas Heritage Trail:** upgrade and add new multimodal roadway crossings (9 – 15 ft = average width of road)
Workforce Housing	2BR, 1BA and 1BR/1BA = average 948 sf [164]
Commercial Space	Café / Restaurant: 300 – 3,000sf+ [165]
	Flexible
Community Space	Space utilization will be influenced by use and site location
Parking Garage	One accessible parking space is required for every increment of 25 parking spaces up to 100 spaces, then in increments of 50 up to 200 spaces, then increments of 100 spaces. Accessible parking spaces are not required to be provided in APS garages, however, an accessible passenger loading zone must be provided at the vehicle pick-up/drop-off area. [166] **APS Garage:** 200 – 250 sf per parking stall **Conventional Garage:** 300 – 400 sf per parking stall [167]
Regular Ground-Level Parking / Bus Parking	Ground-level parking and storage for vehicles and buses depends on space utilization of the buildings
Green Roof / Greenspace	Flexible – depends on type, location, use, and size of available building rooftop space
Fitness Center	Flexible – can range between about 270 sf – 2,000 sf for just equipment space (no lockers or bathrooms) [168]
Childcare	Minimum 45 sf of outdoor space required per child aged 1 or older in Florida [169]

[164] DeVault, Janine. (2021). **Average Apartment Size in the United States; the Complete Guide; RENTCafe, National Multifamily Housing Council.** Flex.
[165] Lindenberg, Bret. (2023). How to Create a Coffee Shop Floor Plan (Any Size and Dimension). Food Truck Empire.
[166] United States Access Board. (2010). **2010 ADA Standards for Accessible Design.** United States Department of Justice Civil Rights Division.
[167] Schafer, Mark. (2017). **Parking Garage Square Footage Per Car.** Sciencing.
[168] Biofit. (n.d.). **Elevating Hospitality Fitness: The Art and Science of Hotel Gym Design**
[169] Florida Department of Children and Families. (2021). **Child Care Facility Handbook October 2021.**

AMENITY	ESTIMATED SPACE UTILILATION
Bicycle/Pedestrian Amenities	Flexible – depends on quantity, type, and location
Public EV Chargers	The number of parking spaces on ground floor parking will be determined by the determined number of EV chargers installed EV charging is possible using some APS systems [170]
BEB Chargers	Depends on charger type and number BEB chargers **Plug-In Charging:** Needs designated space due to needing longer charging time and having equipment installed at bus parking spaces similar to public EV chargers **Overheard Conductive Charging:** Does not necessarily need designated space due to needing 5 – 10 minutes to recharge transit buses and utilizes overhead equipment **Wireless Inductive Charging:** Needs designated space due to requiring a longer charging time and utilizing ground equipment [171]
Farmers' Market	Somewhat flexible, but requires space for vendor stations, vehicles, and maneuvering; requires access to utilities

CONSIDERATIONS

The secondary screening resulted in some amenities being filtered out, deemed not an initial priority, or to be reconsidered after the construction. Space requirements will influence site components and design.

Fitness Center
Although space utilization is flexible, design and whether to establish a fitness center is up to the housing developer's discretion, therefore KWT may have little influence over this amenity.

Childcare
Establishing the required outdoor space for childcare services is likely not feasible due to the space utilization of other amenities on the site. The design of and whether to establish childcare service is up to the housing developer's discretion, therefore KWT may have little influence over this amenity.

[170] Robotic Parking Systems. (n.d.). **Automatic Electric Vehicle Charging Frequently Asked Questions.**
[171] Office of the Under Secretary for Policy. **Electric Bus Basics.** UNITED STATES Department of Transportation.

Farmer's Market
Farmers' markets require electric and water hook-ups, space for vendor stands, and vendor and visitor parking. The proposed site designs do not have the space utilization and traffic circulation to accommodate a farmers' market. Additionally, a farmers' market is already established elsewhere in Key West and implementation at the KWIC may not be successful.

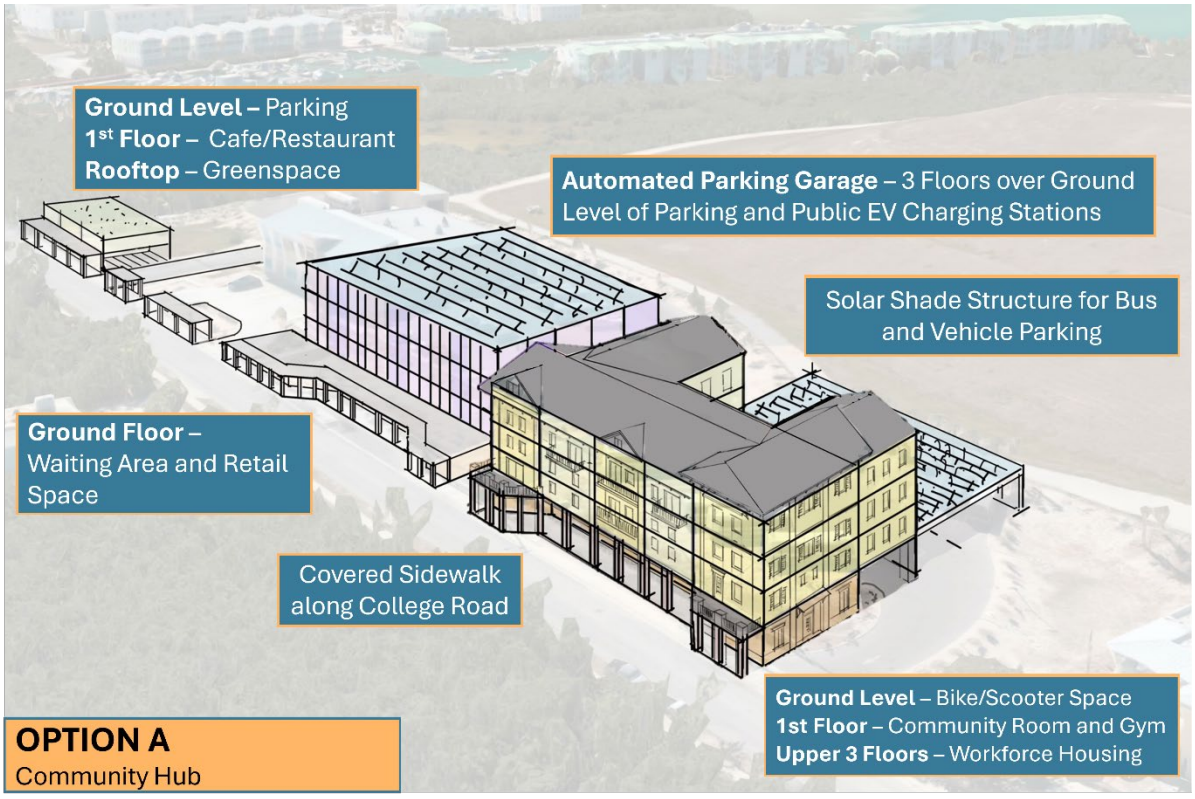
Site Development Scenarios

After the risk screening was conducted and amenity space utilization was considered, three potential site scenario options were developed. Each scenario has a slightly different focus and goal. The site amenities and associated space utilization are discussed. This includes the required parking spaces and amenities associated with each use.

OPTION A: COMMUNITY HUB

Option A: Community Destination Hub has a transit-development oriented focus. Through the provision of selected amenities and features, the KWIC can be established as a community destination. This can promote the use of public transit and multimodal amenities. This option includes the desired affordable workforce housing, while also maximizing potential revenue generation with commercial and community space and other revenue-generating amenities.

Figure 35: Option A Site Rendering



Option A's site components are exhibited in **Table 14**, along with the required parking spaces associated with the amenities.[172] With this scenario option, a three-floor APS garage, at 17,000 sf per floor, offering 255 parking spaces would be able to accommodate more than the number of parking spaces required by the City of Key West's municipal code. However, with a conventional garage, 5 – 6 parking floors at 17,000 sf each would be needed to accommodate the same number of parking spaces. ADA parking spaces could be accommodated by either type of parking garage or ground parking.

Table 14: Option A's Space Utilization

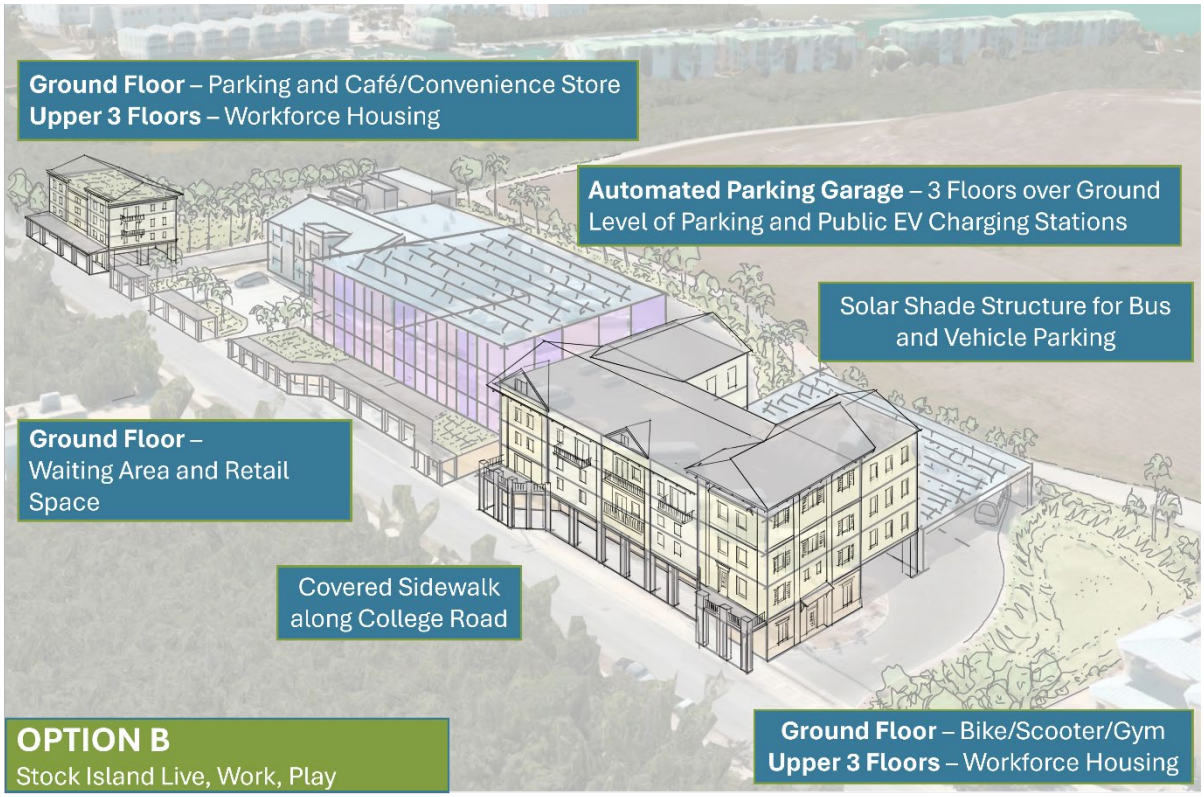
AMENITY	SPACE UTILIZATION	REGULAR PARKING SPACES	ADA PARKING SPACES	BICYCLE SPACES
Existing Transit Facility	6,000 sf	40	2	4
APS Garage	3 floors of 255 total parking spaces 85 parking spaces per floor (17,000 sf per floor)	N/A	N/A	N/A
Workforce Housing	36 total residential units 800 sf 1BD/1BA and 2BD/1BA residential units 3 floors at 12,000 sf each	72	3	8
Commercial Space	Café /restaurant/ convenience store: 3,000 sf	67	3	17
	Retail: 2,500 sf	9	1	3
Community Space	3,000 sf	20	1	7
TOTAL	**43,500 sf of total amenities footprint**	**208**	**10**	**39**

[172] City of Key West. (1997). Code of Ordinances: ARTICLE VII. - OFF-STREET PARKING AND LOADING. Municode Library.

OPTION B: STOCK ISLAND LIVE, WORK, PLAY

Option B: Stock Island Live, Work, Play maximizes the residential amenities for workforce housing. One of the main goals of the KWIC is to establish housing for transit employees to help ensure employee retention. Additional residential/employee amenities such as a gym and/or communal space will further aid in employee retention and quality of life.

Figure 36: Option B Site Rendering



Option B's site components are exhibited in **Table 15**, along with the required parking spaces associated with the amenities.[173] With this scenario option, a three-floor APS garage, at 17,000 sf per floor, offering 255 parking spaces would be able to accommodate the number of parking spaces required by the City of Key West's municipal code. However, with a conventional garage, 6 – 7 parking floors at 17,000 sf each would be needed to accommodate the same number of parking spaces. ADA parking spaces could be accommodated by either type of parking garage or ground parking.

Table 15: Option B's Space Utilization

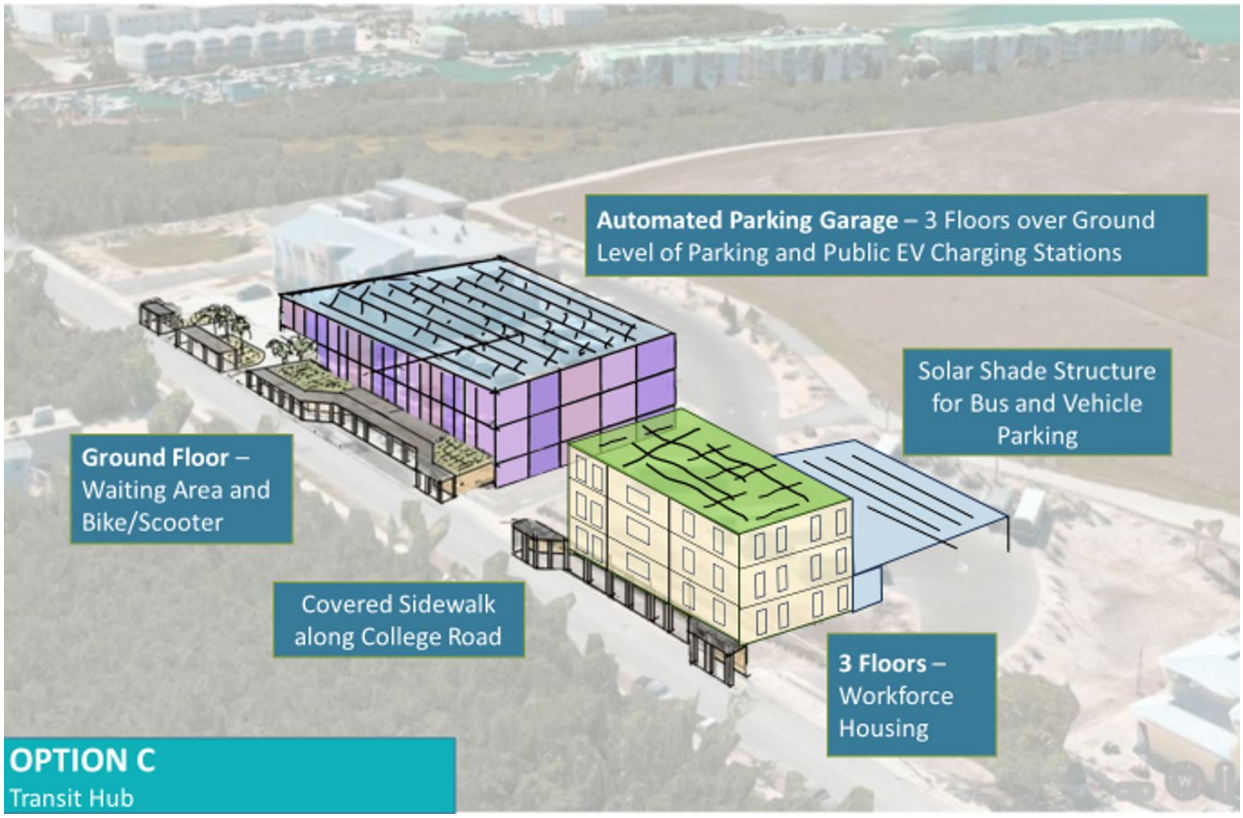
AMENITY	SPACE UTILIZATION	REGULAR PARKING SPACES	ADA PARKING SPACES	BICYCLE SPACES
Existing Transit Facility	6,000 sf	40	2	4
APS Garage	3 floors of 255 total parking spaces 85 parking spaces per floor (17,000 sf per floor)	N/A	N/A	N/A
Workforce Housing	36 total residential units 800 sf 1BD/1BA and 2BD/1BA residential units 3 floors at 12,000 sf each	72	3	8
Commercial Space	Café /restaurant/ convenience store: 3,000 sf	67	3	17
	Retail: 2,500 sf	9	1	3
Community Space	3,000 sf	20	1	7
TOTAL	**43,500 sf of total amenities footprint**	**208**	**10**	**39**

[173] City of Key West. (1997). Code of Ordinances: ARTICLE VII. - OFF-STREET PARKING AND LOADING. Municode Library.

OPTION C: TRANSFER HUB

Option C: Transfer Hub is the site scenario option that has the lowest risk. It focuses on Key West Transit's goals of establishing a parking garage, housing for transit employees, and providing an intermodal hub. Minimal additional amenities would be included.

Figure 37: Option C Site Rendering



Option C's site components are exhibited in **Table 16**, along with the required parking spaces associated with the amenities.[174] With this scenario option, a three-floor APS garage, at 17,000 sf per floor, offering 255 parking spaces would be able to accommodate more than the number of parking spaces required by the City of Key West's municipal code. Additionally, a three-floor conventional garage at 17,000 sf each would be able to accommodate the same number of parking spaces. ADA parking spaces could be accommodated by either type of parking garage or ground parking.

Table 16: Option C's Space Utilization

AMENITY	SPACE UTILIZATION	REGULAR PARKING SPACES	ADA PARKING SPACES	BICYCLE SPACES
Existing Transit Facility	6,000 sf	40	2	4
APS Garage	3 floors of 255 total parking spaces 85 parking spaces per floor (17,000 sf per floor)	N/A	N/A	N/A
Workforce Housing	54 total residential units 800 sf 1BD/1BA and 2BD/1BA residential units 1st building: 3 floors at 6,000 sf each with 18 total units 2nd building: 3 floors at 12,000 sf each with 36 total units	108	5	11
Commercial Space	Café/restaurant/ convenience store: 2,500 sf	56	3	14
	Retail: 2,500 sf	9	1	3
Community Space	6,000 sf	40	2	14
TOTAL	**46,000 sf of amenities footprint**	**253**	**13**	**46**

[174] City of Key West. (1997). Code of Ordinances: ARTICLE VII. - OFF-STREET PARKING AND LOADING. Municode Library.

SUMMARY OF STAKEHOLDER ENGAGEMENT

Organizations key to the implementation and success of the KWIC were identified and contacted to gain local stakeholder feedback on this preliminary study. The identified stakeholders consisted of organizations that may be involved with the implementation of the KWIC and businesses along College Road that could potentially be impacted by the establishment of the KWIC. Additionally, the community was able to provide input through a survey conducted as part of KWT's Transportation Development Plan (TDP) update. This section provides a summary of the input provided by these local stakeholders.

Stakeholder Interviews

Stakeholders were contacted and invited to participate in interviews via email by KWT. Nine organizations took part in 30 – 60 minute interviews. A brief overview of the KWIC and the feasibility study, along with interview questions were provided to the nine organizations ahead of the scheduled interview. The list of stakeholders that engaged in virtual interviews is shown in **Table 17**.

Table 17: Stakeholders Interviewed

ORGANIZATION	PARTICIPANTS
City of Key West	Teri Johnston, Mayor
City of Key West Engineering Department	Ryan Stachurski, Multimodal Transportation Coordinator
City of Key West Housing and Community Development	Tina Burns, Housing and Community Development Director
City of Key West Planning Department	Katie Peral Halloran, City of Key West City Planner Dan Gulizio, Senior Planner Jordan Mannix-Lachner, Planner II Alison Higgins, Sustainability Coordinator
Florida Keys Society for the Prevention of Cruelty to Animals (SPCA)	Tammy Fox, Executive Director
Gerald Adams Elementary School	Steven Vinson, Assistant Principal
Key West Tropical Forest and Botanical Garden	Misha McRae, Executive Director
Lower Keys Medical Center (LKMC)	David Clay, Chief Executive Officer Isaac Heller, Assistant Chief Executive Officer Bradley Lutz, Director of Physican Outreach
Monroe County Sheriff's Office and Freeman Substation, Lower Keys Area, District 1	Rick Ramsay, Sheriff Mike Rice, Chief David Smith, Captain

The stakeholder interviews consisted of a brief presentation providing an overview of the project description, purpose and need, potential facility features and amenities, potential benefits and challenges, and discussion questions. The following questions were used to guide discussion.

1. Based on the project's Purpose and Need, how do you think the KWIC can best serve the community?
2. How do you think your organization could benefit from the KWIC?
    a. Do you think there are any opportunities for collaboration or coordination?
3. After learning of the potential site amenities, are there any additional amenities that you believe should be included in the KWIC?
4. Potential regulatory barriers were identified for the proposed site amenities, such as the need to rezone the site for the desired use. Is there anything you can think of that could be a potential barrier for any of the amenities or the overall implementation of the KWIC?
    a. Do you have potential mitigation recommendations for these? Would your agency/organization be able to assist with addressing the potential regulatory barriers?
5. Is there anyone else that you think we should speak to/include in the stakeholder engagement process?

STAKEHOLDER FEEDBACK

Overall, stakeholders were supportive of the KWIC and potential amenities examined. Throughout the interviews, there were some commonalities among the topics, benefits, ideas, or concerns discussed. This feedback was taken into consideration during the subsequent risk assessment, as well as incorporated into the suggested implementation strategies.

Implementing commercial space at the KWIC can help to address the limited number of shops currently along College Road.
Stakeholders along College Road that participated in interviews expressed support for establishing commercial space such as a coffee shop, convenience store, or quick bite shop. They also noted that this implementation could benefit KWT riders, College Road businesses, and nearby residents such as the KWIC's potential residents, the college students at the College of the Florida Keys, and residents at Garden View Apartments. Currently, the only retail store and option for food along College Road is at Sunset Marina which closes at 5PM.

The City of Key West Planning Division suggested conducting a market analysis to determine the use of the commercial space and expressed concern that the establishment of commercial space could increase traffic causing further traffic congestion on College Road. It was also noted that the site would need to be rezoned for commercial use.

With limited parking in Key West, establishing a new parking garage is a necessity, however there needs to be incentives for drivers to utilize the KWIC's parking garage.
Stakeholders agreed that establishing a public parking garage can help to address downtown traffic congestion, while also increasing the area's parking inventory. Stakeholders along College Road that participated in interviews communicated the need for additional parking either for their own staff and patrons or to combat current illegal parking along College Road.

The Florida Keys Society for the Prevention of Cruelty to Animals (SPCA) expressed interest in using the parking garage. Their facility has enough parking for their own staff, however, there is often not enough parking for visitors. Other stakeholders noted that the parking garage could address the illegal parking that occurs along College Road due to insufficient parking at the Key West Golf Club and Garden View Apartmens.

Stakeholders indicated that strategies would need to be identified to incentivize drivers to travel to and utilize the KWIC's parking garage. Increasing downtown parking rates and the cost of residential parking passes were suggested options to incentivize drivers to park at the KWIC. The implementation of wayfinding signage along U.S. Highway 1 was suggested to help guide drivers towards the KWIC. Additionally, stakeholders recommended improving the visibility of bus stops, as well as bus stop amenities such as Realtime signs showing the bus's location to help encourage riders to use public transit instead of driving.

Establishing new affordable housing can help to help address the high cost of living that workers experience in Key West.
Many stakeholders discussed the difficulty of attracting and keeping staff due to the area's high cost of living. The SPCA has had a recent 40% decrease in employees due to staff not being able to find housing and has established a housing committee in response. According to Gerald Adams Elementary School, the Monroe School District is pursuing the provision of housing to school employeessince many teachers commute to work from as far as Marathon. The Monroe County Sheriff's Office established their own affordable housing for their employees, as well as other government agencies. This housing complex was implemented through a public-private partnership (P3) and offers housing on a tiered basis in the following order: 1) sheriff, deputies, and constables; 2) police department; 3) Monroe County, City of Key West, and fire department; 4) US Fish and Wildlife; 5) Any departments deemed essential.

Regulatory issues surrounding the establishment of employer-provided housing were also discussed. The Planning and Engineering divisions noted that the property would need to be rezoned for residential use, and may even need to be subdivided. The City of Key West Housing and Community Devleopment stressed the importance of establishing "employer-provided" housing as this can enable providing housing to whom KWT determines as the prospective groups. Strategies to potentially enable more site density and building height were also identified, including Florida's Live Local Act that supports affordable housing.

There are opportunities for collaboration and partnerships between KWT and local businesses.
Advertising for local businesses served by KWT could benefit both parties by promoting the use of public transit or micromobility to these businesses. A "welcome center" was a suggested use of space that could provide information on local history and businesses.

The Key West Tropical Forest and Botanical Gardens suggested that the site's greenspace could host a botanical demonstration garden and noted that there is a kayak launch adjacent to their property that could be advertised to further expand multimodal connectivity. The SPCA discussed the potential for collaboration with KWT regarding advertising adoptable animals at the KWIC and on KWT vehicles and assisting with pet transportation.

The establishment of the KWIC may increase the traffic congestion that already periodicly occurs on College Road.
The KWT's neighboring businesses located along College Road that participated in interviews identified that there is an issue with traffic congestion on College Road. The periodic traffic congestion is mainly caused by elementary school drop-off and pick-up times and traffic accidents on U.S. Highway 1. Many stakeholders expressed that with the establishment of the KWIC, there may be an increase of vehicular traffic along College Road.

Gerald Adams Elementary School operates from 7:45AM – 3:15PM. During pick-up and drop-off hours, vehicles queue up along College Road trying to turn into the school's parking lot. The assistant principal did say that to help mitigate the issue, those dropping off or picking up students are encouraged to approach the school from the southbound lane of College Road, preventing vehicles from having to turn left into the school's parking lot. Additionally, traffic congestion is caused by drivers using College Road as a detour to avoid vehicular incidents that often occur on U.S. Highway 1.

The Lower Keys Medical Center (LKMC) noted that congestion can restrict their ambulances from entering or exiting their facility. The Key West Tropical Forest and Botanical Garden and Monroe County Sheriff's Office both expressed having trouble exiting their facility at times due to traffic congestion. As previously mentioned, the City of Key West Planning Division suggested that a market analysis be conducted to help determine the potential commercial uses, followed by a traffic study to determine the potential increase in traffic.

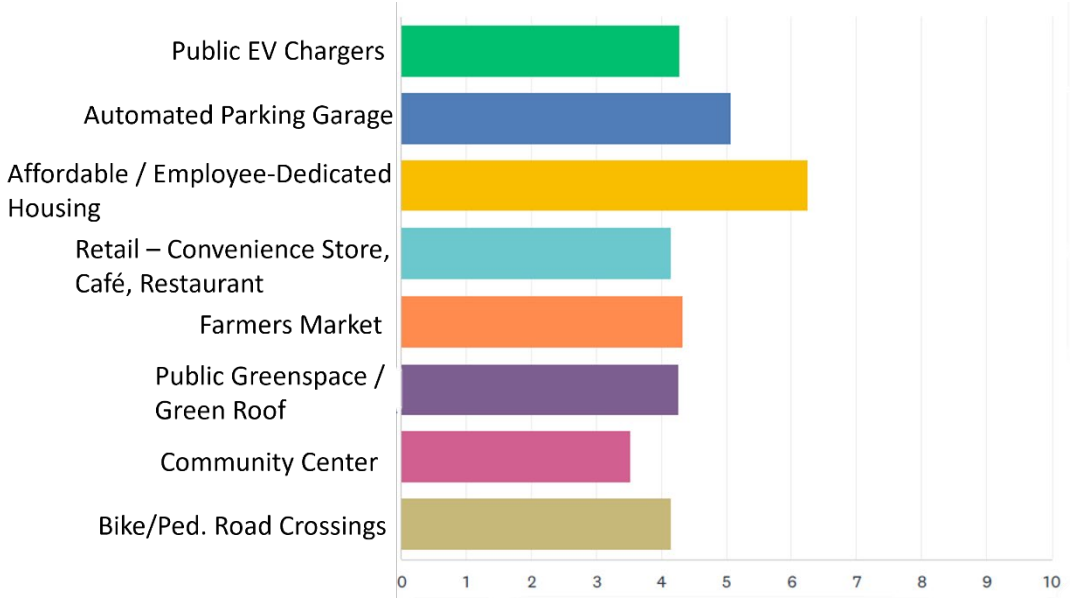
Community Survey

Previously discussed in the **Title VI Compliance** section, KWT is currently in the process of updating the agency's TDP and conducted a survey to gather public input. The survey included a question specific to the KWIC, asking the public to rate which amenities they would like the KWIC to have, as well as provide any additional suggestions.

COMMUNITY INPUT

Survey participants were asked to rank potential KWIC amenities in order of their preference of what they would like to be located at the KWIC facility. **Figure 38** exhibits that affordable/employee-dedicated housing is the most popular amenity, followed by a parking garage, farmers market, public EV chargers, public greenspace/green roof, bicycle/pedestrian road crossings, retail space, and community center.

Figure 38: TDP Survey Results – Ranking of KWIC Amenities



Survey participants also had the opportunity to provide their own suggestions and/or additional comments. The list below summarizes these suggestions. Many of these suggestions, as well as other TDP survey responses align with feedback heard during KWIC stakeholder interviews.

- Welcome center
- Public restrooms, benches, information, and front desk/security
- Teen or children's area
- Free splash pad or indoor playground
- Greenspace
- Public art (murals; sculptures)
- Native pollinator garden
- Lease space for events
- Parking garage
- Long-term, residential parking
- Senior center
- Hotel/airport shuttle pick-up/drop-off
- Ferry service to/from downtown
- Micromobility rentals
- Retail space
- Lease retail to local businesses

IMPLEMENTATION STRATEGIES

Initial, mid-term, and long-term implementation strategies were developed. The implementation strategies are intended to help mitigate the previously identified risks. Strategies are outlined in terms of priority and the number of interdependencies. Tasks with a longer running timeline to complete and are critical for project implementation and success are considered first.

INITIAL IMPLEMENTATION STRATEGIES

The following strategies are critical foundational steps in project approval, planning, development, and implementation.

Identify potential partners for collaboration and coordination and establish partnerships.
During the stakeholder engagement process, some potential partnerships and areas of coordination and collaboration were identified that could benefit both parties. These partnerships should be formalized as funding may be able to be secured from these partners.

One suggested strategy is to partner with businesses to provide fare and/or parking rate discounts. This can motivate people to use KWT and/or park at the KWIC to access the partnering business such as the Key West Tropical Forest and Botanical Garden, guesthouses, or businesses downtown. An additional strategy discussed was to potentially partner with the guesthouses, offering discounted parking rates to guests, and having them pick up their guests at the KWIC. Related to this strategy, the City of Key West Mayor discussed a potential partnership between KWT and the Historic Tours of America (HTA) trolley, providing additional transportation from the KWIC.

Other strategies suggested by stakeholders involved featuring businesses on-site at the KWIC through events, as well as providing advertising on KWT vehicles. In return, businesses would encourage users to utilize KWT. Local businesses could have exhibits or information, in the KWIC lobby and/or hold events in the community center of the KWIC. A welcome center was also suggested for the lobby with restrooms, waiting area, exhibits, and a front desk to answer questions and provide information to visitors.

> Timeline: Partnerships should be identified early on in the process to help determine funding partners. Collaborations and partnerships should be an ongoing process, helping to further enhance the KWIC and KWT service.

Identify and determine funding opportunities and sources for planning, construction, and operations and maintenance of the KWIC.
Planning, construction, and operating and maintenance costs must first be determined, followed by identifying and securing funding opportunities and sources. This will be influenced by the amenities selected to implemented and the determined space utilization. These additional planning and construction costs and increased site operating and maintenance costs will need to be considered as part of KWT's annual budget as well. Using a phased implementation approach can assist in offsetting costs and enable the use of revenue from earlier phases to fund later phases. Conducting a financial plan can help KWT to identify, budget, and forecast for future monetary needs and the strategies to meet these.

Potential funding sources may be established through stakeholder partnerships or contributions. Potential grant funding opportunities have been determined and were summarized in the **Funding Opportunities** section. The application cycles of the identified grants should be monitored to ensure the ability to meet application deadlines for potential funding.

Discussion of the KWIC project should be included in upcoming planning efforts, such as the upcoming update of the City of Key West's Transportation Development Plan (TDP). This inclusion can help to establish support for the KWIC and streamline the process through construction.

> Timeline: Funding opportunities and sources should be identified in preparation for the City of Key West's new fiscal year to be able to consider potential necessary funds and additional expenses that need to be accounted for. These conversations should occur at least half a year before the published budget in October. In preparation, funding cycles will need to be monitored for identified funding opportunities.

Conduct environmental assessments of the site.
A variety of environmental assessments will need to be conducted prior to the start of permitting and construction as part of the NEPA process. Part of this process includes conducting an Environmental Justice (EJ) analysis of the site to determine whether the site will have disproportionate health and/or environmental effects on minority and low-income populations.[175] In preparation for the site scenarios, it was determined that the building permit will need to include modifications to indicate that the retention pond is still usable and effective. An environmental engineer will need to be contracted to complete the assessments.

In the **Environmental Scan** section, the potential environmental impacts to the surrounding environment were identified. Recommendations to mitigate potential environmental resource impacts were summarized, along with the required permits.

> Timeline: Several months to one year – timeline is dependent on anticipated scale of environmental impacts

Determine parking garage type and size, and secure funding for procurement and construction.
Including a parking garage in the KWIC project was a high priority due to the lack of parking and high-level of traffic congestion in downtown Key West. The number of parking spaces desired and code requirements will influence the size of the parking structure. The size and type of parking garage selected will determine the number of parking spaces.

The cost to park and membership/parking pass must be decided in preparation for selecting the type of parking garage and supporting technology such as the public-facing applications for fare payment and reservations. Determining potential revenue will inform funding for operating and maintenance costs. Parking passes and dedicated parking spaces should be provided for employees and residents to enable free parking. To promote the use of this parking garage and other transportation modes at the KWIC, the price to pay to park downtown could be increased.

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[175] United States Environmental Protection Agency. (1994). Title VI and Environmental Justice. United States Federal Government.

Once funding is identified and secured, a construction company must be determined and acquired utilizing a Request for Proposal (RFP). A company will also need to be procured to implement a public-facing application.

APS Garage
The use of an APS garage is KWT's preference due to space utilization efficiency, parking capacity, and low staff involvement/requirements, resulting in overall lower costs compared to a conventional parking garage.

Once funding is identified and secured, a company specializing in the design of APS garage systems must be determined and acquired utilizing an RFP. A contract should also be established with the same company, if possible, or determine another technology company to provide the supporting public-facing technology.

> Timeline: According to Robotic Parking System, an APS manufacturing and installation company, construction can be completed between 10 – 14 months.[176]

Pursue rezoning to allow for mixed use development, as well as modified parking requirements.
One of the first steps that needs to be taken is to rezone the site for the preferred land uses. To allow for on-site housing and retail, the City of Key West should pursue the rezoning of Key West Transit's property to accommodate for the KWIC's mixed-use development as soon as possible. New housing or retail would be considered transit-oriented development, therefore opportunities to reduce or minimize parking requirements for residential and retail uses should be pursued. This action would help to support Park and Ride/Car-Free Key West Initiatives.

Due to the lack of guidance by the local zoning code, a zoning variance or exception may be required. This process involves submitting an application to the Planning Director. The Planning Commission will then review the application and provide recommendations at the Planning Commission meeting.

> Timeline: Needs to align with building permit application cycle. The application and approval cycle could take few years due to the Rate of Growth Ordinance that influences the number of building permits issued each year.

Determine and employ a third-party housing developer and management company.
Potential grant funding should be examined, as well as a Transportation Infrastructure Finance and Innovation Act (TIFIA) loan/financing for the development of the housing units. Florida's Live Local Act, signed into law in 2024, established initiatives and provides financial support towards establishing affordable housing for workers, as well as can assist with exceptions regarding building density and height and parking requirements.[177]

To streamline and ease the burden of developing the site/buildings, a third-party housing developer management company should be pursued. KWT has determined that 30% of the residential units should be dedicated to transit employees. Currently, KWT has 40 employees inclusive of administrative staff, vehicle mechanics, and transit operator, however 17 additional transit employees would be needed if KWT's service were to expand. Other decisions will also need to be made regarding housing eligibility, such as requiring employees to work a

[176] Robotic Parking Systems. (n.d.). **Frequently Asked Questions - Automatic Parking**.
[177] Florida State Senate. (March 2023). **LIVE LOCAL: Workforce Housing Strategy Signed into Law.**

determined number of months or years before being considered eligible for housing, how many years employees can reside in the on-site housing, and the process for eviction once an employee is terminated. The Monroe County Sheriff's Office recent workforce housing project should be examined for guidance to providing employer-provided housing.

> Timeline: Engage with potential housing developers within six months following rezoning to begin design phase

Prepare a market analysis to establish a commercial strategy and pursue third-party commercial real estate operator.
The inclusion of commercial units as part of the site will further establish the KWIC as a dining and retail hub. Commercial businesses provide people with a reason to visit the KWIC, leading to visitors parking at the KWIC or using KWT transit and spending time and money at the KWIC and visiting nearby locations. Additionally, leasing out commercial units provides KWT with a consistent source of revenue.

The City of Key West should commission a market analysis to determine demand for retail space that could include a retail store, convenience store, café, or restaurant. This study will also help to determine the potential increase of vehicular traffic along College Road. Following the market analysis, Key West should consider commissioning a third party to market and manage the retail space.

> Timeline: Commission a market analysis within the next three to six months to inform the space and building requirements for the final facility design

Conduct a traffic study of College Road.
A traffic study, or transportation analysis would help to determine the current and potential future traffic conditions and patterns on College Road and U.S. Highway 1. The market analysis would inform the potential use of the site, helping to determine the potential increase of vehicular traffic. The traffic study would identify current issues and necessary improvements to College Road.

Determine the site's new grid load and new electric rate.
Once all the site amenities are determined, the site's current and new energy consumption must be calculated. This will help to determine the site's new electrical grid load which will influence electric/power rates, whether additional generators are needed, and how many solar panels will be needed. A consultant can be contracted to conduct the assessment and inquire about the new rate from Keys Energy Services (KEYS).

> Timeline: Contingent on the final determination site amenities

Determine types and installation locations of solar panels, public EV charging stations, and BEB charging stations and procure equipment vendor.
The decision of what type of solar panels and public EV and BEB charging stations to install is influenced by cost and space utilization. Available space and the selected location on the site will impact the type of solar panels and BEB charging stations selected. For example, solar panels were suggested as a rooftop shade canopy that can provide protection and cover for KWT's buses. Location will influence the cost and maintenance of the equipment. Public EV chargers could potentially utilize less space if implemented as part of the APS garage instead of separate ground parking. If bus parking is established under a canopy or roof, overhead conductive charging would be ideal due to not needing designated ground space.

Prior to implementing BEBs, a Zero-Emission Fleet Transition Plan will need to be completed if applying for funding through the Grants for Buses and Bus Facilities Competitive Program or the Low or No Emission Program. This plan demonstrates the agency's long-term fleet

management plan, evaluation of current and future resources to meet costs of transition and implementation and agency familiarity with technology, and identifies that impact of transition regarding skill gaps and training of workforce.[178]

> Timeline: Contingent on the determined square footage of the parking garage, as well as the type of EV and BEB charging stations selected

MID-TERM/SECONDARY IMPLEMENTATION STRATEGIES

The following strategies are steps that can be implemented once the larger KWIC components are determined and established. These amenities/strategies do not hinder KWIC implementation but do enhance the site.

Determine and secure funding for bicycle/pedestrian network improvements.
The KWIC's goal is to provide intermodal connectivity. By implementing bicycle/pedestrian improvements such as road crossing upgrades and new trail connections, a comprehensive micro mobility network can thrive. With the assumed increase of bicycle traffic, additional bicycle equipment like bicycle parking racks will also be needed. It is suggested to collaborate with local bicycle/pedestrian groups such as Car Free Key West.

If allowed by the Sunset Marina, one of the proposed new trail connections would connect the KWIC to the marina. The other proposed trail connection would be established from the KWIC, connecting to the Lower Key's SPCA, Gerald Adams Elementary School, and the Lower Keys Medical Center. The trail length and type of material used to construct the trail will need to be determined. Material type will influence the upkeep costs and water run-off. The type of roadway crossings and type and level of associated infrastructure to be implemented will also need to be determined. To address safety, pedestrian crossing lights should also be implemented alongside crosswalks. Once the infrastructure and materials are determined, funding opportunities/sources must be identified and secured.

> Timeline: Coordinate with City of Key West – may be able to accomplish as a joint project. Aim for implementation/construction to be completed within the next five years, to coincide with the completion of KWIC.

Determine and implement an on-site micromobility partner to provide transportation such as dockless e-bikes and e-scooters.
After the bicycle and pedestrian amenities and connections have been established, a micromobility partner can be determined and secured to operate on-site. This addition of micromobility further establishes the site as an intermodal hub and can reduce the number of vehicles on the road.

However, a permit must be secured through the Key West Licensing Department, as well as having a conditional use approved by the Planning Board. Currently only a small number of businesses in Key West are licensed for recreational rentals, furthering the need for implementation. These businesses must also offer helmets, educate the rider that it is illegal to ride on the sidewalks, and must post danger warnings. Each vehicle is also provided a license by code compliance staff after passing inspection.[179]

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[178] Federal Transit Administration. (2022). **Zero-Emission Fleet Transition Plan**. United States Federal Government.
[179] City of Key West. (2013). **Code of Ordinances: ARTICLE VII. - RECREATIONAL RENTAL VEHICLES.** Municode Library.

Timeline: Dependent on funding and implementation of bicycle/pedestrian amenities and connections, as well as securing permit – aim to complete in conjunction with the opening of KWIC – within 5 years

LONG-TERM/TERTIARY IMPLEMENTATION STRATEGIES

The following strategies are not critical to implement as part of the KWIC. After the KWIC has been established for at least a few years, these are potential additional strategies that may be implemented to further enhance the site.

Coordinate with Transportation Network Companies (TNCs) and coach bus companies to utilize KWIC as a hub for shared transportation.
Transportation Network Companies (TNCs), such as Uber and Lyft, and coach bus companies, such as Greyhound, already service Key West elsewhere. KWT suggested the idea of TNCs utilizing the KWIC as a picking up and drop-off hub. KWT also proposed the idea of either providing a second pick-up location for commuter or coach buses or at least provide a dwelling space for the buses. The KWIC is further established as a multimodal transportation hub by providing access to shared modes of transportation and longer, commuter options.

Timeline: Begin coordination with relevant companies one year prior to KWIC opening

Implement updated advertising plan for KWIC.
Advertising KWT and the KWIC will provide increased visibility and awareness of the services, promoting their use and further decreasing drivers on the road. Once the KWIC has been established, advertising for the KWIC can include all amenities. Updated advertising should include advertising any new partnerships that have been established between KWT and businesses and new or updated KWT service.

Timeline: 6 months prior to KWIC opening

Implement KWT upgrades, including bus stop infrastructure and amenities and examine expanding service.
The establishment of the KWIC will help to provide KWT and an economic engine, as well as retain and grow their workforce. This can enable KWT to consider upgrading KWT infrastructure, amenities, and service, further assisting in the promotion of using KWT. It was identified during stakeholder interviews that increasing visibility of KWT bus stops, as well as providing additional amenities such as benches, shelters, and Realtime information could entice users. Currently, KWT only operates three fixed bus routes, on-demand service, and a free downtown circulator, however, the agency would like to expand service by adding additional routes. The agency would need an increase of staff to do so.

Timeline: Contingent upon completion of KWIC, followed by the establishment of an economic engine and increased workforce.

Succeeding Plans and Studies

The following is a list of plans and studies that will need to be conducted as part of the implementation strategies.

- Site Grid Load Analysis
- National Environmental Policy Act (NEPA) Process
  - » Environmental Justice (EJ) Analysis
- Market Analysis

- Financial Plan
- Site Traffic Circulation Study
- Stock Island Traffic Study
- Zero-Emission Fleet Transition Plan
- Marketing Plan
- Route Optimization and Reconfiguration Plan

CONCLUSION

The results of this study concluded that implementing a multimodal transit facility, complete with employer-provided housing, parking garage, and commercial space is feasible at Key West Transit's current site, 5701 College Road. However, some initial steps will need to be completed in order to successfully implement everything. A market study, traffic analysis, and financial plan are suggested next studies to gain insight on the commercial use, necessary roadway improvements to accommodate for a potential increase in vehicular traffic along College Road, and for Key West Transit to financially plan for the KWIC. This will need to be followed by rezoning the site to accommodate residential and commercial use. Additionally, variances and exceptions will need to be pursued depending on the desired building density and height and parking requirements.