

PREPARED FOR:



KALIA PLAZA MOBILITY HUB

Alternatives Analysis

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PREPARED BY:

Kimley»Horn — G7O — WESLIN

City and County of Honolulu

Kalia Plaza Mobility Hub

Alternatives Analysis

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Department of Transportation Services

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INTRODUCTION

The primary objective of this Ala Moana Transit Plaza (hereafter referred to as Kalia Plaza Mobility Hub) Alternatives Analysis (AA) is to conduct conceptual planning and design studies to assess alternatives for the development of a new mobility hub in the vicinity of the future Ala Moana (Kalia) Rail Transit Station. The Project will evaluate potential uses of City and County of Honolulu-owned property and on-street transit facilities. The Project will identify active transportation street improvements to facilitate access to the transit facilities by pedestrians and cyclists. The Project will assess options for including commercial and/or residential uses within the mobility hub as part of an integrated development.

The Ala Moana Center (AMC) has been the major transportation hub for Honolulu for decades and is the busiest transit center in TheBus system. The AMC is currently served by 25 fixed bus routes (TheBus), as well as paratransit (TheHandi-Van) and private buses/trolleys (e.g., Waikiki Trolley). Bus stops are provided along Kona Street and several other streets surrounding the Ala Moana Shopping Mall. Figure 1 shows several buses dwelling along Kona Street in the eastbound direction. Figure 2 presents the existing stops for TheBus routes serving the AMC. In addition to the City's fixed-route services (TheBus), Honolulu has several private transportation carriers serving tourists and residents with a variety of small and large buses. Many of these private passenger carriers have their bus stops near the stops for TheBus at the AMC.



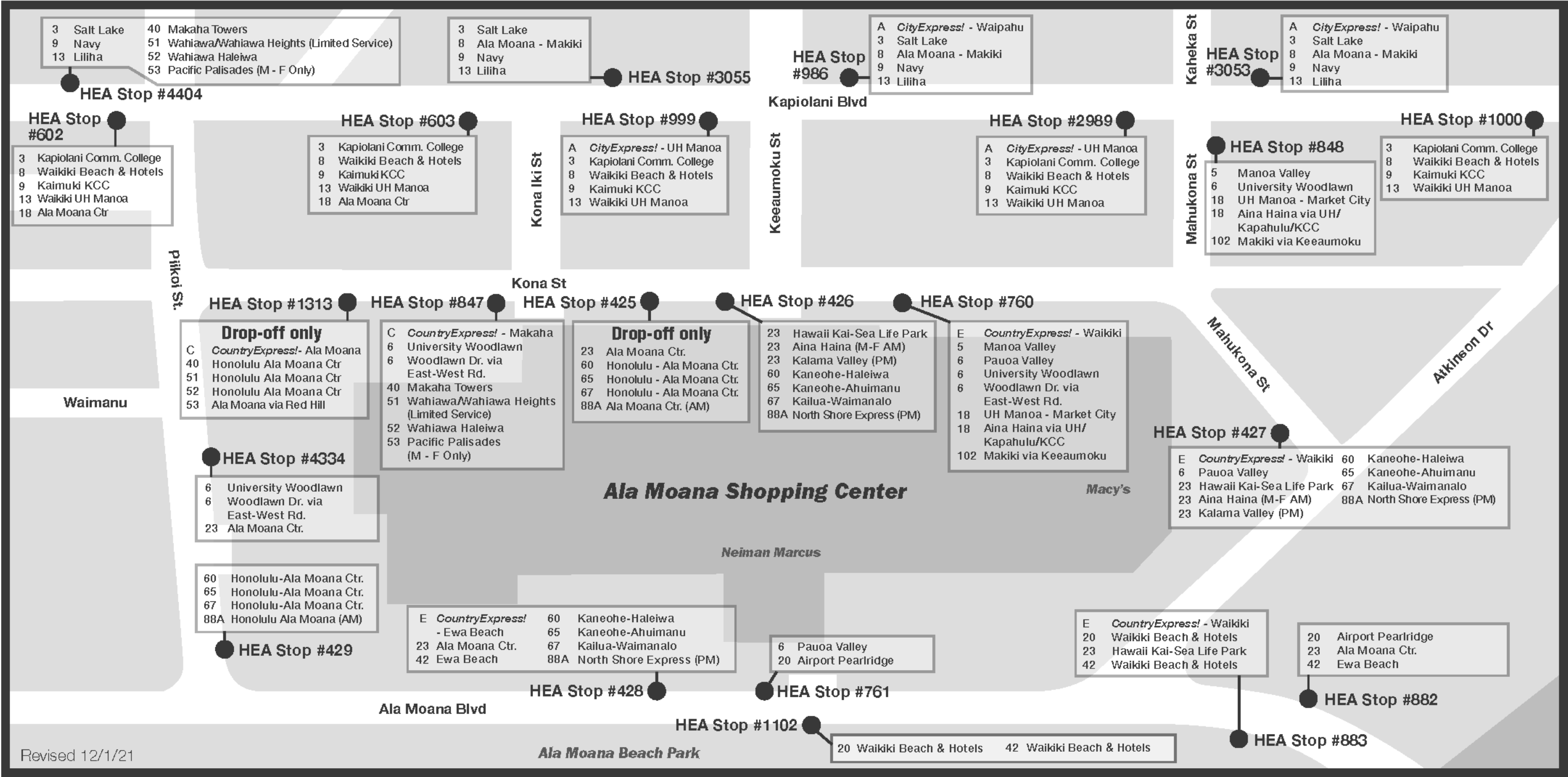
Figure 1 – Buses Dwelling along Kona Street at the Ala Moana Center

The Honolulu Rail Transit project will be an approximately 20-mile line between East Kapolei and the AMC, and the Kalia Rail Station will eventually serve as the eastern terminus of the approximately 21-station rail project. When the Kalia Rail Station opens at the AMC, bus service will be reconfigured to transport riders on buses to/from the Kalia Rail Station and substantial numbers of passengers will transfer between bus and rail. The Kalia Rail Station is expected to eventually be the system's busiest rail station.

The City and County of Honolulu (City) has acquired (see Parcel 3 in Figure 3) or is in the process of acquiring (see Parcel 1 in Figure 3) property in the vicinity of the Ala Moana Center for public use for transportation. The property labeled as Parcel 1 in Figure 3 is anticipated to accommodate vertical circulation for passengers to access the future elevated Kalia Rail Station, which is expected to be constructed above Kona Street. This AA will evaluate potential uses for these City-owned properties as part of the public transit network.

Although the primary objective of the Kalia Plaza Mobility Hub AA is to assess alternatives for a new mobility hub in the vicinity of the future Kalia Rail Station, in the interim the Kalia Plaza Mobility Hub will continue to serve as a major transfer point for the bus system. Thus, the Kalia Plaza Mobility Hub has independent utility as a bus transfer center in advance of the rail system's extension to Ala Moana.

Figure 2 - Ala Moana Transit Center Bus Stops



This aerial map illustrates the Ala Moana Center area in Honolulu, Hawaii, with a focus on the proposed Ala Moana Parking Structure. The map shows the following details:

- Streets:** Kapiolani Boulevard runs horizontally across the top. Kona Street runs horizontally across the middle. Kona Iki Street runs vertically through the center. Piikoi Street runs vertically on the left. Keolu Avenue runs vertically on the right.
- Key Landmarks and Buildings:**
 - Ala Moana Medical Building:** Located on the right side, near Keolu Avenue.
 - Ala Moana Shopping Center (Mauka Wing):** Located at the bottom right.
 - Ala Moana Plaza (538 DC):** Located at the bottom left.
 - Future Mixed Use Project (SKY):** Located at the top right.
 - Future Mixed Use Project (Hawaiian Ocean Plaza):** Located at the top center.
 - Future Mixed Use Project (The Central):** Located in the center, between Kona Iki Street and Kona Street.
 - Future Mixed Use Project:** Located at the bottom left, near Ala Moana Plaza.
 - Uraku Tower:** Located on the left side, near Piikoi Street.
 - Hawaii National Bank:** Located on the left side, near Piikoi Street.
 - 1357 Kapiolani Office Building:** Located in the center, between Kona Iki Street and Kona Street.
- Proposed and Existing Infrastructure:**
 - Ala Moana Parking Structure:** A large parking structure located at the bottom center, with a "Ramp Up" and "Elev" (elevator) area.
 - Upper Level Parking (Connection):** Located on the right side, near the Ala Moana Medical Building.
 - Rail Guideway:** A dashed line running horizontally across the middle, between Kona Street and Kona Iki Street.
- Highlighted Parcels:** Two parcels are highlighted with red boxes and numbered:
 - Parcel 1:** Located on the left side, between Kona Iki Street and Kona Street.
 - Parcel 3:** Located on the right side, between Kona Iki Street and Kona Street.
- Other Labels:**
 - KE'EAUMOKU ENTRY Into Ala Moana:** Located at the top right, near Keolu Avenue.
 - PIIKOI ENTRY Into Ala Moana:** Located at the bottom left, near Piikoi Street.

PURPOSE AND NEED

Purpose

There are currently 25 fixed bus routes that operate in the Ala Moana Center (AMC) district, with bus stops dispersed along Ala Moana Boulevard, Piikoi Street, Kona Street, Mahukona Street, Atkinson Drive, and Kapiolani Boulevard. The AMC has been the major transportation hub in Honolulu for decades.

The Honolulu Rail Transit project will be an approximately 20-mile line between East Kapolei and the AMC district, and the Kalia Rail Station will eventually serve as the eastern terminus of the approximately 21-station rail project. The Ala Moana (Kalia) Rail Station will be located on an elevated guideway above Kona Street. When the Kalia Rail Station opens, substantial numbers of passengers will transfer between bus and rail, particularly during peak periods.

The purpose of the Kalia Plaza Mobility Hub (Project) is to:

- Provide efficient connections between the Honolulu Rail Transit's Kalia Station and Honolulu's bus system (TheBus and TheHandi-Van).
- Promote safe access to the public transit system by reducing conflicts for pedestrians, cyclists, and other modes.
- Provide convenient pedestrian connections to existing and planned development in the area.
- Provide a transit facility that is readily accessible to individuals with disabilities and transit-dependent populations, including those with low incomes.
- Provide a secure, safe, and inviting space for transit patrons.

Although the primary objective of the Project is to develop a new mobility hub in the vicinity of the future Kalia Rail Station, in the interim the Kalia Mobility Hub will continue to serve as a major transfer point for the bus system. Thus, the Kalia Plaza Mobility Hub has independent utility as a bus transfer center in advance of the rail system's extension to Ala Moana.

Providing a connected multimodal transit system, promoting the use of public transportation, and providing infrastructure improvements for increased safety, better mobility, and a sustainable environment is consistent with goals of *Oahu Regional Transportation Plan*, the *Oahu General Plan*, the *Primary Urban Center Development Plan*, and the *Ala Moana Neighborhood Transit Oriented Development (TOD) Plan*.

Needs

Improve Connectivity between Rail and Bus Systems

The Kalia Rail Station will eventually serve as the eastern terminus of the Honolulu Rail Transit line. The Kalia Rail Station is expected to serve 22,610 daily boardings, and the Kalia Plaza Mobility Hub will be the busiest transit center in TheBus system. Travel forecasts indicate buses will be the dominant access mode at the Kalia Rail Station with approximately 79 percent of the passengers arriving by bus. Since the Kalia Rail Station will eventually be the eastern terminus of the rail system, there will be a large number of transfers between the rail system and buses traveling to and from activity centers further to the east, including Waikiki and University of Hawaii at Manoa (UH Manoa). Since bus is expected to be the most prevalent access mode at the Kalia Rail Station, providing efficient bus/rail connectivity is essential. The

Project should provide an efficient connection between the Kalia Rail Station and high-frequency bus services, connecting conveniently from street level directly to the elevated rail station concourse.

Improve Accessibility to Public Transportation System

Providing convenient access to the public transportation system at the Kalia Plaza Mobility Hub is important for providing a positive experience for the system's users and promoting use of the system. The Kalia Rail Station will be elevated above Kona Street. At ground level, Ala Moana Transit Center bus stops are currently dispersed across several blocks. In addition to the City's transportation services, Honolulu has private transportation carriers serving tourists and residents with a variety of small and large buses. Many of these private passenger carriers currently have bus stops near City stops at the Ala Moana Center. Honolulu has also seen a surge of micro-mobility (e.g. bikeshare) and transportation network companies (TNCs) that have quickly changed how people travel and access public transportation. Therefore, intermodal transfers must be consolidated, and the first-last mile connections must be convenient, to enhance the functionality of the transportation system and the user experience of the riders.

Improve Circulation for All Modes

The streets surrounding the TheBus system's Ala Moana Transit Center currently support not only the multitude of buses that currently operate in this area, but also automobile traffic, various tourist trolleys and charter buses, pedestrians, and cyclists. The circulation of these different modes in the AMC district needs to be designed in a way that promotes access, minimizes conflicts between modes, and enhances the overall public quality of life in the area. Walk/bike, after bus, will be the second most prevalent mode of access at the Kalia Rail Station. In addition, a fixed-route passenger survey found that approximately 45 percent of the TheBus system's passengers currently engage in other activities besides transferring between buses at the Ala Moana Transit Center. The large volume of activity in the area underscores the importance of sufficient sidewalks and facilities for pedestrians and cyclists for first-last mile connectivity, as well as the efficient allocation of curb space for taxis, TNCs, and private trolleys and buses.

Improve Bus Operations

There are currently 25 fixed bus routes that operate in the AMC district, with multiple stops around the Ala Moana Transit Center. Many of these bus routes terminate at the Ala Moana Transit Center and use the area for layovers. Bus operations would benefit from having sufficient bus staging and layover areas in a consolidated facility, reducing the need for unnecessary circulation, and improving efficiency. As part of its resilience strategy, the City has established a goal of transitioning its bus fleet to electric vehicles by 2035. Bus charging equipment may be required at layover facilities to support the transition to an electric bus fleet.

Improve Safety

Visitors of the AMC district currently walk and cycle along several streets with high volumes of automobile traffic. The City has identified high pedestrian injury locations based on injury and fatality data provided by the Honolulu Police Department, the Department of Health/Emergency Medical Services, and the national Fatality Analysis Reporting System. These locations are prioritized into Tier 1 (very high pedestrian injury) and Tier 2 (high pedestrian injury) groupings. Within the AMC district, both Piikoi Street and Keeaumoku Street are Tier 1 corridors, while Kapiolani Boulevard is a Tier 2 corridor.

The intersections of Kapiolani Boulevard and Piikoi Street, Kapiolani Boulevard and Keeaumoku Street, and Kona Street and Piikoi Street are Tier 1 intersections. *Per the Bus/Rail Integration Plan for the Ala Moana Center Station*, approximately 3,700 daily passengers would bike or walk to access the Kalia Rail Station, comprising 16 percent of the forecast total daily boardings. With such a large number of pedestrians and cyclists accessing public transportation, the safety of the users of the transportation facilities, of all ages and abilities, is imperative.

Improve Transportation Equity

Accessible, affordable transportation is vital to the livelihood of a community and its residents; it dictates how people can access good jobs, better education, and quality health care. Transportation equity is the fair distribution of travel resources to make sure that low-income communities and communities of color are not underserved and disadvantaged. In an on-board transit survey, five percent of riders on TheBus self-identified as having a disability, about half of the riders are women, more than 75 percent of the riders are people of color, and 66 percent of riders spoke a language other than English at home. There are also many riders in lower-income groups. Although the AMC district is not directly located in an environmental justice (EJ) block group, there are various EJ block groups in a 0.5-mile radius. The AMC district has a greater than average percentage of households with no vehicles than the overall service area of the Honolulu Rail Transit project. This Project will enhance access to a broader transportation system for people of color and low-income users.

Support Growth and Economic Development

Convenient access to jobs, housing, shopping, and recreation spurs economic development. High-value businesses are increasingly choosing locations in proximity to quality transit due to challenges in workplace accessibility, such as delays and congestion experienced in auto-centric commutes. The Project will support transit-oriented development (TOD) that can provide a variety of economic benefits, including an increased tax base, more jobs for local workers, and reduced congestion by concentrating a mix of uses in a walkable area. The Project could support goals and objectives of the *Ala Moana Neighborhood Transit Oriented Development (TOD) Plan*, such as to focus more intense development within the TOD precinct, to improve the quality and safety of the walking environment in the AMC district, and to create active urban street edges through strong street frontages.

PROGRAM OF FACILITIES

The program of facility requirements (i.e., the elements needed for the mobility hub to support the needs of transit users) for a new mobility hub needs to be defined for the long-term (permanent solution with full buildout and opening of the Kalia Rail Station) and short-term (interim solution before the construction of the Honolulu Rail Transit project) conditions. Existing conditions and operations at the AMC Transit Center were evaluated to understand the current conditions for buses and other access modes. Future conditions were informed by prior studies including the *Bus/Rail Integration Plan for Ala Moana Center Station* (2014) and the *Waikiki Regional Circulator Study* (2013). Based on the analysis of existing and future conditions and operations, the program of facility requirements for a new mobility hub were identified.

Defining the Short- and Long-Term Conditions

Short-Term Conditions

The short-term conditions are defined as the interim period before the opening of the Kalia Rail Station. The Kalia Rail Station will be located on an elevated guideway above Kona Street. In the short-term, the Kalia Mobility Hub will continue to serve as a major transfer point for the bus system. In the interim, the construction of the rail project will require street closures in the area that will disrupt circulation in the AMC district and displace existing bus stops on Kona Street.

The focus of the short-term conditions will be enhancing bus operations and enhancing the passenger experience for bus riders. The Kalia Mobility Hub offers the potential to improve connectivity for transfers among bus routes, improve bus circulation patterns, improve access to the transit system for pedestrians and cyclists, improve safety for pedestrians and cyclists, and provide passenger amenities.

A primary focus for **interim conditions** will be maintaining bus operations during the construction of the rail project. Due to street closures and circulation impacts, the alignments of bus routes within the AMC district may need to be revised and bus stops may need to be relocated. In addition to investigating opportunities for relocating bus stops within the street right-of-way, there also may be opportunity to develop off-street facilities on property acquired by the City. An objective will be to preserve as many mobility hub improvements made for the short-term conditions as feasible, for the long-term use after the opening of the Kalia Rail Station.

While transit stations and mobility hubs are planned and designed to accommodate several access modes, an emphasis needs to be placed on walk and bike access. Ultimately, no matter how they get there, everyone eventually walks or rolls into the station or mobility hub. The emphasis on non-motorized access includes internal circulation/connections between the various mobility hub elements, such as entrances, sidewalks, on-street bus stops, off-street bus transit centers, and paths to the station/mobility hub from the surrounding community.

The City has already acquired a site (Parcel 3) located at 1423 Kapiolani Boulevard (see Figure 3), which occupies approximately 0.29 acres (see Figure 3). This site provides a 50-foot corridor between Kona Street and Kapiolani Boulevard, situated between Kona Iki Street and Keeaumoku Street. The City is in the process of acquiring Parcel 1 (approximately 0.86 acres) for the construction of ground-floor access to the Kalia Rail Station (see Figure 3). An objective will be to develop mobility hub alternatives that

preserve the opportunity for residential and/or commercial uses as part of an integrated development on Parcel 1.

Long-Term Conditions

The long-term conditions are defined as the period after the completion of extension of the Honolulu Rail Transit project to the AMC district and the opening of the Kalia Rail Station. The intended long-term objective is to develop a multimodal transit center or mobility hub in proximity to the Kalia Rail Station providing efficient bus routing and passenger access. Several prior studies and plans have investigated the long-term conditions including the *Bus/Rail Integration Plan for Ala Moana Center Station, Waikiki Regional Circulator Study, Station Access and Modal Interface Report* (2011), and the *Ala Moana Neighborhood Transit-Oriented Development Plan* (2016). These prior studies and plans outline a vision for the area including enhancing connectivity for riders of the rail and bus systems and providing complete streets that accommodate bus circulation and bus stops and facilitate first-last mile access for pedestrians and bicyclists.

With the future opening of the Kalia Rail Station, substantial numbers of passengers are expected to transfer between bus and rail, particularly during peak periods. Bus operations will evolve based on passenger demand, land use changes, and roadway improvements. Opportunities for a combination of on-street and off-street facilities for buses will be investigated.

Defining the Program for the Mobility Hub

Fixed-Route Bus Operations

Extensive local bus service is provided to the AMC district; however, bus stop locations are dispersed throughout the area. In addition, substantial transfers currently occur among bus routes at this transit center. There are currently 25 fixed bus routes that operate in the AMC district, with bus stops located along Ala Moana Boulevard, Piikoi Street, Kona Street, Mahukona Street, Atkinson Drive, and Kapiolani Boulevard. Routes along Kona Street generally encircle the AMC in a clockwise flow.

When the Kalia Rail Station becomes operational, changes to current bus routes will be made to support the rail system, particularly for the bus routes to serve the large volumes of bus/rail transfers that will occur. In particular, the Kalia Plaza Mobility Hub will provide the major connection for those transferring between the rail line and buses to access Waikiki and UH Manoa.

Although the number of bus trips at Kalia Plaza Mobility Hub will increase in the peak hours with the opening of the Kalia Rail Station, the number of bus routes serving the Kalia Plaza Mobility Hub will decrease from 25 to 16 according to the *Bus/Rail Integration Plan for Ala Moana Center Station*. Several bus routes are expected to be consolidated and/or eliminated when the rail project begins operating. However, new limited-stop connector routes are expected to be introduced to meet the expected high volumes of transferring passengers providing frequent service to major destinations. Overall, the number of bus trips accessing the Kalia Plaza Mobility Hub during the AM peak hour will increase from 64 for existing 2019 conditions to approximately 103 in 2030 corresponding to the opening of the Kalia Rail Station, as further explained below.

Table 1 presents current information developed for this analysis including existing (2019) bus routes serving the AMC and the potential bus service in 2030. Information presented in Table 1 includes bus routes, frequencies, directions of travel, existing and potential future stop locations, and potential

vehicle sizes. The information presented in Table 1 was prepared to inform the program of facility requirements for the Kalia Plaza Mobility Hub. Bus operations will evolve based on passenger demand,

Table 1 - Existing (2019) Bus Routes Serving the AMC and the Potential Bus Service with Opening of Kalia Rail Station

Bus Routes	Locations of Current			Number of Peak Period Trips			Recommended Locations with Opening of Kalia Rail Station			Number of Peak Period Trips			Maximum Vehicle Size
	Bus Routes Serving AMC			7:00 AM hour			Bus Routes Serving AMC			7:00 AM hour			
	Kapiolani Blvd	Kona Street	Ala Moana Blvd	Diamond Head Bound	Ewa Bound	Average Frequency	Kapiolani Blvd	Kona Street	Ala Moana Blvd	Diamond Head Bound	Ewa Bound	Average Frequency	
A	✓			4	4	15-min	✓			6	6	10-min	60-foot
3	✓			3	4	20-min	✓			5	5	12-min	40-foot
9	✓			2	2	30-min	☐	✓ T		4		15-min	40-foot
13	✓			3	3	20-min	✓			4	4	15-min	60-foot
C		✓ T			2	30-min	Discontinued						
E		✓ DHB	✓ Ewa	2	2	30-min	Discontinued						
UH-C	New Connector Routes							✓ T		15		4-min	60-foot
W-C-A								✓ T		20		3-min	60-foot
W-C-B								✓ T		6		10-min	60-foot
5		✓ T		1		45-min		✓ T		3		20-min	40-foot
6		✓	S	2	2	30-min		✓	S	3	3	20-min	40-foot
8		✓ T	S	4 (at 8 AM)		15-min	Discontinued						
17		✓ TR		2		30-min		✓ T		2		30-min	40-foot
18		✓ TR		1		60-min		✓ T		2		30-min	40-foot
23		✓ T	☐	2		30-min		✓ T	☐	2		30-min	40-foot
40		✓ T			2	30-min		✓ T			3	20-min	60-foot
51		✓ T			3	20-min	Discontinued						
52		✓ T			2	30-min		✓ T			2	30-min	60-foot
53		✓ T			1	60-min	Discontinued						
60		✓ T			2	30-min	Discontinued						
65		✓ T			1	60-min	Discontinued						
67		✓ T			2	30-min	Discontinued						
88A		✓ T		2 peak arrivals 6:00 AM hour				✓ T		2 peak arrivals 6:00 AM hour			40-foot
42			✓	2	2	30-min	Discontinued						
20			✓	3	3	20-min			✓	4	4	15-min	60-foot
98A			✓	2 peak arrivals 6:00 AM hour			Discontinued						
Totals			☐	27	37					76	27		
Kapiolani			☐	12	13					15	15		
Kona -T			☐	10	17					57	8		
Ala Moana			☐	5	7					4	4		

Notes:

Discontinued = Route may continue service but not to AMC in 2030

DHB = Diamond Head Bound

Ewa = Ewa Bound

min = Minutes

S = Secondary stop - for routes that serve both sides

T = AMC is terminus for the routes

TR = AMC is terminus for the routes, but layover/recovery is at the other end of the routes

land use changes, and roadway improvements, as well as updates to the ridership forecasts for the Kalia Rail Station and to the rail access mode split (i.e. bus, walk, bike, etc.).

As presented in Table 1, three new connector bus routes (UH Manoa (UH-C), Waikiki – Kuhio Avenue (W-C-A), and Waikiki – Ala Moana Boulevard (W-C-B)) are proposed to serve the Kalia Rail Station with service as frequent as every three to four minutes. These routes are proposed to terminate at the Kalia Plaza Mobility Hub and will produce the greatest demands for bus bays. Based on expected ridership, these routes should have stops that are as close as possible to the rail station entrances. The remaining bus routes serving the Kalia Plaza Mobility Hub have frequencies ranging from 10 minutes to 30 minutes during the peak hour. Several routes, including the 5, 23, 40, 52, and 88A, will terminate and layover for schedule recovery at the Kalia Plaza Mobility Hub. Layover and staging requirements need to be considered in the programming of facilities for the AMC mobility hub.

The fixed-route bus (TheBus) stops at the Kalia Plaza Mobility Hub should be configured and located per the following criteria:

- Operational impacts should be considered including minimizing unnecessary bus circulation within the AMC district and minimizing non-revenue (deadhead) movement.
- Street crossings should be as minimal as possible among bus stops and the future rail station to facilitate safe and efficient transfers for passengers.
- Infrastructure should be based on operating characteristics of routes and buses.
 - Stop lengths should accommodate different size buses (40-foot and 60-foot).
 - Stops should provide sufficient room for buses to maneuver around vehicles that are stopped.
 - Bus stops should be sited based upon estimated route-specific ridership levels—routes with higher transfers to the rail system should have stops that are as close as possible to rail station entrances.
 - Layover area for schedule recovery for routes that terminate at the AMC and a staging area for buses entering service should be provided nearby but not in a stop being used for passenger loading.

Layover Accommodations

The number of bus berths provided at a mobility hub depends on a variety of factors, including the size and layout of the site; the number of routes passing through the mobility hub and their headways (i.e. frequency); and the number of routes terminating at the mobility hub, their headways, their scheduled layover /recovery time, and the type of buses (e.g., 40-foot, 60-foot).

There are several bus routes that currently layover at the AMC. A layover is a designated stopover location for a bus at or near the end of the route or at a turn back point, with time built into the schedule between arrivals and departures used for the recovery of delays and preparation for the return trip. Layover time may include recovery time and operator rest time as two independent components. Providing layover berths for buses that end their route at the Kalia Plaza Mobility Hub and facilities for operators (i.e. comfort station with restroom and lounge and parking spaces for bus operations

supervisors) are important considerations in the programming of facilities for the Kalia Plaza Mobility Hub.

A layover area for schedule recovery for routes that terminate at the Kalia Plaza Mobility Hub and a staging area for buses that require pre-positioning before entering service should be provided nearby but not in the stops being used for passenger loading. The projected requirements for bus stops for the fixed-route buses assume that layovers will not occur at the designated bus stops. If layovers were to occur within the designated bus stops for the fixed routes, additional bus stops would be required since the turnover time for the stops would increase. Separating the layover (non-revenue) from passenger (revenue) stops improves the overall function of the mobility hub. Although the layover and staging area can be positioned in a more remote portion of the Kalia Plaza Mobility Hub, the location should be as close to the bus stops as possible to minimize non-revenue (deadhead) movement.

Currently, layover or recovery functions primarily occur along Kona Street. Since Kona Street will be impacted by the construction of the rail project during the interim conditions, an alternate location will be necessary for layovers. Note that several routes which currently terminate at the AMC transit center are expected to be discontinued in the long term with the opening of the rail project. However, layover accommodations for these routes will be necessary for the short-term conditions. For the long-term conditions, several routes, including the 5, 23, 40, 52, and 88A, will terminate and layover for schedule recovery at the Kalia Plaza Mobility Hub.

In addition, there is a need for a staging area for pre-positioning of buses to serve new high frequency limited-stop connector routes that will be arriving from the bus garages in Kalihi-Palama and Pearl City. These bus garages are located too far away with too much variability in travel time to supply the Kalia Plaza Mobility Hub with buses to reliably meet peak period needs. Additional linear curb space should be allocated in proximity to the Kalia Plaza Mobility Hub for the staging of buses entering service on the new high frequency connector routes.

Another consideration for long-term conditions is the City's goal to transition to a zero-emission bus fleet by 2035 (see Figure 4). Layovers provide the opportunity for on-route charging when electric vehicles (EVs) are deployed on routes serving the Kalia Plaza Mobility Hub in the future. Accommodating EVs should be considered for the long-term conditions, including space requirements for charging equipment and supporting infrastructure.



Figure 4 - New 40-Foot Battery-Electric Bus
Source: Mass Transit Magazine

Short-Term Conditions

To determine the number of bus stops needed to accommodate the peak demand in the short-term conditions (i.e. in advance of the opening of the Honolulu Rail Transit project and the Kalia Rail Station), current (2019) bus service was examined. Per the *Transit Capacity and Quality of Service Manual, 3rd Edition*, the number of bus stops provided at a terminal depends on a variety of factors including:

- Size and layout of the terminal.
- Number of routes passing through the terminal and their headways.
- Number of routes terminating at the terminal, their headways, and their scheduled layover /recovery time.
- Type of buses (e.g., 40-foot, 60-foot).

The Transit Capacity and Quality of Service Manual, 3rd Edition, prescribes a method for determining the maximum number of bus stops as follows.

- Routes running through the terminal require two stops to pick up and drop off passengers (one for each direction of the route).
- Routes terminating at the terminal require one stop to pick up passengers and, potentially, additional layover stops, if it is likely that one or more following buses on a route would arrive prior to the end of a given bus's recovery time.
- The number of stops needed for a route is determined by the route's recovery time at the terminal divided by the route headway, multiplied by a factor of 1.2 to account for early-arriving buses, rounded up.

Based on this methodology, a maximum of 13 buses may be stopped concurrently at the Kalia Plaza Mobility Hub during the AM peak hour (see Table 2) and an additional four bus stops are required in each direction on Kapiolani Boulevard for routes passing through the mobility hub (Routes A, 3, 9, and 13). Accordingly, alternatives developed for the AMC mobility hub for the short-term conditions should provide no less than 13 bus stops for fixed-route bus operations, if feasible, along with one additional bus stop for TheHandi-Van paratransit operations.

Interim Conditions. As many as four existing bus stops along Kona Street between Piikoi Street and Mahukona Street may be impacted by the construction of the rail project during the interim conditions. Existing Honolulu Estimated Arrival (HEA) Stop Numbers 1313, 847, 426 and 760 function as bus stops for Routes C, E, 6, 8, 17, 18, 23, 40, 51, 52, 53, 60, 65, 67 and 88A (see Figure 2). These four bus stops will be rendered inoperable during construction. The interim conditions will need to provide bus stop accommodations for the impacted bus routes at alternative locations.

Table 2 - Number of Bus Stops Required at the Kalia Plaza Mobility Hub for Short-Term Conditions

Bus Routes	Short-Term Peak Conditions Required Bus Stops			
	Average Recovery	Average Headway (Minutes)	Calculate	Stops
On-Street	Buses remain on Kapiolani Boulevard, no recovery or layover; two-directional travel			
A	--	15	--	Current on-street stops
3	--	20	--	
9	--	30	--	
13	--	20	--	
Terminal	Buses serve AMC Mobility Hub			
C	30	30	1.20	2
E		30	0.50	
UH - C				
W - C-A				
W - C-B				
5		45		0.5
6		30		0.5
8	3	15	0.24	1
17		30		0.5
18		60		0.5
23	17	30	0.68	1
40	26	30	1.04	2
51	(with Route 52)			
52	20	40	0.60	1
53	15	40	0.45	1
60	21	30	0.84	1
65	21	30	0.84	1
67	22	30	0.88	1
Handi-Van				1
Total	14 stops at AMC Mobility Hub			

Notes:

- 1) Assumes Routes C and E share a position.
- 2) Assumes Routes 5 and 6 share a position and Routes 17 and 18 share a position.

Long-Term Conditions

To determine the number of bus stops required at the Kalia Plaza Mobility Hub for the long-term conditions (i.e. after the extension of the Honolulu Rail Transit project and the opening of the Kalia Rail Station), the anticipated future bus service needed to be considered. As presented in Table 1, although the number of bus routes accessing the AMC mobility is expected to decrease to 16, the number of buses accessing the Kalia Plaza Mobility Hub is expected to increase from 64 for existing 2019 conditions to approximately 103 corresponding to the opening of the Kalia Rail Station. The increased number of buses results from more frequent service on several of the existing bus routes that will continue to serve the AMC district and the implementation of the three new connector bus routes as follows.

- Route UH - C, with 4-minute frequencies during the peak hour
- Route W - C-A, with 3-minute frequencies during the peak hour
- Route W - C-B, with 10-minute frequencies during the peak hour

For the long-term conditions, a maximum of 11 fixed-route buses may be stopped concurrently at the Kalia Plaza Mobility Hub during the AM peak hour (see Table 3) and an additional three to four bus stops are required in each direction on Kapiolani Boulevard for routes passing through the mobility hub (Routes A, 3, 9, and 13). One additional bus stop should be provided at the Kalia Plaza Mobility Hub for TheHandi-Van paratransit operations. Accordingly, alternatives developed for the Kalia Plaza Mobility Hub for the long-term conditions should provide no less than 12 bus stops, if feasible, including one bus stop for TheHandi-Van paratransit operations.

Table 3 - Number of Bus Stops Required at AMC Mobility Hub for Long-Term Conditions

Bus Routes	Future Peak Conditions (with Rail) Required Bus Stops				Maximum Vehicle Size
	Average Recovery	Average Headway (Minutes)	Calculate	Stops	
On-Street	Buses remain on-street, no recovery or layover; two-directional travel				
A	--	10	--	4 stops, each direction (see note)	60-foot
3	--	12	--		40-foot
9	--	15	--		40-foot
13	--	15	--		60-foot
Terminal	Buses serve AMC Mobility Hub				
C	Discontinued				
E	Discontinued				
UH - C	5	4	1.50	2	60-foot
W - C-A	5	3	2.00	2	60-foot
W - C-B	5	10	0.60	1	60-foot
5	5	20	0.3	0.5	40-foot
6	5	20	0.3	0.5	40-foot
8	Discontinued				
17	10	30	0.4	0.5	40-foot
18	10	30	0.4	0.5	40-foot
23	17	30	0.68	1	40-foot
40	26	20	1.56	2	60-foot
51	Discontinued				
52	20	30	0.80	1	60-foot
53	Discontinued				
60	Discontinued				
65	Discontinued				
67	Discontinued				
Handi-Van				1	30-foot
Total	12 stops at AMC Mobility Hub				

Notes:

- 1) On-street stops should accommodate 4 buses in each direction in proximity to the AMC Rail Station.
- 2) Assumes Routes 5 and 6 share a position and Routes 17 and 18 share a position.
- 3) Does not include space for the staging of buses entering service on the new high-frequency connector routes.

Paratransit Operations

TheHandi-Van is a public transit service for persons with disabilities who are unable to use the City's fixed-route bus service. The Americans with Disabilities Act of 1990 (ADA) requires fixed-route bus systems to provide complementary paratransit origin-to-destination (curb-to-curb) service to eligible persons who, because of a disability, are unable to access and use the regular bus system. Advanced reservations are required one to three days in advance of the trip. Passengers are picked up at the nearest and safest point next to the curbside of the public street address requested. TheHandi-Van generally uses cutaway vans with a maximum length of 26 feet (see Figure 5).



Figure 5 - TheHandi-Van Cutaway Van
Source: Honolulu Star-Advertiser

Paratransit loading and off-loading locations should be located as close as possible to the Kalia Rail Station and the Kalia Plaza Mobility Hub to facilitate transfers to the rail system and fixed-route bus services. The loading zones should be handicap accessible and comply with current ADA requirements.

A staging location should be provided for the pre-positioning of TheHandi-Van vehicles at the Kalia Plaza Mobility Hub. Per the *Bus/Rail Integration Plan for Ala Moana Center Station*, designated space for TheHandi-Van should be provided at an off-street facility if possible.

Private Bus Operations

The AMC district is served by several private buses/trolley operators including the Waikiki Trolley's Pink Line, Purple Line, and Red Line. Other private operators offer tours and hop-on/hop-off services (e.g., AlohaBus, LeaLea Trolley, JALPAK). Heavy passenger boarding and alighting activity at the AMC occurs at off-street terminals including on the AMC mall property parallel to Ala Moana Boulevard (i.e. Ala Moana Boulevard trolley depot). There are currently three shelters provided for the private bus operators at this terminal on the AMC mall property.

Private bus operators use a variety of vehicles ranging from vans to motor coaches and double-decker buses (see Figure 6). Many passengers using these private bus operations are anticipated to transfer to

the rail system in the future. Options for private operators include the AMC mall continuing to accommodate their operations on mall property (a potential location is on the ground floor of the mall's parking garage across Kona Street from the future rail station) or accommodating their operations in the Kalia Plaza Mobility Hub.



Figure 6 - Waikiki Trolley Pink Line Stop at AMC
Source: waikikitrolley.com

Other Facilities

Consideration for additional infrastructure and facilities to be included in the Kalia Plaza Mobility Hub are noted below. The mobility hub may be split amongst multiple areas and be a combination of on-street and off-street facilities. The items listed below may be desirable to be included within or in close proximity to the mobility hub.

Bikes

Per the *Bus/Rail Integration Plan for Ala Moana Center Station*, walk/bike will be the second largest mode of access at the Kalia Rail Station representing approximately 16 percent of the passengers or 3,680 daily trips. Based on the mode split for the area, the ratio of walk trips to bike trips is 11 to 1. Accordingly, approximately 300 daily bike trips are expected as the mode of access at the Kalia Rail Station.

Secure bike parking should be considered an integral component of the Kalia Plaza Mobility Hub to encourage patrons to access the mobility hub via an active transportation mode and reduce automobile travel. Secure bike should be provided in proximity to the Kalia Rail Station and Kalia Plaza Mobility Hub to facilitate convenient access to the transit system. Fear of bike theft and the lack of secure parking are often cited as reasons why people hesitate to ride a bike to access a destination. Bike parking should be located in well-lit, secure locations and should not interfere with pedestrian movement or ADA accessibility.

Bike parking can be provided with a combination of bike racks in the street right-of-way and off-street facilities (bike lockers, bike room in the Kalia Plaza Mobility Hub). If users will typically be parking their bike for two hours or longer, they are likely to value security and shelter above the convenience and ease that characterizes short-term parking. Bicycle lockers that are pre-reserved, key operated, or bike rooms (see Figure 7) are considered the best protection against bicycle theft and are ideally suited for “long-term” bike parking application.



Figure 7 – Bike Rooms Offer Shelter and Security for Long-Term Bike Parking
Source: sarisinfrastructure.com

Outdoor bike racks are the most basic and common “short-term” bike parking option. On-street “bike corrals” located in the street area adjacent to the curb can be used for areas with limited sidewalk spaces to make use of on-street areas that are unsuitable for automobile parking.

Bikeshare has emerged as a popular transportation option since the Bus/Rail Integration Plan for Ala Moana Center Station was completed in 2014. Biki (see Figure 8) is Honolulu’s bikeshare system that was launched in June 2017. Biki has 1,300 bikes at over 130 self-service bikeshare stations (Biki Stops) including several within the AMC district. With the growing popularity of bikeshare, the number of bike parking spaces at the Kalia Plaza Mobility Hub may be reduced by approximately 50 percent to approximately 150 bike parking spaces, in particular, if bikeshare stations are provided in close proximity to the Kaila Rail Station.



Figure 8 – Biki Bikeshare Station
Source: gobiki.org

Micromobility

Micromobility refers to a range of small, lightweight vehicles operating at speeds typically below 15 miles per hour including electric/pedal-assisted bicycles, electric scooters, and electric skateboards. Micromobility vehicles may become popular for first-last mile access to the Kalia Rail Station and Kalia Plaza Mobility Hub. In particular, electric scooters have experienced a rapid adoption in many locations offered by companies such as Lime and Bird. However, the deployment of electric scooters in Honolulu is pending legislation to amend the vehicle code at the state level and the adoption of safety rules.



Figure 9 - Lime Temporarily Provided Electric Scooters Rental in Honolulu in 2018

Source: Honolulu Civil Beat

A recurring problem associated with electric scooters is cluttering of sidewalks and public spaces (see Figure 9). Some cities now require companies to deploy their rental scooters in designated parking areas or corrals where riders must place the scooters when they are finished riding. Consideration should be given for allocating space at the Kalia Plaza Mobility Hub for a micromobility corral.

Taxis and Transportation Network Companies

Taxis and transportation network companies (TNCs) should be accommodated in some fashion in relative proximity to the Kaila Rail Station and the Kalia Plaza Mobility Hub. Currently, several taxi stands are provided at the AMC mall. TNCs such as Uber and Lyft, also known as ridehailing companies, provide on-demand transportation services for passengers and have been widely adopted over the past few years. Passengers request rides directly from private drivers under contract with a TNC, typically through the use of a smartphone app, and are offered upfront pricing and route previews (see Figure 10). Currently, several rideshare stands are provided for TNC pick-ups at the AMC mall. A pick-up zone should be designated for taxis and TNCs in proximity to the Kalia



Figure 10 - TNCs Connect Riders with Private Drivers

Source: lifewire.com

Plaza Mobility Hub to reduce disruption to traffic flow resulting from disorganized loading activities in the surrounding streets.

Passenger Facilities

A variety of passenger facilities should be provided at a mobility hub to provide travel information and a safe and secure environment. Passenger facilities that should be considered for the Kalia Plaza Mobility Hub include:

- **Waiting areas including shelters and benches** – comfortable, easily accessible, and well-designed waiting areas should be provided at the Kalia Plaza Mobility Hub. Facilities that should be considered include weather protection, seating, trash receptacles, lighting, Wi-Fi connectivity, and charging stations for devices.
- **Fare purchase** – off-vehicle fare payment improves operations by reducing the time required for passengers boarding the bus and correspondingly reducing the dwell times for buses at the stops. Fare vending machines (see Figure 11) allow riders to purchase single fares, add value to fare cards (HOLO card), or generate proof-of-payment (PoP) tickets from passes. Fare vending machines that incorporate video displays should be designed and located so that the display is legible under a variety of conditions
- **Wayfinding including real-time information** – wayfinding is an important element for directing users to the mobility hub and to the appropriate transit service within the mobility hub, including facilitating smooth transfers between routes and modes. Real-time information facilitates transfers between transit modes and allows transportation users to pick the best transit option in real-time. Real-time information also warns users of expected delays or changes in transit service and can help improve the customer experience. Real-time information can be displayed on dynamic message signs or provided at digital kiosks (see Figure 12). Providing multilingual wayfinding information is an important consideration in a high tourist area such as the AMC district.



Figure 11 - Fare Vending Machine
Source: Honolulu Star-Advertiser

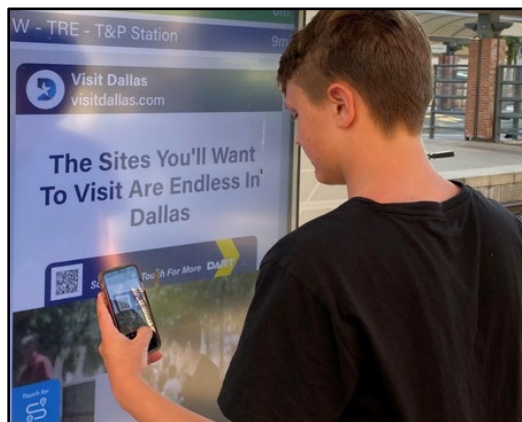


Figure 12 - Touchless Digital Kiosk at Dallas DART Station
Source: Smart Cities World

- **Public restrooms** should be considered for the Kalia Plaza Mobility Hub, including safety and maintenance implications.
- **Public space and art** – a mobility hub should provide a pleasant public realm including open spaces, plazas, landscaping, murals, and artwork.
- **Vendors and transit-oriented retail** can be provided onsite or nearby sites within walking distance and may range from temporary structures, such as carts, kiosks, or other flexible structures, to fixed permanent retail spaces. Keys to successful transit-oriented retail (see Figure 13) include location (i.e. placement along pedestrian corridors/walking paths), not building too much based on the context of the area (i.e. proximity to the AMC mall), and providing a mix of retail and services.



Figure 13 - Retail at Marine Gateway TOD, Vancouver

Source: marinegateway.com

Operations and Maintenance

Accommodations need to be provided in the Kalia Plaza Mobility Hub for operations and maintenance support functions including **security, janitorial services, and other support functions**. Security options may include space for law enforcement/on-site security personnel, security cameras, lighting, and maintaining clear sight lines for natural surveillance consistent with crime prevention through environmental design (CPTED) principles. A storage room/closet should include a sink or floor-set mop sink and should be situated in an area that is clean, dry, and well-ventilated. A comfort station should be provided for operators near the layover area which could include a break room and bathrooms for staff.

Mixed-Use Joint Development Opportunities

An objective of this Kalia Plaza Mobility Hub AA is to evaluate opportunities for mixed-use development as part of an integrated joint development project delivery approach to leverage transit investment. The area around the AMC has been studied in previous planning efforts, including a 2012 market analysis specific to the Ala Moana Station Area and a 2019 demand allocation analysis for development along the entire Honolulu Rail Transit Project. As part of this AA, the previously prepared market analyses were reviewed and updated based on current conditions to inform future development opportunities within the mobility hub as part of an integrated development. Findings are documented under separate cover in the Market Analysis Update (December 23, 2020) and are summarized below. The Market Analysis Update is also included as **Appendix A**.

Demand Allocation Summary

This analysis relied on demand projections prepared as part of the *Honolulu TOD Demand Analysis and Market Projections*, prepared by Strategic Economics in 2019. Projections and allocation by real estate sector were prepared for each one-half mile station area for the entire transit corridor. Ala Moana (Kalia) was grouped with two other station areas, Kakaako and Civic Center. According to the TOD Demand Analysis

methodology, groupings were created based on similarities in land use context, location, distance from each other, and market dynamics. The numbers presented in Figure 14 represent forecasted demand for the three station areas in the grouping through 2040.

Figure 14 - Real Estate Demand Summary (2018-2040)



Source: Strategic Economics

The Ala Moana (Kalia), Kakaako, and Civic Center station areas could support a variety of land uses through the 20+ year forecast horizon. These allocations are leveraged in this analysis to inform opportunities for the Kalia Plaza Mobility Hub. The forecasts help to inform competitive real estate sectors at the Kalia Plaza Mobility Hub property (Parcel 1) and support market opportunities that are based in market reality.

Opportunities by Real Estate Sector

Multifamily Residential

Multifamily residential represents the strongest development opportunity for the Kalia Plaza Mobility Hub. The Mobility Hub presents a unique opportunity to leverage private mixed-use development as part of a multimodal transportation center. The AMC district is a high-value residential area given its location with proximity to the waterfront, the AMC shopping mall, the Convention Center, and, in the future, a rail station that will connect the area to the downtown job center. The target market for new residential units in the area includes households on both ends of the age spectrum: (1) young professionals seeking a home near jobs, shopping, dining, and nightlife; as well as (2) active adults who want to downsize.

Through 2040, Strategic Economics forecast residential demand of 6,300 to 6,800 residential units beyond what has been identified as currently in the development pipeline. Given the size, access, and visibility of the Mobility Hub site, the project would be well-positioned to capture a portion of the future demand. New condominium projects in the area generally range in size from 300 to 500 units, which represents 5.0 percent to 7.0 percent of the total demand forecast for the three station areas in the defined grouping.

A review of both condominium and apartment opportunities in the AMC district leans towards a for-sale product, although either would be appropriate. Tapestry Segmentation Analysis indicates that the three largest segments of residents in the AMC district have an affinity for multifamily rental housing, as many are young and comparatively more transient. It should be noted that the property also presents a key opportunity to incorporate affordable housing in a high-price area. For instance, The Central Ala Moana condominium project, adjacent to the Mobility Hub site has a proposed mix of 60% affordable and 40%

market-rate. Incorporating affordable units on the Mobility Hub site would offer premium access to transit to households of a wide array of income levels.

Figure 15 - Projected Multifamily Site Demand: 300-500 units



Retail

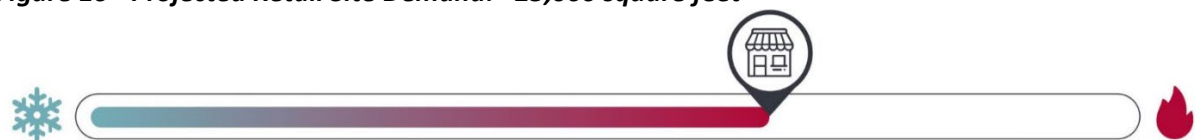
As demonstrated by the reduced level of new completions in the region in recent years, investment and development opportunities for retail are slow. Retail is currently one of the most volatile sectors, undergoing a significant evolution based on a macro-level shift in shopper preferences and changes to how goods are viewed and delivered. The significance of online shopping is a dominant influencer in how retail is changing across the United States. The COVID-19 pandemic has accelerated these trends giving more advantage to online shopping as stores were shuttered to promote social distancing.

Although online sales have grown significantly in the last 15 years, it is important to note that many sales still take place in brick-and-mortar stores. This is likely to continue to recover over the next six to 12 months. Recent research shows that while many customers shop and compare online, they often opt to make their final purchases in-person. Recovery through and following the pandemic is expected to favor retail experiences that offer entertainment and dining, particularly those with outdoor spaces to allow for social distancing.

Performance of retail centers varies widely, depending on product type and location. Retail sectors demonstrating strong performance include grocery-anchored neighborhood centers and lifestyle/entertainment centers. Two of the three top center types reflect a movement towards mixed- or multi-use development patterns. Enclosed malls and unanchored centers, however, continue to show declines.

Hosting the AMC shopping mall, the AMC district is a major retail activity center for Honolulu County. The Strategic Economics analysis forecast future demand at approximately 260,000 to 320,000 square feet through 2040. The Kalia Plaza Mobility Hub, located immediately across Kona Street from the AMC shopping mall, would be best served to focus on-site retail on small-scale suites that directly serve transit users. The future square footage would likely be divided between street-level retail suites at the base of the Kalia Plaza Mobility Hub, as well as opportunities on the mezzanine level connecting to the Kalia Rail Station.

Figure 16 - Projected Retail Site Demand: <25,000 square feet



Office

Like multifamily residential, well-located office space is experiencing a resurgence across the nation. Office space located in mixed-use projects near multimodal transit has achieved success in attracting talent-seeking companies and young, educated workers. Tenants expect their employees to be more satisfied in places that offer diverse, connected land uses, including proximity to cafes, restaurants, retail shops, personal and business services, hospitality, and civic uses. These companies anticipate higher productivity, less turnover, and more innovation as a result of a well-designed, integrated development pattern.

There has been no new office development in the AMC district in the last two decades. Existing office space in the AMC district performs better when compared to Honolulu County, with higher average rents per square foot and lower vacancy rates. According to the Demand Allocation Study prepared by Strategic Economics, the Ala Moana (Kalia), Kakaako, and Civic Center station areas are projected to be able to support between 290,000 and 328,000 square feet of office space through 2040. Demand for office development is expected to be a longer-term play for the Kalia Rail Station area. Given the timing of the Kalia Plaza Mobility Hub development, the office market will likely be too soft to support new development and this product type will not compete well when compared to a residential alternative. As such, no office space is recommended for the Kalia Plaza Mobility Hub site.

Hotel

According to the Demand Allocation Study prepared by Strategic Economics, the Ala Moana (Kalia), Kakaako, and Civic Center station areas are projected to be able to support between 1,000 and 1,800 hotel rooms through 2040. This demand would likely gravitate to the two other station areas (or elsewhere in the AMC district) as the economy improves from the COVID-19 pandemic and travel and tourism recover. Given the strong performance of the residential sector, it will perform better at the Kalia Plaza Mobility Hub site and present a stronger opportunity than a hospitality use. No hotel rooms are recommended for the Kalia Plaza Mobility Hub site.

Recommended Program of Facilities

First and foremost, the Kalia Plaza Mobility Hub should accommodate the needs of the City's fixed-route (TheBus) and paratransit (TheHandi-Van) system. Requirements for bus stops and layover berths have been identified. Note that efficiencies may be possible with the sharing of bus stops and layover berths. In addition, the City is preparing a comprehensive operations analysis (COA) which may recommend adjustments to the bus system. However, reasonable targets for the bus infrastructure have been identified in this analysis for fixed-route services, including 14 bus stops for the short-term conditions, and 12 bus stops for the long-term conditions, and additional linear curb space allocated for the staging of buses entering service. A paratransit loading zone should be provided in close proximity to the Kalia Rail Station and a staging location should be provided for the pre-positioning of TheHandi-Van vehicles. In addition, facilities for operators (i.e. comfort station with restroom and lounge and parking spaces for bus operations supervisors) and charging equipment and supporting infrastructure for electric buses are important considerations in the programming of facilities for the Kalia Plaza Mobility Hub.

Other prominent modes of access to the Kalia Rail Station that must be considered in the design of the Kalia Plaza Mobility Hub or accommodated nearby include bike parking, bikeshare stations, micromobility designated parking areas or "corrals," rideshare/TNC stands, and a host of passenger

facilities to provide a safe and comfortable environment and facilitate a seamless transfer among modes.

The recommended program of facilities for the Kalia Plaza Mobility Hub is summarized below in Table 4.

Table 4 - Program of Facilities

Program of Facilities	
Transit Facilities	
14 bus bays including 1 bus bay designated for paratransit (TheHandi-Van)	
2-3 bus stops on Kapiolani Boulevard for through routes	
3 layover/pre-positioning spaces for buses (with electric vehicle charging equipment)	
Comfort station for bus operators	
Accommodations for a future rail station entrance and supporting infrastructure (vertical circulation, wayfinding, fare gates, etc.)	
Multimodal Facilities	
Mix of short- and long-term parking for 150 bikes	
Bikeshare station	
Space for parking/storage of micromobility vehicles (e.g., electric scooters)	
Private Transportation Providers (may be provided on Ala Moana Center Mall property or on Kona Street)	
Bus stops for private bus operations (trolleys, hotel shuttle vans, etc.)	
Curb space for taxis and TNC operations	
Passenger Amenities	
Waiting areas with weather protection (shelters) and benches	
Wayfinding and including real-time information (next bus arrival)	
Fare vending machines	
Passenger service kiosks (self-service digital and/or staffed with transit ambassadors to help riders navigate the transit system)	
Public restrooms	
Vendors space/transit-oriented retail	
First-Last Mile Infrastructure	
Traffic improvements for bus operations	
Pedestrian improvements (sidewalks, curb ramps, crosswalks, signals, future elevated pedestrian crossing over Kapiolani Boulevard)	
Bike improvements (routes/facilities connecting with mobility hub)	
Joint Development	
Multifamily residential (affordable housing component)	
Transit supportive retail	

DEVELOPMENT AND EVALUATION OF ALTERNATIVES

Early in the Kalia Plaza Mobility Hub AA process, a precedent study was performed that included a review of prior planning initiatives, applicable guidelines, and peer transit centers (mobility hubs). The precedent study provided a foundation for the subsequent development of alternatives for the Kalia Plaza Mobility Hub. The precedent study is included as **Appendix B**.

Ten preliminary Tier 1 alternatives were developed and evaluated versus Tier 1 evaluation criteria. The Tier 1 screening included a conceptual level evaluation that analyzed the advantages and disadvantages of the preliminary alternatives. The purpose of the Tier 1 screening was to determine which of the alternatives would be the most feasible and to narrow the range of alternatives for more detailed analysis in the Tier 2 evaluation. Three of the preliminary alternatives were subsequently advanced to the Tier 2 Screening to select a locally preferred alternative (LPA) for the Kalia Plaza Mobility Hub.

Description of Tier 1 Alternatives

The descriptions in this section of the report provide a high-level summary of each preliminary alternative, with references to each relevant concept drawing. The preliminary alternatives are presented on concept drawings included in **Appendix C**.

The concept drawings are overlaid on a site plan. The area labeled as “Parcel 1” on the site plan, which is located to the west of Kona Iki Street, is in the process of being acquired by the City to provide ground floor access to the future Kalia Rail Station. The acquisition of “Parcel 2,” which is located to the east of Kona Iki Street, has been put on hold due to lack of funding to acquire the property and lack of progress in negotiations with the owner to sell the property. “Parcel 3,” which is located immediately to the east of “Parcel 2,” has already been acquired by the City for a transportation purpose.

Some of the preliminary alternatives place mobility hub transportation facilities on private property under the same ownership (Brookfield Properties Retail Group) as the AMC Mall, including within the AMC Mall parking structure and along Kona Street. Mobility hub transportation facilities are also placed along Kapiolani Boulevard in the public street right-of-way.

Alternative 1A: Mobility Hub on Parcels 2/3 with Joint Development (without Parking)

This alternative (see Figure 1 in **Appendix C**) uses all three parcels (i.e. Parcels 1, 2, and 3) for mobility hub transportation facilities and provides opportunities for mixed-use development, including retail and a tower on Parcel 1 and a tower on Parcels 2/3. Note this scheme does not accommodate on-site parking for the retail and towers. The ground floor of Parcels 2/3 is occupied by bus positions including three layover positions with electric charging equipment on Parcel 3. Bus stops are provided along Kapiolani Boulevard for pass-through bus routes. Private buses/trolleys are accommodated in the AMC Mall parking structure. Parcel 1 is lined with retail along the Kapiolani Boulevard frontage and has ground floor access to the Kalia Rail Station. This alternative requires longer walks for passenger transfers between the concentration of bus positions on Parcels 2/3 and the future rail station access on Parcel 1.

Alternative 1B: Two-Story Mobility Hub on Parcels 2/3

This alternative (see Figure 2 in **Appendix C**) is similar to Alternative 1A but includes a two-level bus facility on Parcels 2/3, with layover positions and electric charging equipment on the second-floor level. Mixed-use development opportunities are limited to Parcel 1, including retail along the Kapiolani

Boulevard frontage and a tower, without on-site parking. This concept shifts the ground floor access to the Kalia Rail Station to the southwest corner of Parcel 1, providing additional space for the mixed-use development. Like Alternative 1A, this alternative requires longer walks for passenger transfers between the concentration of bus positions on Parcels 2/3 and the future rail station access on Parcel 1.

Alternative 1C: Mobility Hub on Parcels 2/3 with Joint Development (with Parking)

This alternative (see Figure 3 in **Appendix C**) is similar to Alternative 1A but includes on-site parking for the mixed-use development on Parcels 2/3, which reduces the space available for bus positions and requires locating additional bus positions along Kapiolani Boulevard and placing bus positions along Kona Street. The layout of Parcel 1 is consistent with Alternative 1A. This alternative offers better connectivity for bus/rail transfers than Alternatives 1A and 1B, as more of the bus positions are located near the future rail station access on Parcel 1.

Alternative 2: Mobility Hub on Parcels 2/3 without Kona Street Access

This alternative (see Figure 4 in **Appendix C**) includes a bus facility occupying Parcels 2/3. A unique design element of this alternative is that access to the bus facility on Parcels 2/3 is solely from Kapiolani Boulevard. The advantage of limiting access from Kapiolani Boulevard is eliminating bus circulation on Kona Street which is not a public right-of-way; the disadvantage is less efficient bus operations as additional out-of-direction travel would be required to access the bus facility. In addition, the layout of Parcels 2/3 provides less space for bus positions and does not accommodate mixed-use development. The layout of Parcel 1 is consistent with Alternative 1A, and private buses/trolleys are accommodated in the AMC Mall parking structure. This alternative provides fewer bus stop positions than Alternatives 1A, 1B, and 1C and requires longer walks for passenger transfers between the concentration of bus positions on Parcels 2/3 and the future rail station access on Parcel 1.

Alternative 3: Integrated Mobility Hub (Rail and Bus) on Parcel 1

This alternative (see Figure 5 in **Appendix C**) only involves the use of Parcels 1 and 3 for mobility hub transportation facilities and does not require the acquisition of Parcel 2. A key element of Alternative 3 is a compact and integrated rail station and bus hub on Parcel 1. Ground floor access to the Kalia Rail Station is consistent with the rail project's plan, and six off-street bus positions are provided on Parcel 1. Bus stops are provided along Kapiolani Boulevard for pass-through bus routes and along Kona Street in proximity to Parcel 1. Private buses/trolleys are accommodated in the AMC Mall parking structure. Mixed-use development is limited to ground-floor and potentially concourse-level retail on Parcel 1. Parcel 3 accommodates three layover bus positions with electric charging equipment. This alternative provides convenient bus/rail transfers, as the bus stops are concentrated in close proximity to the future rail station access on Parcel 1.

Alternative 4A: Kapiolani Boulevard Transit Mall

Similar to Alternative 3, this alternative (see Figure 6 in **Appendix C**) only involves the use of Parcels 1 and 3 for mobility hub transportation facilities and does not require the acquisition of Parcel 2. This alternative considers reimagining Kapiolani Boulevard to function primarily as a transit mall. Vehicular traffic on Kapiolani Boulevard would be limited to one lane in each direction to provide access to the adjacent properties. Two bus lanes and a loading island to accommodate bus stops would be provided in the center of Kapiolani Boulevard. Private buses/trolleys are accommodated in the AMC Mall parking structure. The layout of Parcel 1 is consistent with Alternative 1A, and Parcel 1 accommodates retail along the Kapiolani

Boulevard frontage and a tower, without on-site parking. The layout of Parcel 3 is similar to Alternative 3 and accommodates three layover bus positions with electric charging equipment. A disadvantage of this alternative is inefficient bus operations, as out-of-direction travel would be required for buses due to the one-way eastbound flow of buses on Kapiolani Boulevard. This alternative would also adversely affect vehicular circulation with the lane reductions on Kapiolani Boulevard.

Alternative 4B: Dedicated Bus Lanes on Kapiolani Boulevard and Kona Street

This alternative (see Figure 7 in **Appendix C**) also only uses Parcels 1 and 3 for mobility hub transportation facilities and does not require the acquisition of Parcel 2. This alternative develops a one-way clockwise bus loop around Parcels 1 and 3 circulating in exclusive bus lanes on Kapiolani Boulevard (eastbound) and Kona Street (westbound). Bus positions would be provided along the loop. Another unique element of this alternative is repurposing Kona Iki Street to function as a pedestrian plaza between Kona Street and Kapiolani Boulevard. Ground floor access to the Kalia Rail Station could be provided on Parcel 1, consistent with the rail project's plan, and there would be ample opportunities for mixed-use development on Parcel 1. Although not to the scale of Alternative 4A, this alternative could adversely affect vehicular circulation due to repurposing travel lanes to function as bus lanes. Note that Alternative 4B was developed late in the Tier 1 process and does not contain as much definition as the other Tier 1 alternatives.

Alternative 5A: Kona Street Transit Mall

This alternative (see Figure 8 in **Appendix C**) is similar to Alternative 4A but converts Kona Street, rather than Kapiolani Boulevard, to function primarily as a transit mall. Vehicular traffic on Kona Street would be limited to one lane in each direction to provide access to the adjacent properties. Bus stops are provided in both directions on Kona Street in proximity to Parcel 1 and are provided along Kapiolani Boulevard for pass-through bus routes. Private buses/trolleys are accommodated in the AMC Mall parking structure. This concept shifts the ground-floor access to the Kalia Rail Station to the southwest corner of Parcel 1, providing additional space for a pedestrian plaza and ground-floor retail. Parcel 3 accommodates three layover bus positions with electric charging equipment. Parcel 2 provides space for mobility hub facilities, such as a bike hub, and mixed-use development. An advantage of this alternative is convenient bus/rail transfers, as the bus stops are concentrated in close proximity to the future rail station access on Parcel 1. A disadvantage of this alternative is reliance upon modifying vehicular circulation on Kona Street, which is privately controlled.

Alternative 5B: Kapiolani Boulevard and Kona Street On-Street

This alternative (see Figure 9 in **Appendix C**) locates the majority of the bus positions along Kapiolani Boulevard and Kona Street. The bus positions on Kona Street are located to the east of Kona Iki Street, further from the future rail station access on Parcel 1 but removed from the rail project's construction impacts. Private buses/trolleys are accommodated in the AMC Mall parking structure. The layout of Parcel 1 is consistent with Alternative 1A (tower, lined with retail along the Kapiolani Boulevard frontage, and ground floor access to the Kalia Rail Station consistent with the rail project's plan). Parcel 3 accommodates three layover bus positions with electric charging equipment. This alternative does not require the acquisition of Parcel 2. Due to the more remote location of the bus positions on Kona Street in comparison to Alternative 5A, this alternative offers poorer connectivity for future bus/rail transfers.

Alternative 6: Bus Transit Hub In Ala Moana Center Mall Parking Structure

The unique element of this alternative (see Figure 10 in **Appendix C**) is a transit hub with eight bus positions in the AMC Mall parking structure. This concept shifts the ground floor access to the Kalia Rail Station to the southwest corner of Parcel 1, providing additional space for a pedestrian plaza lined with retail and connecting with the transit hub in AMC Mall parking structure and the bus stops on Kapiolani Boulevard. Parcel 3 accommodates three layover bus positions with electric charging equipment. This alternative provides the most convenient bus/rail transfers, as the majority of transfers would not require crossing a street. However, this alternative requires the cooperation of the owner of the AMC Mall, Brookfield Properties Retail Group.

Screening of Tier 1 Alternatives

The objective of the Tier 1 screening process was to identify the most feasible alternatives for further refinement and evaluation. The Tier 1 evaluation criteria (see Table 5) were primarily qualitative and sought to identify the relative advantages and disadvantages of each alternative. The Project Steering Committee provided input and identified the following criteria as most important:

1. Connectivity with Kalia Rail Station
2. Pedestrian and passenger flows and safety
3. Serves the short- and long-term programmatic needs for the multi-modal mobility hub
4. Efficiency in bus route ingress/egress
5. Opportunities for mixed-use joint development

Each preliminary alternative was assigned a qualitative rating of High, Medium, or Low for each of the criteria. A High rating represents a desirable score (i.e. the alternative performs favorably versus the criterion), while a Low rating represents an undesirable score (i.e. the alternative performs poorly versus the criterion). Definitions of High, Medium and Low ratings for the evaluation criteria are provided in Table 5. A High rating for a criterion is assigned one point, a Medium rating is assigned a half point, and a Low rating is assigned zero points. The overall rating for each alternative is calculated by summing the total points for a maximum score of 10, since there are 10 evaluation criteria.

The Tier 1 screening results are presented in the evaluation matrix in Table 6. The overall ratings for the Tier 1 alternatives ranged between 3.5 points and 7 points. The highest scoring alternatives helped select the alternatives that would advance to the Tier 2 evaluation. The alternatives that scored 5 points or better were Alternatives 1A, 1B, 1C, 3, 4B, 5A, and 6. Alternatives 2, 4A, and 5B were eliminated from further considerations due to flaws including requiring significant bus rerouting to access mobility hub, major impacts to vehicle circulation, poor connectivity between the bus stops and the rail station entrance, and/or ineffectively serving the mobility hub's programmatic needs. These disadvantages caused these alternatives to score below the other alternatives under consideration.

Alternatives 1A, 1B, 1C, and 5A were eliminated primarily because these alternatives require the acquisition of Parcel 2. The acquisition of Parcel 2 is uncertain and subject to the availability of funding to purchase the property and the parcel owner's willingness to sell the property. Therefore, there is a high-level of risk associated with alternatives that require the acquisition of Parcel 2. These alternatives also do not perform well versus some of the more important evaluation criteria. Alternatives 1A, 1B, and 1C have poor connectivity between the bus stops and rail station, which requires longer walks for


transfers. A primary disadvantage of Alternative 5A is not serving the mobility hub's programmatic needs.

Alternatives 3 and 6 earned the highest ratings with scores of 6 and 7 points, respectively. Alternative 4B was selected as the de facto third alternative to advance to the Tier 2 evaluation, as Alternative 4B is the next highest scoring alternative that does not require the acquisition of Parcel 2.

Table 5 - Tier 1 Evaluation Criteria Ratings Definition

Criterion	Rating		
	High	Medium	Low
Serves the short- and long-term programmatic needs for the multi-modal mobility hub	12 bus positions or more and 4 bus stops on Kapiolani Blvd	N/A	Does not provide necessary number of bus positions and stops
Public safety (openness of viewsheds and sightlines)	Well-lit/open spaces throughout hub	Well-lit/open spaces in part of hub	Absence of well-lit/open spaces in hub
Efficiency in bus route ingress/egress (limits out-of-direction travel)	High efficiency (most directions)	Partial efficiency (some directions)	Not efficient (limited directions)
Connectivity with Kalia Rail Station (proximity of stops for primary bus feeder routes to rail station)	Bus stops and rail station are integrated into one location	Many bus stops are close in proximity to rail station	Many bus stops are detached from rail station
Transfer convenience among bus routes (consolidation of bus stops)	Most bus stops are consolidated	Some bus stops are consolidated	Bus stops are spread out
Pedestrian and passenger flows and safety (street crossings)	Few bus stops require major street crossings to access future rail station	Some bus positions require major street crossings to access future rail station	Many bus positions require major street crossings to access future rail station
Effects on vehicle circulation (street network modifications)	Minimal vehicle circulation impact	Some vehicle circulation impact	Major vehicle circulation impact
Number of parcels (right-of-way requirements)	Uses Parcels 1 and 3 only	N/A	Uses Parcels 1, 2, and 3
Opportunities for mixed-use joint development (opportunity to preserve space)	Space for two mixed-use towers (with parking)	Space for two mixed-use towers (no parking) or 1 mixed-use tower with parking	No space for mixed-use towers
Compatibility with adjacent properties (vibrancy and activation of street)	Ample retail along parcel street frontages	Some retail along parcel street frontages	Little to no retail along parcel street frontages

Table 6 - Tier 1 Evaluation Matrix

TIER 1 EVALUATION MATRIX																
	Site Functionality	Serves the short- and long-term programmatic needs for the multi-modal mobility hub	Public safety (openness of viewsheds and sightlines)	Bus Operations	Efficiency in bus route ingress/egress (limits out of direction travel)	Connectivity between Transit Services	Connectivity with Kalia Rail Station (proximity of stops for primary bus feeder routes to rail station)	Transfer convenience among bus routes (consolidation of bus stops)	Local Circulation	Pedestrian and passenger flows and safety (street crossings)	Effects on vehicle circulation (street network modifications)	Land Requirements	Number of parcels (right-of-way requirements)	Opportunities for mixed-use joint development (opportunity to preserve space)	Compatibility with adjacent properties (vibrancy and activation of street)	Total
OPTION 1A Mobility Hub on Parcels 2 & 3 with Joint Development and (without Parking)		●	●		○		○	●		○	●		○	●	●	5
OPTION 1B Two-Story Mobility Hub on Parcels 2 & 3		●	●		●		○	●		○	●		○	●	●	5
OPTION 1C Mobility Hub on Parcels 2 & 3 with Joint Development (with Parking)		●	●		●		●	○		○	●		○	●	●	5
OPTION 2 Mobility Hub on Parcels 2 & 3 without Kona Street Access		○	●		○		○	●		○	●		○	●	●	4
OPTION 3 Integrated Mobility Hub (Rail and Bus) on Parcel 1		●	●		●		●	●		●	●		●	○	○	6
OPTION 4A Kapiolani Boulevard Transit Mall		○	●		○		●	●		●	○		●	●	●	4.5
OPTION 4B Dedicated Bus Lanes on Kapiolani Boulevard and Kona Street		○	●		●		●	○		●	○		●	●	●	5
OPTION 5A Kona Street Transit Mall		○	●		●		●	●		●	○		○	●	●	5
OPTION 5B Kapiolani Boulevard and Kona Street On-Street		○	●		●		○	○		○	●		●	●	●	3.5
OPTION 6 Bus Transit Hub in Ala Moana Center Mall Parking Structure		●	●		●		●	●		●	●		○	●	●	7

Description of Tier 2 Alternatives

Three of the Tier 1 alternatives – Option 3, Option 4B, and Option 6 – were advanced to the Tier 2 Screening and were renamed as Option A, Option B, and Option C, respectively. The descriptions in this section provide a high-level summary of each Tier 2 alternative, with references to each relevant concept drawing.

Option A: Integrated Mobility Hub (Rail and Bus) on Parcel 1

This alternative involves the use of Parcels 1 and 3 for mobility hub transportation facilities and also includes improvements in the public street right-of-way and along private streets under the control of Brookfield Properties Retail Group (AMC Mall). A key element of Option A is a compact and integrated rail station and bus hub on Parcel 1. Ground floor access to the future Kalia Rail Station is consistent with the rail project's plan and six off-street bus positions are provided on Parcel 1. Bus stops are provided along Kapiolani Boulevard for pass-through bus routes and along Kona Street in proximity to Parcel 1. Private buses/trolleys are accommodated in the AMC Mall parking structure. Mixed-use development is limited to ground-floor and potentially concourse level retail on Parcel 1. Parcel 3 accommodates three layover bus positions with electric charging equipment. This alternative provides convenient bus/rail transfers, as the bus stops are concentrated in close proximity to the rail station access on Parcel 1.

Figure 17 presents the refined site plan for Option A: Integrated Mobility Hub (Rail and Bus) on Parcel 1, and Figure 18 presents a massing concept for Option A.

Option B: Integrated Rail and Bus Mobility with Dedicated Bus Lanes and Kona Iki Street Pedestrian Plaza

This alternative involves the use of Parcels 1 and 3 for mobility hub transportation facilities and also includes improvements in the public street right-of-way and along private streets under the control of Brookfield Properties Retail Group (AMC Mall). Three off-street bus positions are provided on Parcel 1. This alternative develops a one-way clockwise bus loop around Parcels 1 and 3 with buses circulating in exclusive bus lanes on Kapiolani Boulevard (eastbound) and Kona Street (westbound). Bus positions would be provided in the street frontages along the loop. Parcel 3 accommodates three layover bus positions with electric charging equipment. Another unique element of this alternative is repurposing Kona Iki Street to function as a pedestrian plaza between Kona Street and Kapiolani Boulevard. Ground floor access to the future Kalia Rail Station would be provided on Parcel 1, consistent with the rail project's plan, and there would be ample opportunities for mixed-use development on Parcel 1. This alternative could adversely affect vehicular circulation due to repurposing travel lanes to function as bus lanes and closing Kona Iki Street to vehicular traffic.

Figure 19 presents the refined site plan for Option B: Integrated Rail and Bus Mobility with Dedicated Bus Lanes and Kona Iki Street Pedestrian Plaza, and Figure 20 presents a massing concept for Option B.

Figure 17 - Site Plan for Option A: Integrated Mobility Hub (Rail and Bus) on Parcel 1

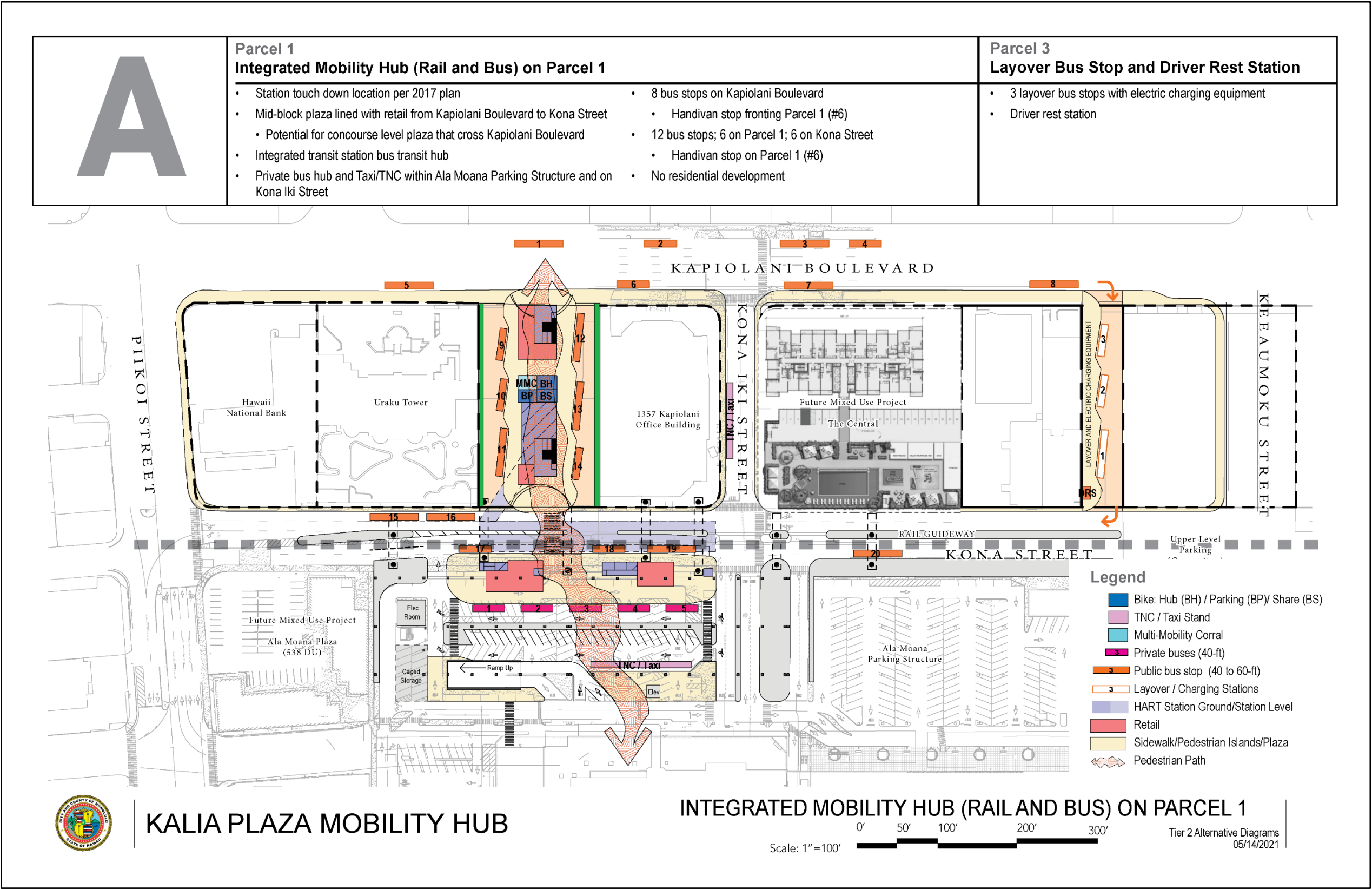


Figure 18 - Massing Concept for Option A: Integrated Mobility Hub (Rail and Bus) on Parcel 1

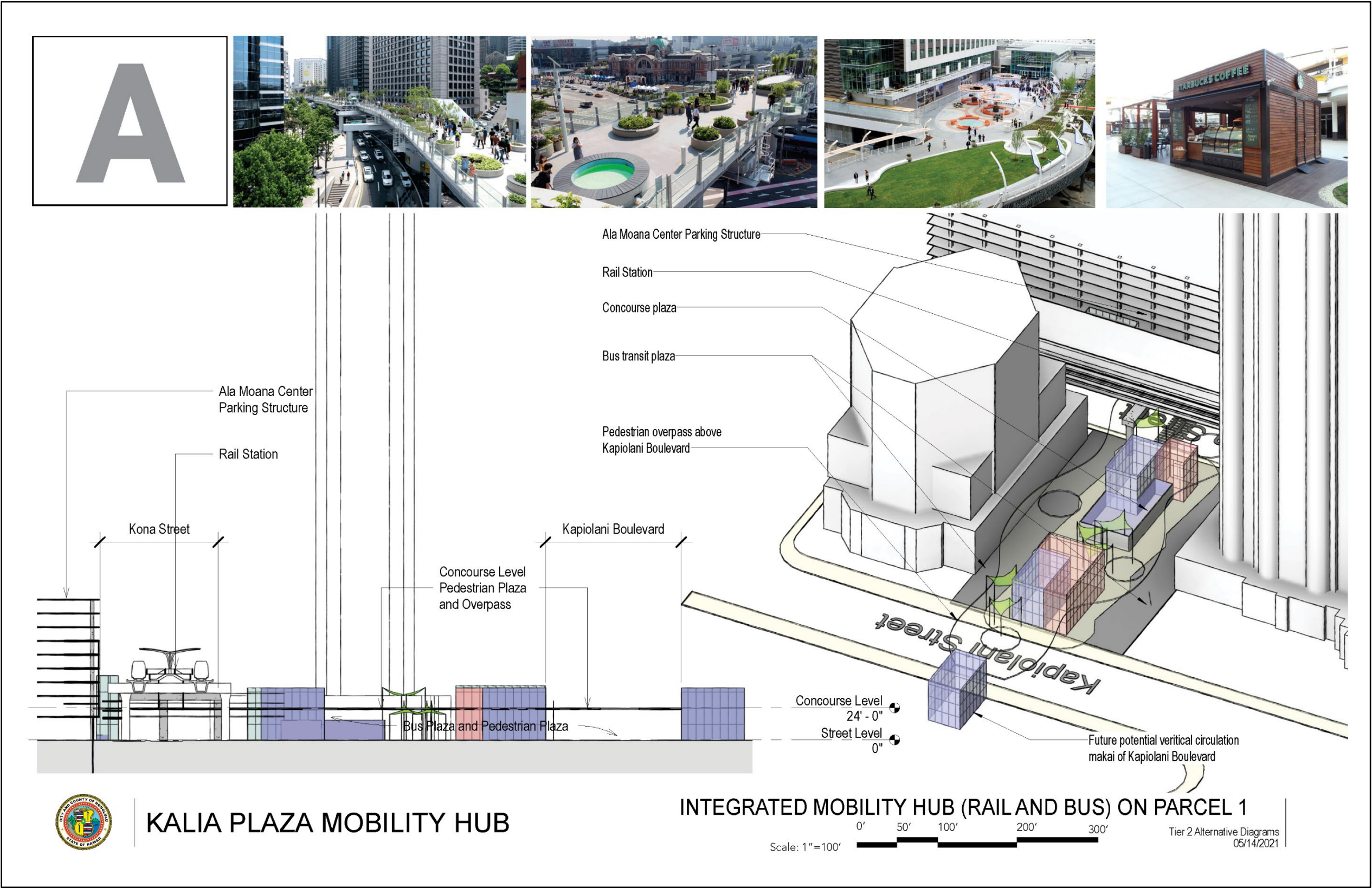
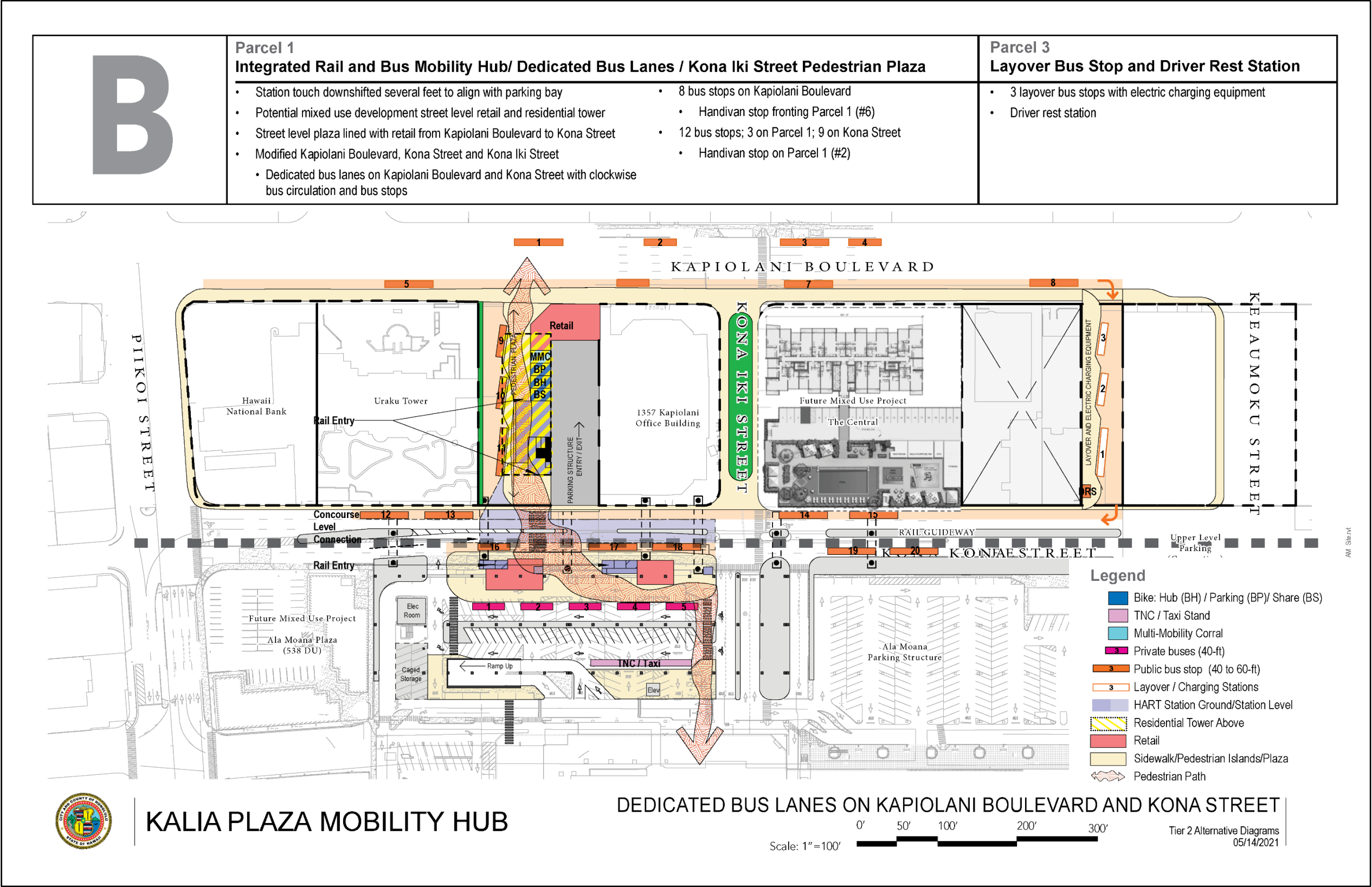
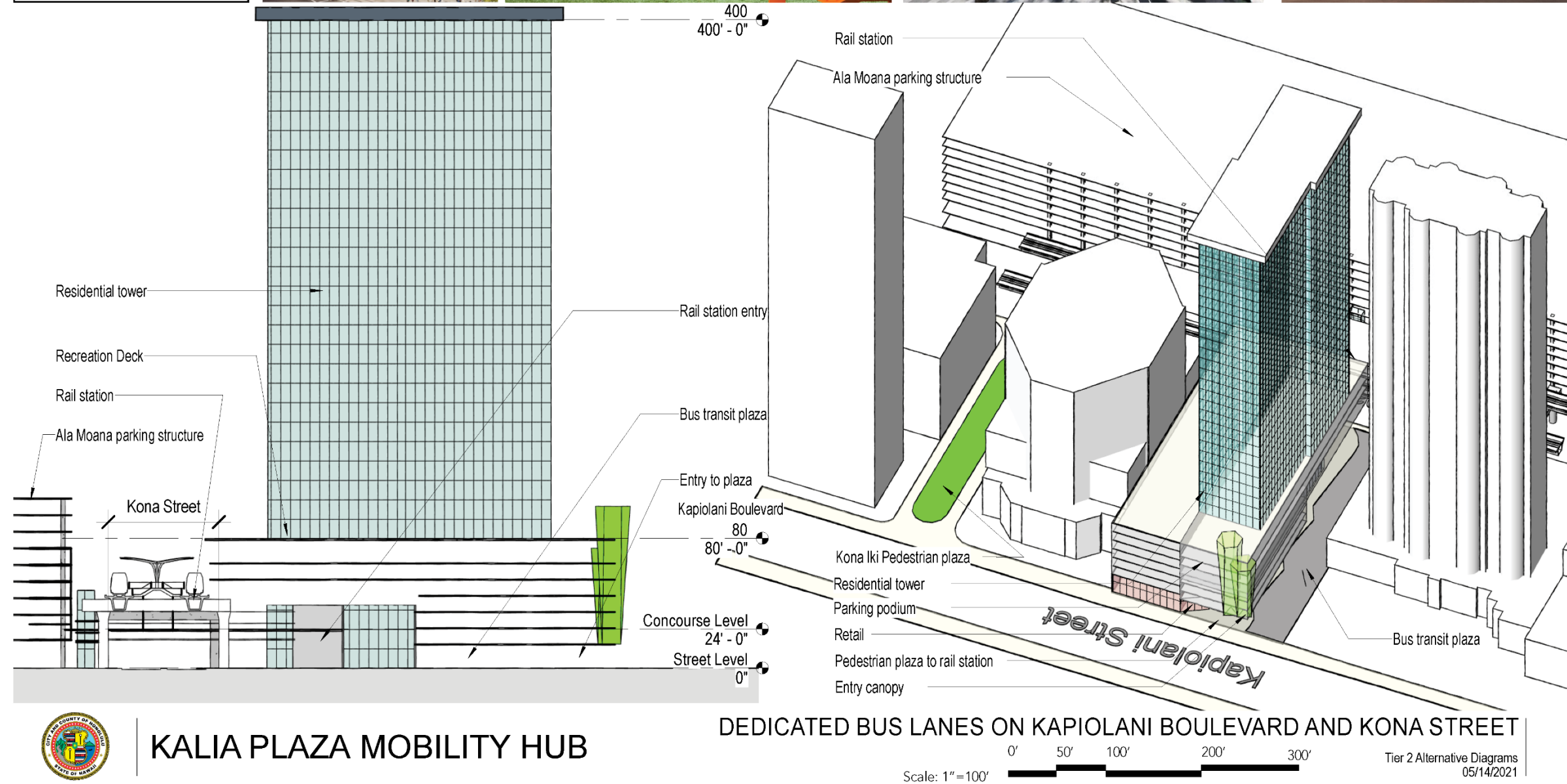
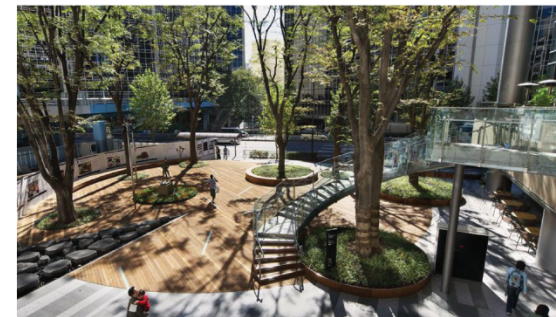


Figure 19 - Site Plan for Option B: Integrated Rail and Bus Mobility with Dedicated Bus Lanes and Kona Iki Street Pedestrian Plaza



B



Option C: Bus Transit Hub in Ala Moana Center Mall Parking Structure

The unique element of this alternative is a bus hub with eight bus positions in the AMC Mall parking structure. Additional bus stops are provided along Kapiolani Boulevard for pass-through bus routes and along Kona Street in proximity to Parcel 1. This concept shifts the ground floor access to the Kalia Rail Station to the southwest corner of Parcel 1, providing additional space for a pedestrian plaza lined with retail and providing a corridor connecting with the mobility hub in AMC Mall parking structure and the bus stops on Kapiolani Boulevard. There also would be ample opportunities for mixed-use development on Parcel 1. Parcel 3 accommodates three layover bus positions with electric charging equipment. This alternative provides convenient bus/rail transfers, as the majority of transfers would not require crossing a street. However, this alternative requires the cooperation of the owner of the AMC Mall, Brookfield Properties Retail Group, to allow much of the mobility hub facilities to be constructed on private property.

Figure 19 presents the refined site plan for Option C: Bus Transit Hub in Ala Moana Center Mall Parking Structure, and Figure 20 presents a massing concept for Option C.

Figure 21 - Site Plan for Option C: Bus Transit Hub in Ala Moana Center Mall Parking Structure

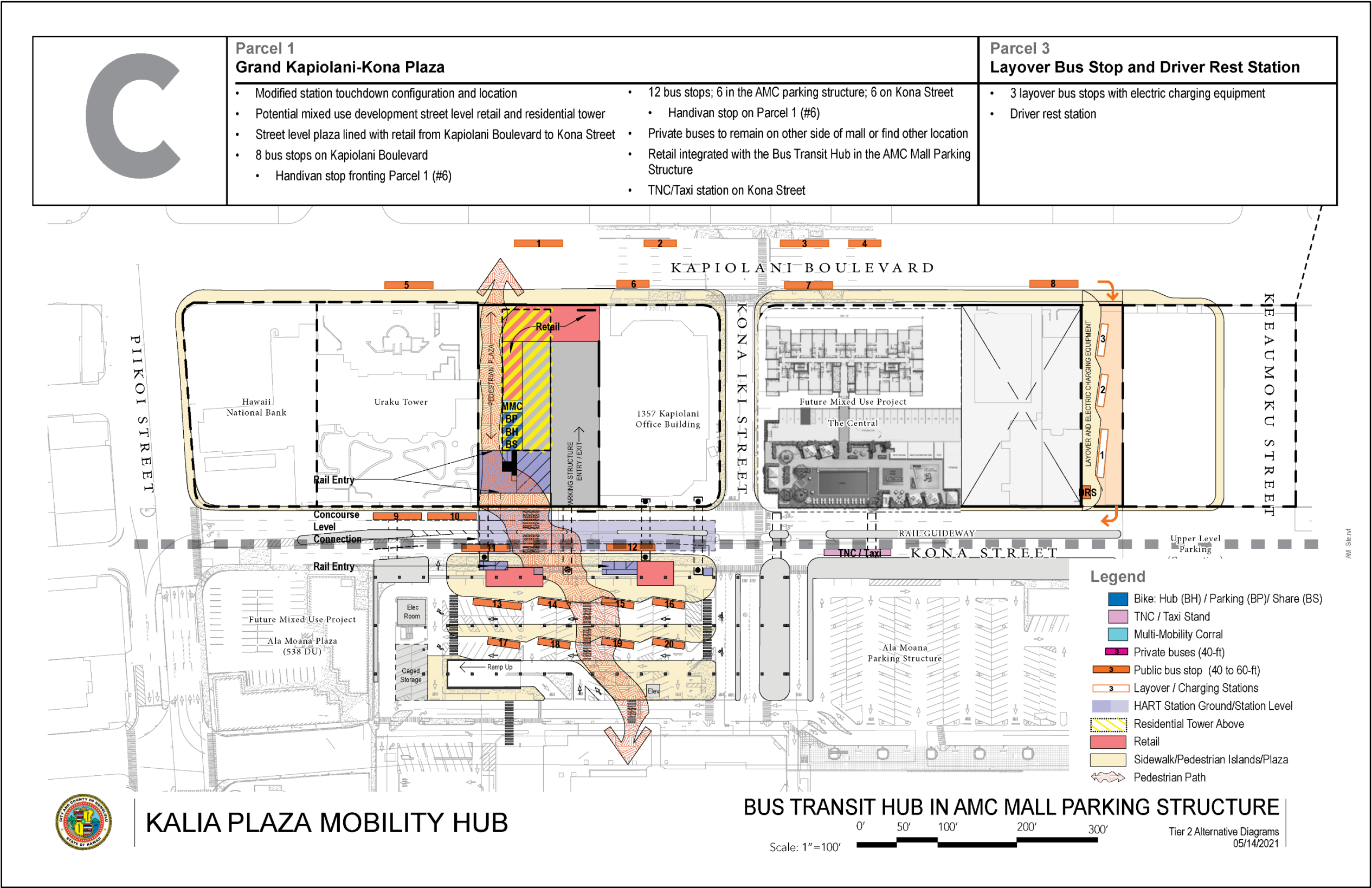
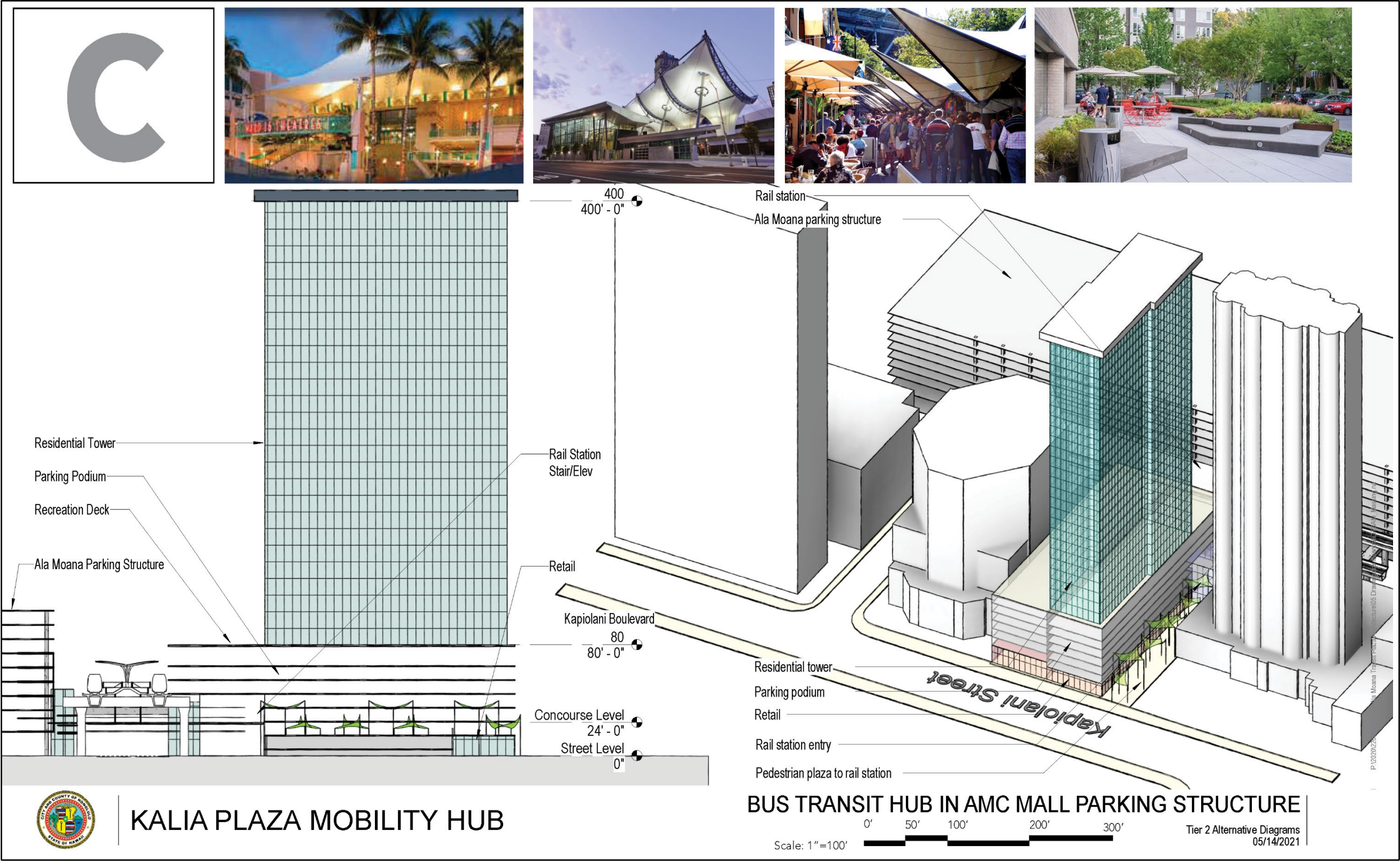


Figure 22 - Massing Concept for Site Plan for Option C: Bus Transit Hub in Ala Moana Center Mall Parking Structure



Screening of Tier 2 Alternatives

The objective of the Tier 2 screening process was to identify the most feasible alternative for further refinement as the LPA. The Tier 2 evaluation criteria are presented in Table 7. Each alternative was assigned a rating of 1 point (High), 0.5 points (Medium), or 0 points (Low) depending on how the alternative performs for each criterion, as described in the Metric/Method column in Table 7. Each criterion also is assigned a weight (%). The weighting of the criteria was informed by input received from the Project Steering Committee. The overall rating for each alternative is calculated by summing the product of the weight and the score of each criterion and then multiplying by 100. The highest possible score is 100.

The Tier 2 screening results are presented in the evaluation matrix in **Table 8**. Results of the Tier 2 screening indicate that Options A and B score higher versus the evaluation criteria than Option C, with Option A scoring slightly higher than Option B. Strengths of Option A include efficient bus operations, consolidation of modes in the mobility hub, and the ability to construct much of the mobility hub facilities on publicly-owned property and right-of-way. Relative strengths of Option B in comparison to Option A include improved pedestrian accessibility and reduced conflict points between transfers, along with increased potential for the integration of vertical mixed-use joint development. Option C scores lower due to poorer customer experience associated with the placement of mobility hub facilities on the ground floor of the AMC Mall parking structure, less flexibility for bus operations, and the requirement to construct much of the mobility hub facilities on private property.

Based on the Tier 2 screening of the three alternatives and input from the Project Steering Committee, Option A was selected to move forward and be refined as the LPA.

Table 7 - Tier 2 Evaluation Criteria Ratings Definition

Criterion	Weight (%)	Metric / Method
Site Functionality		
Number of Bus Bays	7%	Low = Less than 20 bus bays, High = 20+ bus bays
Number of Electric Bus Charging Positions	4%	Low = Less than 3 charging bays, High = 3+ charging bays
Sq. Ft. Available for Additional Modes	4%	Inclusion of MMC/BH/BP/BS
Flexibility in Utilization of Bus Bays	5%	Number of 60' bus bays
Customer Experience	5%	Fumes, lighting, noise, layout of station amenities
Bus Operations		
Distance of Added Travel	5%	Low = 20 or more added miles peak hour Medium = Between 19 and 20 added miles peak hour High = Less than 19 added miles peak hour
Accessibility of Bays from All Key Directions	5%	Low = More than 470 combined turns & Intersections Medium = Between 440 and 470 combined turns & Intersections High = Less than 440 combined turns & intersections
Transfer Convenience		
Distance between Transfers	7%	Low = Distance is 550'+ Medium = 500' < Average Distance < 550' High = Distance is 500' or less
Conflict Points between Transfers	4%	Low = More than 150 crossings (intersections/driveways) Medium = 125 - 149 crossings (intersections/driveways) High = Less than 124 crossings (intersections/driveways)
Consolidation of Modes	4%	Consolidation of MMC/BH/BP/BS, bus position concentration, and rail station connectivity
Local Circulation		
Changes to Street Network	5%	Number of lane-miles converted to bus-only
Bicyclist Accessibility	4%	Low = no additional bicycle amenities and facilities Medium = some additional bicycle amenities or facilities High = additional bicycle amenities and facilities
Pedestrian Accessibility	6%	Low = no changes to pedestrian facilities High = changes to pedestrian facilities
Impacts to Commercial Loading/Deliveries	5%	Number of lane-miles converted to bus-only and street closures to vehicular traffic
Land Requirements		
Opportunities for Public Space	4%	Pedestrian plazas
Public Safety	6%	Viewshed and sightlines
Compatibility with Adjacent Properties	5%	Retail on street frontage
Ability to Construct on Public Property	5%	Low = More dependent on Kona St, Kona Iki St, or AMC High = Less dependent on Kona St, Kona Iki St or AMC
Construction Costs and Constructability		
ROM Construction Costs	4%	Low to High construction costs
Potential for Integration of Mixed-Use Joint Development	6%	Opportunity to include joint-use vertical development

REFINEMENT OF LOCALLY PREFERRED ALTERNATIVE

Based on the Tier 2 screening and input from the Project Steering Committee, Option A was selected to move forward and be refined as the LPA. Option A provides a compact mobility hub, which co-locates bus positions and ground floor access to the future Kalia Rail Station on Parcel 1 and does not require crossing a street crossing for most transfers between bus and rail. Option A also locates most of the transit facilities on City-owned property and within City-owned street rights-of-way. Considerations for the LPA refinement include confirmation of the program of facilities, placement of the facilities, and integration of the facilities with the surrounding urban environment.

Items identified as strengths of Option A in advance of the refinement included:

- **Efficient bus operations** provided by two-way circulation through the bus hub on Parcel 1.
- **Transfer convenience** facilitated through the integration of the bus hub and rail station access on Parcel 1.
- **Land requirements** accommodated on Parcel 1 to provide the main bus hub and rail station access on City-owned property.

The primary deficiency noted for Option A is the absence of a mixed-use building on Parcel 1, as transit-supportive retail development is limited to ground-floor and potentially concourse level retail on Parcel 1. An objective of the project is to identify the best use of the City-owned property and to incorporate mixed-use development.

Based on the considerations noted above, Option A was refined as the LPA to maintain two-way bus circulation on Parcel 1 while further investigating the opportunity to include a mixed-use/residential tower as part of the development program on Parcel 1.

LPA Option A1: Integrated Mobility Hub/Mixed-Use on Parcel 1 without Parking

This refined LPA option maintains the compact and integrated rail station and bus hub on Parcel 1. One-way circulation of buses is maintained and provided on either side of a central plaza facilitating efficient bus circulation and convenient transfers between bus and rail. Mobility hub facilities are provided on the first level of the central plaza including bike parking and passenger amenities and there are opportunities for transit-supportive retail on the concourse level which provides a connection to the future Kalia Rail Station spanning Kona Street.

A residential tower spans the podium above the mobility hub facilities; however, this LPA option does not provide on-site parking. Although not providing on-site parking provides flexibility for a more efficient layout of the transit facilities on Parcel and reduces the development costs associated with providing off-street parking in a structure, developers may have concerns regarding the marketability of residential units without dedicated off-street parking. The location of the residential tower above the mobility hub provides access to the public transportation system, but the long-term viability of constructing a residential tower without parking may be predicated upon the opening of the Kalia Rail Station providing direct access to the rail system as well as the bus system.

This refined LPA option includes improvements in the public street rights-of-way and along private streets under the control of Brookfield Properties Retail Group (AMC Mall). Bus stops are provided along

Kapiolani Boulevard for pass-through bus routes and along Kona Street in proximity to Parcel 1. Parcel 3 accommodates three layover bus positions with electric charging equipment.

Figure 23 presents a refined site plan for LPA Option A1: Integrated Mobility Hub/Mixed-Use on Parcel 1 without Parking. Figure 24 presents a street-level plan, concourse-level plan, and roof plan for LPA Option A, and Figure 25 presents a massing concept.

LPA Option A2: Integrated Mobility Hub/Mixed-Use on Parcel 1 with Parking

Based on concerns regarding the marketability of residential units on Parcel 1 without dedicated off-street parking, this LPA option was developed. This refined LPA option maintains the compact and integrated rail station and bus hub on Parcel 1. The bus circulation is accommodated in a two-way drive aisle adjacent to a plaza that accommodates the mobility hub facilities on the ground level. This arrangement facilitates efficient bus circulation but negatively impacts transfers between bus and rail, as accessing half of the bus positions on Parcel 1 from the mobility hub plaza requires crossing the bus drive aisle. This configuration is necessary to provide an additional driveway connection on Parcel 1's frontage for accessing the parking structure ramp. The configuration of the parking structure also reduces the space for transit-supportive retail on the concourse level, although a connection is maintained to the future Kalia Rail Station spanning Kona Street. A residential tower spans the parking podium above the mobility hub facilities.

Similar to LPA Option A1, LPA Option A2 includes improvements in the public street rights-of-way and along private streets under the control of Brookfield Properties Retail Group (AMC Mall). Bus stops are provided along Kapiolani Boulevard for pass-through bus routes and along Kona Street in proximity to Parcel 1. Parcel 3 accommodates three layover bus positions with electric charging equipment.

Figure 26 presents a refined site plan for LPA Option A2: Integrated Mobility Hub/Mixed-Use on Parcel 1 with Parking. Figure 27 presents a street-level, concourse-level plan, and roof plan for LPA Option A, and

Figure 28 presents a massing concept.

The two LPA options were reviewed to confirm the concepts could facilitate efficient bus operations. Bus circulation would be consistent for the two LPA options, as the one-way drive aisles in LPA Option A1 and the two-way drive aisle in LPA Option A2 would not affect how buses access Parcel. A bus circulation diagram for the LPA is included as **Appendix D**.

Figure 23 - Site Plan for LPA Option A1: Integrated Mobility Hub/Mixed-Use on Parcel 1 without Parking

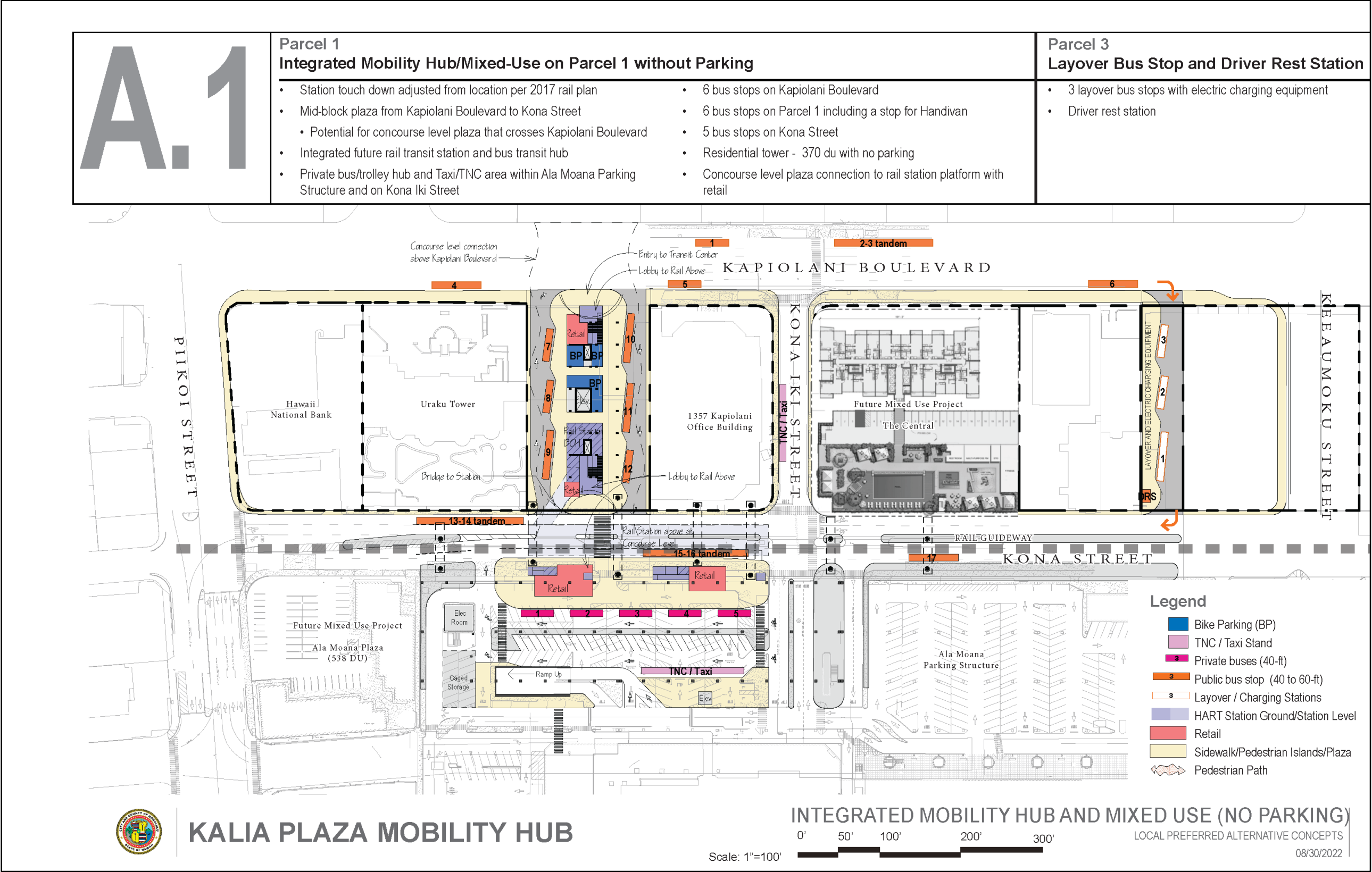
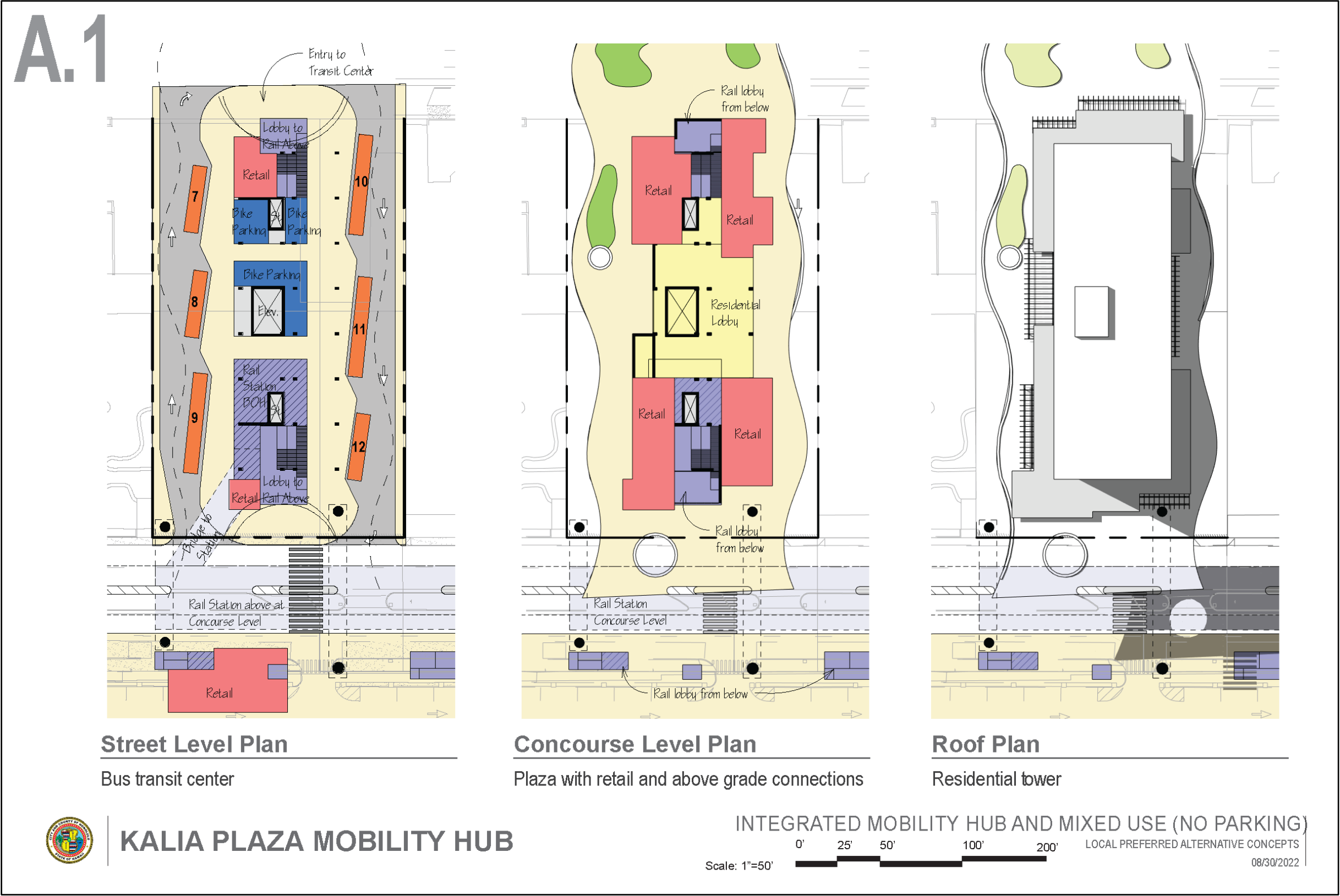


Figure 24 - Floor Plans for LPA Option A1: Integrated Mobility Hub/Mixed-Use on Parcel 1 without Parking



A.1

KALIA PLAZA MOBILITY HUB

INTEGRATED MOBILITY HUB AND MIXED-USE (NO PARKING)
LOCAL PREFERRED ALTERNATIVE CONCEPTS
08/30/2022

The rendering illustrates the Kalia Plaza Mobility Hub, a proposed integrated transit and mixed-use development. The left side shows a cross-section of the building, highlighting the vertical stack of spaces: a residential tower at the top, followed by the Ala Moana Center Parking Structure, the Rail Station, and a Concourse Level Pedestrian Plaza and Overpass. The right side shows a 3D perspective view of the building, emphasizing its integration with the surrounding urban environment, including Kapiolani Boulevard and the future potential vertical circulation makai of Kapiolani Boulevard. The rendering also shows the building's proximity to the Ala Moana Center Parking Structure and the Rail Station, and its potential to serve as a hub for local transit and pedestrian movement.

Labels in the rendering include:

- Residential tower
- Ala Moana Center Parking Structure
- Rail Station
- Kona Street
- Bus and at Grade Pedestrian Plaza
- Lobby / Vertical Circulation to Above Grade Plaza
- Concourse Level Pedestrian Plaza and Overpass
- Ala Moana Center Parking Structure
- Rail Station
- Concourse plaza
- Bus transit plaza below
- Retail opportunities above street level
- Pedestrian overpass above Kapiolani Boulevard
- Kapiolani Boulevard
- Future potential vertical circulation makai of Kapiolani Boulevard

Figure 26 - Site Plan for LPA Option A2: Integrated Mobility Hub/Mixed-Use on Parcel 1 with Parking

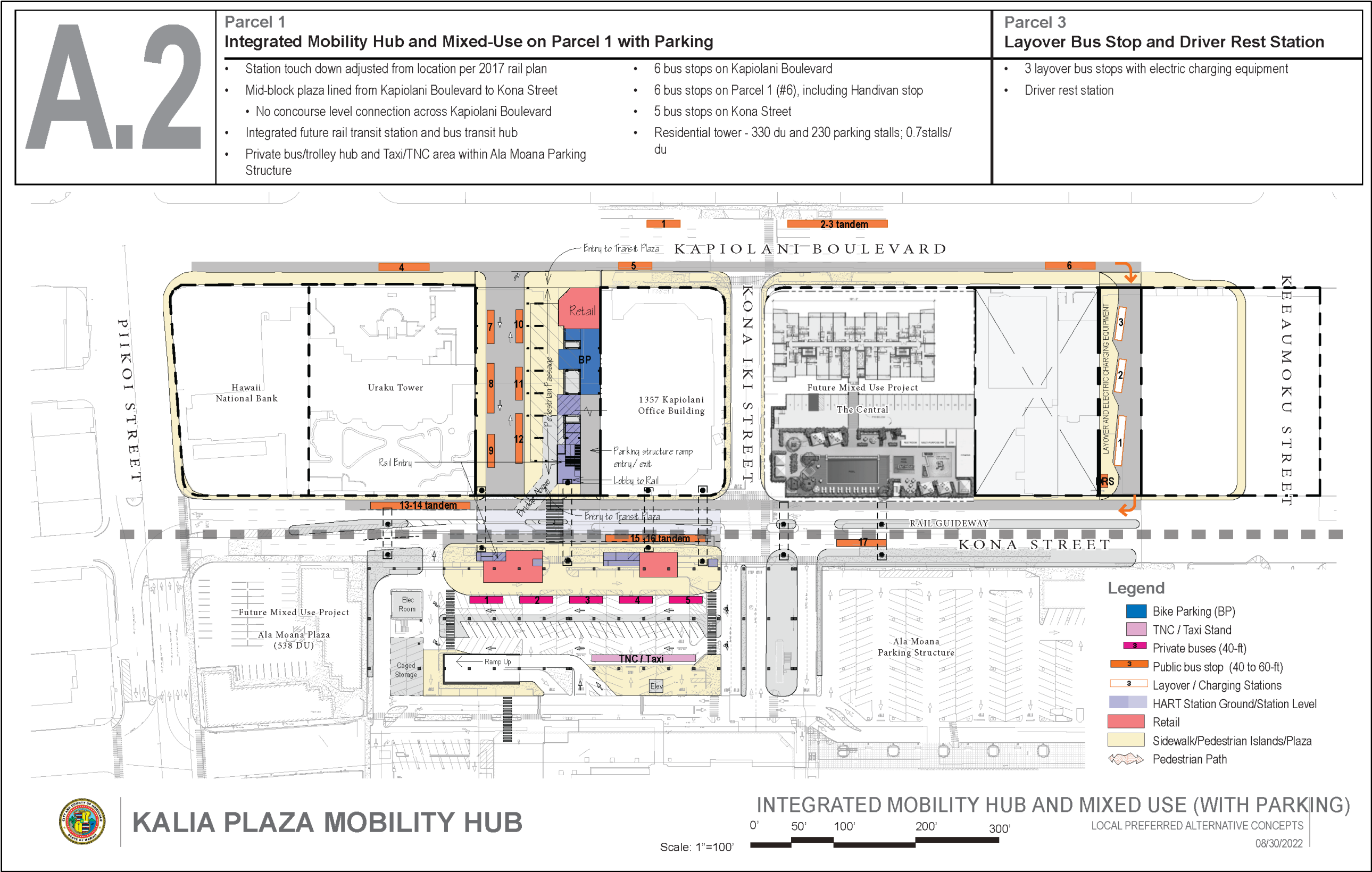


Figure 27 - Floor Plans for LPA Option A2: Integrated Mobility Hub/Mixed-Use on Parcel 1 with Parking

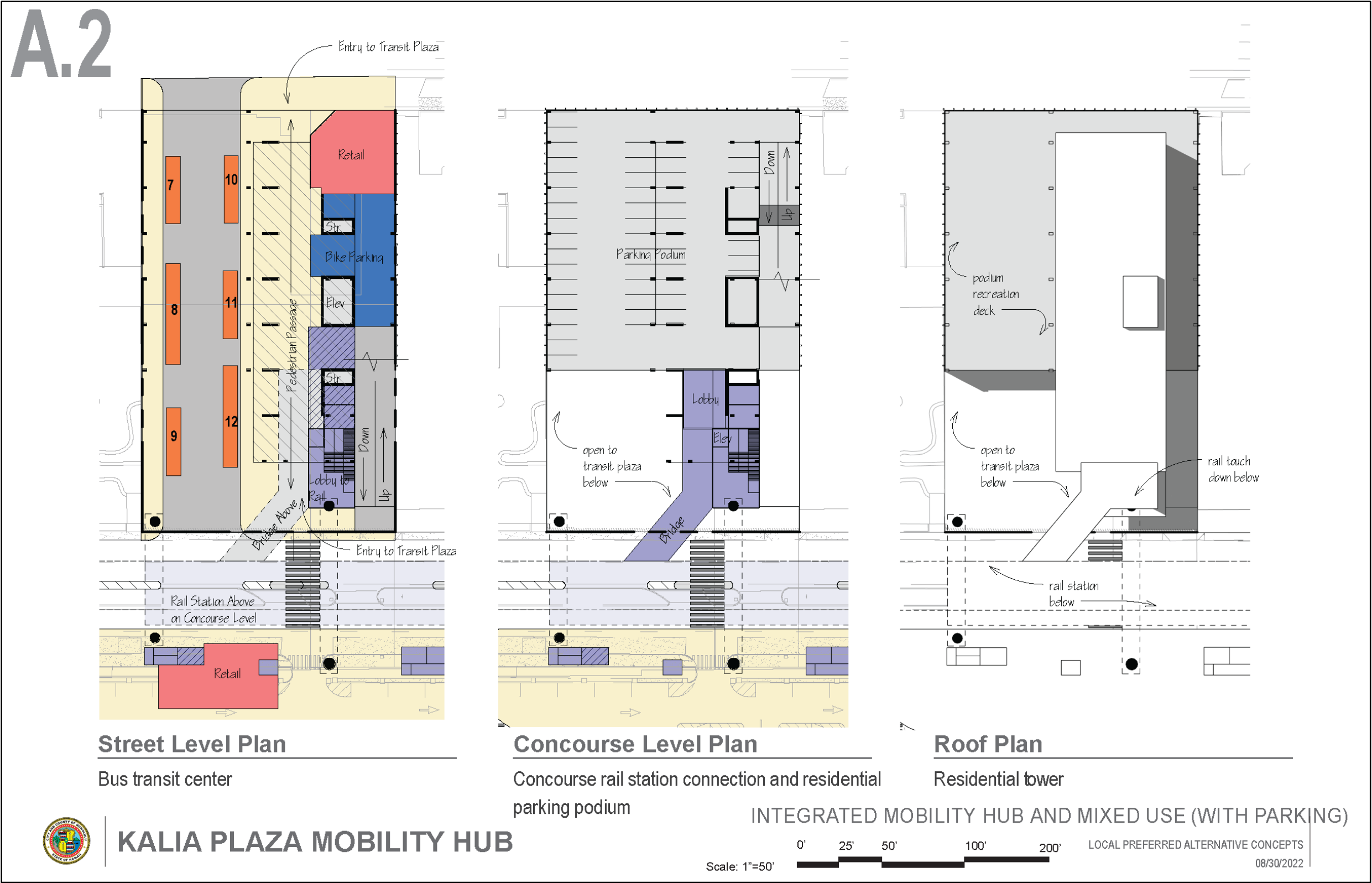
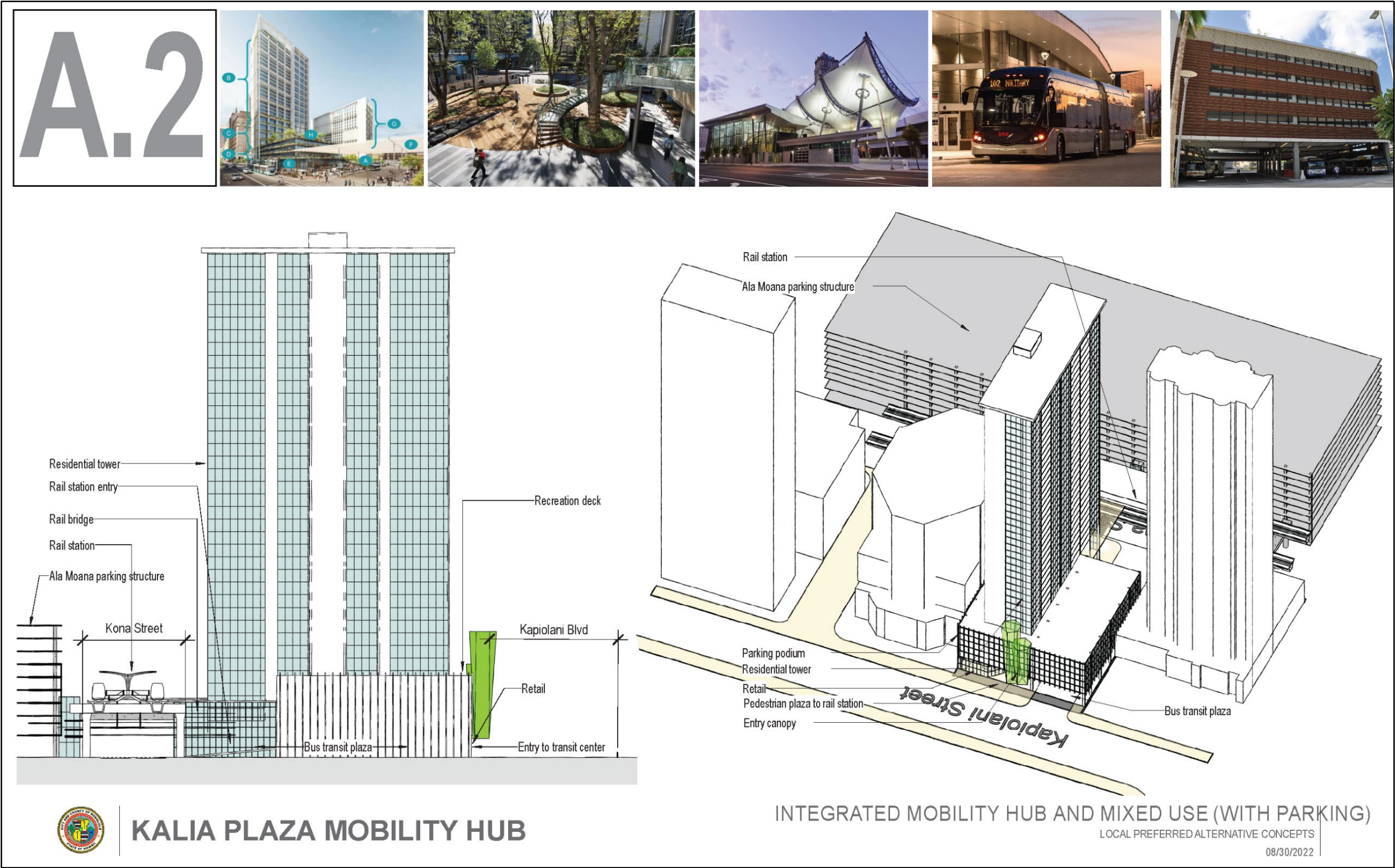


Figure 28 – Massing Concept for LPA Option A2: Integrated Mobility Hub/Mixed-Use on Parcel 1 with Parking



First-Last Mile Improvements

A person's trip is comprised of their entire journey from an origin to a destination. People may use several modes of transportation to complete their journey including walking, driving, riding a bike, taking a bus or train, or combining multiple modes. Public transportation agencies typically provide bus and rail services that may frame the core of such trips, but people must complete the first and last portion on their own by walking, driving, or rolling to the nearest stop or station. This is referred to as the first and last mile of the person's trip, or the first-last mile for short.

First-last mile infrastructure improvements are an important component of the LPA for the Kalia Plaza Mobility Hub. As referenced earlier in this report, approximately 45 percent of the TheBus system's passengers currently engage in other activities besides transferring between buses at the Ala Moana Transit Center. In addition, walk/bike will be the second largest mode of access (behind transfer from bus) at the Kalia Rail Station.

An existing conditions multimodal transportation inventory and assessment was performed for the study area that evaluated pedestrian, bike, transit, and vehicle infrastructure and operations. Findings from the assessment include:

- **Pedestrian** – intersection improvements should be a focus for pedestrian comfort enhancement
- **Bike** – stress for cyclists will generally be alleviated with the implementation of proposed protected and non-protected bikeways that are planned in the study area in the Oahu Bike Plan
- **Transit** – traffic signal improvements are necessary for efficient bus circulation for accessing the Kalia Plaza Mobility Hub
- **Vehicle** – most of the study area intersections operate at an acceptable level of service (LOS)

Figure 29 presents first-last mile infrastructure improvements identified for the LPA. The first-last mile infrastructure improvements by mode include:

- Pedestrian crossing improvements at intersections from the following list of options
 - Add or enhance crosswalks by adding missing crosswalks to legs of intersections and upgrading to high-visibility (continental) crosswalks
 - Install or upgrade to Americans with Disabilities Act (ADA) curb ramps with surface-mounted truncated domes
 - Install curb extensions, where feasible, to reduce the crossing distance for pedestrians and improve the ability of pedestrians and motorists to see each other
 - Provide a leading pedestrian interval to give pedestrians to enter the crosswalk at an intersection three to seven seconds before vehicles are given a green indication. Thus, pedestrians can better establish their presence in the crosswalk before vehicles have priority to turn right or left
 - Provide a pedestrian scramble phase, which stops all vehicular traffic and allows people to cross the intersection from all corners at the same time, including diagonally

Figure 29 - First-Last Mile Infrastructure Improvements

- Bike improvements
 - Implement the bikeways that are planned in the study area in the Oahu Bike Plan
 - Provide bike parking with a combination of bike racks for short-term use and a bike room for long-term use (i.e. two hours or longer)
 - Provide bikeshare stations (Biki Stops) at the Kalia Plaza Mobility Hub
- Traffic improvements for bus operations
 - Traffic signal improvements to provide protected left-turn phasing for bus movements at the following intersections
 - Westbound left-turn at Kapiolani Boulevard and Kona Iki Street
 - Westbound left-turn at Kapiolani Boulevard and Piikoi Street
 - Southbound left-turn at Piikoi Street and Kona Street
 - Install all-way stop control and a crosswalk at the bus aisle exit from Parcel 1 onto Kona Street to facilitate left-turns by buses and pedestrian crossings.

Rough Order of Magnitude Costs

Rough order of magnitude (ROM) capital cost estimates were prepared for LPA Option A1 and LPA Option A2. The level of detail of these ROM cost estimates corresponds with the conceptual level of definition and engineering detail currently developed for the LPA options. As the project advances through the subsequent design phases of preliminary and final engineering, the precision of cost estimating detail will also progress.

These ROM cost estimates were developed primarily using a “bottom-up” approach, estimating the cost of major scope elements and totaling the cost of the component parts. This allows for the flexibility to adjust costs for changes in the project’s scope, refinement of components of the LPA concepts, and identification of site constraints. The ROM cost estimates include “hard costs” associated with the construction of the mobility hub and first-last mile infrastructure improvements as defined in the conceptual plans for the LPA options. “Soft costs” included in the ROM cost estimates include professional services, which are estimated as a percentage of the estimated “hard costs” (i.e. construction costs), and contingency for unknown variables at this early stage of project development. A contingency factor of 50 percent is applied to both the “hard costs” and professional services to account for unforeseen items of work, quantity fluctuations, variances in unit costs, and changes in project scope that are encountered as a project progresses through stages of study and design development.

The ROM cost estimates utilized the following main cost categories, with notable items and assumptions identified within each:

- **Demolition** of existing buildings and clearing the sites (Parcels 1 and 3)
- **Mobility Hub Improvements**
 - Bus platform and pedestrian areas
 - General site construction (concrete pavement, sidewalks, landscape, irrigation, lighting, site furnishings, bus shelters, general utility services, etc.)
 - Enclosed storage area for long-term parking for 150 bikes
 - Electric vehicle charging stations (3)
 - Driver comfort station
- **Street Improvements**
 - Traffic signal modifications at three intersections
 - Pedestrian crossing improvements at seven intersections
 - Repaving of travel lanes and pavement markings on adjacent streets
 - Raised pedestrian crosswalk on Kona Street
- **Professional Services**
 - Environmental clearance
 - Preliminary engineering (6 percent)
 - Final design (10 percent)
 - Construction administration (6 percent)
 - Construction management (15 percent)

Costs associated with the integrated joint development (i.e. mixed-use building/residential tower) above the mobility hub on Parcel 1 are not captured, including items such as building foundations, structured

parking, off-site utility, or other infrastructure improvements associated with the mixed-use building/residential tower, or the building itself. Mobility hub canopies, street furnishings, and amenities are assumed to be “standard” finishes and not “high-end” decorative finishes. Land acquisition and costs associated with upgrading the electrical infrastructure system to support the electric vehicle charging equipment for the three layover bus positions on Parcel 3 are not included.

Table 9 presents the ROM cost estimates for LPA Options A1 and A2. Since the LPA options have similar mobility hub components and first-last mile infrastructure improvements, their estimated costs are similar. Note that the costs of integrating a mixed-use building above the mobility hub on Parcel 1 will be significantly higher for LPA Option A2 because of additional costs associated with providing on-site parking in a structure.

Table 9 - Rough Order of Magnitude Costs for LPA Options

Item	LPA OPTION A1	LPA OPTION A2
Demolition	\$2,539,000	\$2,539,000
Mobility Hub Improvements	\$8,030,000	\$8,057,000
Street Improvements	\$3,533,000	\$3,401,000
Mobilization, Temporary Controls (erosion, traffic, pedestrians)	\$1,833,000	\$1,820,000
Construction Subtotal	\$15,935,000	\$15,817,000
Professional Services	\$6,646,000	\$6,603,000
Contingency	\$11,290,500	\$11,210,000
Total Project Cost	\$33,871,500	\$33,630,000

See **Appendix E** for a more detailed breakdown of the rough order of magnitude costs for the LPA options.

PUBLIC AND STAKEHOLDER PARTICIPATION

Project involvement including stakeholder consultation and engaging the public is intrinsic to the success of a major project. Identifying key audiences and their interests and concerns or questions, providing the information to address those interests, and documenting engagement efforts provide decision-makers with the information needed to make informed decisions. The goals and objectives of the public and stakeholder participation process for the Kalia Plaza Mobility Hub are shown in Table 10.

Table 10 - Public and Stakeholder Participation Goals and Objectives

Goals and Objectives	Questions
Build understanding for the purpose and need of the Project	Why is a transit center, mobility hub needed?
Create credibility for the process leading to decisions	How will a new facility impact travel and destination choices for me, my family, my employees, my customers? What options are available to be considered, such as plaza area, shops, information?
Establish and maintain working relationship with individuals and organizations interested in the Project	Am I being heard? Will my questions and comments be considered?
Promote early and continuous involvement by agency and public stakeholders in identifying challenges and opportunities, and develop achievable and supportable alternatives	What are the fatal flaws in the alternatives, what are we missing, how will the facility be used, serviced, and maintained?
Identify and involve early in the Project those who will be responsible for subsequent phases of the Project to ensure implementation	What permits, approvals, funding, environmental studies, scheduling are needed for project implementation?
Provide information for the public and media	Are public notices and press releases timely?
Meet federal requirements for documenting public participation	Are comments, decisions, and issues documented and available?

The consultation program during the AA phase of the Kalia Plaza Mobility Hub project focused on identifying what type of services, facilities, support functions, open space, and development alternatives are needed or envisioned by project stakeholders. The public outreach program for the AA phase of the project was conducted under constraints caused by the COVID-19 pandemic. It was not possible to hold in-person public workshops or meetings.

The project is listed under the Department of Transportation Services (DTS) Complete Streets Mobility Hubs heading at [Mobility Hubs \(honolulu.gov\)](https://mobilityhubs.honolulu.gov). Project materials can be found at this site and additional materials are being added as the project progresses in future phases. The conduct of the AA phase followed the DTS 2019 Public Transit Title VI Program for Title VI and Limited English Proficiency (LEP) guidelines.

Steering Committee

The AA phase of this project consulted with an active Steering Committee composed of City departments, semi-autonomous City agencies, and Brookfield Properties Retail Group (owner of Ala Moana Center and

host of the Ala Moana Transit Center). The following lists the departments and agencies represented on the Steering Committee.

- City and County of Honolulu:
 - Department of Transportation Services (DTS), Transportation Performance & Development Division
 - DTS, Transportation Mobility Division
 - DTS, Rail Station Access
 - Department of Design and Construction, Facilities Division
 - Department of Land Management
 - Department of Planning and Permitting (DPP), Planning Division
 - DPP, Transit Oriented Development Division
 - Honolulu Authority for Rapid Transit
 - Oahu Transit Services
- Brookfield Properties Retail Group

The Steering Committee met three times: kickoff meeting on December 8, 2020, workshop meeting on February 11, 2021, and review and selection of an LPA on June 9, 2022. The kickoff Steering Committee meeting discussed the overall project goals and objectives; presented existing conditions, challenges, and needs; reviewed mobility hubs projects in other cities; identified and ranked supporting components and amenities that should be prioritized for the mobility hub; and identified and ranked how transportation modes should be prioritized. The second Steering Committee meeting was conducted in a virtual workshop format with participants breaking into three groups to provide detailed review of the Tier 1 Alternatives. Comments, changes in design, and additions and deletions were received from participants to interactively obtain their input. The third Steering Committee meeting presented the refined LPA options.

Neighborhood Boards

The Neighborhood Board system is an essential part of Honolulu's citizen involvement and engagement processes. Three Neighborhood Boards were identified to be briefed and consulted: the Ala Moana-Kakaako Neighborhood Board, the Waikiki Neighborhood Board, and the McCully-Moiliili Neighborhood Board. The project team gave presentations to these three Neighborhood Boards providing updates of ongoing project work and providing an opportunity for the Neighborhood Boards to ask questions and provide comments. A project flyer shown in Figure 30 was distributed to these three Neighborhood Boards and other organizations.

The Kalia Plaza Mobility Hub is located within the Ala Moana-Kakaako Neighborhood Board boundaries. The project team gave a presentation to the Neighborhood Board on February 23, 2021. Recognizing the future mobility hub is for people and their transportation needs, the project team encouraged the Neighborhood Board to help determine which modes and supporting features were desired. The Chair of the Ala Moana-Kakaako Neighborhood Board invited the project team to attend their Community Action Committee on March 11, 2021. The project team attended this Community Action Meeting, as well as the March 23 and April 27, 2021, Ala Moana-Kakaako Neighborhood Board meetings to promote the Community Meeting scheduled for April 29, 2021.

The project team provided presentations to the McCully-Moiliili Neighborhood Board on March 4, 2021, and the Waikiki Neighborhood Board on March 9, 2021. Additionally, the project team sent the Neighborhood Board Chairs the Community Meeting notice at their April meetings.

Figure 30 - Project Flyer



Other Stakeholders and Project Coordination

Stakeholders and related ongoing projects contacted directly through the Neighborhood Boards and through outreach efforts during the AA phase of the Kalia Plaza Mobility Hub project are listed in Table 11.

Table 11 - Stakeholders and Project Coordination

City and County of Honolulu	Others
Department of Transportation Services	University of Hawaii-Manoa
Oahu Transit Services	Hawaii Community Development Authority
Department of Design and Construction	Hawaiian Electric Company
Department of Land Management	Waikiki Transportation Management Association
Honolulu Authority for Rapid Transportation	Waikiki Improvement Association
Department of Planning and Permitting	Brookfield Properties
Honolulu Fire Department	Oahu Metropolitan Planning Organization
Honolulu Police Department	Uraku Condominium (adjacent to site)
Board of Water Supply	American Association of Retired Persons
Elected Officials	Access to Independence
Mayor's Offices	Honolulu Bicycle League
City Councilmembers	Hawaii Convention Center
Governor	Transit Users
State Senators	Projects
State Representatives	Ala Moana TOD (Town Hall participation)
Congressmember	Keeaumoku Complete Streets
	Honolulu Transit Comprehensive Operations Analysis

Letters of project introduction and presentation slide decks were prepared to send to elected officials, agencies, and other stakeholders.

Public Meeting

A public meeting was conducted on April 29, 2021. The project team prepared and distributed a meeting flyer (Figure 31), drafted a news release, prepared a notice for the City's Complete Streets Facebook page, and coordinated with DTS Transportation Mobility Division and Oahu Transit Services to have the meeting notice posted on bus stop signs around Ala Moana Center. The meeting format was similar to the second Steering Committee meeting and included introductions, a presentation, polling questions, and breakout group discussions. The breakout groups allowed participants to have their comments posted directly onto the alternatives being discussed. The presentation is provided in **Appendix F**.

Eight questions (polls) were asked of meeting participants during the course of the meeting. The questions ranged from use of current transit or paratransit services to ranking of transportation modes and amenities to identifying the most important evaluation measures the project should use. Meeting participants were asked to identify their top priorities in rating or ranking project alternatives. The prioritization of transportation modes, project elements, and evaluation criteria provided the project team with an understanding of the public's priorities.

Figure 31 - Public Meeting Notice


Honolulu
COMPLETESTREETS

KALIA MOBILITY PLAZA

Community Outreach Notice:

Join us to discuss the Kalia Mobility Plaza Transit Hub at Ala Moana:

- Prioritize modes (bus, walk, bike, drop-off/pickup, private buses, and others),
- Prioritize Passenger facilities (shelters, open plaza, real-time information, vending, and others),
- Learn how other systems designed their transit centers; and,
- Provide your comments on potential options.

Next Meeting:
Virtual Community Meeting
Thursday, April 29, 2021, 6:00PM

For ongoing Project information and to register for the meeting go to:
<https://www.honolulu.gov/completestreets/kalia>

For questions and/or comments on the Kalia Mobility Plaza project, or if you require special assistance, auxiliary aid and/or service to participate in this event, please contact Virginia Sosh at (808) 768-5461, or via email at completestreets@honolulu.gov at least five (5) business days prior to the meeting.



Scan code at left to reach the Kalia Mobility Plaza webpage to find out about meetings and learn more about the Project and updates.

SCAN ME



The above picture shows a bus stop on Piikoi Street with the public meeting notice attached. These notices were placed on bus stops on Ala Moana Boulevard, Kona Street, Piikoi Street, and Kapiolani Boulevard in the vicinity of Ala Moana Center.

Results from the public meeting were combined with other outreach efforts and the Steering Committee guidance to refine the LPA. For example, more bike parking and storage space was added to the mobility hub.

The public and stakeholder participation program will continue to provide opportunities for information dissemination and feedback as the project moves forward into further phases.

PRELIMINARY ASSESSMENT OF ENVIRONMENTAL IMPACTS AND MITIGATION

A preliminary assessment of potential environmental impacts and mitigation was conducted for the Kalia Plaza Mobility Hub project. The assessment provides preliminary consideration of potential impacts associated with redevelopment of two City-owned properties (identified as Parcel 1 and Parcel 3 in Figure 3 earlier in this report) to implement the concept project design. This analysis identifies resources early in the planning process to consider sensitive environmental resources in the study area (see Figure 32 for an aerial view) and avoid the potential for experiencing fatal flaws from an environmental impact standpoint.

This preliminary environment assessment provides summary descriptions addressing the following subjects.

- Sensitive Environmental Areas
- Description of Environmental Resources
- Potential Impacts to Environmental Resources and Mitigation
- Future Environmental Assessment in Compliance with National Environmental Policy Act (NEPA)/Hawaii Environmental Policy Act (HEPA)

Figure 32 - Aerial View of Project Setting in the Kapiolani Boulevard Corridor Adjacent to Ala Moana Center Shopping Mall



This preliminary assessment of potential environmental impacts and mitigation is being provided prior to conducting outreach with the local community residents and businesses, and without the benefit of inquiries with State and County agencies. This preliminary assessment provides initial guidance to shape the future outreach and investigations leading to the preparation of environmental impact assessment documentation and detailed technical investigations. The future environmental review process will involve public and agency outreach and reviews in compliance with State and Federal environmental laws and procedures.

Sensitive Environmental Areas

The Kalia Plaza Mobility Hub involves two parcels (Parcel 1 and Parcel 3) situated in a dense, urbanized setting adjacent to expansive commercial properties of Ala Moana Center shopping mall. The properties are surrounded by existing commercial and residential development, with limited natural resource conditions. There are no sensitive environmental areas associated with the subject parcels. There are no adjoining industrial operations or hazardous materials sites located near the subject properties. The closest natural habitat area is located offshore of the Ala Moana Beach Park (City and County of Honolulu).

Environmental Resources

Below is a summary of resources categorized by the natural environment and human environment.

Natural Environment

- **Flora:** Within this urban biological setting, landscaped areas of the subject properties and adjoining properties provide very limited flora habitat for ornamental plantings including ground cover, shrubs, and trees.
- **Fauna:** The landscaped areas and developed site provide very limited habitats for common bird species and mammals. Most of these species are transient visitors to the property of the pest variety. The white fairy tern (Manu-o-Ku) is a native Hawaiian seabird which commonly chooses nesting sites along Kapiolani Boulevard and elsewhere in urban Honolulu and Waikiki. Manu-o-Ku are federally protected under the Migratory Bird Treaty Act and listed as Threatened by the State of Hawaii.
- **Water Resources:** There are no surface waters, streams, or wetlands on the property. Rainfall runoff is collected and conveyed to the County storm drain system.

Human Environment

- **Land Use:** The properties included in the Kalia Plaza Mobility Hub project are business mixed-use zoned properties supporting commercial use. The adjoining properties are also business mixed-use zoned land supporting commercial and residential uses, with future redevelopment density allowances tied to future Transit-Oriented Development.
- **Cultural Resources and Historic Preservation:** Cultural and historic resources of this urban setting include potential subsurface resources, historic properties (e.g., buildings over 50 years old), cultural legend, and potential cultural uses of the land for access, worship, and gathering.
- **Views:** Public views of the subject properties are street-level views from Kapiolani Boulevard and Kona Street. There are no significant public scenic views associated with the properties and adjoining lands.

- **Traffic and Mobility:** Vehicular traffic is heavy in this area along Kapiolani Boulevard and Kona Street, including personal vehicles, buses, and commercial delivery trucks. Pedestrian traffic is also actively associated with the nearby residential towers, offices, and major commercial centers.
- **Acoustics/Noise:** Noise conditions in the project area are typical of a busy commercial corridor, primarily generated by the activity of passenger vehicles, commercial vehicles, and buses.
- **Air Quality:** Air quality conditions in the project area are good due to Honolulu's clean air quality and active trade winds circulation. Heavy traffic areas and semi-enclosed garage settings in the project area can experience periodic elevation in air pollutant levels.
- **Hazardous Materials:** The subject properties will be surveyed for the potential presence of hazardous materials and considerations for future redevelopment use. There is no knowledge of hazardous materials conditions which may preclude the reuse of these properties.
- **Economics:** The commercial activity associated with the surrounding land uses provides a significant economic contribution to the local economy.
- **Environmental Justice:** There is an affordable housing project being developed in the adjacent property which should be evaluated in a future environmental justice (EJ) analysis.

Potential Impacts to Environmental Resources and Mitigation

The development of the Kalia Plaza Mobility Hub will generate short-term construction-related impacts and long-term operational effects to the surrounding community.

Short-Term Impacts for Construction Phase

Short-term construction phase impacts from demolition and site development for the new from Kalia Plaza Mobility are anticipated to include the following effects, with implementation of mitigation measures.

- **Soil disturbance** during site clearing, grading, and excavation. Mitigation will include required measures for Low Impact Development to minimize soil loss.
- **Stormwater runoff** during site development, including runoff pollutants. Mitigation will include required measures for Low Impact Development (LID) to manage stormwater runoff.
- **Removal of landscape** vegetation, shrubs, and trees where present on the properties. Removal of urban landscape habitat displacing birds and mammals which may visit these properties. Tree removal should be avoided during the white fairy tern nesting season (January to June).
- **Air quality degradation** due to dust generation and vehicle exhaust emissions. Mitigation will include required dust screening and site watering, along with regular maintenance of construction equipment and strict hours of operation.
- **Noise** conditions during construction will affect adjoining commercial and residential properties. Mitigation will include equipment maintenance and strict hours of operation.
- **Construction-related traffic** will be experienced for equipment transport (mobilization and demobilization), worker vehicles, demolition material removal, and construction materials deliveries. Mitigation will include construction operations timing to avoid rush hour conflicts and permitted transport of oversized equipment and material deliveries.
- **Historic preservation effects** will result from removal of the historic building (over 50 years old) on Parcel 1 and potential effects to cultural resources in the construction phase.
- **Civil infrastructure systems** will be affected in the short-term in support of site development activities affecting access/roadways, drainage, and stormwater management, water supply, wastewater management, electrical supply, and communications. Construction phase mitigation

measures, including LID, will be implemented per permit conditions to minimize effects to these systems.

- **Views** of the construction area will be available from public locations on the adjoining roadways and properties. Mitigation will include construction site screening and strict hours of operation.
- **Economics effects** will include short-term beneficial impacts to government revenues associated with construction spending and employment, along with private economic benefits for construction contracts and worker employment.

Long-Term Operational Impacts

Long-term operational phase impacts that will result from the operation of the Kalia Plaza Mobility Hub are anticipated to include the following effects, with implementation of mitigation measures.

- The creation of a public transit plaza land use will raise some concerns in the community about the potential disturbance/negative effects of heavy public use and potential vagrant activities.
- Topography and soils will be adjusted for required grading and excavation in site development. Mitigation will include Low Impact Development, landscape planting, and drainage controls.
- Vegetation, shrubs, and trees will be installed in landscape for each property. Mitigation will include a new urban landscape habitat for birds and mammals which may visit these properties.
- Stormwater management systems will be installed in the new development. Mitigation will include required measures for LID to manage stormwater runoff.
- Air quality effects will result from vehicle exhaust emissions. Mitigation will include regular maintenance of combustion engines and the ongoing transition of the fleet to electric buses.
- Noise conditions will result from the transit plaza operations. Mitigation will include transition to an electric bus fleet and design measures to mitigate noise levels affecting residential uses.
- Historic preservation effects will result from the potential effects to cultural resources in the construction phase, to be determined by studies and mitigation appropriate to the findings.
- Long-term beneficial effects will result due to a reduction in personal vehicle use to access this urban community and commercial center. Operational traffic generated by bus circulation associated with this active mobility hub will be factored into on-site facility design and mitigation of impacts to off-site traffic flows.
- Civil infrastructure systems will be affected in the long-term in support of the mobility hub's operational activities affecting access/roadways, drainage, and stormwater management, water supply, wastewater management, electrical supply, and communications. Long-term mitigation design measures, including LID, will be implemented to minimize effects to these systems.
- Views of the new mobility hub will be available from public locations on the adjoining roadways and properties. Mitigation will include high quality project design for this dense urban setting.
- Economics effects will include long-term beneficial impacts to government revenues associated with employment and commerce, along with private economic benefits to commercial operations and employees.

Future Scope for Environmental Assessment in Compliance with NEPA/HEPA

The future environmental review process will involve public and agency outreach and reviews in compliance with State and Federal environmental laws and procedures. The scoping process for the future environmental review will more clearly identify the potential for significant effects and determine the level of analysis to be required.

Chapter 343 Hawaii Revised Statutes (HRS)

The project must comply with the requirements pursuant to Chapter 343 HRS and Title 11-200.1 Hawaii Administrative Rules (HAR). Under section 343-5(a), HRS, use of state or county funds shall include any form of funding assistance flowing from the state or a county, and use of state or county lands includes any use (title, lease, permit, easement, license, etc.) or entitlement to those lands.

<http://oeqc2.doh.hawaii.gov/Laws/2019-HAR-11-200.1-Signed.pdf>

The project proponent for the compliance with Chapter 343 HRS is anticipated to be the City and County of Honolulu Department of Transportation Services (DTS), which will serve as the Accepting Authority for the subject environmental impact assessment process. Pending the findings of the scoping review, the Kalia Plaza Mobility Hub project is anticipated to require the preparation and processing of an Environmental Assessment (EA). The potential requirement for the preparation of a more intensive Environmental Impact Statement (EIS) may be considered during the early consultation/scoping phase if there is an indication of the potential for the project to generate significant adverse effects.

As part of the preliminary assessment of potential environmental impacts and mitigation, a draft letter and handout were prepared for the future early consultation process associated with the preparation of a Draft EA. The draft letter and handout are included as **Appendix G**.

National Environmental Protection Act (NEPA)

There is the potential for the City to receive federal funding via the Federal Transit Administration (FTA) to support a portion of the development of the Kalia Plaza Mobility Hub. If federal funds are used, the project would be required to comply with NEPA and most likely will require the preparation and processing of an Environmental Assessment (EA). An EA is a concise document that is prepared for an action where the significance of the potential social, economic, and environmental impacts are not clearly established (23 CFR 771.119). For NEPA compliance, consultations would be required under Section 106 National Historic Preservation Act (NHPA) and Section 7 Endangered Species Act (ESA).

If an EA demonstrates that the action will not have a significant effect on the environment, the process concludes with a finding of no significant impact (FONSI) (23 CFR 771.121). If, however, FTA determines that a project is likely to have significant impacts that cannot be mitigated to a level below “significant,” an Environmental Impact Statement (EIS) will be required. The requirement for the preparation of a NEPA EIS is not anticipated for the Kalia Plaza Mobility Hub project.

<https://www.transit.dot.gov/regulations-and-programs/environmental-programs/preparing-environmental-documents>

Based on an initial review of 23 CFR § 771.118 - FTA categorical exclusions, it is possible that the development of the Kalia Plaza Mobility Hub could qualify as a Type C Categorical Exclusion. Reference is made to two potentially applicable categories for this project, as follows:

(9) Assembly or construction of facilities that is consistent with existing land use and zoning requirements (including floodplain regulations) and uses primarily land disturbed for transportation use, such as: Buildings and associated structures; bus transfer stations or intermodal centers; busways and streetcar lines or other transit investments within areas of the right-of-way occupied by the physical footprint of the existing facility or otherwise maintained or used for transportation operations; and parking facilities.

(10) Development of facilities for transit and non-transit purposes, located on, above, or adjacent to existing transit facilities, that are not part of a larger transportation project and do not substantially enlarge such facilities, such as: police facilities, daycare facilities, public service facilities, amenities, and commercial, retail, and residential development.

The City should work closely with FTA to pursue the potential for NEPA compliance for the Kalia Plaza Mobility Hub as a qualified Categorical Exclusion under one or both of these categories. Another aspect of NEPA compliance would be the potential need to complete the Section 106 NHPA consultation, which may be required due to the existing building on Parcel 1.

PRELIMINARY INFRASTRUCTURE ASSESSMENT

The purpose of this preliminary infrastructure assessment is to evaluate the existing site infrastructure and determine the extent of infrastructure improvements necessary to support the proposed development of the proposed Kalia Plaza Mobility Hub, which may also include mixed-use joint development on City-owned parcels. The preliminary infrastructure assessment is summarized below, and the full Preliminary Infrastructure Assessment Report is included as **Appendix H**.

Existing Conditions

The project site consists of three Tax Map Keys (TMK) parcels (see Figure 33). The site identified as Parcel 1 throughout this report is comprised of TMKs 2-3-039:016 and 2-3-039:017. Existing uses on these parcels consist of offices, a multi-level parking lot, and restaurants/nightclubs. The site identified as Parcel 3 throughout this report is comprised of TMK 2-3-039:004. Existing uses on this parcel consist of a commercial retail building and small surface parking area. The three parcels are zoned as Business Mixed Use – 3 (BMX-3) based on Land Use Ordinance (LUO) zoning designation provided by the City and County of Honolulu.

The area is generally flat. The parcels located generally slope toward Kona Street along the south side of the sites, and slope toward Kapiolani Boulevard along the north side. The elevations generally range from 5.5 feet at the north side of the sites to about 4.5 feet at the southern boundary of the sites.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the project area, most of the project will be in Zone – “X”, an area determined to be outside the 500-year floodplain subject to any flood regulations. However, the southern half of TMK 2-3-039-004 (i.e. site referenced as Parcel 3 throughout this report) is located within Zone – “AE= 6'”, which consists of a flood hazard area with a base flood elevation (BFE) determined at elevation 6-feet. This section is within the Special Flood Hazard Areas (SFHAs), which is subject to inundation by the 1 percent annual chance of flood.

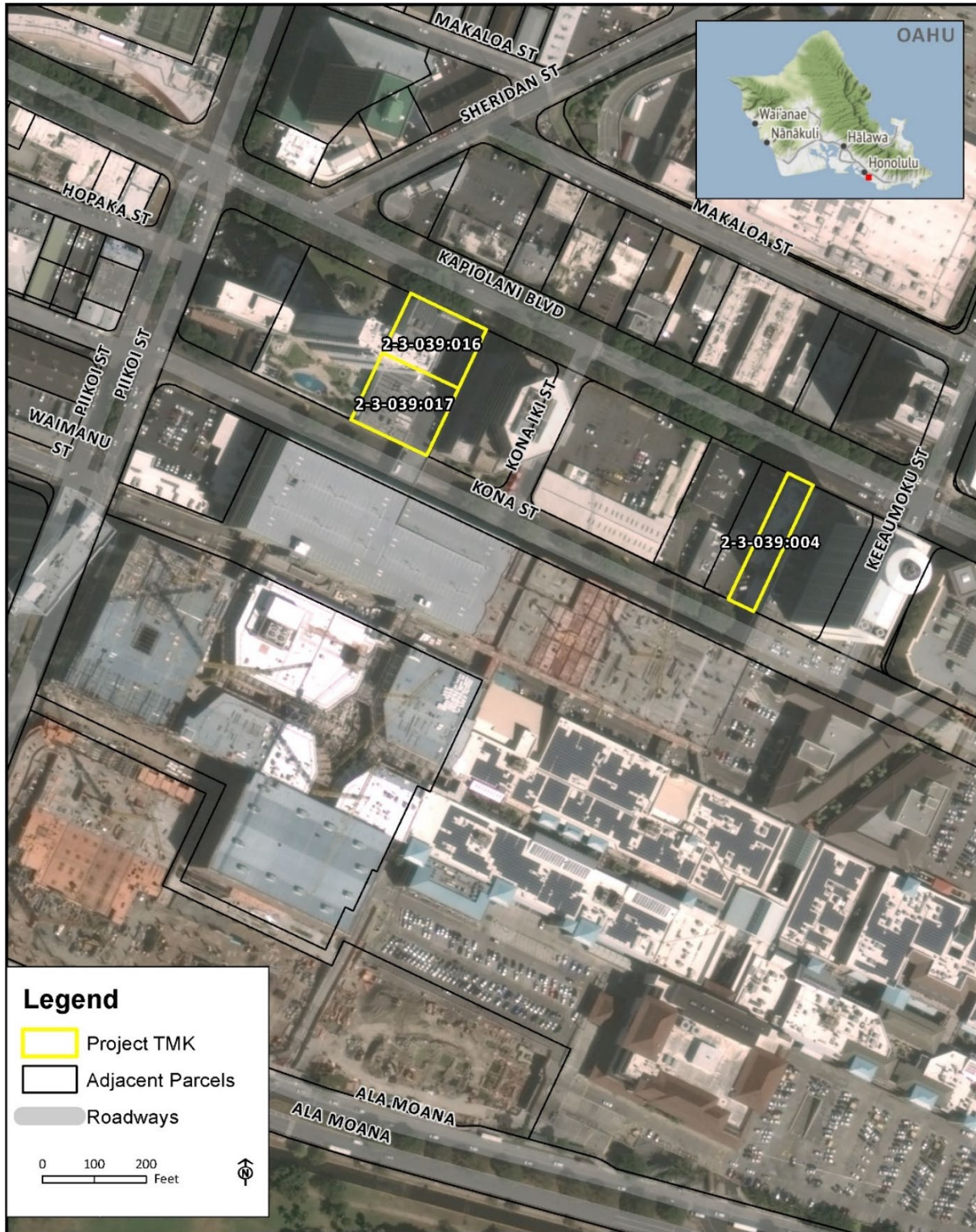
The effects of sea level rise on flood hazard areas from upland flooding are not yet fully studied. However, planning for the project should consider the effects of sea level rise and coastal flooding and their impacts to the groundwater table, buried infrastructure, and upland flooding. Consideration should be given for potential areas not currently within the SFHA that may be added to the SFHAs, a result of potentially higher base-flood elevations.

Proposed Infrastructure

An analysis of existing infrastructure is presented in a Preliminary Infrastructure Report prepared under separate cover. New utility infrastructure including water and sewer utilities, grading and earthwork, and new pavements are not expected to have major impacts on existing conditions or existing infrastructure systems within or around the project site.

An area to highlight is electrical and telecom infrastructure. Based on information provided by the Hawaiian Electric Company (HECO), HECO 12 kilovolt (kV) and 25 kV distribution systems serve the project area, but both systems are at capacity. With redevelopment ongoing in the project area, much of the capacity is already occupied by new projects either already served, planned, or pending services requests. HECO may require new transformer infrastructure at the existing Kewalo Substation west of the project sites on Kona Street. New transformers and 25 kV line infrastructure consisting of underground conduit duct banks and manholes and vaults would be required to be extended to the project sites if capacity is not currently available. The addition of transformers at the substation would require Public Utility Commission (PUC) approval.

Figure 33 - Tax Map Keys for Project Sites



DEVELOPMENT APPROACHES

The range of potential development approaches that may be considered for advancing the Kalia Plaza Mobility Hub will vary based upon the City and County of Honolulu's preferred method or defined policy for addressing key considerations, including:

- Development parcel(s) ownership
- Project components (definition and programming)
- Responsibilities assigned to the public and/or private entities, including:
 - Project development
 - Design
 - Entitlements and permit acquisitions
 - Construction
 - Maintenance
 - Funding for capital (implementation) and operations & maintenance (O&M)
- Project delivery oversight

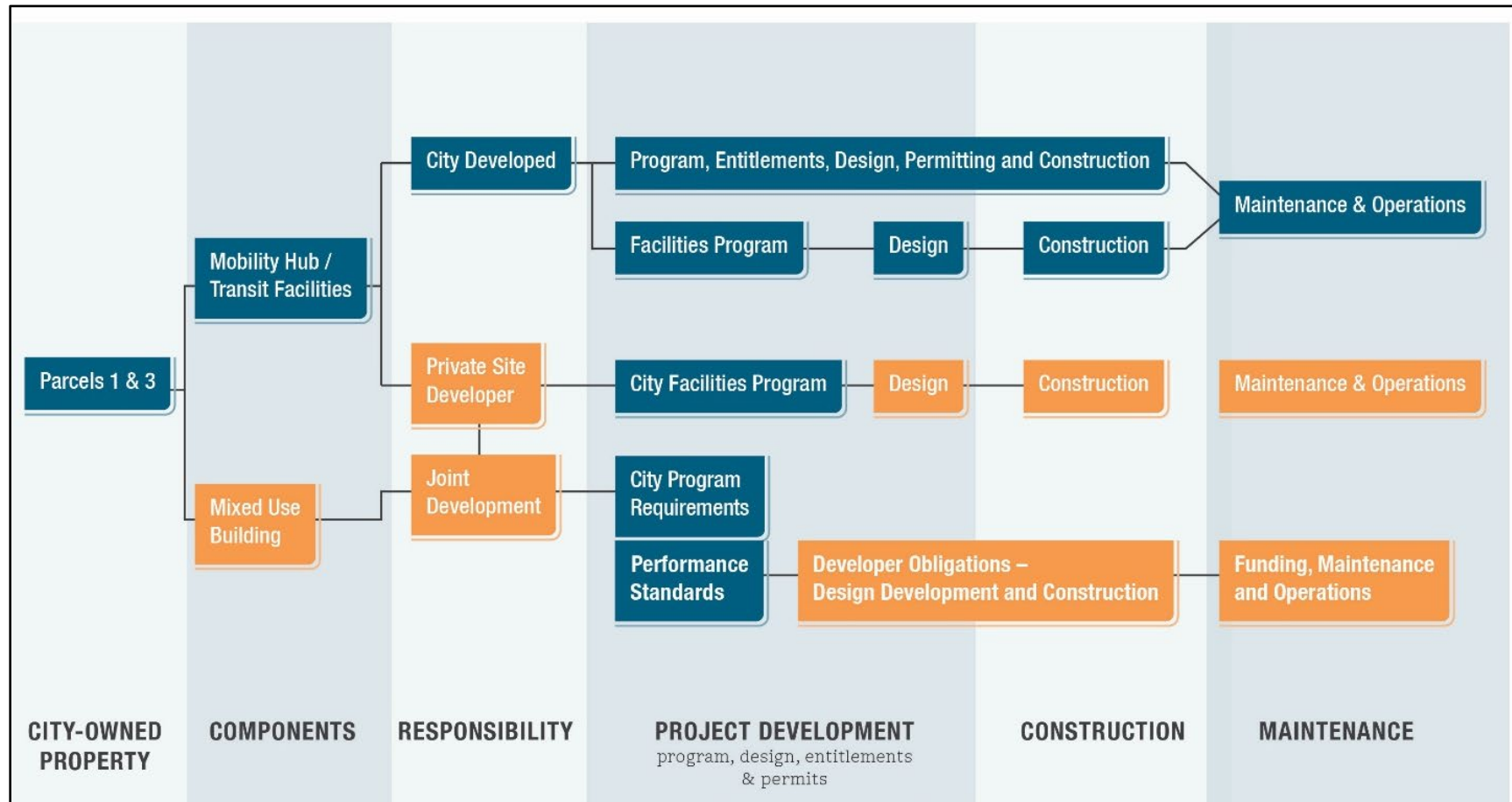
While there are numerous potential combinations of outcomes combining each consideration, the development approaches process flow diagram (see Figure 34) summarizes several options for delivering all or components of the mobility hub project. The lighter (orange) shaded boxes in the diagram represent activities performed by a private sector development partner, whereas the darker (blue) shaded boxes in the diagram represent activities performed by the public sector (City) as part of a public-private partnership (P3) project delivery method.

Development Parcel Ownership

For a typical public agency led project, the agency provides start-to-finish project definition, programming, design, entitlements, permitting, and construction oversight services, applying a range of procurement methods. Design-bid-build project delivery represents a large percentage of projects implemented by public agencies, progressing projects through a capital improvements program and meeting defined timelines for project completion.

Partnerships with the private sector may provide greater flexibility and capacity to agencies for delivering a non-conventional project. For complex projects, such as a mixed-use building spanning a mobility hub, private sector engagement leverages the developer's experience in the various project types (e.g., vertical construction), uses, building scales, and functions. Experience with these aspects may be less comprehensive at a public agency. In addition, a private sector partner may help manage the public agency's risks during project delivery, such as cost, schedule, as well as long-term operations & maintenance.

Beyond solely public agency (City-led) or exclusively private sector (developer-driven) approaches for delivering the Kalia Plaza Mobility Hub project, a joint development approach could be advanced whereby the City could complete aspects of the project such as building the public transportation infrastructure (mobility hub) and installing building foundations for the mixed-use building to be constructed above the mobility hub.

Figure 34 - Development Approaches

Different approaches to ownership structure are also available such as the City (1) retaining property ownership and providing development rights or (2) conveying the property to a private entity under a type of real estate transaction. If the retention of City property ownership is preferred, the mobility hub development could be constructed with recurring property ground lease payments paid by the private entity in exchange for the development of air rights. Conversely, the sale of the property to a private entity could result in a one-time capital payment and include additional terms as part of the sales transaction (e.g., requirement to construct the mobility hub's public transportation infrastructure). Either of these ownership approaches could include requiring the private sector developer to build the mobility hub's transit facilities and, if desired, also assign the private sector developer responsibility for the operations and maintenance of the mobility hub's transit facilities.

Project Components

The LPA concepts place mobility hub public transportation infrastructure, including the bus transit center and concourse for accessing the future rail station, on the first two levels of an integrated building on Parcel 1, which would serve as a podium for the mixed-use development building and would integrate the structural supports for the building. Due to space constraints on Parcel 1, it may not be feasible to develop the mobility hub and mixed-use building as two separate projects. If the mobility hub was constructed in advance of the mixed-use building, the operations of the mobility hub would be severely restricted during the subsequent construction of the mixed-use building.

Other components of the Kalia Plaza Mobility Hub project, such as the transit facilities on Parcel 3 and the transit facilities and first-last mile infrastructure along streets, could be developed separately as standalone projects or could be developed in conjunction with Parcel 1.

Responsible Party and Roles

There is a wide spectrum of potential arrangements ranging from a publicly owned, designed, constructed, and managed project to a private sector turnkey designed, constructed, operated, maintained, and potentially funded project. At each stage of the project development and delivery process, the City needs to consider the strengths, weaknesses, and tradeoffs associated with either retaining or relinquishing their ownership and control.

When considering delivering a mixed-use building as proposed on Parcel 1, public agencies without a mission to provide a real estate function often do not possess the necessary skills, experience, and staff to lead this type of development effort, including elements such as residential and/or commercial leases or sales. Benefits of private developer-led implementation may include transfer of risk, accelerated project delivery, increased innovation, alternative financing methods, and more in-depth understanding of market demand and property development. Accordingly, either a private developer-led implementation or other joint development method may be most favorable for delivering the mixed-use building component of the project.

On the other hand, the transit facilities on Parcel 3 and additional on-street transit facilities and first-last mile infrastructure could be advanced either as independent City projects or with participation by the private sector. Advantages of advancing these improvements as independent City projects include maintaining maximum control of the design process for facilities that will serve the public, the opportunity to accelerate the delivery of these smaller scale improvements, and the potential for these improvements to support transit operations during the more intensive construction process on Parcel 1. An advantage of private sector implementation of these improvements is potential cost efficiencies that may be realized if these improvements are implemented concurrently with the improvements on Parcel 1.

Project Development

Development Program

The definition of program requirements for the project remains a key responsibility for the City. Whether the development program is (1) prescribed with a concept plan with specific size and use requirements or (2) provided as an overall guide for the designer, design-builder, or private sector developer to interpret and return with concepts, rests in the level of control desired by the City.

The program development for the mobility hub's transit facilities, at a minimum, should be based on the facility's established public transportation needs, including on-site bus bays, intermodal rail connections, and passenger amenities, and should be completed in coordination with the City. For the mixed-use building, the program could include a blend of real estate opportunities ranging from transit-supportive retail to residential units targeted toward lower income residents. The overall program of improvements developed in the AA study is summarized in Table 12, which outlines the various components by location.

As described in the December 2020 market study completed during the AA study, there is a strong market demand for residential units in the area. The mixed-use building could be completed as fully market-rate residential project with the City receiving compensation through either recurring or one-time payments. However, affordable, workforce housing is a highly desired community need, and the project's transit facilities can help provide much needed mobility opportunities for lower-income residents who often rely on public transportation to serve their mobility needs. The City could require that residential development include a component of affordable housing and the City could include a financial incentive to increase the share of affordable housing. The presence of a major transit facility (i.e. mobility hub) provides an opportunity to lower development costs for the mixed-use building by eliminating the provision of on-site parking, consistent with LPA Concept A1: Integrated Mobility Hub and Mixed-Use Building without Parking.

For the joint development to be viable for a private sector partner, the project will need to "pencil out" financially through the developer's proforma. For example, the ability to attract developers and successfully complete a fully (100%) affordable housing project would typically be more limited or may require more project incentives. As such, defining the program is an important consideration early in the process. During the joint development procurement and developer selection, the process will likely require balancing the City's project goals and objectives to meet the private sector developer's requirements. The program definition for the project could be either specified or could be achieved through developer performance measures.

Design and Construction

The mobility hub's design and construction phase could be managed directly by the City or by a private sector developer partner. A primary project development consideration is the selection of the project delivery method and procurement strategy for project implementation. Design and construction phase services are defined by the contractual arrangements between the public agency and/or private developer partners and through the defined roles which vary based on the project delivery method.

Project Delivery Methods

Project delivery methods commonly used for agency-managed infrastructure projects, include Design-Bid-Build, Design-Build, and Construction Management/General Contractor (GM/GC). These project delivery methods define the process by which an Owner (i.e., City for this project) will enter into design and construction contract(s) with designers, contractors, or designer/builders, and the associated

responsibilities, risks, and contractual relationships that are assigned to each of the parties to deliver the project.

Public agencies often do not possess the expertise nor have the mandate to deliver and manage for-profit development or vertical building projects. Therefore, private developers, public-private partnerships (P3) and/or joint development project delivery methods are often used for publicly-owned, real-property asset development and management of commercial uses (e.g., housing, office, and retail). These project delivery methods are effectively applied where the public agency leverages the real property (land) and intends to develop an integrated public facilities project without retaining ownership and management of the non-transit private facilities. The private entity is selected and assumes the responsibility of delivering the public agency's facilities as part of an overall private development project. The difference between these options are best determined by the level of ownership, source of funding and distribution of revenue streams, and sharing of risk. Through this

Table 12 - Program of Improvements by Location

Parcel 1	Parcel 3	Kapiolani Blvd.	Kona Street /Kona Iki Street (Brookfield Properties Retail Group)	Ala Moana Center (Brookfield Properties Retail Group)
Mobility Hub	Transit Facilities	Transit Facilities	Transit Facilities	Considerations
6 bus bays (1 bus bay designated for paratransit operations)	3 layover positions (with electric vehicle charging equipment)	2-3 bus stops for through routes (may include 1 tandem stop in each direction)	3 bus stops on Kona Street (includes 2 tandem stops - 1 in each direction)	Bus stops for private bus operations (trolleys)
Mix of short- and long-term parking for 150 bikes	Comfort station for bus operators	Traffic improvements for bus operations (e.g., signal improvement for protected left turn from Kapiolani Boulevard to Kona Iki Street)		Curb space for taxis and TNC operations
Bikeshare station	Considerations	First/Last Mile	First/Last Mile	Parking for joint (residential) development on Parcel 1
Space for parking/storage of micromobility vehicles (e.g., electric scooters)	Pedestrian corridor between Kapiolani Blvd. and Kona Street	Pedestrian improvements (sidewalks, curb ramps, enhanced crosswalks, curb extensions, signals - lead pedestrian interval, pedestrian scramble)	Pedestrian improvements (sidewalks, curb ramps, enhanced crosswalks, curb extensions, signals - lead pedestrian interval, pedestrian scramble)	
Waiting areas with weather protection (shelters) and benches	Security - gates, fencing, lighting, cameras	Bike improvements (routes/facilities connecting with mobility hub)		
Wayfinding and including real-time information (next bus arrival)		Long term - pedestrian overpass from Parcel 1 crossing Kapiolani Boulevard (elevated pedestrian corridor connecting with rail station)		
Fare purchase			Considerations	
Public restrooms			Bus stops for private bus operations (trolleys)	
Vendors space/transit-oriented retail			Curb space for taxis and TNC operations	
Joint Development				
Multifamily residential (affordable housing component)				
Transit supportive retail				

approach, the skills, and assets of the public and private sectors are shared in delivering a service or facility for the use of the general public. In addition to the sharing of resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility.

A private developer project may assume risks and responsibilities including funding, design, construction, and operations. A P3 approach may be applied where a private entity has a long-term contract with a public agency and assumes substantial financial, technical and operational risk with associated performance-linked payments. The design and construction process with associated reviews and approvals is defined with project development responsibilities for both private and public sector parties as part of the contractual agreements. Development-related services can include but are not limited to:

- Definition of project goals
- Documentation of existing conditions
- Development of space or site program
- Advice on optimum use of available funds
- Early coordination during the design phase
- Value engineering
- Constructability reviews
- Control over the scope of work
- Optimum use of the design and construction firms' skills and talents

A joint development is a contractual arrangement whereby public and private parties will complete development activity under clearly defined coordinated controls. While a joint development project may include coordination between and the sharing of responsibilities by public and private entities, there is a distinction between a joint development and a P3. See the *Federal Transit Administration Guidance on Joint Development* section of this report for more details on the distinction.

Operations and Maintenance

Additional considerations include sharing or delegating the operations & maintenance (O&M) responsibilities to the private developer in a joint development agreement. These O&M services can be administered under the purview of the private entity as part of their normal operations on the site, which reduces the public agency requirements to maintain the facilities. However, the public agency may develop key performance indicators (KPIs) for O&M services, which must be met by the private entity.

Joint Development

Joint development programs are real estate development programs established by transit and public agencies to guide real property asset development and management. The real property development is conducted by public and private sector developments for their land holdings. Joint development programs define the developer responsibilities, program objectives, policies, and processes that govern the joint development, typically including community outreach, competitive developer solicitation, project development and refinement, joint development agreements, negotiated terms, and financial, permitting, and construction phase requirements.





Various transit and public agencies have developed comprehensive joint development processes. Below is a synopsis of one transit agency's joint development program and a summary of the Federal Transit Administration's guidance on joint development.

Los Angeles MTA (Metro) Joint Development Process

The Los Angeles County Metropolitan Transportation Authority's (Metro's) Joint Development Process highlights key elements and outlines a timeline approximating four to six years for the implementation of a joint development project (see Figure 35). The LA Metro Joint Development process can be summarized as follows.

- **Inventory and Site Selection**
 - Metro maintains an inventory of potential properties for future joint development.
 - Site selection for joint development is based on several factors, including market conditions, community input, local jurisdiction, and agency resources.
 - Determination of financing requirements, which is dependent on the funding sources that were used to acquire the selected site.
- **Community Outreach and Scoping**
 - Consult with local jurisdictions and seek community input through outreach.
 - Prepare development guidelines specific to the site to guide intensity and type of land use along with transit and urban design features.
- **Competitive Solicitation Process**
 - Solicit proposals for joint development through a Request for Information and Qualifications (RFIQ) and/or Request for Proposals (RFP).
 - Evaluation of proposals based on Metro's Joint Development Objectives and conformance with site-specific Development Guidelines.
- **Development Phase**
 - Execute an Exclusive Negotiation Agreement and Planning Document, including project concept, terms, and conditions regarding community engagement, general planning and development goals, deposit and fees, design review, and a predevelopment schedule.
 - Complete a Joint Development Agreement upon satisfaction of environmental documentation.
 - Obtain concurrence from the Federal Transit Administration (FTA), if necessary, based on the funding source used to acquire the property and/or fund public transportation improvements.
 - Execute a Ground Lease that describes the rights and responsibilities of each party.

Figure 35 - Los Angeles County Metropolitan Transportation Authority's Joint Development Process

Metro Joint Development Process				
STAGE	Initial Community Outreach	Developer Solicitation/ Selection**	Project Refinement, Joint Development Agreement Ground Lease Negotiations	Permitting and Construction
				
	<ul style="list-style-type: none"> >Community meetings >Creation of Development Guidelines* 	<ul style="list-style-type: none"> >Issue Request for Information and Qualifications (RFIQ) and/or Request for Proposals (RFP) >Evaluate proposals >Community update 	<ul style="list-style-type: none"> >Developers progress architectural design >Community outreach and input - several iterations >Entitlements and CEQA process*** >Negotiation of financial terms 	<ul style="list-style-type: none"> >City engineering >Construction documents >City building permits >Seek concurrence from FTA (for properties with federal interest) >City-related approvals >On-site construction >Occupancy
ACTIONS	Metro Board approves Development Guidelines	Metro Board authorizes Exclusive Negotiation Agreement (ENA) with recommended developer(s)	Metro Board approves Joint Development Agreement and Ground Lease Agreement	Completed project
RESULT	approximate overall time frame: 48 - 70 months			
	6 - 8 months	6 - 8 months	18 - 30 months	18 - 24 months

Federal Transit Administration Guidance on Joint Development

The Federal Transit Administration (FTA) can support joint development through its various planning and capital assistance programs. In general, project sponsors may fund joint development using any FTA funding source that is available to assist a capital project.

FTA Circular C 7050.1B defines the term “joint development” and explains how a joint development project can qualify for FTA assistance. Joint development is defined as a public transportation project that integrally relates to, and often co-locates with commercial, residential, mixed-use, or other non-transit development. Note that joint development is defined in the City’s land use ordinance as “the development of two or more adjacent subdivision lots under a single or unified project concept.” The concept of joint development in this memorandum is consistent with its definition in the FTA circular, rather than in the City’s land use ordinance.

Although related in purpose – creating vibrant, compact, mixed-use, economically successful communities near public transportation – joint development and transit-oriented development (TOD) differ. Joint development uses project property, whereas TOD has a broader neighborhood scale. Joint development provides opportunities for private-sector participation in public-sector transportation projects.

Another key distinction to note is the difference between a joint development project and a public-private partnership (P3). A joint development project often combines the development of transit and non-transit projects, and, in most circumstances, includes the participation of a private entity. A P3 is a contractual agreement formed between a public agency and a private sector entity that is characterized by private sector investment and risk-sharing in the delivery, financing, and operation of a project. Thus, while a joint development project may include coordination between and the sharing of responsibilities by public and private entities, it is not a P3. A project sponsor, however, may use a P3 to procure services from a private partner in a joint development project.

FTA’s policy is to maximize the utility of FTA-assisted projects and to encourage the generation of revenue for public transportation through joint development. One of the primary benefits of joint development is revenue generation for the transit system, such as income derived from rental or lease payments, as well as private sector contributions to public infrastructure. Other benefits include shared costs, efficient land use, reduced distance between transportation and other activities, economic development, increased transit ridership, and improved transit connectivity.

FTA funds may be used to pay for many aspects of a joint development, including costs associated with eligible planning and capital activities. Project sponsors of an FTA-assisted joint development must ensure their project satisfies all four eligibility criteria in order to be eligible for capital funding.

- **Economic Benefit.** An FTA-assisted joint development project must either enhance economic development or incorporate private investment.
- **Public Transportation Benefit.** The joint development project can either (a) enhance the effectiveness of public transportation and be related physically or functionally to public transportation, or it can (b) establish new or enhanced coordination between public transportation and other modes of transportation.
- **Fair Share of Revenue.** A “fair share of revenue” is the division of revenue generated from a joint development project that the project sponsor and its partners negotiate and agree that the project sponsor will receive. The revenue may be generated over the life of the project.

- **Fair Share of Costs.** A joint development must provide that a person making an agreement to occupy space at a facility constructed with FTA assistance must pay a fair share of the costs of the facility to the project sponsor. The fair share may be paid in the form of rental payments, but may also take other forms (e.g., operating and maintenance agreements).

Eligible Activities

Capital costs associated with joint development activities that are eligible for FTA assistance include:

- Property acquisition
- Demolition of existing structures
- Site preparation
- Utilities, including utility relocation and construction
- Building foundations, including substructure improvements for buildings constructed over transit facilities
- Walkways, including bicycle lanes and pedestrian connections and access links between public transportation services and related development
- Pedestrian and bicycle access to a public transportation facility
- Construction, renovation, and improvement of intercity bus and intercity rail stations and terminals
- Renovation and improvement of historic transportation facilities
- Open space, including site amenities and related streetscape improvements such as functional landscaping and streetscaping
- Safety and security equipment and facilities (including lighting, surveillance, and related intelligent transportation system applications)
- Facilities that incorporate community services such as daycare and healthcare
- A capital project for, and improving, equipment or a facility for an intermodal transfer facility or transportation mall
- Construction of space for commercial uses
- Capital project and equipment for an intermodal transfer facility or transportation mall, including acquisition of facilities and equipment, roadbeds, tracks and bus ramps, pedestrian concourses, parking facilities, park-and-ride services, improvements to existing bus or rail transit terminals, stations, major transfer points, and shelters as well as other facilities directly related to the linking of public transportation facilities with other modes of transportation
- Transportation-related furniture, fixtures, and equipment
- Parking improvements with a public transportation justification and use, or with an intercity bus or intercity rail justification and use, in connection with joint development
- Project development activities, including design, engineering, construction cost estimating, environmental analysis, real estate packaging and financial projections (operating income and expenses, debt service, and cash flow analysis), and negotiations to secure financing and tenants
- Professional services, including reasonable and necessary costs incurred to hire professionals to prepare or perform the activities described above, or to assist the project sponsor in reviewing the same

NEXT STEPS IN PROJECT IMPLEMENTATION PROCESS

This AA for the Kalia Plaza Mobility Hub has defined a general program of components for a new mobility hub in proximity to the future Kalia Rail Station. In addition, there is an opportunity to integrate mixed-use development with housing and commercial elements on the site (on Parcel 1).

The subsequent phases of project development and implementation for the project may include:

- **Project Definition:** The components of the project need to be confirmed including the specific elements for the mobility hub on Parcel 1, the transit facilities on Parcel 3, the transit facilities and first-last mile infrastructure along adjacent streets, and requirements for mixed-use development (e.g., affordable housing commitment).
- **Selection of Project Delivery Method:** There is a wide spectrum of potential arrangements ranging from a City-owned, designed, constructed, and managed project to a private sector turnkey designed, constructed, operated, maintained, and potentially funded project. Since public agencies such as the City often do not possess the necessary resources to deliver the mixed-use building component of the project, either a private developer-led implementation or other joint development method may be most favorable for delivering the components of the project on Parcel 1. The transit facilities on Parcel 3 and additional on-street transit facilities and first-last mile infrastructure could be advanced either as independent City projects or with participation by the private sector. When selecting a preferred project delivery method, the City needs to consider the strengths, weaknesses, and tradeoffs associated with either retaining or relinquishing their ownership and control of various project elements.
- **Preliminary Engineering/Design Development:** The plans for the project need to be advanced to the level required to refine cost estimates for budgetary programming and to inform required environmental studies.
- **Environmental Compliance:** The project must comply with the requirements of the Hawaii Environmental Policy Act and, if federal funds are applied to the project, with the requirements of the National Environmental Policy Act.
- **Final Design and Permitting:** The engineering and construction drawings must be completed by design professionals.
- **Construction:** The construction phase will include the work required to build the project including the installation of site infrastructure improvements before the buildings and other components of the project can be constructed.
- **Operations and Maintenance:** The functions and duties associated with the daily operations, upkeep, and other activities required to maintain the mobility hub, so it continues to provide acceptable services and amenities for transit passengers.

Figure 36 provides a simplified timeline of the project implementation process. Note that the steps involved, and timeframes, can vary substantially depending on the project delivery method. There also may be opportunities to overlap some of the steps to shorten the overall duration.

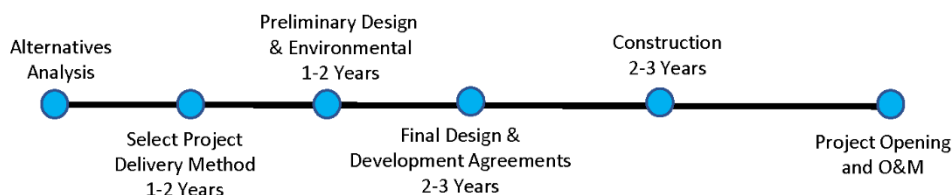


Figure 36 - Project Implementation Process Timeline



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Contact

Greg Kyle

Greg.Kyle@kimley-horn.com

213.261.4109

www.kimley-horn.com

Kimley-Horn

660 South Figueroa Street

Suite 2050

Los Angeles, CA 90017