

SECTION 2:

WAYFINDING ANALYSIS

When people attempt to navigate an unfamiliar place, they face a series of decisions as they follow a path to their destination. Many factors determine where those decision points occur, each of which needs to be identified and studied. For TOD, this requires a thorough analysis and understanding of pedestrian circulation patterns, bus routes, bike networks, rail parking locations, and the potential destinations that people are seeking. By understanding the existing conditions, the wayfinding system can be planned to anticipate user behavior and provide critical information where people need it and in the format most useful for that location.

Navigating Neighborhoods

Generally, a 5- to 10- minute walk is considered the standard amount a person is willing to travel by foot before looking for other modes of transportation. For TOD neighborhoods, this translates to a ¼ to ½ mile radius from the rail station as the walkable threshold and is the area of focus for this analysis. The bike network plays a critical role in TOD neighborhoods. Bicycling allows people to extend their journey 1 to 2 miles beyond the walkable threshold, journeying further from the rail stations, linking TOD-adjacent neighborhoods, and reducing the need for single-occupancy vehicles.

Pedestrian movements can benefit from well-planned wayfinding that promotes the use of more desirable pathways and encourages exploration of unfamiliar neighborhoods. The analysis process uncovers where decision points occur, which then define the information that is required and the format in which it should be displayed. There are four major components that play a part in determining primary pedestrian routes and decision points within the TOD neighborhood — streetscape character, street grid, transit and bike connections, and wayfinding destinations.

The variety of current streetscape conditions throughout the TOD neighborhoods



Lack of sidewalks



Lack of sidewalks

Obstructions / limited sidewalk space



STREETSCAPE CHARACTER

The character of the streetscape provides important cues for decision making by signaling which routes are well-maintained, safe, and likely to lead to desired amenities. Existing conditions and infrastructure in neighborhoods along the guideway vary greatly. Some conditions that present challenges to wayfinding include:

- Lack of / narrow sidewalks, gaps in sidewalk network, a lack of marked crosswalks
- Streets that dead end and are not connected to major corridors
- Lack of shade and / or resting places
- Large blocks that cut off access and discourage pedestrian travel
- Potential underground issues that prevent placement of ground mounted signs

While the streetscape character of Honolulu varies by geography, similarities can be drawn among the neighborhoods on the rail corridor. A summary of these neighborhood specific observations follows.

Obstructions / limited sidewalk space



Dead ends / uninviting pedestrian conditions





A typical intersection in Chinatown includes crosswalks and pedestrian signals.



Where streets are wider, as shown here in Waipahu, larger fixtures like bus shelters are more noticeable than signs. Leveraging these fixtures to include wayfinding information could be beneficial.

The streetscape character from Chinatown to Ala Moana is similar to the typical “downtown” found in many American cities and therefore navigating them is predictable for most people. The street network is fairly dense and walkable. There are areas that require sidewalk and crosswalk improvements to increase connectivity and be more pedestrian-friendly, but there are not many major improvements required. Wayfinding signs such as pedestrian scale post mounted directional signs, that are commonly seen in downtowns of other cities, could be easily utilized in these neighborhoods. Clear wayfinding through familiar methods will encourage tourists to explore these neighborhoods and businesses more fully.

Some light industrial areas from Iwilei to Kalihi have existing pedestrian infrastructure along the streets that connect to major destinations, others do not. In the near term, signage should support the established pedestrian corridors. As areas are redeveloped and new streets are integrated, signage should be implemented in the same manner as in downtown areas to promote cross-circulation and exploration.

In suburban neighborhoods such as Pearl City or Waipahu, roadway infrastructure is primarily designed for vehicular use. Streets are wider and often lack a buffer between the vehicular and pedestrian traffic. Blocks are longer with fewer intersections or pedestrian crosswalks. Vistas are more open, making typical pedestrian scale information less visible. Care is needed to properly scale and locate signage elements in this context.

In all instances, the neighborhood character around rail stations will improve over time. Key streets in the direct vicinity of the rail stations will be required to be designed according to the TOD Special District requirements, transforming them into pedestrian-friendly zones with wider sidewalks, shade trees, street furniture, and other amenities. Planning for physical wayfinding signage must take into consideration the needs of existing and anticipated conditions.



Streetscape rendering from East Kapolei Neighborhood TOD Plan showing conceptual "Main Street" pedestrian amenities.



Rendering from Kalihi Neighborhood TOD Plan showing conceptual pedestrian improvements to Kapalama Canal.

STREET GRID

Understanding the street grid helps one form a “mental map” of the neighborhood. The existing streets within each TOD neighborhood fall into two types: linear spokes that emanate from a central location; or a predictable structured grid of varying block sizes. Each model affects pedestrian movement in a different manner.

Linear spokes act as connectors from one major destination to another. Pedestrians are funneled along specific routes with few additional decision points once they are oriented to their desired path of travel. A structured street grid, by contrast, is highly connected and promotes more “wandering” behavior. It also provides many more decision points and requires more frequent direction and reassurance that you are headed the right way. An additional challenge is posed in neighborhoods that currently consist of very large blocks. There are longer stretches of streets fronting the sides of commercial buildings and there are often dead end streets. Overall, they are not the most pedestrian-friendly environments.

The Neighborhood TOD Plans have reviewed these issues in concept and TOD regulations will help resolve many of the problem areas. In areas such as Iwilei and Kapalama, new streets are being proposed to break up large blocks. These new streets will fit in with and complete the surrounding network. The lack of existing development around the Kualaka'i, Keone'ae, and Honouliuli stations provides the opportunity to create, from scratch, organized streets with small block sizes, frequent intersections, dedicated bike lanes, and pedestrian amenities. Understanding how planned infrastructure changes connect into the patterns of developed areas allows future pedestrian pathways, and therefore the sign requirements, to be predicted.



Existing Chinatown wayfinding signs



Existing Hawaii Capital District wayfinding signs

EXISTING WAYFINDING SIGNS

Examples of existing wayfinding signs are in the Hawaii Capital District and in Chinatown. These signs will need to be fully evaluated and audited as part of the design and implementation process. It is critical to ensure seamless messaging of existing signs with any new wayfinding signs to be installed in the surrounding neighborhoods. Coordination between City and State will be required for signs in the Capital District. The signs in Chinatown were installed with streetscape improvements undertaken through the Chinatown Action Plan. They were designed utilizing the principles outlined in the 2015 TOD Conceptual Wayfinding Report. They were intended to serve as an early pilot of these concepts, with expansion of the system as part of the design.



In areas where traffic is more focused around large destinations, such as near the Kalauao Station, streets act as connectors between major points of interest.



An organized street grid, like that of Chinatown, provides many decision points and requires more reassurance that the user is continuing in the right direction.



The planned development of currently-industrialized areas like Iwilei will connect dead end streets to improve the organization of the neighborhood, and consequently the pedestrian and bike experience.



In areas where little or no pedestrian infrastructure exists, planned development will establish an organized street grid system that makes pedestrian and bike travel a priority.



In areas like Waipahu, pedestrian infrastructure has been built up along main transit routes. These roads will serve as main corridors for pedestrian traffic to/from the rail station and throughout the neighborhood.



Stations such as the Chinatown and Downtown Stations will be in close walkable proximity to one another, meaning the wayfinding support should reference the nearby stations, as well as local destinations.

TRANSIT AND BIKE CONNECTIONS

Rail stations, bus transit centers, and individual bus stops are the points at which riders transition into pedestrians. They are the natural point at which a person would need orientation or make deliberate route change decisions. Route change decisions can include deciding to take another bus, walking, or hopping on a bike — all depending on the anticipated trip time and distance. It is important to understand the existing and future conditions of bus and bike networks in order to understand where pedestrians need information.

At rail stations, HART's station signage identifies exit direction and orientation to the street grid, however TOD wayfinding will need to pick up the thread of information once riders leave the station. A review of stations shows riders will encounter different points of entry into and out of the rail station depending on the station type, creating a variety of decision points and wayfinding needs. Single-entrance rail stations that can only be accessed from one side of the street require riders to re-orient themselves after exiting the station. Stations with access from both sides of the guideway allow riders to choose an egress direction before leaving the station and avoid crossing busy intersections. Additionally, train to bus connections are simplified at stations that are immediately adjacent to bus transfer centers.

In terms of individual bus stops, current east/west bus routes along the path of the guideway will be re-examined for redundancies once the rail is operational. However, TheBus will still be the main transit option between the rail stations and surrounding neighborhoods. For this reason, in any neighborhood, the direct path from a bus stop to the rail station can be considered a primary pedestrian corridor.



Biki Stops could be utilized as a location for a wayfinding map.

In the denser urban areas from Kalihi to Ala Moana, where there are structured street grids, bus stops are in close proximity to each other and in greater concentration. The rail stations will be in walkable proximity to one another, creating additional arrival points into each station area. Heading west, bus routes align with main corridors, and bus stops are spaced further apart. The pedestrian routes naturally align with these streets due to their transit connectivity.

While the existing network of on-road bike lanes is somewhat segmented, there is an ongoing concerted effort within the City to create additional bike facilities. DTS has undertaken development of the O'ahu Bike Plan, a master plan aimed at creating additional lanes, paths, and bike facilities to make connections between the existing network of bike lanes. Ultimately, this expanded network will integrate bicycling more fully into available travel modes, helping connect the rail stations to buses and TOD neighborhood amenities.

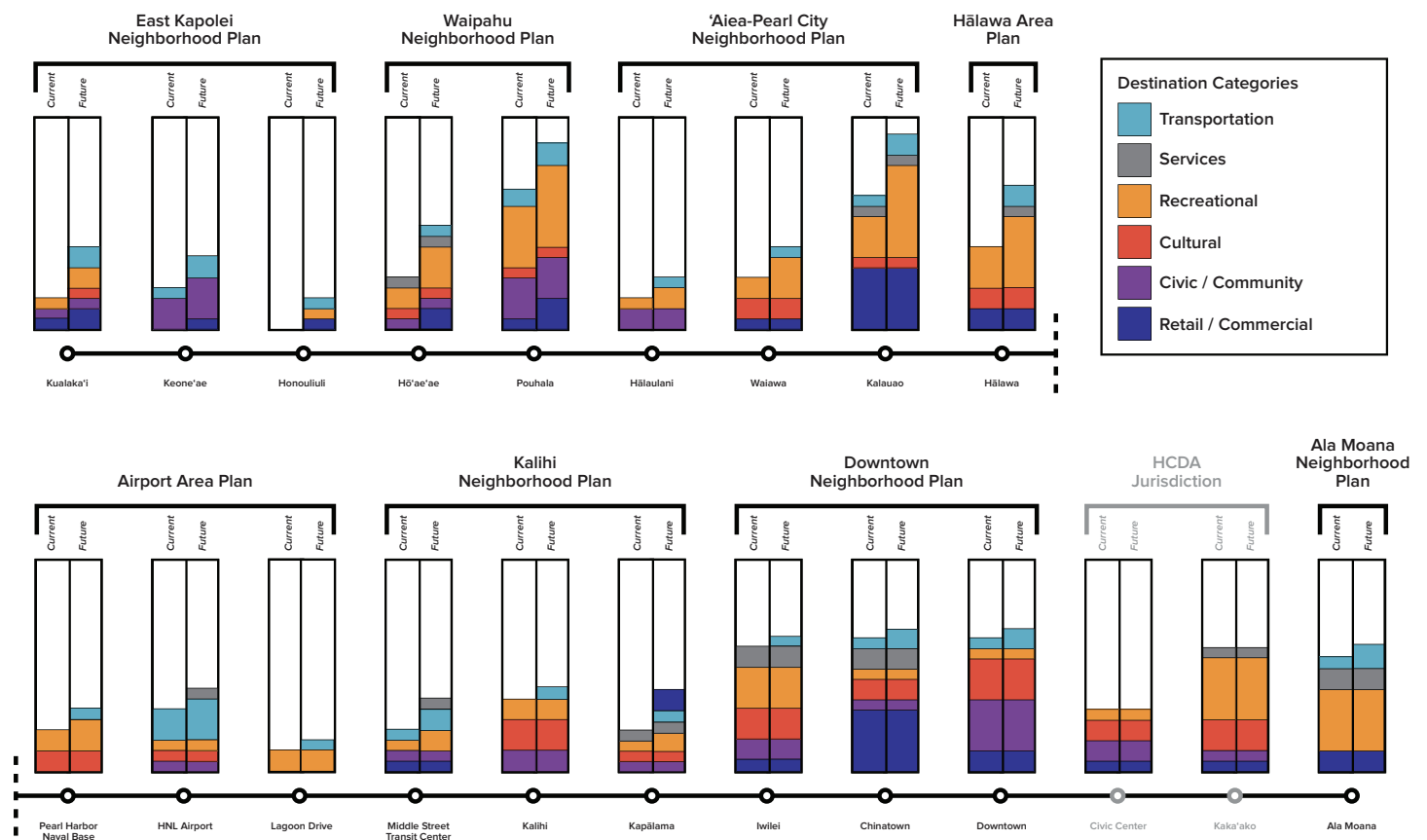
Biki and other bikeshare systems are additional opportunities for integrating bike use into the multi-modal movements within TOD neighborhoods and provide integral connections to transit. One simple improvement would be to utilize the Biki Stop as a location for a wayfinding map, a technique employed in many other cities to unify the city wayfinding with the bikeshare system.

WAYFINDING DESTINATIONS

The audience for the TOD wayfinding system is mainly residents including those who commute. To a lesser extent, tourists are a consideration, but will not be the primary users of the system. Consequently, the wayfinding needs for this system are heavily weighted toward community and commercial destinations, rather than tourist attractions.

An analysis of how zoning changes may affect future destinations did not reveal any large scale movements that would impact the types of destinations requiring wayfinding in any given neighborhood. For example, in station areas like Iwilei and Kapalama, where areas makai of Dillingham Boulevard are more commercial and industrial, recommended zoning would allow new mixed-use development similar to what is currently found in higher-density areas. These new developments will shift the industrial-commercial balance, but likely not require different wayfinding strategies. Therefore the destination inclusion criteria developed for existing dense areas will be applicable to all areas as they develop.

Current vs. Future Destination Distribution (By Category)



While destination types are largely consistent, the scale and distribution of destinations vary across neighborhoods and will change as Neighborhood TOD Plans are realized. Honolulu's urban core from Chinatown to Ala Moana houses a larger quantity of destinations distributed across a dense but regular street grid. There are many potential routes from one point to another. The ½-mile walking radii from stations overlap each other, making destinations accessible from multiple stations. In some cases, the stations themselves are in close proximity and are considered destinations for adjacent neighborhoods.

By contrast, neighborhoods such as those surrounding the Pouhala, Waiawa, and Kalauao Stations have large destinations at the perimeters of the TOD area that inherently create pedestrian corridors along their connecting routes, with few if any secondary routes from one point to another. In some instances, for example Pearlridge Center, a single destination that is prominent enough to be a landmark can serve as wayfinding orientation. Over time, stations that currently only serve a single major destination will become more developed, making the original major destination a wayfinding landmark.

The Chinatown and Downtown neighborhoods in Honolulu's urban core have a large number of destinations with a broad audience.



Pearlridge Center is a large, well-known destination that serves as a wayfinding landmark.



Review of Existing Digital Tools

A robust digital strategy is essential to ensuring the user is supported throughout their entire journey, from bus to bikeshare to rail. By taking a look at the existing digital tools, we can better understand the capabilities as they are today and examine the threshold for future user adoption. At this time, the existing tools are the DaBus2 app, HNL.info, and several digital kiosks.

Screen shots of the DaBus2 app show a typical search sequence.



1. Home Screen



2. Search Screen



3. Search Result



4. Route Selected



5. Real-Time Arrivals Result



6. Bus Tracking Result

DABUS2 APP

The City's current app for TheBus system, called DaBus2, is a good starting point for future iterations of a transit mobile app. The most useful aspect of the current app is the near real-time bus arrival information it provides, although the GPS technology is in need of an upgrade. There are some improvements to the user interface that could be made.

The overall design and user interface of the app makes it difficult to find information, particularly for people who are not regular commuters. The interface gives the user many ways to search for a bus stop or route map, but there is no point-to-point trip planning aspect. The user can search by street name, stop number, route number, head sign, or by tapping on a map. From there, the user has to navigate through five to six steps to ultimately drill down to a stop number and its corresponding bus arrival information. Stop numbers are not commonly known or used for describing locations, so this method could only realistically be used if someone is already at a bus station and just wants to know when a particular bus is arriving. Essentially, without the trip planning aspect included in the app, it can only help experienced system riders rather than introducing new ones to the system.

The app does allow the user to choose between real-time arrivals and scheduled arrivals, which is useful for pre-trip planning only if you are familiar enough with the bus network to know which bus you need to take. The FAQ section only addresses the app itself rather than provide any information about TheBus system such as fares or payment methods.

Overall, there are many opportunities to expand the app to provide a more holistic and user-friendly experience. Rather than just real-time arrival information, it could also incorporate status updates and connections to other buses, as well as a trip-planning component. As it stands, users are moving to other apps (such as Google Maps) for complete trip integration and ease of use, while continuing to reference DaBus2 for real-time updates. Having two apps that each provide half the required information does not create an ideal user experience. Refining the app to be more straightforward for new users would help set up a construct that can take on the addition of rail information without becoming bogged down and difficult to use.

DIGITAL SCREENS AT FASI BUILDING AND KALIHI TRANSIT CENTER



The TransitScreen display installed in lobby of Fasi Building is inconsistent with HNL.info and DaBus2 app interfaces.

Currently, there are two examples of digital screens displaying real-time bus arrival information. One is at the Fasi Municipal Building and utilizes a TransitScreen product. The other is at the Kalihi Transit Center and pulls data from HNL.info. Since these are different models, they display content in different visual formats. It's not instantly apparent that they are serving the same basic function. Regardless, it is a positive move in the right direction. The more this information is both dependable and available to the public, the easier it will be for users to feel comfortable and trust the system, which may help increase ridership.

These types of screens can be improved by increasing their numbers and including additional mobility options. If placed in high-profile areas and with additional information about other modes of transportation (e.g., Biki, Hui, Ride Sharee, rail information, and Uber/Lyft), they could inform residents and visitors about other transit options to get to and from destinations. Providing this information will be a constant reminder to consider and use other, more efficient travel options around the city. The signage may also serve to influence single-occupancy vehicle trips and replace them with multi-modal trips.



Digital screens at Kalihi Transit Center could benefit from a larger font size.



Kalihi Transit Center

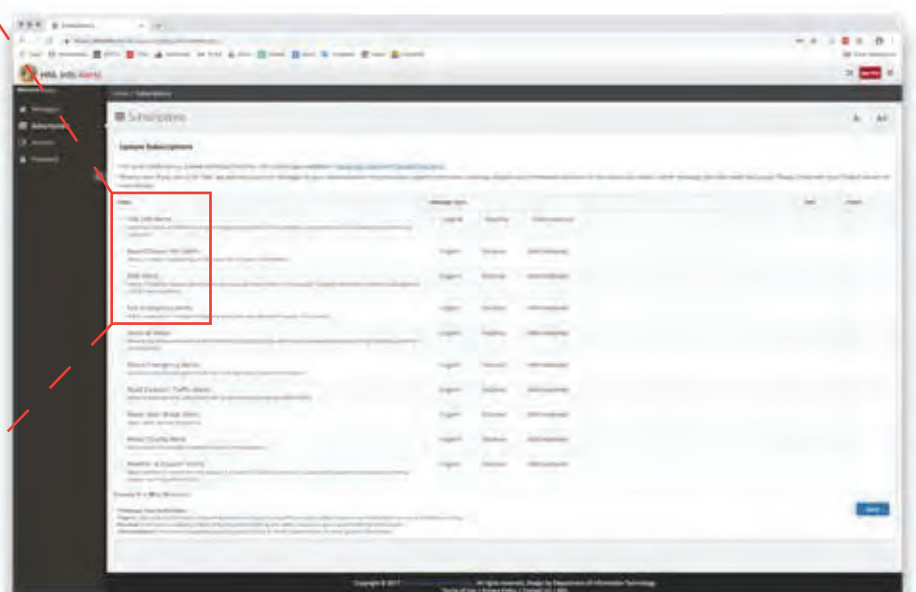
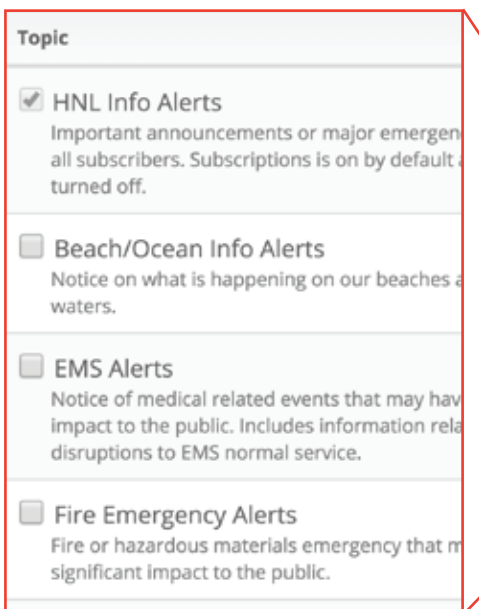
HNL.INFO AND LŌKAHI

The City has excellent existing infrastructure to begin the process of establishing and enhancing its digital tools. That infrastructure includes HNL.info and Lōkahi, two parts of the city's digital information platform that work in unison to centralize where local information is stored, curated, and distributed to both residents and visitors. Lōkahi is the City's overall data storage and management system for both internal and external data; HNL.info is the outward-facing way in which the data can be accessed.

Lōkahi compiles, stores, and curates all kinds of useful, locally relevant information, including but not limited to city/island culture, news and events, important alerts, and other information pertinent to how residents and visitors experience the city. It has the ability to expand and evolve as the needs of the City, residents, and visitors change and grow. This scalability is extremely important because that means it is adaptable and can be easily modified to accommodate new information uses we may not be aware of today. More importantly, these modifications can be made with little or no change to its existing structure. Lastly, Lōkahi's unique platform attributes allow the City to decide which information is relevant and who can access it. This curation process is critical to ensure people are not overwhelmed with too much information.

HNL.info is primarily a web portal to city services, though there is also a mobile app version available. This web portal serves as a distribution platform for content selected by the City and currently allows access to various feeds such as Emergency Services, Road Closures, and Weather Alerts. It is well positioned for the City to expand on its capabilities, though at present it is lacking.

As the City becomes positioned to build upon its digital tools, HNL.info will provide a clear way to continue developing as a centralized portal that gives people access to the information from Lōkahi. Presently, HNL.info's biggest flaw is its lack of a user-friendly graphic interface to keep engagement high. However, this can be easily modified moving forward.



The HNL.info website allows users to select and subscribe to information feeds.

Wayfinding Strategy

TOD is about enhancing the neighborhoods around the rail stations and increasing the number of people who live and work within easy walking distance to transportation. Transit enhanced neighborhoods reduce the dependency of single-use vehicles and improve the efficiency of government services and infrastructure. Ultimately, TOD is about creating a more sustainable future for O'ahu.

The benefits of a successful pedestrian wayfinding program clearly align with the overall goals of transit-oriented development. Pedestrian wayfinding information encourages walking as a mode choice and empowers residents to explore their neighborhoods. It can boost local economies by increasing foot traffic in front of local businesses. It leads to improved public health and reduces vehicular congestion and air pollution.

To achieve these results, the wayfinding system must provide people with the right information in the right place and format. For TOD, this means providing the information needed to make multiple modes of transportation between neighborhoods easy to find and desirable to use. The goal of the wayfinding system is to encourage walking within the TOD neighborhoods by making destinations and amenities easy to find from the transit arrival points, thereby feeding into the overall TOD vision of vibrant, sustainable communities supported by transit.

The results of the analysis of existing and planned conditions throughout the TOD neighborhoods informs the requirements of the system and clarifies the most effective type and placement of wayfinding tools for each step in the user journey from pre-trip planning through the return trip home.

WAYFINDING REQUIREMENTS

Pre-Trip Planning

- Provide pre-trip planning tools such as apps and website integration that allow for seamless transitions between all possible forms of transportation: Rail, TheBus, bikeshare, and car share options
- Allow payment for all transit types through a single app
- Provide on-train and in-station information to support non-smartphone users
- Use digital tools to provide real-time arrivals for trains and connecting buses, provide driving directions to Park & Ride / Kiss & Ride, provide walk times and directions for connections to buses, other modes of travel, and neighborhood destinations

Arrival

- Treat the immediate station area as an information hub where orientation to the neighborhood is readily available
- Include information about transit connections and neighborhood destinations in both static and digital formats

TOD WAYFINDING GOALS:

Make Transportation Mobility a Priority

Create seamless Transit-to-Neighborhood connections

Focus on making Neighborhood-to-Neighborhood connections easy and appealing through multi-modal means

Provide the resources for an enriching and vibrant Neighborhood Exploration experience

- Include neighborhood map on static signs
- Leverage prominent destinations as “Wayfinding Landmarks” for top-level navigation
- Consider additional opportunities to celebrate the history and culture of neighborhoods

Navigation & Exploration

- Provide navigation and orientation reinforcement along paths of travel that are appropriately scaled for the setting
- Locate wayfinding signs in a consistent pattern along highly trafficked corridors so that information availability becomes predictable
- Divert pedestrian traffic away from inaccessible paths and streets with unsafe walking conditions
- Consider digital tools that incentivize transit use and exploration of neighborhood amenities

Departure

- Provide direction back to the rail station, rail parking, and bus transit centers
- Provide transit information at major destinations with walk times
- Consider opportunities for coordination with private business owners to incorporate wayfinding tools within major destinations

Coordination Considerations

CITY SIGN REGULATIONS

Outdoor digital displays would be a significant advantage to providing real-time information where it will have the most impact on riders: on the street at public transportation decision points. A simple LED display with real-time bus arrival information at bus stops is a very basic solution found in many cities. Screens such as these benefit all riders, especially those without smart phones, and can be seen as providing a public service. In Honolulu, there has been a long-standing culture of resistance to outdoor advertising billboards, which are viewed as detrimental to the protection of open space and the visual beauty of Hawai'i. Over time, this has evolved into a high sensitivity against the use of electronic signage, which is often commercial in nature. Consequently, the City ordinances currently prohibit the use of "flashing signs." The Wayfinding Master Plan does not seek to change this intent, but rather advocates for a modern solution to support transit ridership.

EXCERPTS FROM REVISED ORDINANCES OF HONOLULU

SECTION 21-7.30

Flashing Signs are prohibited. These are defined as "a sign designed to attract attention by the inclusion of a flashing, changing, revolving, or flickering light source or a change of light intensity; and, also includes any sign involving electronically generated or controlled images, such as an electronic programmable message sign, digital sign, or plasma or LED sign, or video or holographic display."

SECTION 21-7.60 (B)

District sign regulations do not apply to "Public Signs." These are defined as "signs of a public or noncommercial nature, which shall include public transit service signs, utility information signs, safety signs, danger signs, trespassing signs, signs indicating scenic or historical points of interest and all signs erected by a public officer in the performance of a public duty."

Consideration should be given to potential City sign code interpretations, amendments or exceptions specifically for allowing changeable digital information for transit and destination wayfinding signs when used to provide a non-commercial public service. The exception should be

written as strictly as possible to ensure the specific needs of wayfinding can be met without dishonoring the original intent of the regulation. The exception could be such that the City is able to control placement, screen types, light intensity, and speed of content changes. ***Any recommendations for outdoor digital signage included in the TOD Wayfinding Master Plan are for discussion purposes only.***

PER SECTION 445-111 STATE OF HAWAII SIGNAGE LAWS

"Outdoor advertising device" means any device which is:

A writing, picture, painting, light, model, display, emblem, sign, or similar device situated outdoors, which is so designed that it draws the attention of persons in any public highway, park, or other public place to any property, services, entertainment, or amusement, bought, sold, rented, hired, offered, or otherwise traded in by any person, or to the place or person where or by whom such buying, selling, renting, hiring, offering, or other trading is carried on.

STATE SIGN REGULATIONS

The State of Hawai'i has specific prohibitions on outdoor advertising with very few exceptions. There is no specific mention of public transit-related information signage being considered advertising. The regulations would need to be studied in order to clarify if including private entities such as Uber or Lyft on public transit signage would be considered advertising.

The wayfinding program could consider sponsorship on physical and/or digital signs as a revenue source for implementation, management, and maintenance. Sponsorship implies a permanent or long-term commitment by an organization to provide funding for installation and maintenance of a sign in exchange for a small acknowledgment panel. Any such sponsorship acknowledgment visible on a sign would be strictly controlled to limit size, placement, and content. It is a very different approach than an advertising

model, which implies constantly changing commercial information. It would be beneficial to start a dialogue with the State to understand if any trade-offs such as sponsorship might be made to enable the City to solicit funding from private sources.

TRANSPORTATION DEMAND MANAGEMENT (TDM)

Another avenue to explore is to write requirements into the Transportation Demand Management (TDM) Plan that supports the use of real-time transit information to effect transportation behavior change. Examples of these requirements can be found in many local ordinances in other cities. One of the best examples is San Francisco's TDM Ordinance. The goal of this ordinance is to shift people away from more car dependent practices by providing a TDM tool to help developers self-identify when and where they can take advantage of pre-approved options that will benefit both the developer's project and meet the city's TDM goals. Among those pre-approved options is the use of wayfinding and/or real-time transit information displays as an on-site communication tool for building occupants. The goal is to use signage to help create a behavior change that ultimately reduces single-occupancy vehicle trips to the property. Similar objectives are practiced in different ways at the local level in areas such as Washington, DC; Arlington, VA; Montgomery County, MD; Boston, MA; Cambridge, MA; Seattle, WA; and Santa Monica, CA.

Honolulu is currently encouraging TDM measures through the permitting process for major TOD projects. This is a good start, but enacting an ordinance to require wayfinding as part of the TDM measures for projects should be considered.