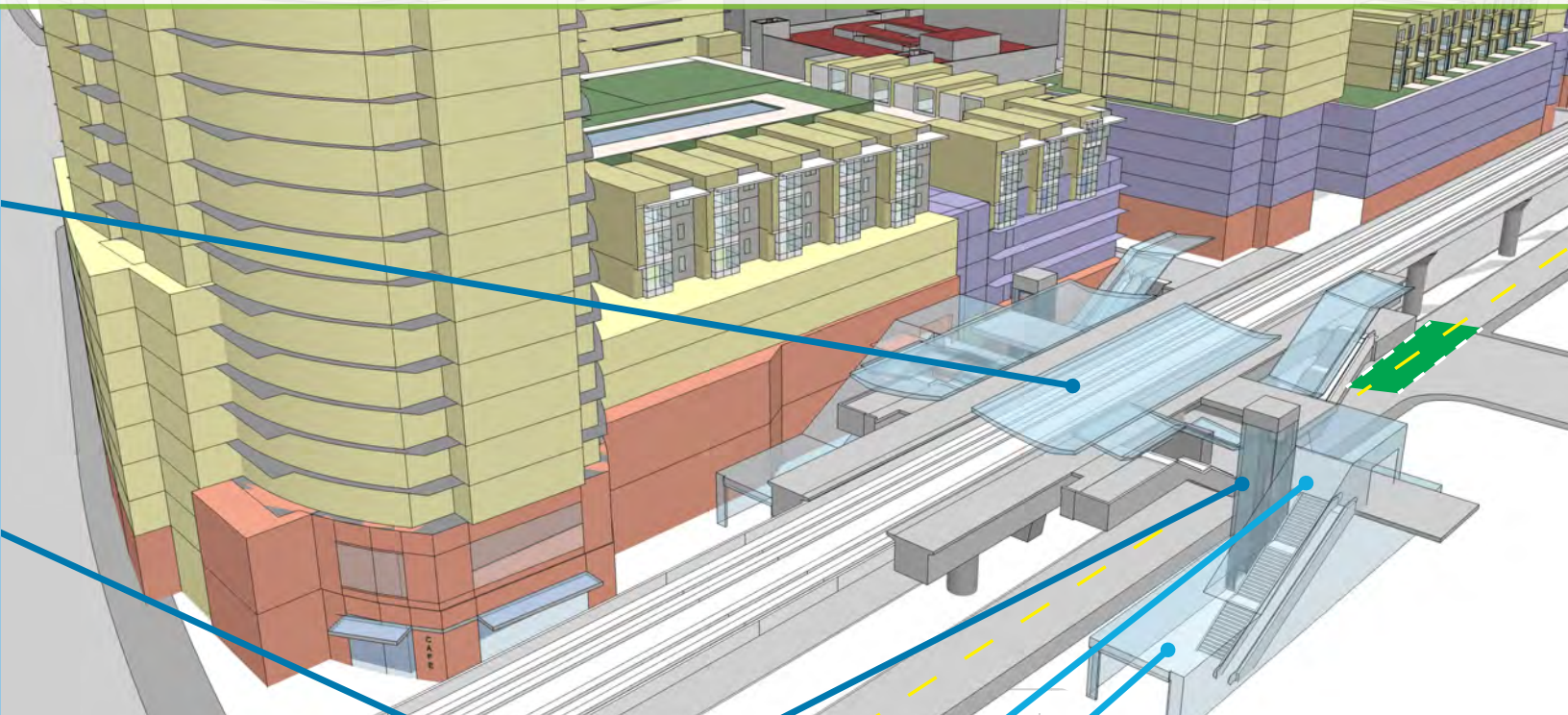


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## 7 HART STATIONS AND ACCESS







## 7 HART STATIONS AND ACCESS

### Integrating Rapid Transit in the Kaka`ako District

The Honolulu Authority for Rapid Transit project is a piece of civic infrastructure that will cut an elevated swath across the center of Kaka`ako. HART plans to contract for station design of two stations within the Kaka`ako District (Civic Center and Kaka`ako) along with the six other stations that comprise the Diamond Head segment of the HART alignment including Downtown and Ala Moana. This Chapter provides an outline of design strategies, opportunities and overall vision for the two Kaka`ako District Stations (Civic Center Station and Kaka`ako Station) as well as provides opportunities for the Aloha Tower parcel under HCDA jurisdiction (neighboring to the Downtown Station). It also outlines design guidance for preferred future station and alignment design, and a series of access strategies. HCDA will collaborate with HART to ensure that these design principles and strategies are considered during the transit system's implementation process to help make HART a local asset (rather than a encumbrance) in the transitioning Kaka`ako District.

#### Elements of Station Access

Station access includes the total travel experience from a transit passenger's origin (e.g., home) to his or her final destination (e.g., work, school, entertainment). Access includes the physical act of travelling to the transit station as well as the psychological ease of navigating the route to get there, regardless of the mode taken. Given the relative simplicity of driving a personal car directly from origin to destination, the success of a new transit investment depends on understanding the total transit experience to maximize ridership by making transit competitive and compelling to as many potential riders as possible. To this end, this chapter provides a set of overarching station access principles and

specific strategies and actions to ensure Civic Center and Kaka`ako stations are focal points of the KCDD community.

### Station Area Principles: Place, People, and Performance

The three major principles that guide the TOD Overlay Plan approach to integrate the HART stations into the neighborhood are *People*, *Performance*, and *Placemaking*. Design objectives for the public realm related to *People* optimize convenience and comfort for all transit users by simplifying travel to/from and within the station area and adding human-scaled design elements. *Performance* objectives foster seamless multimodal connections. Lastly, *Placemaking* principles are tied to creating opportunities for context-sensitive design solutions, complete with active public spaces, and transit-friendly land uses. Principles for the Kaka`ako, Civic Center and Downtown Station locations are presented in Figure 7-1. Figure 7-2 illustrates how selected principles might be considered at the Civic Center Station.

### Access Hierarchy

All modes of station access cannot be given equal priority. At every station, there is limited space and scarce funding available for access improvements. Recognizing these constraints, the proposed station access hierarchy illustrated below establishes priorities for access improvements and policies. The station access strategies and actions described in this Chapter are based upon this hierarchy.

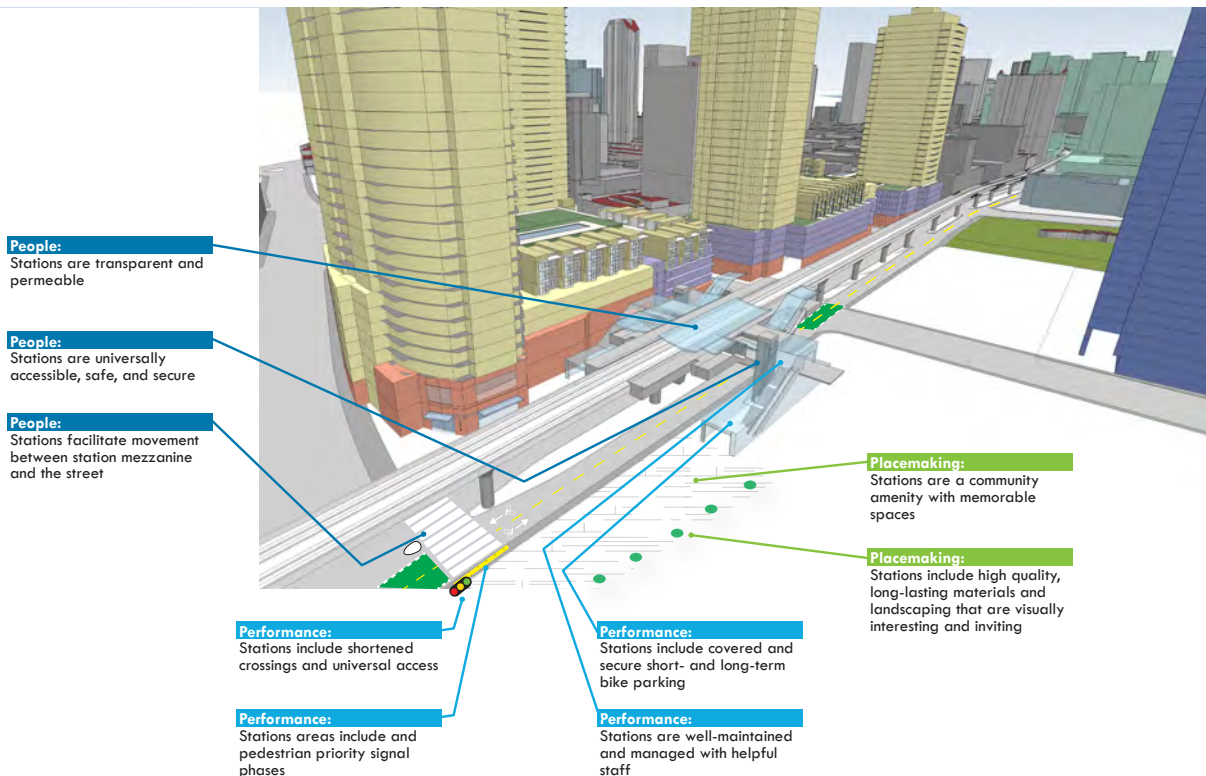




Figure 7-1 Station Access Principles and Objectives

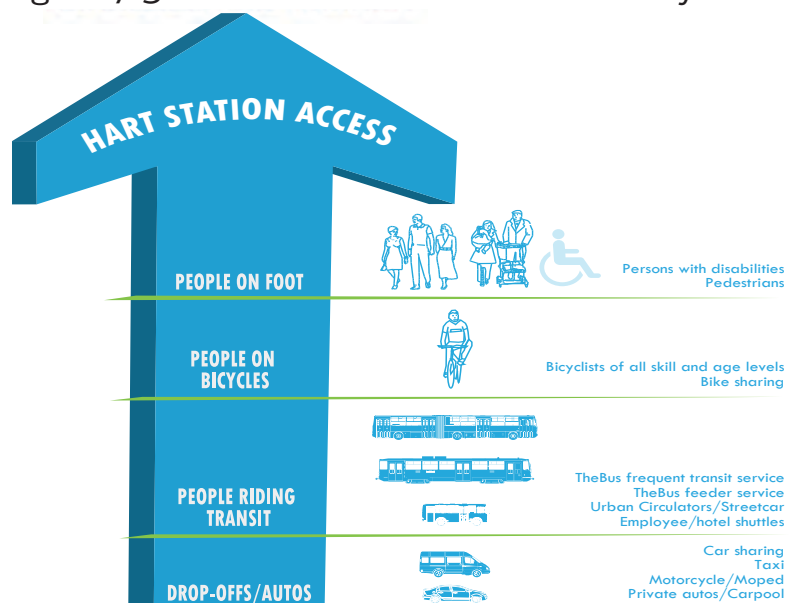
Principles	Objectives
<b>PEOPLE</b> 	<ul style="list-style-type: none"> <li>• Station access should be simple and intuitive, with a legible layout for street-to-train, bus-to-train, and station-to area destinations.</li> <li>• Station siting maximizes pedestrian connectivity to the street and adjacent uses while considering pedestrian safety issues and operational/functional needs.</li> <li>• Public realm designs adjacent to the station provide generous space for pedestrian movement, weather protection, comfortable furnishings and Crime Prevention Through Environmental Design (CPTED) elements. Design includes street-level activation and high quality lighting to make under-guideway environments more comfortable.</li> <li>• The station addresses and balances the needs and hierarchy of all modes, including pedestrians and cyclists, transit, and vehicular travel.</li> </ul>
<b>PERFORMANCE</b> 	<ul style="list-style-type: none"> <li>• The station area eliminates safety conflicts between roadway users and reduces ground transportation collision rates.</li> <li>• Efficient bus transfer locations are developed and kiss-and-ride layout is planned and designed to minimize impacts with other modes.</li> <li>• The station includes secure bicycle parking and storage facilities and convenient bike-on-transit integration. Additionally, all streets in the station area will provide a safe and comfortable space for cyclists.</li> </ul>
<b>PLACEMAKING</b> 	<ul style="list-style-type: none"> <li>• Station sites are community assets designed to enhance local environment.</li> <li>• Station areas integrate with transit-friendly development projects, generous public realm, public gathering areas, sidewalks and activated streetscapes.</li> <li>• Elements to humanize the scale of new infrastructure are included where feasible such as distinctive architectural treatments, public art, and under alignment landscape.</li> </ul>

Figure 7-2 Station Access Principles at Civic Center Station



The proposed access hierarchy prioritizes pedestrians above all other modes. Walking to transit is the most cost-effective, environmentally friendly, and equitable form of station access. Furthermore, every transit rider is a pedestrian for at least part of their trip, even if it is only from the bus drop-off to the station platform. Bicycling is the second highest access priority. Similar to walking, its cost and environmental impact is minimal. It remains a highly equitable form of transportation even if it may not be an option for all users. The remaining access modes are prioritized based on their increasing cost, space demands, and environmental footprint. Bus transit access to HART stations will be of critical importance; however, major bus transfer points are planned outside the district to the east and west at the Ala Moana and Downtown Stations.

Figure 7-3 HART Station Access Hierarchy



## Access Demand

Station access needs are determined based on station access demand by mode. Opening day ridership projections for the Kaka`ako and Civic Center stations are 3,320 and 3,930 respec-



tively. In both cases, approximately 80% of these transit trips are expected to originate on foot and by bicycle, thereby increasing the importance of adequately designed pedestrian and bicycle facilities. Furthermore, given that both station areas are planned for significant redevelopment, multimodal access demand should be based on future build-out conditions.

An estimate of 2035 ridership is compared to opening day. Both stations are expected to see ridership growth of over 500% in the 20 year time period. These projections do not include any additional growth allowed under the TOD Overlay Plan scenario.

**Figure 7-4 Opening Day and 2035 Ridership at KCDD HART Stations**

	Civic Center			Kaka`ako		
	2035	Opening	%Change	2035	Opening	%Change
AM and PM Peak Periods	5,878	880	568%	5,348	570	838%
Total Daily	7,168	3,930	82%	7,771	3,320	134%

Note: Peak Period is defined as 4 hour AM and 4 hour PM peak; 2035 projections based on OMPO Modeling for RTP (2035 projection), may differ from official HART ridership forecasting

## Overall Access Strategies

Helping passengers get to the rapid transit stations is a shared responsibility: the City/County of Honolulu, HCDA, and HART must work together to ensure that the stations themselves are well-integrated with the surrounding areas, and that passengers using all modes of transportation have safe, comfortable, and convenient paths of travel to and from the station. While HART is responsible for the design of the stations themselves, this section outlines a set of strategies and actions for the areas around the station. Streets, paths, signage, connections to feeder transit, buildings in the station area: these are the elements that tie the station together with the surrounding community.

This section describes strategies that the HCDA can implement, or advocate for, as HART station and adjacent developments and streets are designed. In addition, the specific recommended station area actions listed below should be implemented by the appropriate agency depending on the location and nature of the improvement.

### Strategy SA1 Ensure high-quality pedestrian access to transit stations.

Walking to and from transit stations should be safe, comfortable, and inviting. The key strategies for creating a great pedestrian environment are discussed in detail in Chapter 5 (Mobility and Access). In addition, important considerations that apply specifically to transit access include:

- Improve street connectivity in the half mile area around the station to shorten walking distances to and from the transit station and increase the total population within walking distance of the station. More detail is provided in the Walking section of Chapter 5.
- Prioritize pedestrian crossings and minimize conflicts with other modes. Assess intersections and street crossings along preferred routes of pedestrian travel to and from the station and adjust designs to prioritize pedestrian movement. More detail is provided in the Walking section of Chapter 5.
- Provide adequate capacity for passenger flows within and outside the station, focusing on support of development potential. Ensure sidewalks and walkways are sufficient in size to accommodate a number of pedestrian activities including passenger flows, sitting, standing, leaning, and queuing.
- Promote transit-oriented development close to stations, using good design to ensure amenities

for pedestrians, lively street frontages and “eyes on the street.” More detail is provided in the Walking section of Chapter 5.

### Strategy SA2 Maximize feeder transit connectivity.

High-quality connections between transit routes can dramatically improve the usefulness of the transit system for passengers. The station area should be configured to ensure a seamless connection between feeder bus routes and the rail line. Key considerations include:

- Ensure that roadways in the station area meet geometric design requirements for transit vehicles.
- Ensure adequate transit and shuttle bay space to promote efficient intermodal transfers. Space requirements include both pick-up and drop-off bays and layover and recovery areas for routes that terminate at the station.
- Position bus stops as close as possible to transit station entrances, and ensure safe paths of travel to bus stops and the station.
- Provide a comfortable, safe waiting environment for intermodal transfers, including information about bus routes and schedules.



Pedestrians have direct access to either side of the street from the Metrotown Station on Vancouver's SkyTrain system.

Image from Nelson\Nygaard

### Strategy SA3 Provide bicycle connectivity and storage.

Bicycle travel supports transit by extending the reach of the transit system; while few passengers will walk more than half of a mile to reach transit, most bicyclists are willing to travel up to three miles to reach high-frequency transit services. More detail on bicycling accommodated in Kaka`ako is provided in Chapter 5. Listed below are key principles for promoting bicycle access to transit stations:

- Provide direct, safe and well-marked on-street bicycle facilities at HART stations.
- Provide secure, conveniently located bicycle parking facilities to meet demand, including both short-term and long-term bicycle storage. Long-term bike parking should be provided in fully enclosed cages, which also provide visibility from the outside to reduce theft or tampering.
- Provide space for bicycle sharing. Bike sharing programs can be designed to meet these “last mile” connections by providing convenient and affordable access to bicycles for shorter trips.
- Design and build stations to allow bicycle access to trains. Some rail systems allow cyclists to bring their bicycles on board, and others do not. While HART will weigh many factors in determining whether bikes should be allowed on-board trains, stations should be designed to accommodate bicycles in case they are permitted on trains in the future.



This high-quality bus stop provides access to bus service immediately adjacent to a SkyTrain station in Vancouver.

Image from Nelson\Nygaard





Traditional staple racks on the mezzanine level of a BART station are well utilized as they are weather-protected and in sight of security personnel.  
Image from Nelson\Nygaard

## CASE STUDY: BAY AREA RAPID TRANSIT BICYCLE ACCESS PLAN

In 2012, BART conducted a comprehensive assessment of bicycle parking at its many stations through the San Francisco Bay Area. The assessment supports a strategy to increase bicycle access mode share from 4% to 8% of all access trips to BART. The agency estimates that bicycle access is a key strategy to increase ridership and provide better access to regional transit at the lowest cost and with the least environmental impacts. The effort determined that bike access is already trending upward – between 1998 and 2008, BART's bicycle access rate increased by 69%, while daily ridership increased by just 27% during the same period. Looking at more detailed analysis, neighborhoods more comparable to Kaka'ako saw increases in bike access of well over 100% in the same period.

The BART inventory found that while there was unused bicycle parking throughout the system, there were shortages of supply for covered, indoor, and secured parking, particularly parking located inside the systems fare gates and in conveniently located lockers. The BART story shows that getting the amount of bike parking right is only half the challenge, making sure it is safe, secure, and conveniently located to the platform is also critical.



Stacked bike parking inside a BART station.  
Image from Nelson\Nygaard



A cyclist with his bicycle crosses the Frasier River on Vancouver's Canada Line.  
Image from Nelson\Nygaard



### Strategy SA4 Provide for and manage vehicle access to transit stations.

While the KCDD HART stations will be designed primarily for pedestrian and bicycle access, it must be recognized that some passengers will arrive by automobile. While the stations will not provide dedicated park-and-ride facilities, transit passengers may use taxis, be dropped-off or picked-up at the station by other drivers, or drive themselves and park in private parking facilities or on-street. Key principles for accommodating and managing vehicle access include:

- Provide adequate space for drop-off/pick-up to proceed comfortably and in an orderly manner. More space may be required than is indicated in HART Station Access Plans for the two stations.
- Locate transit passenger drop-off/pick-up and taxi areas so that vehicle movements do not conflict with bus traffic, other traffic, or pedestrian movement in the station area. Ensure passengers arriving by private vehicle are not given “front door access” at the expense of other modes.
- Monitor transit passenger parking on-street in the areas around the stations, taking steps to regulate spillover parking into residential areas when necessary.
- Consider steps to allow transit passengers to use underutilized parking in the station area. This may include conversion of some time-limited parking to longer-term paid parking (as discussed in Chapter 8), or conversion of some private off-street accessory parking to publicly-available shared parking.



A taxi serving Bay Area Rapid Transit's elevated Daly City Station.

Image from Nelson\Nygaard

### Strategy SA5 Ensure clear wayfinding in the station area.

HCDA and HART can work together to ensure a legible station area that includes both clear and consistent signage and easy-to-navigate paths of travel. Wayfinding is discussed in detail in Chapter 5. Key elements of the wayfinding strategy that apply specifically to station access include:

- Design the station area so that passengers can quickly and easily orient themselves during the journey between the fare gates and the bus stop, parking lot, drop-off zone or bicycle racks, or the sidewalk network of the local jurisdiction.
- Coordinate with HART and the City and County of Honolulu to develop station signage consistent with system-wide sign types, locations, colors, fonts, and symbols.
- Expand the traditional scope of transit wayfinding devices by including signage and maps directing passengers to bike facilities, major pedestrian routes and station area attractions such as Blaisdell Center, University of Hawai`i School of Medicine, and Ward 16 Theatres.
- Locate passenger information and maps outside the stream of dominant passenger flows to minimize bottlenecks and pedestrian congestion.

### Strategy SA6 Provide for universal access to transit stations.

Transit stations and station areas should be designed to be accessible to people of all abilities. By designing according to principles of universal access, station areas can welcome people with reduced mobility, as well as visual and hearing impairments. They also become easier to access for people with strollers or young children, luggage or large bags, and shopping trolleys or bicycles. More detail on



## CASE STUDY: TRANSIT WAYFINDING STANDARDS

TransLink, Vancouver, BC's regional transit provider, adopted its Wayfinding Standards Manual in 2010 to establish a clear and consistent practice for its wayfinding devices and tools. The intent of the Manual is to meet three key objectives:

- Encourage multimodal journeys
- Provide consistent information
- Deliver usable, suitable and manageable information.

To meet these objectives, the standards adhere to the following principles:

- Provide seamless information
- Understand complex journeys
- Be predictable
- Name the places
- Utilize consistent codes
- Progressively disclose information
- Don't make directions complicated
- Provide just the right amount of information
- Ensure information has integrity
- Help riders learn the system
- Use an appropriate tone of voice



Symbol-Based Wayfinding signage (MAX rail system, Portland Oregon).  
Image from Nelson\Nygaard



Signage directs passengers at Vancouver TransLink's Metrotown Station.  
Image from Nelson\Nygaard

accessibility for pedestrian facilities is provided in the Walking section of Chapter 5. Key elements of the universal access that apply specifically to station access include:

- Take special care to ensure that streets and intersections within 0.5 miles of each transit station are fully accessible for pedestrians with disabilities, including adequate curb ramps, clear paths of travel, and safe crossings. Incorporate audible signals into all station area signalized intersections to assist pedestrians who are blind or low vision. All new signals should also include pedestrian countdown timers to assist pedestrians in understanding how much safe time they have to cross the street.
- Reduce barriers and vertical obstructions. Minimize the number of level changes required to complete a trip, and when level changes do occur, provide both elevators and escalators.
- Provide fully accessible bus stops, as defined by the Americans with Disabilities Act, and provide adequate bays for paratransit vehicles.
- Provide information in a variety of media types to cater to the needs of the visual, hearing, developmental, and mobility-impaired.



Accessible Elevator (New York MTA Utica Subway Station).  
Image from Nelson\Nygaard

## Station-Specific Access Strategies and Actions

This section includes specific actions that HCDA and the City should undertake to implement the strategies outlined in the previous section for the three HART stations: Kaka`ako Station, Civic Center Station, and Downtown Station at the Aloha Tower Special District.

### Strategy SA7 Implement actions specific to the Kaka`ako Station.

Located just off of Ward Avenue, the Kaka`ako Station is the first station after the alignment leaves Halekauwila Street as it begins to veer southeast to meet with Kona Street. It will be embedded within a mixed-use district with an eclectic blend of retail, entertainment, industrial and high-density residential buildings. Key potential transit attractions include the Neal S. Blaisdell Center, University of Hawai`i School of Medicine, Ward Center, and the Kaka`ako Waterfront and Ala Moana Beach Parks. Similar to Civic Center, the attractions are not directly adjacent to the transit station and will require visitors and employees to walk, bike, or transfer to a bus or shuttle to reach their final destinations. Much of the area surrounding the station is planned for major redevelopment by the Ward Neighborhood Master Plan. Existing low-intensity land uses will be replaced by mixed-use residential development with FAR ranging from 9 to 12.

The strategies and actions below are designed to improve these connections and enhance the overall accessibility of the station. They consider the current condition and the transformation of the surrounding blocks of within the TOD Plan horizon.

Figure 7-5 Kaka`ako Station Access and Circulation







**Action SA7.1** Increase building setbacks along Ward Avenue to ensure sufficient sidewalk widths as redevelopment occurs

Based on build-out projections and AM peak demands, sidewalks and walkways at, or near, the station will need to be 15 feet wide minimum, 20 feet preferred. In most locations along Ward Avenue, a minimum of 5 feet of additional setback is recommended to achieve the minimum 15 feet sidewalk widths. For a comparison, sidewalks on North America's most iconic, major transit and pedestrian corridors, such as Market Street in San Francisco, are 30 feet or more in width.

**Action SA7.2** Design waiting areas and station plazas to safely accommodate potential crush loads during peak periods of travel and before and large events.



Generous sidewalks near a SkyTrain Station in Metro Vancouver.

Image from Nelson\Nygaard

The Kaka`ako Station is likely to be the transit station of choice for visitors to the Blaisdell Center's many annual events. If designed properly, the high capacity transit connection can dramatically reduce the need for parking at such events and mitigate traffic congestion. A full capacity stage event in the arena, for instance, can accommodate 8,800 attendees (up to 17,000 in the arena proposed in the TOD scenario). Assuming even a modest transit mode split of 10% would bring up to 900 passengers to the station, approaching double the peak AM demand. Given the capacity of the two-car train sets, passengers may have to wait through one or two trains before they are able to board. To help ease potential passenger frustration, waiting areas and street-level plazas will be designed to encourage short-term public congregation and dwelling.

**Action SA7.3** Introduce pedestrian countdown signals at all signalized intersections along Ward Avenue.

Pedestrian countdown signal heads allow pedestrians to judge if they have sufficient time to cross a street. They are particularly useful to populations requiring additional crossing times including the disabled, elderly, and adults accompanying small children. In addition to reducing pedestrian crossings on red and vehicle-pedestrian collisions, they have been shown to increase driver caution when approaching these intersections.

**Action SA7.4** Install a signalized crossing with countdown signal heads on the mauka side of the intersection of Ward Avenue and Halekauwila Street.

The proposed crosswalk will provide a more direct connection from the west to the station entrance plaza for pedestrians and transferring bus passengers.

**Action SA7.5** Enhance the pedestrian crossing at the intersection of Ward Avenue and Ilaniwai Street.

The intersection of Ilaniwai Street and Ward Avenue is unsignalized and lacks a crosswalk on the Mauka side of the intersection. Given that a full signal is unlikely warranted, this crossing could be improved with zebra crosswalks on both sides the intersection and pedestrian actuated rectangular rapid flashing beacons (RRFB). In an evaluation conducted by the Federal Highway Administration (FHWA), RRFBs improved vehicle yield/stop rate from under 2% to 85%.

**Action SA7.6** Provide new direct pedestrian connections from the Ward Neighborhood Master Plan's Central Plaza to the station.

Since the Ward Neighborhood Master Plan assumed a different location for the station, it has planned building locations that currently block pedestrian access from its Central Plaza to the future station site. As redevelopment occurs, Halekauwila Street should be extended through Ward Avenue to provide direct multimodal access between the station and the Plan's signature open space.



Mid-block pedestrian crossing with rapid flashing beacon in Boulder, CO.  
Image from Nelson\Nygaard

**Action SA7.7** Minimize pedestrian and vehicle conflicts at ingress and egress points to the bus and kiss-and-ride turnaround facility.

Pedestrians using the sidewalk on the station side of Ward Avenue will be required to cross the entrance and exit to the bus and kiss-and-ride turnaround. To minimize potential conflicts, a pedestrian crossing signal could be installed at this curb cut to allow for a protected pedestrian crossing phase.

**Action SA7.8** Integrate a bike share station into the Kaka`ako station design, and provide space for expansion.

The station area should be designed to accommodate a 20 bike station with capacity to expand to 56 bikes by 2035. The approximate spatial requirements for the initial station and a 2035 build-out station are provided in the Figure 7-6 below.

Figure 7-6 Spatial Needs for Bike Share at Kaka`ako HART Station  
(Opening Year and 2035)

Year	Docks	Width	Station Depth	Access Depth	Total Depth
Opening	20	52' - 54'	6' - 8'	4	10' - 12'
2035	56	112' - 114'	6' - 8'	4	10' - 12'

Figure 7-7 Sample Station Dimension for 11 Dock Bike Share Station

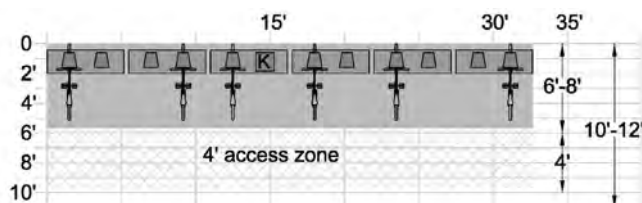


Image from Bike Sharing in the United States: State of the Practice and Guide to Implementation, FHWA (2012)

Figure 7-8 Sample Double-Sided Bike Share Station

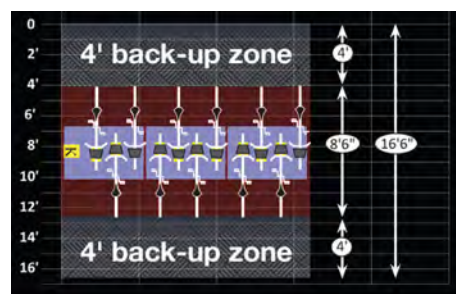


Image from Bike Sharing in the United States: State of the Practice and Guide to Implementation, FHWA (2012)

A design option is to employ two-sided stations, which would require less total width, but require a doubling of total station and access depth (approximately 20' to 24' required).



**Action SA7.9** Provide high quality separated bike facilities connecting to the station on Ward Avenue and Halekauwila Street.

Ward Avenue and Halekauwila Street will provide direct bicycle access from each direction to the station. As the primary access routes, they present opportunities for separated bike facilities ranging from traditional and buffered bike lanes to cycle tracks. Given the levels of traffic on Ward Avenue, high quality treatments and vehicle separation will be required to attract a ridership base beyond the most avid and fearless cyclists. Although Halekauwila is a lower traffic street, bi-directional cycle track treatments will help attract higher bicycle ridership and provide a seamless connection between the Civic Center and Kaka`oko stations. The weather protection afforded by the elevated trackway should be supplemented with attractive lighting, signage and a reduction in curb cuts to help draw cyclists to the route.



A two-way cycle track on Hornby Street in downtown Vancouver, BC.  
Image from Nelson\Nygaard

See the Bicycle section of Chapter 5 for more detail.

**Action SA7.10** Provide high-quality shared bike facilities on Queen and Auahi Streets.

As key parallel facilities to the station and the proposed Halekauwila Street bi-directional cycle track, Queen and Auahi Streets are ideally suited for shared bikeway treatments including sharrows, directional signage and improved crossings. In addition to providing comfortable bike connections to Ward Avenues separated facilities, the features (e.g. traffic calming) associated with the shared bikeways will also help transform the two streets into more pedestrian friendly environments.

**Action SA7.11** Increase supply of short- and long-term station bicycle parking at Kaka`oko Station.

Initial plans developed by HART suggest a need for 20 bicycle parking spaces for opening day service, increasing to 30 total in 2030. Based on the access demand estimates, an additional 10 spaces are recommended for opening day service. In 2030, that demand is expected to grow to 120 spaces with the implementation and build-out of planned TOD densities. Additionally, station design should anticipate the need for future growth in station area bike parking. A long-term bicycle storage facility that accommodates 30 bicycles is recommended. This facility should be located as close as possible to or, if possible, inside the fare gate. See call out for description of methods use to calculate bicycle parking.

Since this station is expected to be the destination end of more than 80% of home-based trips to and from the station, bike-share will be a critical strategy to complete last mile connections in the KCDD and adjacent neighborhoods.

**Action SA8** Implement actions specific to the Civic Center Station.

Located on Halekauwila Street between South and Keawe Streets, Civic Center is the primary station for the district's many local, state and federal employees and visitors. Civic anchors and institutions include the Honolulu City & County Buildings, State Capitol District, Queen's Medical Center, Social Security Administration, and US Customs & Immigration. The station's site at the periphery of the district, however, will require passengers to walk or bike for the last leg of their trips. The recommended strategies and actions below focus on key priorities for enhancing multimodal access to these major destinations.



## TRIMET APPROACH TO CALCULATING STATION BIKE PARKING

Portland is a national leader in bicycle accommodation and its public transit provider, TriMet, sees providing safe, secure access to transit for cyclists as a cornerstone of regional mobility. As part of its latest light rail project, the Portland to Milwaukee line, it developed a model for assessing bicycle access to stations based on each station's land use context, location, and availability of bicycle facilities. The model is used to determine how much bicycle parking to construct at each station. The model uses projected station ridership, transit frequency, urban context (center city, neighborhood, suburban, etc.) and bikeway network inventory data to determine optimal and minimum number of bicycle parking stalls. A similar approach was used to calculate bike parking requirements for the two stations in the KCDD.



A card-access bicycle parking facility at a suburban TriMet light rail station.  
Image from Nelson\Nygaard



Long-term bike parking at a SkyTrain Station in Vancouver, BC.  
Image from Nelson\Nygaard

Figure 7-9 Civic Center Station Access and Circulation



- Primary pedestrian crossing enhancements (Shorten crossing distances, improve sightlines)
- Secondary pedestrian crossing enhancements (Implement or improve crosswalks)
- Sidewalk improvements (widen, reduce curb cuts)
- Separated bikeway facilities
- Shared bikeway facilities
- Proposed street connections
- Proposed pedestrian connections
- HART rail alignment
- HART station location
- 
- 0 0.05 0.1 Miles

Data Sources: ESRI, State of Hawaii Office of Planning State GIS Program; Honolulu Land Information System



**Action SA8.1** Establish Punchbowl Street as the primary pedestrian route between the station and local, state and federal campuses.

Punchbowl Street will be a major pedestrian conduit for transit riders traveling to the City & County of Honolulu buildings, the State Capitol District and federal facilities. It also provides a direct path to the busy bus transit stop at Punchbowl and King. To take advantage of its existing pedestrian amenities (zebra crossings, pedestrian signals, street trees), it should be promoted as the primary route through signage and wayfinding. Signage should provide clear direction to regular commuters as well as visitors and residents that access the government facilities on a less frequent basis.

All three east-west oriented streets in the vicinity of the station – Queen, Halekauwila, and Pohukaina Streets – should all be treated as major pedestrian access ways to Punchbowl.



Wide sidewalks accommodate high pedestrian volumes near a SkyTrain station in Metro Vancouver.  
Image from Nelson\Nygaard

**Action SA8.2** Enhance pedestrian experience along Halekauwila, Queen, and Pohukaina Streets.

While it will be critical to provide a quality pedestrian environment on Halekauwila in the vicinity of the station, pedestrians are not anticipated to travel long distances on this street. The introduction of an elevated guideway in this relatively narrow right-of-way will make the street relatively less appealing for walking. Features such as vibrant ground floor retail and street-front cafes, which contribute to a vital walking environment, are less likely to locate immediately adjacent to the guideway, making parallel streets such as Queen and Pohukaina more attractive for pedestrians. Important steps for improving the pedestrian environment on these streets will include:

- Integrate pedestrian scaled lighting into the elevated guideway structures or in the sidewalk furniture zone. Reduce the number of curb cuts along Halekauwila, Queen, and Pohukaina to ensure universal accessibility and limit the number of pedestrian-vehicle conflicts.
- Implement pedestrian crossings at the intersection of Halekauwila and Keawe.
- Construct mid-block crossings regularly along Halekauwila.
- Enhance pedestrian crossings on Queen and Pohukaina where they intersect Punchbowl, South, and Cooke. Improvements may include tightening corner radii, reducing crosswalk distances with curb extensions and pedestrian refuges, and addressing other sightline issues.

**Action SA8.3** Improve pedestrian crossings in the Civic Center area by improving sightlines and shortening crossing distances.

Although pedestrian crossings in the Civic Center station area are generally marked, signalized or stop sign protected, many of them are angled, thereby impairing sightlines, and entailing longer crossing distances. This is especially true on the mauka side of the station along Queen and King Streets. Sightlines at these intersections could be improved by restriping crosswalks perpendicular to sidewalks. Curb extensions, or bulb-outs, should be implemented to reduce crossing distances.

**Action SA8.4** Provide interim pedestrian walkways and preserve long-term connections through the surface parking block on the makai side of Halekauwila Street.

Interim pedestrian routes through the surface parking lot would provide direct access from the station to high-density development. As this lot is developed, a mauka-makai running center block pedestrian pathway should be considered (such a facility is included in the Kamehameha Schools Master Plan). Running parallel to the station, an extension of Reed Lane could be planned for a future connection to the Mother Waldron Playground.

**Action SA8.5** Integrate a bike share station into the Civic Center Station design, and provide space for expansion.

Given the added distance from the station to many of the major destinations in the area, Civic Center is an ideal candidate for a bike sharing station. Likewise, the employment concentrations at those destinations provide the critical mass of potential users to warrant bike stations of their own.

The station area should be designed to accommodate a 20 bike station with capacity to expand to 56 bikes by 2035. The approximate spatial requirements for the initial station and a 2035 build-out station are provided in the table below:

Figure 7-10 Spatial Needs for Bike Share at Civic Center HART Station  
(Opening Year and 2035)

Year	Docks	Width	Station Depth	Access Depth	Total Depth
Opening	20	52' - 54'	6' - 8'	4	10' - 12'
2035	56	112' - 114'	6' - 8'	4	10' - 12'

**Action SA8.6** Increase the supply of short- and long-term station bicycle parking at Civic Center Station.

Initial estimates from the HART station access plans are to provide 20 bicycle parking spaces for opening day service, increasing to 110 total in 2030. Based on the access demand estimates, an additional 10 spaces are recommended for opening day service. In 2030, that demand is expected to grow to 130 spaces with the implementation and build-out of planned TOD densities. Additionally, station design should anticipate the need for future growth in station area bike parking. A long-term bicycle storage facility that accommodates 30 bicycles is recommended. This facility should be located as close as possible to or, if possible, inside the fare gate.



Bike sharing programs help meet “last mile” connection needs at transit stations.  
Image from Nelson\Nygaard

Since this station is expected to be the destination end of most than 80% of home-based trips to and from the station, bike-share will be a critical strategy to complete last mile connections in the KCDD and adjacent neighborhoods.

**Action SA8.7** Promote South Street as a major bicycle route accessing the station and institutional uses.

The Civic Center station is located on the periphery of many large government employers. While in the future it will be the center of an active mixed-use area, in the short- to mid-term attention must be paid to the last mile connections for potential transit riders. For instance, the station is over





½-mile to the State Capitol and the Queen's Medical Center. Although still within reasonable walking distances, these destinations are ideally suited for short urban bicycle trips. To this end, South Street's existing right-of-way width and capacity affords opportunities for innovative separated bicycle facilities. Its one-way operations, however, make traditional bike lanes on opposite sides of the street problematic. Rather than having to provide facilities on parallel streets, cities have addressed this condition by implementing contraflow bike lanes on the same side of the street. A pilot project on 15<sup>th</sup> Street in Washington, DC yielded a 40% increase in bicycle traffic and a 7 mph reduction in vehicle speeds within one year.



Two-way cycle track on 15th Street in Washington, DC.  
Image from Green Lane Project

An alternative to two-way cycle track on South Street is to couple it with Punchbowl Street as parallel one-way facilities going in their respective directions.

**Action SA8.8** Provide separated bicycle facilities along Cooke Street.

Separated bike lanes on Cooke Street would provide direct access to the University of Hawai`i School of Medicine and the Kaka`ako Waterfront Park.

**Strategy SA9** Implement actions specific to Downtown Station (related to redevelopment of Aloha Tower portion of the District)

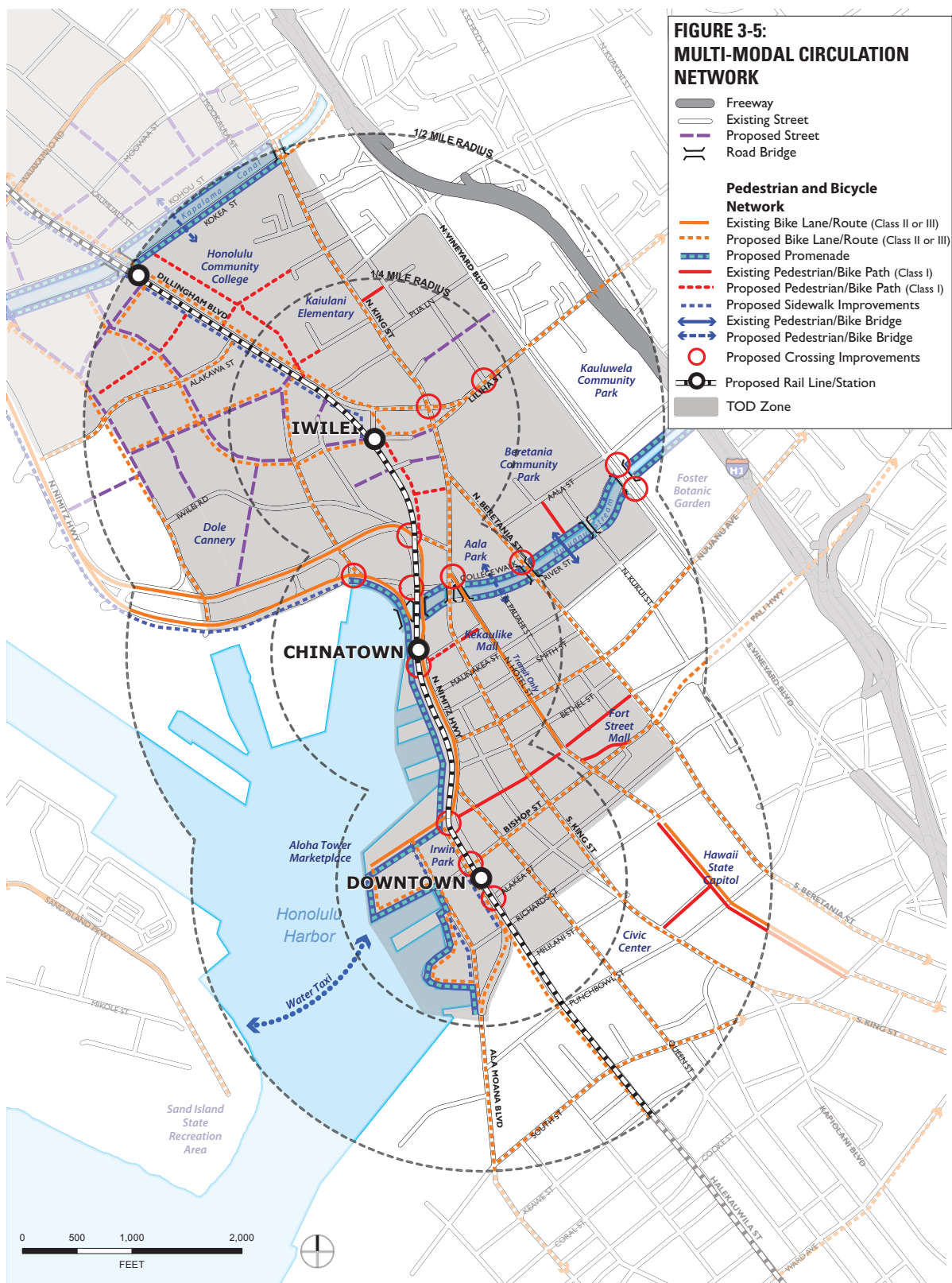
The Downtown HART station sits at the makai edge of the Aloha Tower Marketplace. This area of the KCDD also includes the HECO Powerplant site which is slated for redevelopment. The City/County Kilihi-Downtown Framework Plan calls for the area surrounding this station (including Aloha Tower site) to be developed as intensive mixed use development. The Framework Plan calls for maximum FAR of greater than 7 for this site and surrounding properties .

The City and County has completed a Downtown Neighborhood Transit Oriented Development Plan that provides detail on land use, station integration, and design for the Downtown Station. This plan documents specific transportation existing conditions and proposed access and mobility projects.

**Action SA9.1** Implement Connectivity Improvements from the Downtown Framework Plan

The Kilihi-Downtown Framework Plan calls for improved trail access and sidewalk improvements that would improve Ewa Diamond Head connectivity between the Aloha Tower Area and other parts of the KCDD. HCDA should work with the City/County DTS to prioritize and complete these improvements which are illustrated in Figure 7-11 excerpted from the Kalihi-Downtown TOD Framework Plan.

Figure 7-11 Connectivity Improvements for Downtown HART Station Area





## Action SA9.2 Create a seamless and inviting pedestrian connection between Downtown and the Aloha Tower area

Introduction of the downtown station represents an opportunity for transformational change at what currently is the greatest pedestrian barrier between Downtown and the Waterfront/Aloha Tower area- the Nimitz Highway. HCDA should work with HART and the City/County to ensure the design of this station includes significant placemaking investments and prioritizes mauka – makai pedestrian movements.

The station should have pedestrian entrances on both sides of Nimitz Highway to ensure passengers can ascend to the platform without crossing the Highway. Pedestrian cross-block concept would create a high quality public space and pedestrian crossing opportunity at Nimitz. This could be designed as a pedestrian-scramble intersection allowing all users to cross at the same time anywhere on the block .

The Haleakuwila cycle track concept presented in Chapter 5 provides an opportunity for excellent Diamond Head side bike access to this area. Similar attention should be given to connections from the Ewa direction.



### Pedestrian Circulation Across Nimitz:

- Irwin Park extension across Nimitz
- Entire block that will function as a crosswalk
- Provides an area of Nimitz that is at the pedestrian scale
- Allows motor vehicles to only need to stop once for pedestrian crossing

## Pedestrian Crossblock

Pedestrian improvements between the Downtown Station and Aloha Tower Special District.  
Image from HCDA





## BEST PRACTICES IN RETAIL INTEGRATION

Broadway /Commercial Station SkyTrain The Hub - A low scaled retail building is incorporated adjacent to an Elevated rail transit exchange. This provides eyes on the street, and a retail presence to keep people safe, provide a sense of place and wayfinding. This single story structures adjacent to the station to activates the area, and allows for room for pedestrian movement and gathering places.



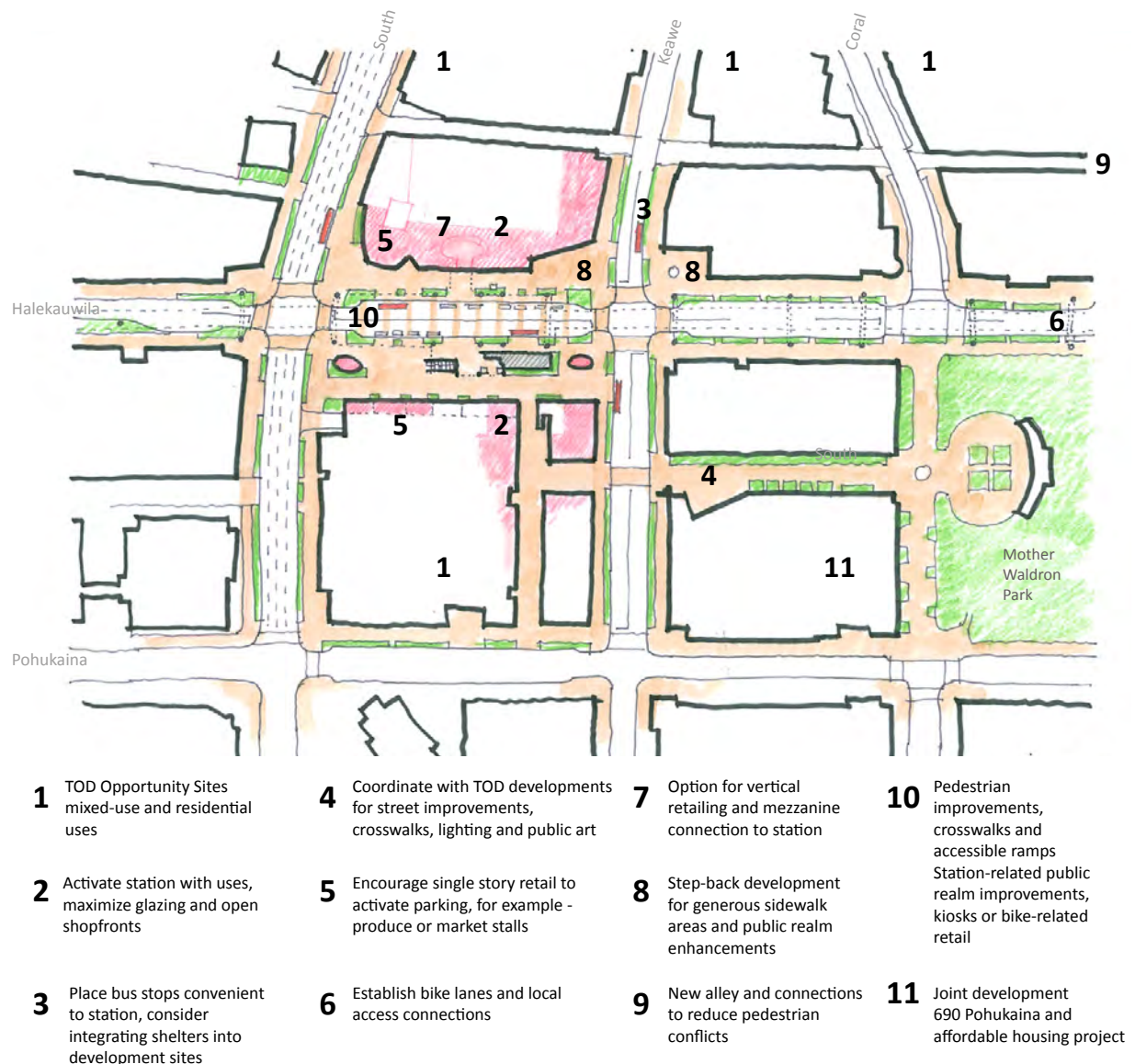
Westlake Center in Seattle, WA is a good example of elevated retail associated with a public plaza. Westlake center is also a transit hub with connections to light rail, and regional and local bus service below. Major developments are set back from the rail station from one half to one block.



## Opportunities for Civic Center Station Integration

There are a variety of opportunities for TOD redevelopment within close proximity to Civic Center station, including sites directly mauka and makai of the station. The HART Station Area Development Potential Report (2011) asserts that Civic Center Station has “perhaps the greatest (redevelopment) potential of any station along the project alignment excluding the West O`ahu stations.” Underutilized parcels here surround the station, existing uses include surface parking lots, low-rise warehouses and garages. The 690 Pohukaina catalyst project is located at Keawe and Halekauwila, one block from Civic Center Station, while the parcel directly makai of Civic Center is a part of the Kamehameha Schools master plan and is currently proposed for a high-rise housing project. The following diagram provides an overview vision of TOD potential for the Civic Center station location.

Figure 7-13 Civic Center Station Vision and Opportunities



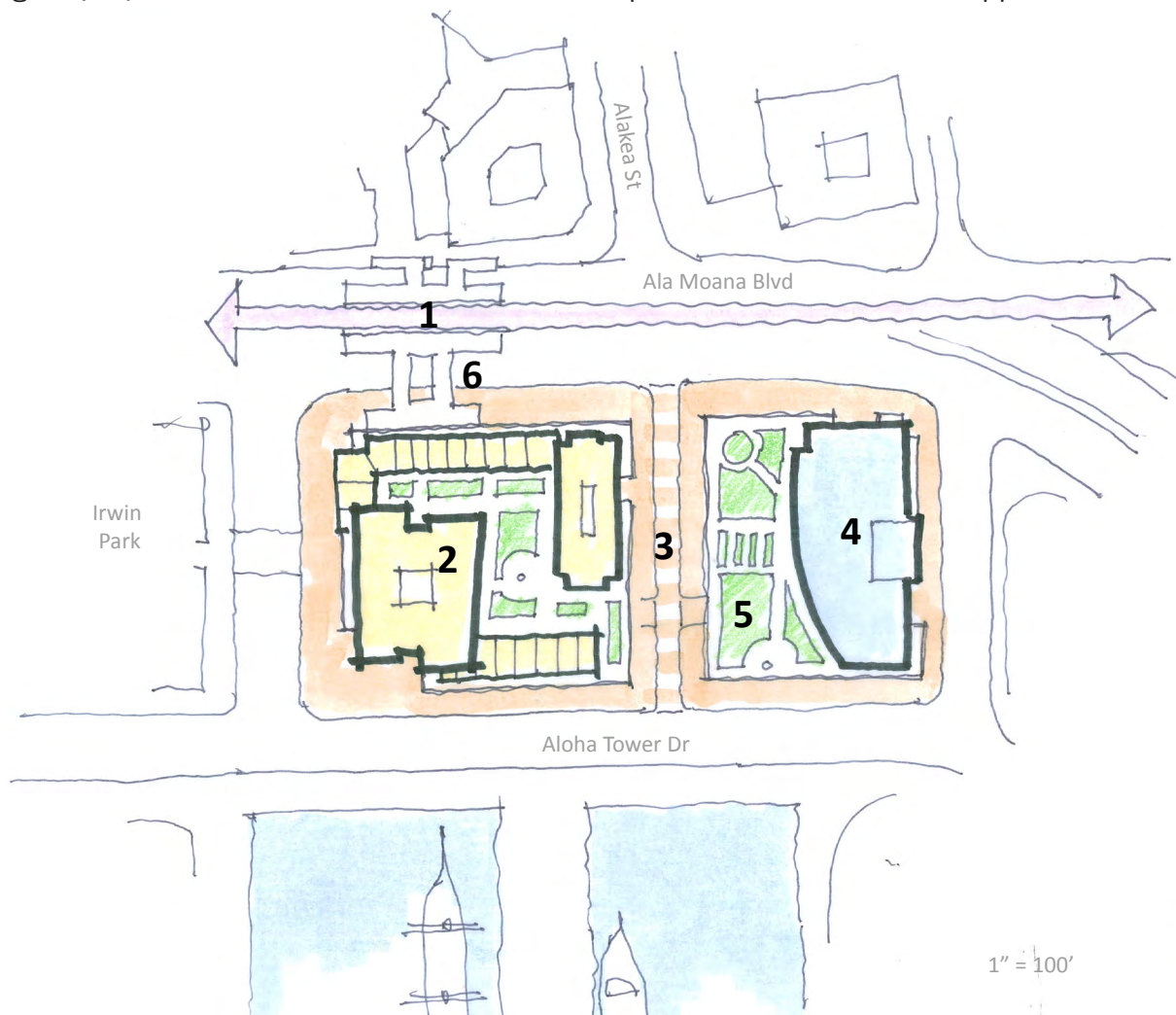




## Opportunities for Aloha Tower Special District, HECO Site, and Downtown Station Integration

Downtown Station is within close proximity to the Aloha Tower marketplace, the downtown commercial core, Irwin Park and Honolulu Harbor. It is the primary station serving Honolulu's central business district. The HECO substation parcel adjacent to Downtown Station is particularly well positioned for TOD redevelopment for a range of uses, as it enjoys waterfront views and proximity to downtown. Under the TOD Overlay plan this site would be able to develop using an increase in capacity with more flexibility in off-street parking requirements. This vision is coordinated with the City and County of Honolulu Downtown TOD Plan (2012) that envisions this area as a mixed-use, high intensity district appropriate for high rise buildings. The Plan also recognizes an opportunity for revitalizing the Aloha Tower HECO substation complex into a citywide destination and community-gathering place.

Figure 7-14 Downtown Station at Aloha Tower Special District Vision and Opportunities



- |  |   |  |
|--|---|--|
| <b>1</b> HART Downtown Station at Aloha Tower Special District | <b>3</b> Shared street                        | <b>5</b> Integrated public space                                       |
| <b>2</b> Multifamily residential opportunity site              | <b>4</b> Commercial / office opportunity site | <b>6</b> High-quality pedestrian plaza and integrated roadway crossing |

## Opportunities for the Elevated Alignment

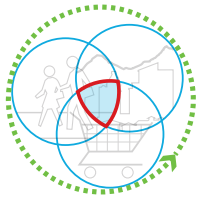
Integrating the overhead alignment into a working neighborhood requires special attention to shadow creation, and spaces around columns. Existing uses on Halekauwila St. include light industrial services, shops and a variety of walk-in trade establishments. Unintended impacts of the elevated rail include underutilized land or vacant storefronts adjacent to the guideway. HART is currently collaborating with HCDA to ensure that the design of the elevated alignment will address this areas incremental urbanization. In particular HCDA and HART will coordinate to ensure that the impact on the pedestrian environment is reduced.



In Bangkok, under the transit alignment is a busy, urban place  
Image from Google Earth

Figure 7-15 Alignment Design Opportunities





## Activating the Alignment

HCDA should prepare for transition, by working with property owners to activate below the guideway where feasible, as well as partnering with HART and the private sector for the provision of active public spaces such as paths, exercise courses, community gardens, lighting and art, shops or storefronts. HCDA and HART will coordinate to

- Reduce impact and number of supportive dual columns that crowd the urban context.
- Locate ancillary buildings such as electrical transformers, maintenance facilities to provide both operational efficiency and better respond to urban context.
- Welcome users by activating ground levels with retail or other commuter uses, such as services or daycare and bike share stations.



### View 1

Design Based on a possible new road configuration and column consideration into a center median. For illustrative purposes only.

- 1 center column supports located on 18'-20' wide median



### View 2

Design based on HART Preliminary Engineering Drawings. For illustrative purposes only.

- 2 dual column support located on sidewalks





## Urban Design and TOD Impacts of Elevated Rail

Parcels adjacent to, or within the sphere of influence of the alignment will be impacted in a variety of ways over the course of the project, ranging from land acquisition (and the creation of some residual land parcels adjacent to the Kaka`ako Station site), to construction nuisance, and noise impacts from the overheard train. At the same time these areas will also see significant private sector benefits typical to transit rich areas such as:

- Increased land values, and real estate performance (rents and lease rates)
- Increased retail sales
- Increased access to labor pools
- Increased affordability due to increased access and reduced parking costs by providing transit alternatives
- Renewed vitality as a destination

HCDA and its public sector partners will work to ensure that the benefit of the rail can be broadly shared in the form of improvements to local infrastructures and specific transit-oriented development projects that will locate more investment within proximity of the station. The HART Station Area Development Potential Report (August 2011) conducted an analysis identifying underutilized parcels and opportunities for redevelopment within each station's quarter-mile. This report documented that redevelopment potential is greatest at the three West O`ahu stations followed closely by the Kaka`ako District's Civic Center Station. In order to best meet this potential for redevelopment, the following presents a set of recommended strategies to be conducted during the phases of HART design and construction, with a focus on integrated decision-making.

### Strategy SA10 Collaborate with HART in order to integrate station design with TOD sites and catalyze redevelopment.

In order to best meet this potential for redevelopment, HCDA must implement or collaborate to achieve the following actions during the phases of HART design and construction, with a focus on integrated decision-making.

#### HCDA ACTIVITIES

HART  
 Complete (2019)  
 Construction phase (2016-2018)  
 Current phase (2013)

- **Action SA10.1** Work with agency partners to plan transit stations and associated infrastructure that are attractive public destinations, are integrated with the public realm and promote ridership.
- **Action SA10.2** Develop strategies for private-sector engagement with partnerships, demonstration and/or catalyst projects to spur desired uses (see Chapter 3, page 3-19).
- **Action SA10.3** Provide a vision, design and principles for the station design, and support redevelopment with high trip-generating land uses (see Chapter 3, page 3-6).
- **Action SA10.4** Collaborate with jurisdictional and private sector partners to provide market-place comparable, such as the 690 Pohukaina joint-development project. (Chapter 3, pages 3-21).
- **Action SA10.5** Meet with local stakeholders to reinforce the benefits and opportunities of TOD, include financiers, lenders, property owners and developers.
- **Action SA10.6** Partner to provide a vision for residual properties impacted by the rail, including clarifying liability. Consider a method, if necessary to land-bank residual properties resulting from construction areas for future high intensity development so they do not result in long-term underutilization.
- **Action SA10.7** Continue to work towards the evolution of Kaka`ako District, including large and small scale redevelopment, master plans and priority complete streets and access upgrades as defined in this chapter.



## Strategy SA11 Establish partnerships with key stakeholders to ensure successful station integration and TOD design.

In urban environments, success will be achieved if transit becomes just one part of the overall public experience of Kaka`ako as a destination. The implementation of this vision will require a partnership among agencies over the course of the project to ensure that land use, transportation and access policies are coordinated for optimal outcomes. Most importantly, HCDA will encourage creativity with neighborhood transformation, by planning for, and encouraging both large-scale redevelopment and incremental adaptive-re use to advance TOD objectives. The following summarizes roles for the public sector (HCDA and City/County), private sector and HART in creating both transit-oriented development and influencing the creation of place at a station site.

Public Partner (HCDA and City/County)	Private Partner	Transit Agency
Development Regulations /Permits	Development Proposals	Alignment / Station Design
Land Acquisition and Consolidation	Land Assembly	Land Acquisition for System
Environmental Reviews	Architecture and Programming	Planning Partner
Community Facilitator	Entitlements	Construction Facilitator
Land Owner Incentives	Construction	Urban Design Guidelines for Stations and Alignment
Priority Infrastructure Improvements and Public Facilities	Occupancy/ Maintenance/ Selling	