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CITY AND COUNTY OF HONOLULU

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FILE COPY

JUN 08 2019

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MAYOR



ROBERT J. KRONING, P.E.
DIRECTOR

MARK YONAMINE, P.E.
DEPUTY DIRECTOR

May 24, 2019

Mr. Scott Glenn, Director
Office of Environmental Quality Control
Department of Health, State of Hawaii
235 S. Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Director Glenn:

Subject: Final Environmental Assessment and Finding of No Significant Impact for the Neal S. Blaisdell Center Master Plan Environmental Assessment


With this letter, the Department of Design and Construction of the City and County of Honolulu hereby transmits the final environmental assessment and finding of no significant impact (FEA-FONSI) for the Neal S. Blaisdell Center Master Plan Environmental Assessment, situated at Tax Map Keys (1) 2-3-008:001-3777, in the Honolulu District on the island of Oahu, for publication in the next available edition of the Environmental Notice, June 8, 2019.

The Department of Design and Construction of the City and County of Honolulu has included copies of the comments and responses that it received during the 30-day public comment period on the draft environmental assessment and anticipated finding of no significant impact (DEA-AFONSI).

Enclosed is a completed OEQC Publication Form, one hardcopy of the FEA-FONSI, and a CD with an Adobe Acrobat PDF file of the same, and an electronic copy of the publication form in MS Word. Simultaneous with this letter, we have submitted the summary of the action in a text file by electronic mail to your office.

If there are any questions, please contact John Condrey, Project Manager at 808-768-8468 or by email at jcondrey@honolulu.gov.

Sincerely,


Robert J. Kroning, P.E.
Director

Enclosures

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QUALITY CONTROL

19 380

AGENCY PUBLICATION FORM

Project Name:	Neal S. Blaisdell Center Master Plan Final Environmental Assessment
Project Short Name:	Blaisdell Center
HRS §343-5 Trigger(s):	[1] Use of County lands and County funds
Island(s):	Oahu
Judicial District(s):	Honolulu
TMK(s):	(1)2-3-008:001-3
Permit(s)/Approval(s):	Compliance with Chapter 343, HRS; compliance with Chapter 6E, HRS; Special District Permit-minor; Special Design District Amendment; National Pollutant Discharge Elimination System (NPDES) Permit; community noise permit; well construction/pump installation permit; groundwater use permit; water use permit; building permit; grading/stockpiling; grubbing permits; street usage permit for construction-related work in right of ways or lane closures.
Proposing/Determining Agency:	City and County of Honolulu – Department of Design and Construction
<i>Contact Name, Email, Telephone, Address</i>	John Condrey, AIA, IIDA City and County of Honolulu Department of Design and Construction 650 S. King Street, 11th Floor Honolulu, Hawaii 96813 808.768.8480 JCondrey@honolulu.gov
Accepting Authority:	(for EIS submittals only)
<i>Contact Name, Email, Telephone, Address</i>	
Consultant:	AECOM Technical Services, Inc.
<i>Contact Name, Email, Telephone, Address</i>	Erin Dunable 1001 Bishop Street, 16 th Floor Honolulu, HI 96813 808-954-4508 Erin.Dunable@aecom.com

Status (select one) DEA-AFNSI**Submittal Requirements**

Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEA, and 4) a searchable PDF of the DEA; a 30-day comment period follows from the date of publication in the Notice.

 FEA-FONSI

Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; no comment period follows from publication in the Notice.

 FEA-EISPN

Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; a 30-day comment period follows from the date of publication in the Notice.

 Act 172-12 EISPN
("Direct to EIS")

Submit 1) the proposing agency notice of determination letter on agency letterhead and 2) this completed OEQC publication form as a Word file; no EA is required and a 30-day comment period follows from the date of publication in the Notice.

 DEIS

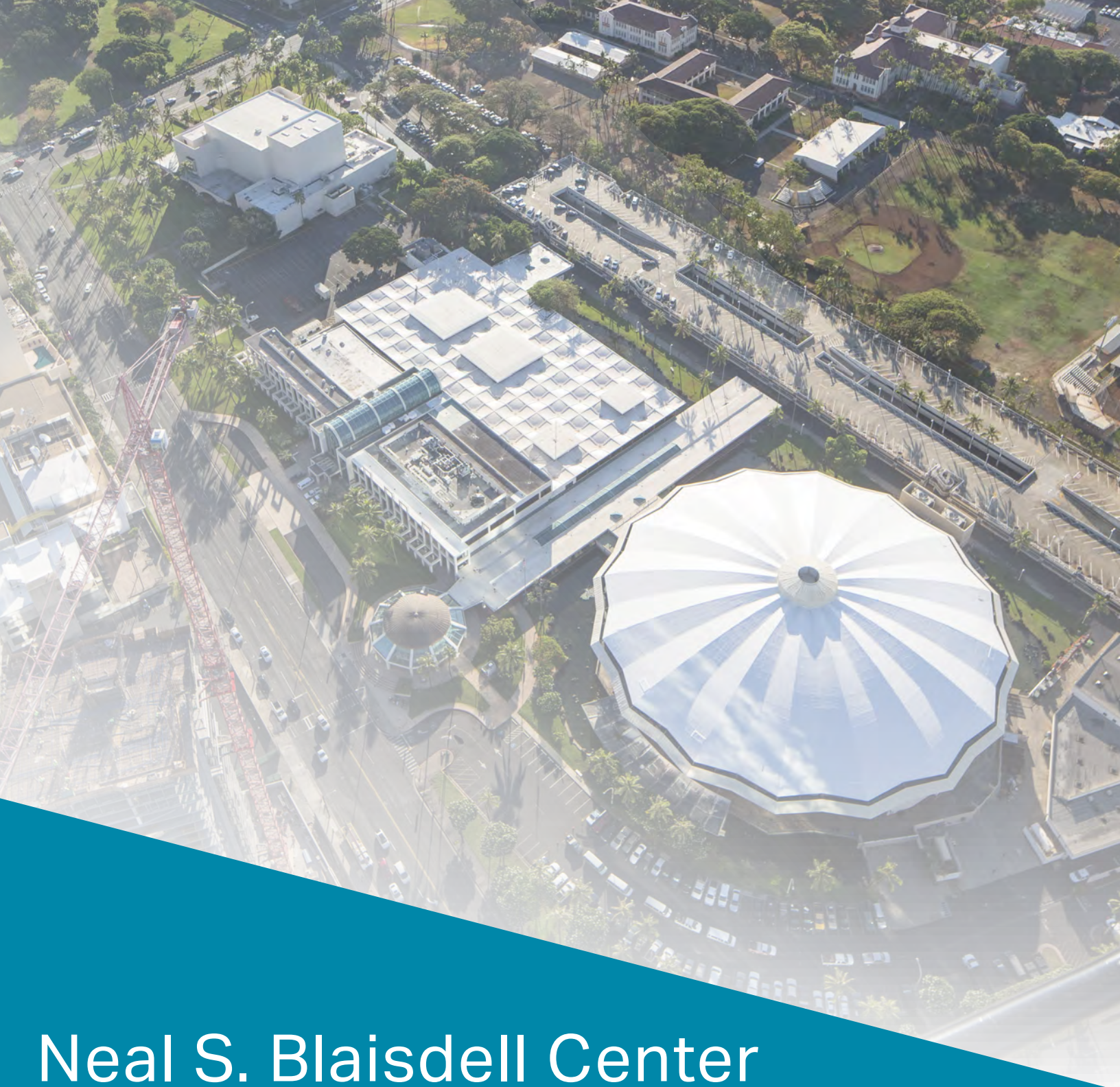
Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEIS, 4) a searchable PDF of the DEIS, and 5) a searchable PDF of the distribution list; a 45-day comment period follows from the date of publication in the Notice.

- FEIS Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEIS, 4) a searchable PDF of the FEIS, and 5) a searchable PDF of the distribution list; no comment period follows from publication in the Notice.
- FEIS Acceptance Determination The accepting authority simultaneously transmits to both the OEQC and the proposing agency a letter of its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS; no comment period ensues upon publication in the Notice.
- FEIS Statutory Acceptance Timely statutory acceptance of the FEIS under Section 343-5(c), HRS, is not applicable to agency actions.
- Supplemental EIS Determination The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is or is not required; no EA is required and no comment period ensues upon publication in the Notice.
- Withdrawal Identify the specific document(s) to withdraw and explain in the project summary section.
- Other Contact the OEQC if your action is not one of the above items.

Project Summary

The City and County of Honolulu is proposing implementation of the Blaisdell Center Master Plan, which would involve the complete redevelopment of the Neal S. Blaisdell Center (Blaisdell Center). The proposed action is to demolish and reconstruct the existing parking garage and the Exhibition Hall, which also contains meeting rooms and administrative facilities for the Department of Enterprise Services (DES). The Concert Hall and Arena would be retained but would undergo major renovations. The new parking garage would add approximately 500 additional parking spaces, improved access, and maintenance/storage areas. New additions include a Sports Pavilion for sports practices and games; a 1,500 seat Performance Hall for live performances; an Arts Ensemble building for hula practice, youth symphony, Royal Hawaiian Band, and other core users; a Satellite City Hall; traffic corridor and landscaping along Victoria Street; additional outdoor venues and gathering areas; and new campus landscaping featuring terracing, paths, promenades, gardens, and relocated fishponds.

The now 55-year-old Blaisdell Center is in need of renovations and upgrades to its facility, systems, and infrastructure. These renovations would ensure that future generations of locals and visitors would continue to enjoy the Blaisdell Center as a true gathering place, where memories continue to be made.



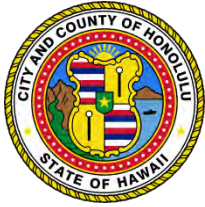
Neal S. Blaisdell Center Master Plan Final Environmental Assessment

City and County of Honolulu
June 2019



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Prepared for:



City and County of Honolulu
Department of Design and Construction
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Prepared by:

AECOM

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Glossary of Terms

Ahupuaʻa: A complex system of land division, usually extending from the mountains to the ocean.

ʻĀpana: Land parcels.

ʻAuwai: Ditch.

Arcade: A covered walkway enclosed by a line of arches on one or both sides.

Arcaded lānai: A porch or veranda faced in a line of arched openings (see also arcade).

Back-of-house: Backstage; the area out of audience view to the rear and sides of the visible performance area.

Bas-relief: A kind of carving or sculpture in which the figures are raised a few inches from a flat background to give a three-dimensional effect.

Decibel: A unit used to measure the intensity of sound.

dBA: A-weighted decibels are an expression of the relative loudness of sounds in air, as perceived by the human ear.

Diamond Head: Used in Hawaiʻi to imply directionality; from the project site, Diamond Head corresponds to east.

ʻEwa: Used in Hawaiʻi to imply directionality; from the project site, ʻEwa corresponds to west.

Floor rake: Slope or angle of inclination of the floor, as in stadium or concert hall audience seating.

Front-of-house: In the performing arts, this is the part of a performance venue that is open to the public. In theatre and live music venues, it is the auditorium and foyer, as opposed to the stage and backstage areas.

Glazed openings: Windows; any openings in a wall that are covered in panes of glass (see also glazing).

Glazing: Panes or sheets of glass set or made to be set in frames, as in windows, doors, or mirrors.

Hālau hula: Hula school.

ʻIli: District subdivision.

Kalo: Taro.

Kula ʻāina: Agricultural fields.

Loges: The loge is a tier within the balcony portion of a theater, sometimes referred to as box seating or balcony seating.

Loʻi: Agricultural and aquaculture constructed ponds.

Māhele ʻĀina: Also known as the Great Māhele, beginning in 1848, was the redistribution of land throughout Hawaiʻi under Kamehameha III.

Makai: Used in Hawai'i to imply directionality; from the project site, makai (towards the sea) corresponds to south.

Massing: An architectural term referring to the general shape, form, and size of a building; the three-dimensional form of a building.

Mauka: Used in Hawai'i to imply directionality; from the project site, mauka (towards the mountain) corresponds to north.

Multiplier effect: A phenomenon whereby a given change in an input, such as government spending, causes a larger change in an output.

Oculus: (from Latin oculus, "eye") A circular window or opening in the center of a dome or in a wall.

Pork chop: Raised traffic island used to channelize traffic movements at an intersection.

Proscenium: The part of a modern stage in front of the curtain; also, the wall that separates the stage from the auditorium and provides the arch that frames it.

Spandrel: The almost-triangular space between one side of the outer curve of an arch, a wall, and the ceiling or framework; the space between the shoulders of adjoining arches and the ceiling or molding above.

Executive Summary

This Environmental Assessment (EA) has been prepared in accordance with the requirements of Hawai'i Revised Statutes (HRS) Chapter 343 and Hawai'i Administrative Rules, Title 11, Chapter 200 (HAR 11-200), Department of Health, which set requirements for the preparation of environmental assessments.

Type of Document: Environmental Assessment

HRS Chapter 343 Triggers: [1] Use of County lands and County funds

Project Name: Blaisdell Center Master Plan

Proposing Agency: City and County of Honolulu, Department of Design and Construction

Determination Agency: City and County of Honolulu, Office of the Mayor

Location: 777 Ward Avenue, Honolulu, Hawai'i

Tax Map Key (TMK): Keys (1)2-3-008:001-3

Project Area: Approximately 22.4 acres

Landowner: City and County of Honolulu

Existing Uses: Concerts, entertainment, exhibitions, cultural activities, sports, and community events

Proposed Uses: Concerts, entertainment, exhibitions, cultural activities, sports, community events, and civic activities

Land Use Designation: Hawai'i Community Development Authority (HCDA), Kaka'ako Community Development District

Special Management Area: No

Permits/Approvals Required: Compliance with Chapter 343, HRS; compliance with Chapter 6E, HRS; Special District Permit-minor; Special Design District Amendment; National Pollutant Discharge Elimination System (NPDES) Permit; community noise permit; well construction/pump installation permit; groundwater use permit; water use permit; building permit; grading and grubbing permits; street usage permit for construction-related work in right of ways or lane closures.

Proposed Action: The City and County of Honolulu is proposing implementation of the Blaisdell Center Master Plan, which would involve the complete redevelopment of the Neal S. Blaisdell Center (Blaisdell Center). The proposed action is to demolish and reconstruct the existing parking garage and the Exhibition Hall, which also contains meeting rooms and administrative facilities for the Department of Enterprise Services (DES). The Concert Hall and Arena would be retained but would undergo major renovations. The new parking garage would add approximately 500 additional parking spaces, improved access, maintenance/storage areas, and space for the relocated central utilities. Table ES-1 shows proposed uses for both new and renovated major facilities. New additions include a Sports Pavilion for sports practices and games; a 1,500-seat Performance Hall to provide an additional venue for live performances; an Arts Ensemble building for hula practice, youth symphony, Royal Hawaiian Band, and other core users; a Satellite City Hall; traffic corridor and landscaping along Victoria Street; additional

outdoor venues and gathering areas; and new campus landscaping featuring terracing, paths, promenades, gardens, and relocated fishponds. Table ES-1 shows the proposed redevelopment features at the Blaisdell Center.

Table ES-1. Proposed Redevelopment of the Blaisdell Center

Facility Component	Existing	Proposed Action
Concert Hall	Concert Hall	<ol style="list-style-type: none"> 1) Renovate Concert Hall. Increase footprint of the front- and back-of-house of the facility. 2) Enclose and air-condition the front lobby. 3) Improve existing restrooms and add new restrooms. Address Americans with Disabilities Act accessibility and safety concerns to provide access to the balcony and upper seating. 4) Add dining/café on the ground level facing Ward Avenue.
Arena	Arena	<ol style="list-style-type: none"> 1) Renovate Arena. Re-configure seating from bowl to theatre configuration. Enclose and air-condition lobbies. Improve existing and add new restrooms. Bring facility in compliance with current accessibility codes. 2) Add new Sports Pavilion. 3) Additional dressing rooms and storage.
Exhibition Hall	Exhibition Hall; additional features include administrative space for DES and meeting rooms	<ol style="list-style-type: none"> 1) Demolish and build new Exhibition Hall expanded to 95,000-square-foot capacity, divisible into three major floor areas. 2) Add new Performance Hall to complement the Concert Hall use by providing a flexible and alternate practice and performance facility. 3) Build new meeting rooms and administrative facilities for the DES.
Parking Garage	Parking Garage	<ol style="list-style-type: none"> 1) Demolish existing structure; construct two connected parking structures. 2) Add new Arts Ensemble. 3) Add new Satellite City Hall. 4) Add new Food and Beverage outlets. 5) Add new maintenance shops, storage, and campus-wide kitchen on ground level. 6) Activate Victoria Street as an occasional thoroughfare. 7) Connect parking structure to back-of-house functions on the ground level.

Facility Component	Existing	Proposed Action
Campus	Open space; Box Office	1) Activate open space spanning ground level and Terrace levels. Renovate ground level to include new landscaping, water features, streetscapes, pedestrian amenities, informal gathering locations, and all back-of-house functions and facilities. New Terrace level to include informal gathering locations, landscaping, water features, pedestrian amenities, Box Office, Satellite City Hall and Arts Ensemble entries, and Exhibition Hall and Arena entries. All back-of-house functions and facilities below Terrace level. 2) New Box Office. 3) Relocated and enhanced War Memorial, Elvis Statue, and other works of art.

Alternatives Considered: The No Action Alternative is the status quo alternative. It retains all major venues and structures in their current configuration with continued maintenance and upkeep. The other alternative explores demolition and reconstruction of all buildings and campus landscaping, except for the Concert Hall, which would be fully renovated.

Potential Impacts and Mitigation Measures: The adverse impacts associated with the implementation of the Blaisdell Center Master Plan are expected to be temporary, localized to a small area, and/or have low intensity. Adverse short-term impacts could result from construction activities (e.g., noise generation, sediment and fugitive dust generation, impacts from inability to use facilities). Long-term adverse impacts could occur to historic architectural resources.

Mitigation measures include, but are not limited to, standard construction best management practices (BMP), historic feature documentation, and historic preservation through design.

Anticipated Determination: Finding of No Significant Impact.

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Acronyms and Abbreviations

%	percent
°F	degree Fahrenheit
AASHTO	American Association of State Highway and Transportation Officials
ac.	acre
ADA	Americans with Disabilities Act
AECOM	AECOM Technical Services, Inc.
AIS	Archaeological Inventory Survey
AISP	Archaeological Inventory Survey Plan
BAMS	Bulletin of the American Meteorological Society
BMP	best management practice
BMX	Business Mixed Use
BWS	Board of Water Supply
CCH	City and County of Honolulu
CFR	Code of Federal Regulations
CIA	Cultural Impact Assessment
CO	carbon monoxide
CWMP	Construction and Waste Management Plan
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
dBA	A-weighted decibels
DC	District of Columbia
DDC	Department of Design and Construction, City and County of Honolulu
DES	Department of Enterprise Services, City and County of Honolulu
DLNR	Department of Land and Natural Resources
DOH	Department of Health, State of Hawai'i
DTS	Department of Transportation Services
EA	Environmental Assessment
EDAW	EDAW, Inc.
EPA	Environmental Protection Agency, United States
ft.	feet
FEMA	Federal Emergency Management Agency
FOG	fats, oils, and grease
HAAQS	Hawai'i Ambient Air Quality Standards
HABS	Historic American Buildings Survey
HAR	Hawai'i Administrative Rules
HART	Honolulu Authority for Rapid Transportation
HCDA	Hawai'i Community Development Authority
HECO	Hawaiian Electric Company
HEPA	Hawai'i Environmental Policy Act
HHF	Historic Hawai'i Foundation
HPD	Honolulu Police Department
HRHP	Hawai'i Register of Historic Places
HRS	Hawai'i Revised Statutes
IPCC	Intergovernmental Panel on Climate Change
KOP	Key Observation Point

LOS	Level-of-Service
m	meter
MKA	Makiki Clay-Loam
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PM	particulate matter
PUC	Primary Urban Center
PUCDP	Primary Urban Center Development Plan
SIHP	State Inventory of Historic Places
SLH	Session Laws of Hawai'i
SLR	sea level rise
SMA	Special Management Area
SOI	United States Secretary of Interior
sq. ft.	square feet
telecom	telecommunications service
TIAR	Traffic Impact Assessment Report
TMK	Tax Map Key
TOD	transit-oriented development
UHI	urban heat island
ULI	Urban Land Institute
U.S.	United States
USA	United States of America
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USDOT	United States Department of Transportation
USGS	United States Geological Service
VIP	very important person

1 Introduction

The City and County of Honolulu (CCH) proposes to redevelop the 22.4-acre (ac.) Neal S. Blaisdell Center (the Blaisdell Center). The proposed project would entail demolishing the existing Exhibition Hall and meeting rooms, CCH Department of Enterprise Services (DES) offices, Box Office, parking garage, all shops and associated storage areas, entry kiosks, and most driveways, sidewalks, and landscaping, and replacing them with new facilities, driveways, sidewalks, and landscaping. The Concert Hall and Arena would be retained, but would undergo major renovations. Additionally, a new Performance Hall and Sports Pavilion would be added to the Blaisdell Center campus (buildings and grounds).

This section may contain technical jargon or words unfamiliar to the general public. For this reason, we have provided a Glossary of Terms at the beginning of the document.

1.1 Project Description

1.1.1 Project Location and Land Ownership

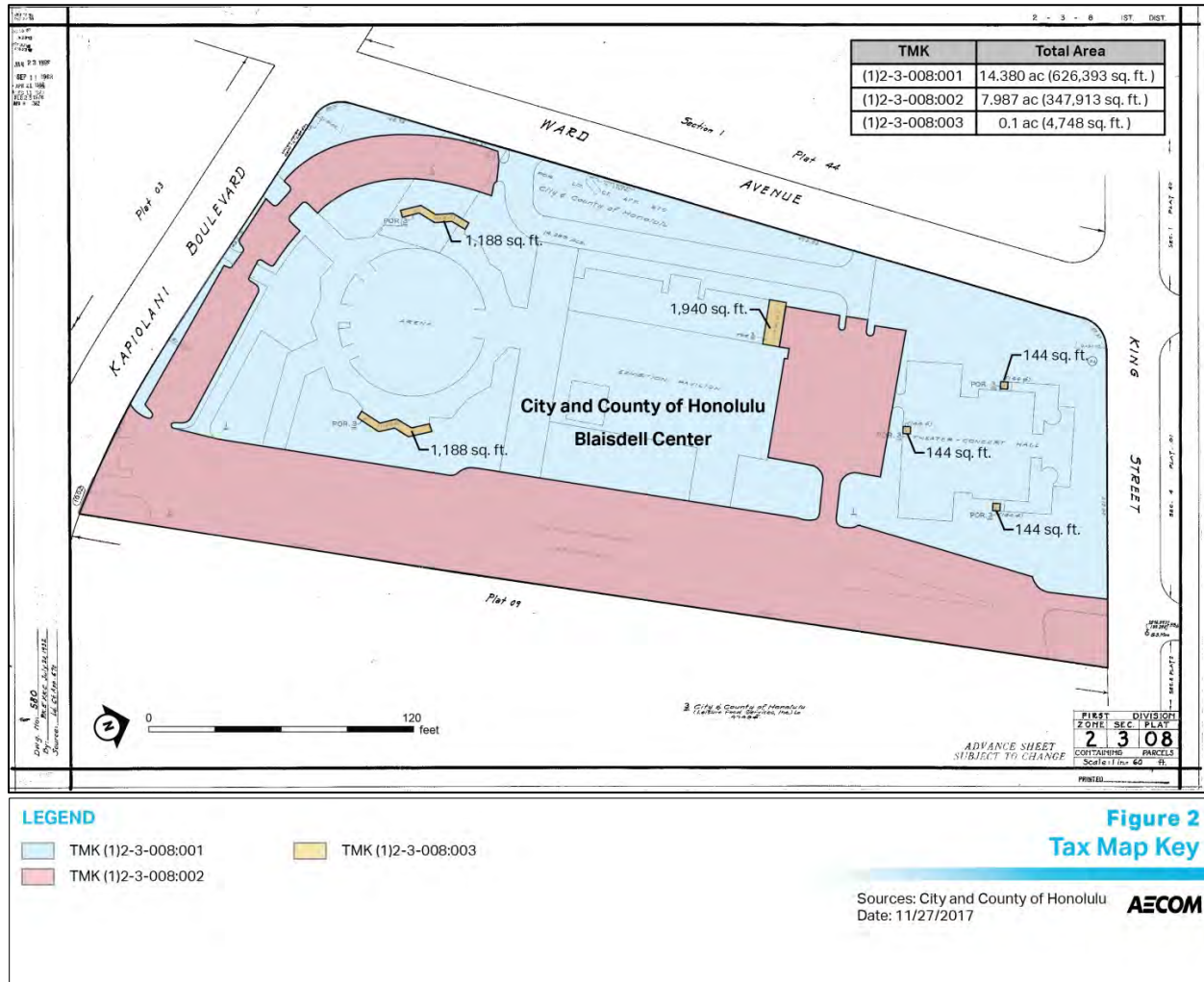
The Blaisdell Center is located in Kulaokahu‘a, which is within the ahupua‘a of Honolulu, in urban Honolulu on the island of O‘ahu (‘Āina Archaeology 2019). It is adjacent to President William McKinley High School (McKinley High School) (Diamond Head) and situated between Kapi‘olani Boulevard (makai), Ward Avenue (‘Ewa), and South King Street (mauka) (Figure 1).

Figure 1. Location Map



The property is owned in fee by the CCH and is within the Hawai'i Community Development Authority's (HCDA) Kaka'ako Community Development District. Figure 2 shows the three Tax Map Key (TMK) parcels that make up the Blaisdell Center.

Figure 2. Tax Map Key



1.1.2 Property Description and Surrounding Land Uses

The 22.4-ac. property extends approximately 800 feet (ft.) along Kapi'olani Boulevard, 550 ft. along South King Street, 1,400 ft. along Ward Avenue, and 1,700 ft. along the boundary between the Blaisdell Center and McKinley High School. It is generally flat with elevations of approximately 12 ft. above mean sea level (MSL) at South King Street, sloping gradually downward makai to approximately 5 ft. above MSL at Kapi'olani Boulevard.

Buildings, parking (structured and surface), driveways, sidewalks, and other impervious surfaces make up approximately three-quarters of the property. The remaining quarter of the property is composed of various landscaping, including grass, shrubs, trees, and fish ponds.

Surrounding land uses include parks (e.g., Thomas Square, mauka across South King Street); residential housing; retail/commercial buildings (makai, across Kapi'olani Boulevard); utility services (e.g., Hawaiian

Electric Company [HECO]) (‘Ewa, across Ward Avenue); and schools (e.g., McKinley High School) (Diamond Head).

1.2 Purpose and Need

1.2.1 Purpose of the Environmental Assessment

The proposed project occurs on CCH property and requires CCH funding; therefore, it must comply with the Hawai‘i Revised Statute (HRS) Chapter 343 environmental review process. Additionally, the Arena and Concert Hall are over 50 years old, and the site is a war memorial, thereby requiring compliance with HRS Chapter 6E. This EA has been prepared pursuant to Hawai‘i Environmental Policy Act (HEPA) (Chapter 343 of the HRS) and in accordance with Hawai‘i Administrative Rules (HAR) § 11-200. The CCH Department of Design and Construction (DDC) is the accepting authority for the environmental assessment (EA).

1.2.2 Need for the Proposed Action

The Blaisdell Center was built as a state-of-the-art facility in 1964. However, the now 55-year-old campus needs renovations and upgrades to its facility, systems, and infrastructure. Following a recommendation from the Urban Land Institute’s (ULI) Daniel Rose Center for Public Leadership in Land Use, Honolulu Mayor Kirk Caldwell endorsed a feasibility study as the first step in a Master Plan process. Through the feasibility study, it was determined that redevelopment is the most cost-effective way to help sustain, expand, and modernize the site to showcase Hawai‘i’s arts and culture for the next 50 years and beyond.

A Master Plan was subsequently prepared that focused on the feasibility study’s preferred alternative of fully renovating the Concert Hall and Arena, and demolishing and re-building the Exhibition Hall and parking garage. The Master Plan is the focus of this EA to determine any potential impacts that could result from the implementation of the elements presented in the Master Plan.

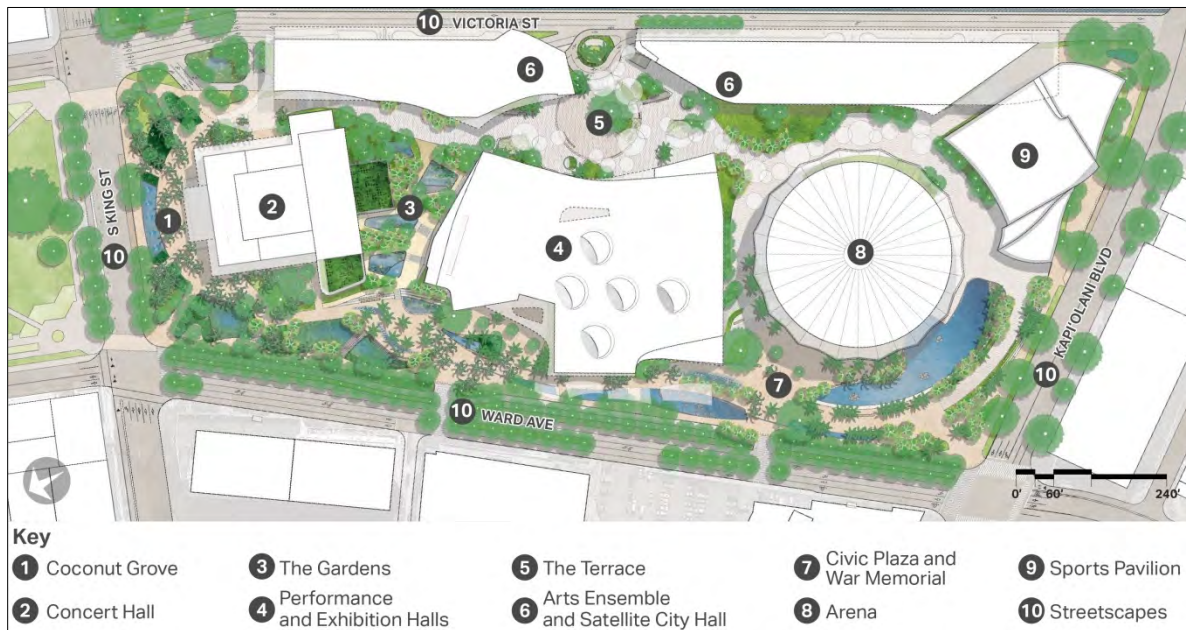
Locals and visitors alike have made lasting memories in over 50 years of the Blaisdell Center’s past tenure. The next 50 years of the Blaisdell Center would only be possible with substantial reinvestment in the existing facilities and construction of new facilities. These renovations would ensure that future generations of locals and visitors would continue to enjoy the Blaisdell Center as a true gathering place, where memories continue to be made.

1.3 Proposed Action

The proposed action is a complete redevelopment of the Blaisdell Center. This includes a new Exhibition Hall, meeting rooms, DES offices, and parking structures. The Concert Hall and Arena would be retained with major renovations. Additionally, the entire landscape, including vehicular and pedestrian circulation, would be reimagined and renovated. The proposed conceptual plan (the primary focus of the Master Plan) was built upon a community vision, guiding principles, cultural themes, and a conceptual framework, with the goal to better integrate the Blaisdell Center within the urban fabric of the larger district, improve connectivity, and increase usage by visitors and residents.

The Blaisdell Center’s conceptual plan components (i.e., major facilities and their surrounding features) are shown in Figure 3 and described below.

Figure 3. The Blaisdell Center’s conceptual plan components



1.3.1 Coconut Grove

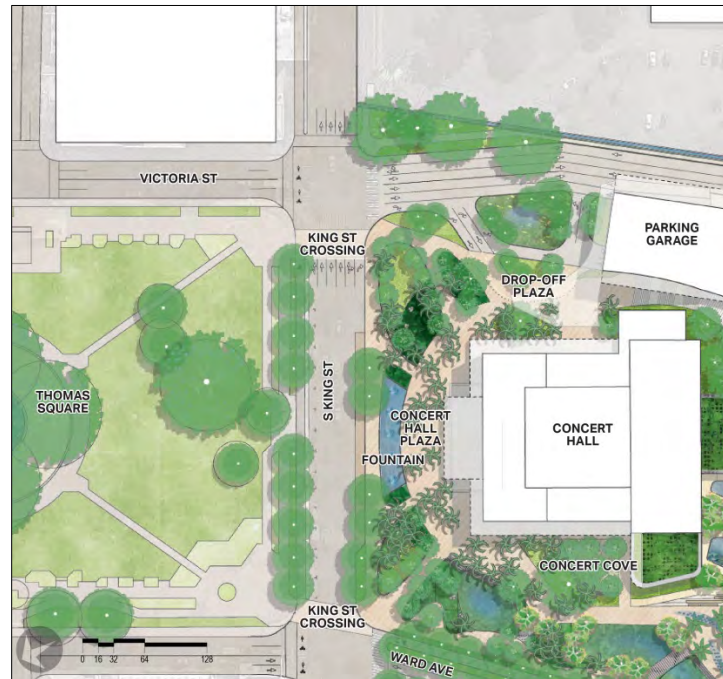
The Coconut Grove pays homage to the property’s past as the historic Ward family estate known as “The Old Plantation,” by retaining the existing grove of coconut palm trees (Section 4.2). As shown in Figure 4, the overall grove would be further defined into three smaller areas: (1) a drop-off plaza to welcome patrons, (2) the main Concert Hall plaza to accommodate large events like concerts or markets, and (3) a more intimate Concert Cove with movable seating adjacent to the lobby arcade and new café.

Framing the historic Concert Hall entrance would be a series of lush and vibrant gardens. A central fountain with a series of water jets, to help block the noise from the street, would serve as a buffer between South King Street and events occurring within the Concert Hall plaza, fronting the main entry to the hall.

Crosswalks would be widened to improve the pedestrian experience and draw people into the site from Thomas Square. A covered drop-off would provide visitors with easy access to performances in the Concert Hall. Outdoor orchestral concerts could take place on the lānai of the Concert Hall, and the Concert Cove would provide a protected zone for intermission, receptions, café seating, and other small gatherings.

Fronting the entry canopy and Thomas Square, the main plaza would extend the entry steps and expand the paved portion to allow for a larger audience area for shows underneath the canopy and enhance the formal symmetry of the entry. A long, arching bench would define the small plaza centered on the last facade arch on the ‘Ewa side of the hall and provide the potential to control access during events. Lower trees would create dappled light at sunset, help to shelter the space, and invite patrons out of the hall during intermissions. Conceived as an outdoor lobby, the Concert Cove would provide additional space for the constrained lobby while serving as a relaxing seating area for the café during non-event times.

Figure 4. Coconut Grove



Note: The coconut trees are represented by the star-shaped foliage.

1.3.2 Concert Hall

The Concert Hall would retain its historic presence facing Thomas Square Park with minimal interventions, largely maintaining its historic character and inviting atmosphere. The theater renovation and expansion would create a new experience of an interior/exterior space under the existing arcade by minimally extending the lobby, while preserving a large exterior walkway on all three sides of the arcade (Figure 5 through Figure 7). This subtle expansion would preserve the prominence of the existing arches, enrich the facade by replacing opaque wall and wood sliding panels with glazed openings, allow for air conditioning of the building, and secure the decorative screen elements to better preserve this unique feature.

The café, which would extend beyond the current footprint of the Concert Hall, would continue the deep-set lānai and give shape to an informal gathering space adjacent to the theater. On the upper levels, simple glass-walled spaces would create needed balcony lobby space. Similarly, another glass-walled room containing the rehearsal hall would be located along the backstage wall. Centered on the fly tower and partially concealing the blank rear wall of the building, the rehearsal hall would extend through the sloped garden stepping up to the Terrace and become a focal point, reorienting the concert hall toward this public space. Situated near the original location of the Old Plantation Home, the rehearsal room could also incorporate design elements that reference the historical significance of the estate. Concealed below the Terrace, the visual impact of the expanded back-of-house area would be intentionally minimized to preserve the exterior appearance of the existing Concert Hall.

Expanded and air-conditioned, the main lobby would be better able to accommodate concessions and other front-of-house spaces in addition to providing more space for patrons. Restrooms would be reconfigured and positioned just outside the wings on both sides of the hall. The proposed configuration would address the deficient number of toilets and wash basins, as well as provide men's and women's

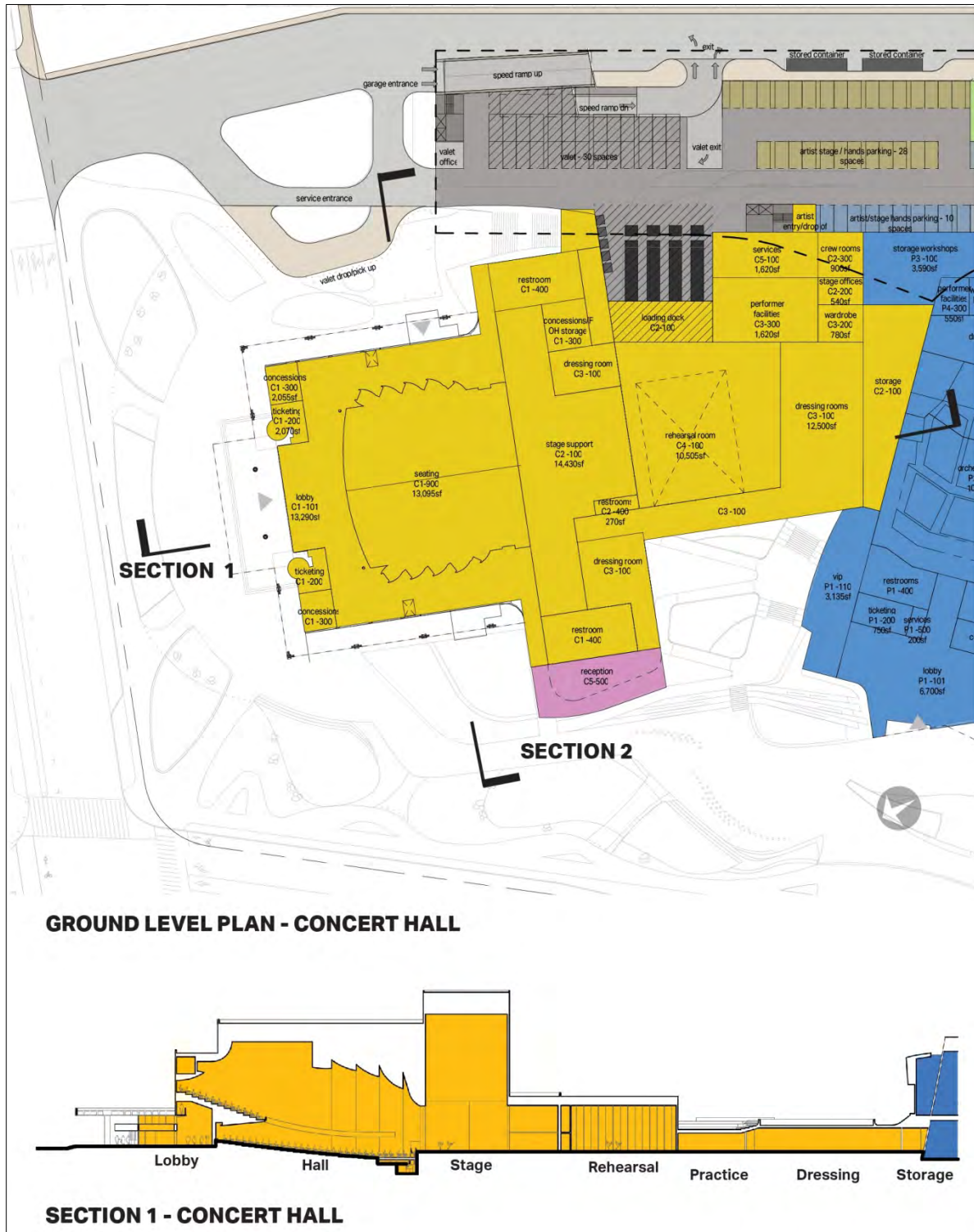
rooms on each side of the hall. Elevators would be integrated on both sides of the lobby, making both mezzanine landing levels accessible to patrons with disabilities. Although this creates accessible routes to the ground-floor lobby and restrooms, both spaces are undersized to serve patrons seated in the balcony and on the main level. To improve convenience, reduce wait times, and better serve the balcony section, new lobbies are proposed on both sides of the hall. Each lobby would contain concession and restroom spaces with the potential for serving as very important person (VIP) space and pre-/post-event space and providing scenic overlooks to the landscape below. Providing upper lobbies reduces the need for space at grade, creates a distinctly new experience that increases the value of balcony seating, and allows for additional rental opportunities. Between the two balconies, a narrow bridge is proposed with a gentle curve echoing that of the rear wall of the hall. By linking the two sides of the hall, patrons could access seats on either side of the hall without having to enter the auditorium.

Within the hall, the existing continental seating configuration would be retained, with accessibility addressed by adding 16 wheelchair spaces in the orchestra and four in the balcony. The proposed configuration utilizes the existing floor rake, but re-seats the auditorium to avoid removing seats while adding wheelchair spaces.

A rehearsal room provides additional practice space to reduce competition for the hall's use and could serve as a small, informal performance space. Based on the hall's stage dimensions, the proposed rehearsal room could be used by various dance or musical groups for practice and accommodate an audience of approximately 300 people with up to 20 performers in various seating/staging arrangements. In addition to the exterior modifications and expanded program, other major improvements are proposed to modernize and upgrade the facility to current standards, such as the:

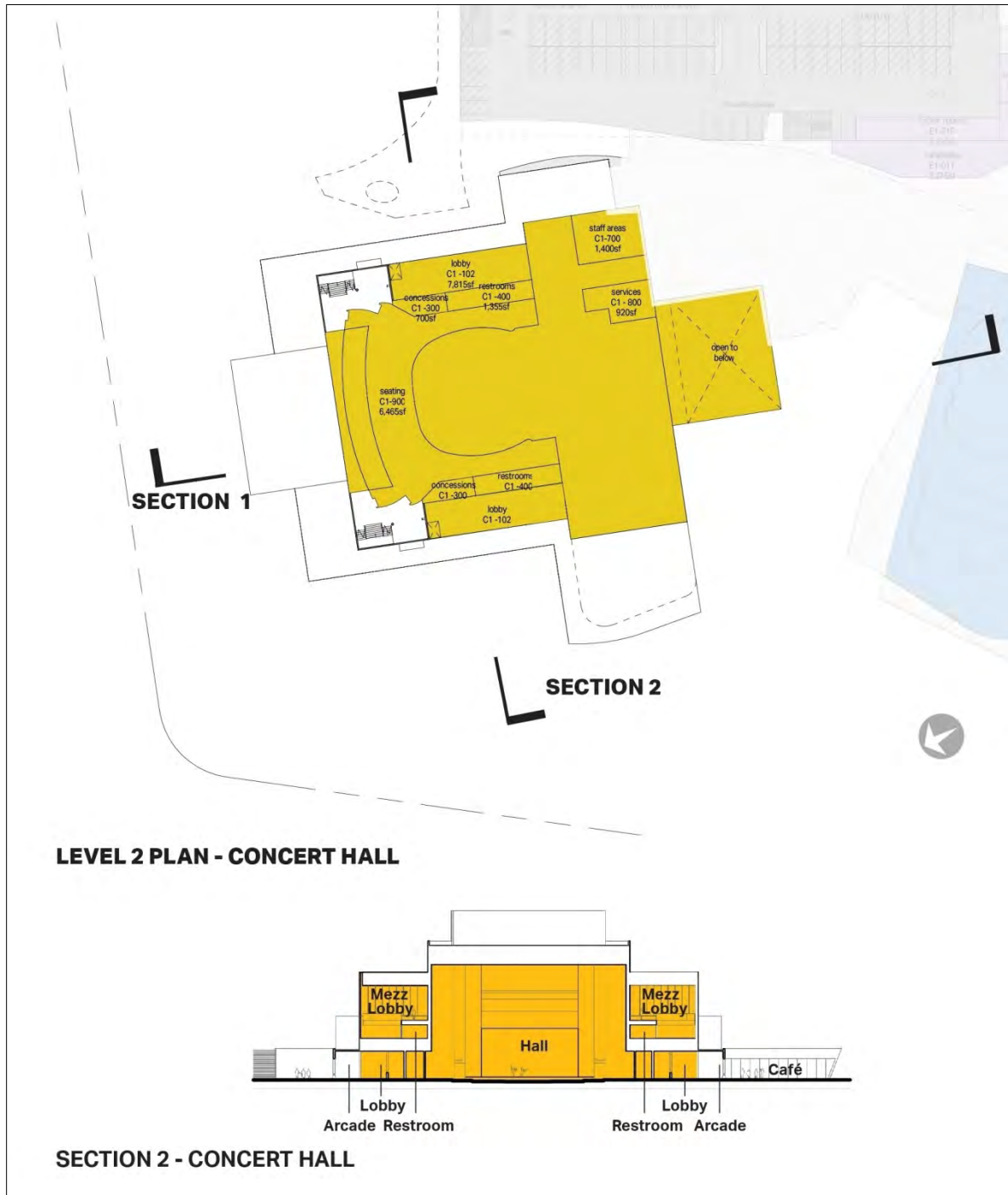
- lobby
- vertical circulation
- washrooms
- concessions
- auditorium configuration
- seating
- aisle lights
- cup holders
- Americans with Disabilities Act accessibility
- back-of-house
- stage systems
- acoustics
- building systems

Figure 5. Ground Level Plan and Section 1 – Concert Hall



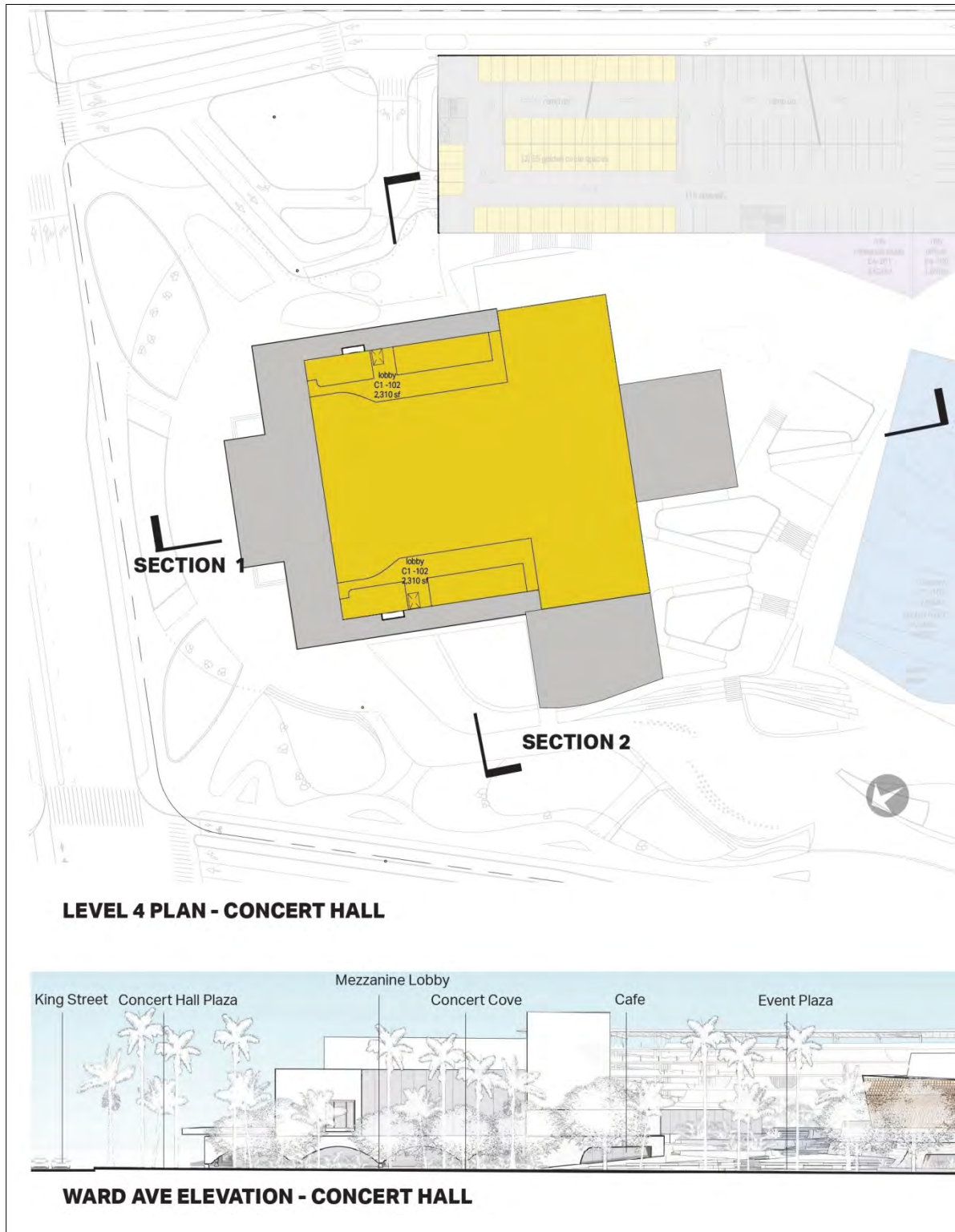
Note: The L-shaped lines indicate the angles of the cross sections available; if not provided in the EA, they can be found in the Master Plan.

Figure 6. Level 2 Plan and Section 2 – Concert Hall



Note: The L-shaped lines indicate the angles of the cross sections available; if not provided in the EA, they can be found in the Master Plan.

Figure 7. Level 4 Plan and Ward Ave Elevation – Concert Hall



Note: The level numbering does not include Level 3, which is not usable square footage and is simply the open space above Level 2 that allows for cathedral ceilings. The L-shaped lines indicate the angles of the cross sections available; if not provided in the EA, they can be found in the Master Plan.

1.3.3 The Gardens

The Gardens are proposed to be a central gathering point at the Blaisdell Center. A diverse range of programming is intended to draw people of all ages and backgrounds to sit and observe, explore the lo'i terraces, learn about the traditional Hawaiian ahupua'a system, or enjoy an outdoor concert.

The hardscaped plaza would be interspersed with shade trees, feature programmable water jets, and offer ample space for flexible programming to occur throughout the year (Figure 8). Water plants would surround the ponds and aid in water filtration while also providing a habitat for a range of aquatic and sub-aquatic life, bringing an additional layer of liveliness to the site.

Stepping down from the Terrace above, The Gardens would provide a lush, shaded, and green transition between the street and Terrace levels. Utilizing its gradual slope, water is proposed to descend the space linking the water source from the upper Terrace with the linear ponds lining Ward Avenue. A sloped path would wind between a series of lo'i with low seat walls which create smaller spaces within the overall landscape. The lo'i could also evolve to become integrated rainwater collection or water treatment areas, as a functional landscape, echoing the traditional Hawaiian watershed, while expressing water as a visual and ecological resource.

Figure 8. The Gardens



1.3.4 Exhibition Hall and Performance Hall

The proposed 95,000-square-foot (sq. ft.) Exhibition Hall would replace the existing 65,000 sq. ft. hall with a more efficient building that includes an expanded exhibition floor and a new Performance Hall to provide increased opportunities for events and entertainment. Positioned in generally the same location as the existing building, the proposed massing consolidates the building program for the two large

venues within a single form. By concealing large program areas below the Terrace and stacking meeting and office spaces directly above the Exhibition Hall, the additional program area would add to the site without reducing the area available for public space.

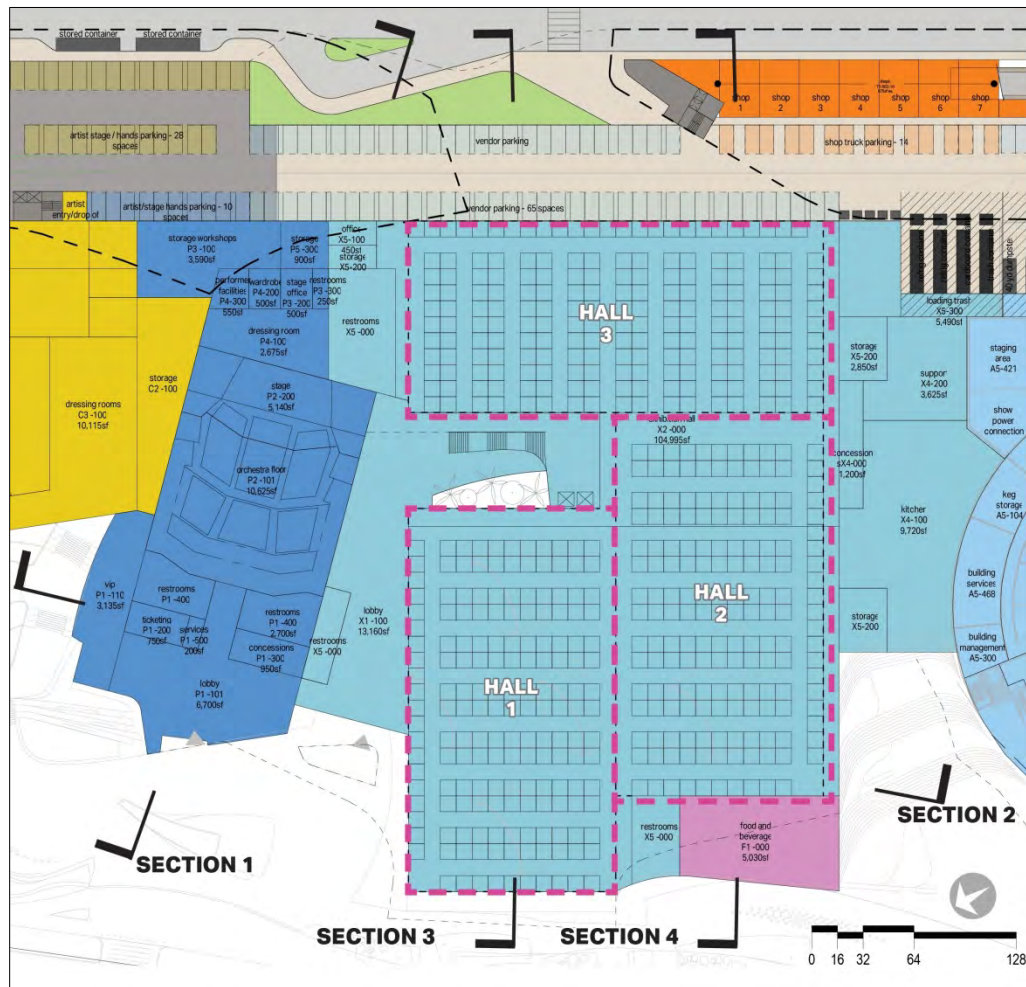
A new 1,500-seat Performance Hall is proposed as an additional venue for live performances. The lower seat count and flat floor provide opportunities for various configurations to support different types of performances and events, as shown in Figure 9 through Figure 11 below. The room configuration and proximity to the Exhibition Hall would allow the space to be utilized by performing groups and various other users, increasing rental opportunities.

Rotating the Performance Hall creates a gap between the two venues, providing a shared lobby for pre-function/check-in and entry points for both the street and Terrace levels. A designated lobby entry directly into the Performance Hall would further distinguish its visual identity. A large oculus over the shared lobby would highlight the entry and create a visual connection to the screened lānai above. On axis with Ward Avenue as it extends mauka of South King Street would be a large showcase window, providing a visual connection between the streetscape and activity inside the hall.

Ground Level Plan

Unlike the current hall, which is a single large room, the proposed hall would be able to be subdivided into three smaller halls of approximately 32,000 sq. ft. each (Figure 9). This configuration would allow for two to three smaller exhibitions to occur simultaneously and provide adequate space for the largest shows that currently utilize both the Exhibition Hall and the Arena. A central kitchen and service corridor would extend along the makai side of the exhibition space to service all halls, the Arena, and the food and beverage spaces. Additional office and storage space would be provided just off the lobby for event management. With a flat floor and flexible seating, the Performance Hall could also function as a lecture hall or demonstration area for exhibitions. Separate lobbies and a VIP space would allow the Performance Hall to operate independently for musical performances or other events.

Figure 9. Ground Level Plan – Exhibition and Performance Halls

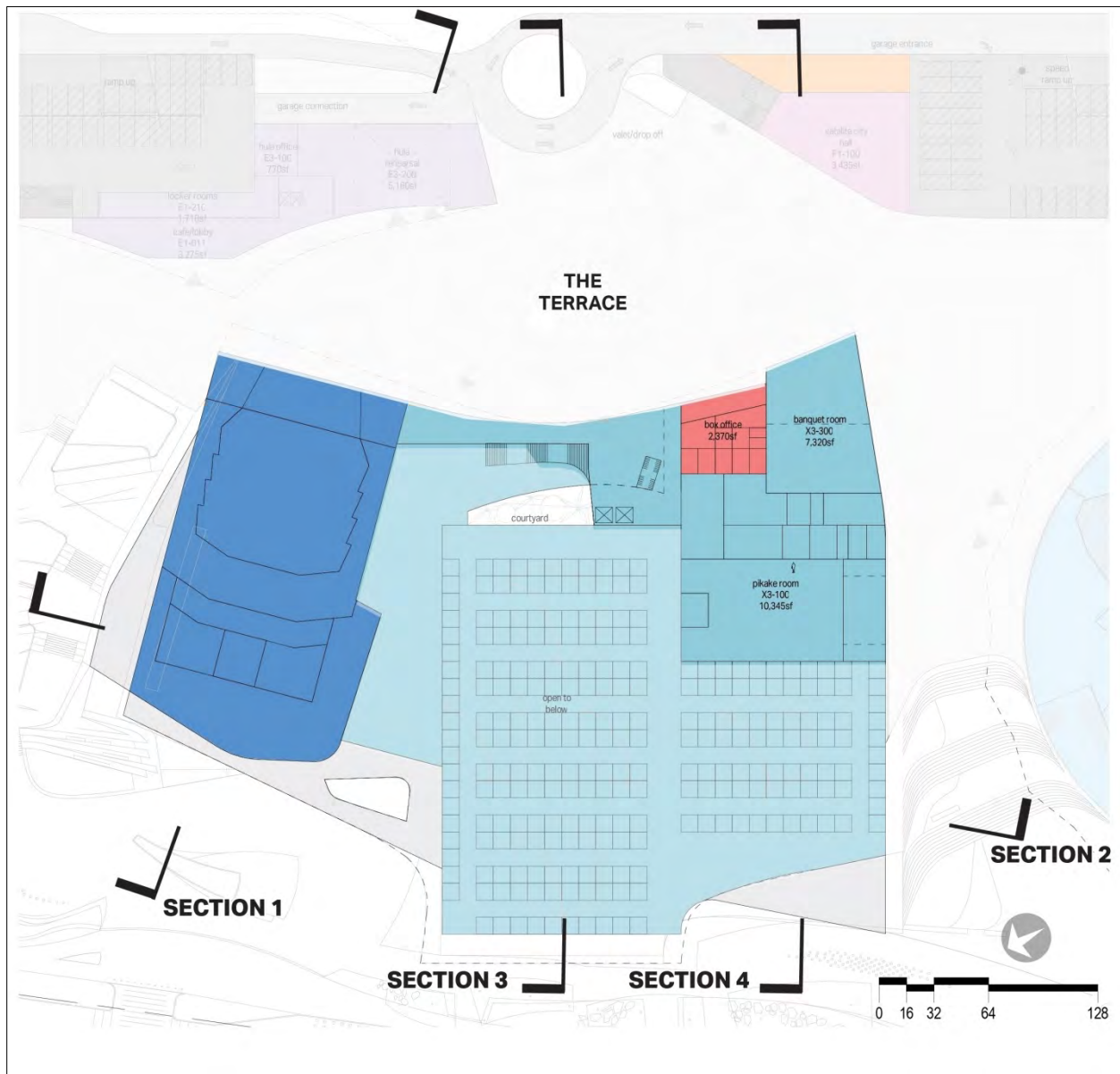


Note: The L-shaped lines indicate the angles of the cross sections available; if not provided in the EA, they can be found in the Master Plan.

1.3.4.1 Level 2 Plan

In the Level 2 Plan, the shared lobby would extend from Ward Avenue up to the Terrace to provide a secondary access point from the parking garage (Figure 10). An internal courtyard would serve as a light well for the lobby and exhibition space below. Meeting and event rooms are proposed on the second level with the ability to spill onto the Terrace. Hall 1 and half of Hall 2 would contain double height spaces with large north-facing skylights providing controllable natural daylight to the exhibition floor. A centralized Box Office is proposed on site, but smaller Box Office/will call spaces could also be provided at individual venues. Integrating the Box Office within the Exhibition Hall facade would provide a central location easily accessible to both parking garages and could be appropriated for other functions in the future as technology evolves and limits the need for a dedicated Box Office.

Figure 10. Level 2 Plan – Exhibition and Performance Halls



Note: The level numbering does not include Level 3, which is not usable square footage and is simply the open space above Level 2 that allows for cathedral ceilings. The L-shaped lines indicate the angles of the cross sections available; if not provided in the EA, they can be found in the Master Plan.

1.3.4.2 Level 4 Plan

Stacked above the banquet, event, and exhibition spaces, offices for DES would remain within the Exhibition Hall building and overlook the exhibition floor (Figure 11). Smaller meeting rooms are proposed on this level and would share a rooftop courtyard.

Figure 11. Level 4 Plan – Exhibition and Performance Halls



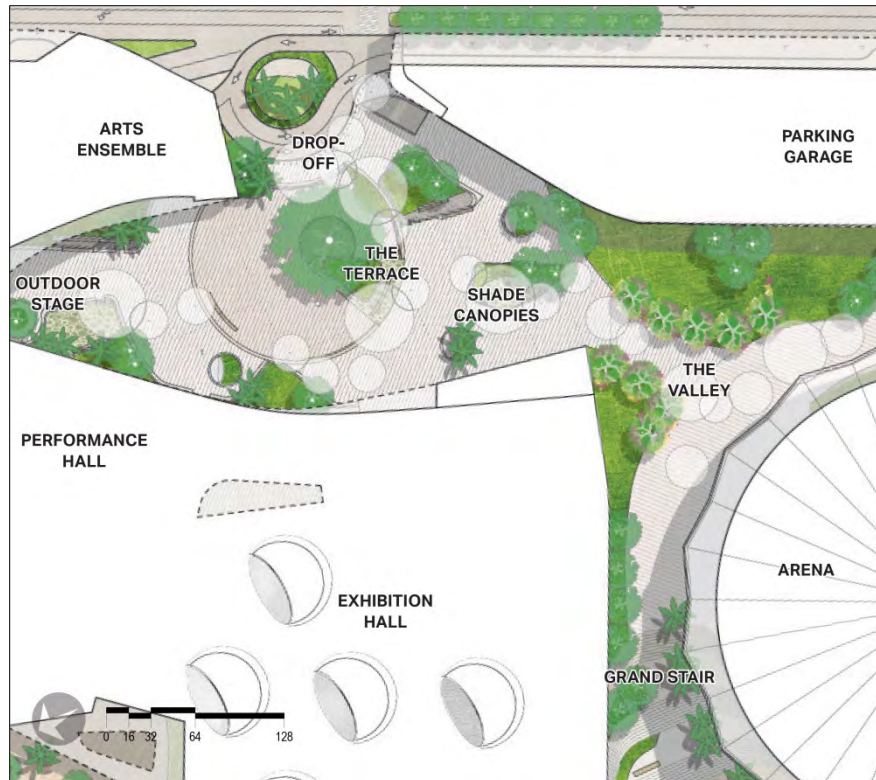
Note: The level numbering does not include Level 3, which is not usable square footage and is simply the open space above Level 2 that allows for cathedral ceilings. The L-shaped lines indicate the angles of the cross sections available; if not provided in the EA, they can be found in the Master Plan.

1.3.5 The Terrace

The Terrace is proposed as an elevated outdoor space that allows for all site services and maintenance circulation to be managed efficiently below while simultaneously forming a large public space and circulation path aboveground (Figure 12). Cooled by northeast trade winds and sheltered by architectural canopies as mechanisms for passive cooling, the constructed nature of the Terrace would be accentuated by site features at varying heights, defined edges, and the overall vegetation strategy. The Terrace would serve as an important arrival point to welcome visitors to the site from the parking garages or as they move from one venue to another. Several venues would have entries directly off the

Terrace, allowing for easy access from the garages and the capacity for program space to spill outdoors to utilize the Terrace for events. Accessible directly from the garage or via a series of stairs and sloped paths, the Terrace would collect circulation from many directions while creating a space large enough accommodate gathering crowds and large events.

Figure 12. The Terrace

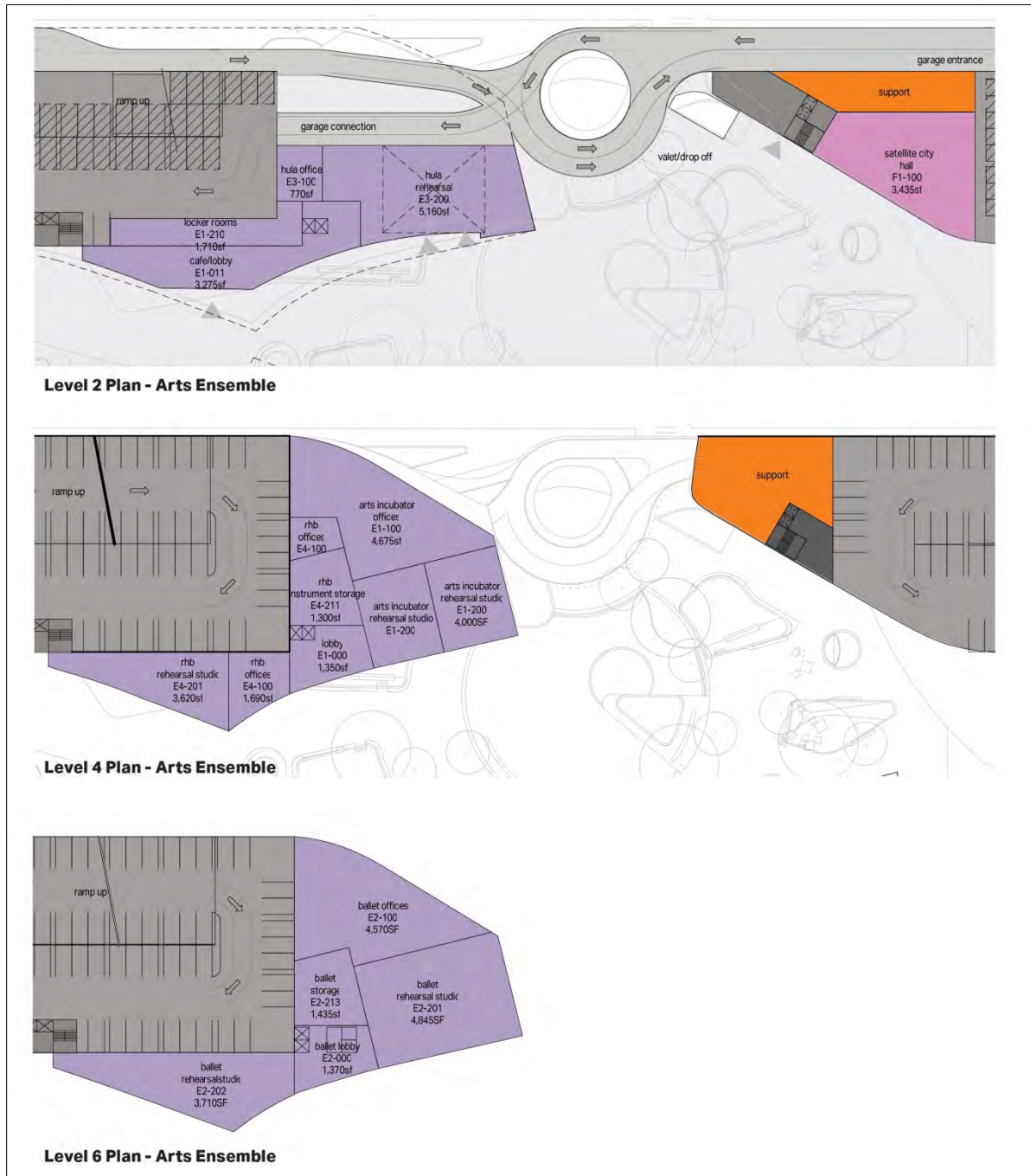


Expansive in size but shaped by the surrounding facades of the Exhibition and Performance halls, Arts Ensemble, and parking garage, the Terrace would provide a securable outdoor space for events, concerts, and/or movies with the architecture of the campus as its backdrop. A small outdoor stage would be integrated adjacent to the Arts Ensemble to host informal performances, small shows, and public programming.

1.3.6 Arts Ensemble and Satellite City Hall

Envisioned to attract more daily activity and diversify the site's user groups, the Arts Ensemble would be a new 35,000-sq. ft. facility proposed for the Blaisdell Center (Figure 13). The new spaces would provide core/shell space to be utilized as practice studios, classrooms, and offices to be built out by local performing arts groups such as a hālau hula, youth symphony, Royal Hawaiian Band, or other core users such as Ballet Hawai'i, Hawai'i Symphony Orchestra, and/or Hawai'i Opera Theatre. Stacked on three levels and concealing a portion of the mauka parking garage, the Arts Ensemble would overlook the Terrace and the Gardens. The proposed location would provide a visual landmark from the street-level plazas along Ward Avenue, activate the elevated Terrace, and enable views of the surrounding campus, McKinley High School, and the city beyond.

Figure 13. Arts Ensemble and Satellite City Hall



Note: The level numbering does not include Levels 3 and 5, which do not contain usable square footage and are simply the open space above that allows for cathedral ceilings.

Along with the parking garages, the Arts Ensemble would be shaped to capture the prevailing northeastern winds and circulate air throughout the site. These structures would provide a sculptural backdrop for the more prominent venues and landscape elements in the foreground. The Arts Ensemble would be clad with soft, vertically patterned precast panels and a light screen material, revealing the

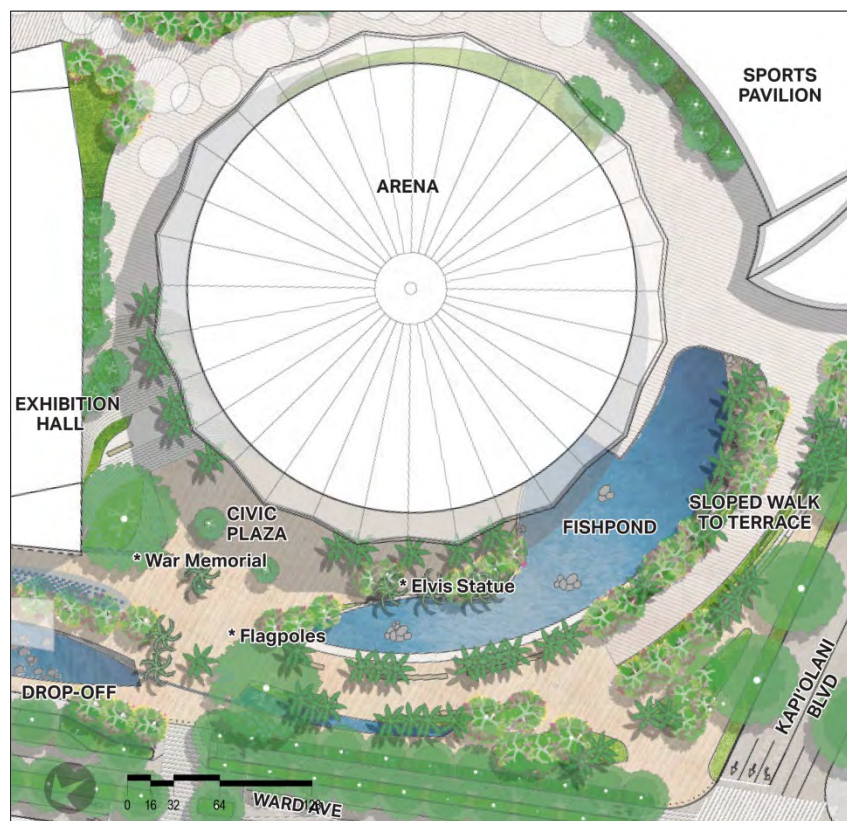
activities within, activating the perimeter of the Terrace, and giving the Arts Ensemble a visible presence at the Blaisdell Center.

In addition to the Arts Ensemble, a separate Satellite City Hall is proposed at the Terrace level of the makai parking garage. Like the Arts Ensemble, the Satellite City Hall would be integrated to provide another daily source of activity and welcome a different set of users to the Blaisdell Center. Integrated into the overall garage massing and facade, the Satellite City Hall would contain a fairly small footprint, while providing another convenient location for the community to access a variety of CCH services.

1.3.7 Civic Plaza

The Civic Plaza would serve as the entry point for the majority of people coming to the site from Kaka’ako, the future rail station, or Ward Avenue. Its grand scale and formal features would accommodate large crowds and make it orderly and easily navigable, while visually framing the arena (Figure 14). Water jets and a seating area would be situated near the café and Exhibition Hall and help to activate the plaza. A grand stair would lead up to the garage and Terrace above and be broad enough to integrate seating areas, easing the transition from grade to the upper level.

Figure 14. Civic Plaza



A large fishpond would reflect the historic fishponds that were on-site and have become inseparable from the identity of the Blaisdell Center. Given a prominent location at the corner of Ward Avenue and Kapi’olani Boulevard, the fishpond would mark the entry from the makai side of the site with open views to the historic arena. Not only a visual reminder, the fishpond would also provide habitat for aquatic flora and fauna and continues the site’s legacy as a productive landscape. A café is proposed to flank the edge, offering a cool, shaded space to enjoy a bite to eat or drink before or after a show.

1.3.8 War Memorial

After originally being dedicated as a living memorial to all of Hawai'i's war veterans in 1964, the memorial plaque at the Blaisdell Center was misplaced at some point in the decades that followed. As part the Master Plan process, the site was rededicated in 2014 with a new plaque mounted to a stone on the Ward Avenue side of the Concert Hall.

To reinforce the Blaisdell Center as a place to honor the service of the veterans of Hawai'i, an expanded war memorial is proposed as part of the Master Plan. After consulting with members of various veteran groups, the following principles were proposed as guidelines for the placement and design of the reconfigured memorial.

Guiding Principles

1. Engender pride of service for past, present, and future service members and veterans.
2. Celebrate the connections and relationships service members helped to facilitate between Hawai'i and the world beyond.
3. Create an inclusive space that is welcoming to veterans, civic organizations, and the larger community.
4. Honor freedom and justice by creating an accessible, peaceful place within the urban environment.
5. Allow the diversity of experiences, generations, and cultural backgrounds of service members and veterans to influence a design that can adapt and change over time.
6. Inspire future generations to value service and educate visitors on the warrior heritage of Hawai'i.

Given its scale and formal character, the Civic Plaza was identified as a preliminary site for the memorial, but further consideration of siting and scale would be completed as a specific design concept is developed.

1.3.9 Arena and Sports Pavilion

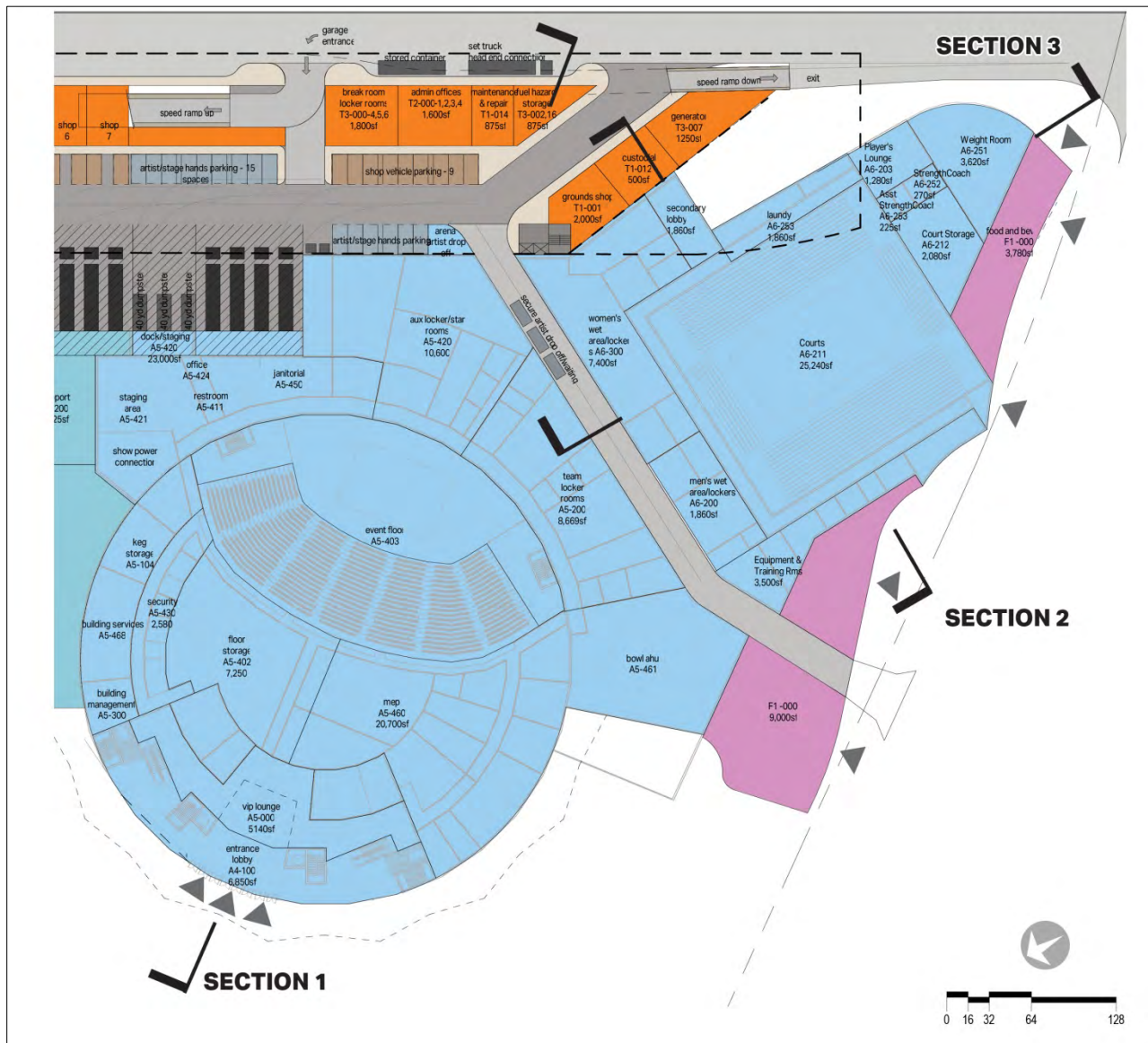
The expansion of the Arena would reveal a luminous interior from a full-height lobby facing the corner of Ward and Kapi'olani. Vertical louvers are proposed to accentuate the geometries of the existing structure while providing shade to the southwestern facade. A Sports Pavilion would be added makai of the arena to provide additional space for sports practices and games. A large fishpond encircling the Arena would reflect against its underside. The historic silhouette and major architectural elements of this iconic building are proposed to be preserved and enhanced through these careful additions.

Over the years, the types of events hosted at the Arena have evolved from sporting events like boxing and basketball, to events including major national tours of concerts, comedians, and local events, such as large school graduations and performances. The proposed action re-envision the Arena interior as multi-tiered seating balconies oriented toward a stage at one end of the arena, allowing for 8,200 unobstructed seats with excellent sight lines, while maintaining the exterior iconic roof structure and columns. Meanwhile, the Sports Pavilion would provide approximately 2,500 seats in a more appropriately scaled room for the typical audience size attending local sporting events. The Sports Pavilion would also provide the flexibility to host graduations and practices to open more available dates on the arena calendar which are currently blocked out for non-event and set-up days. The floor layout of the Sports Pavilion assumes one event court with two cross courts for practice (Figure 15 through Figure 18).

Ground Level Plan

The ground floor would be the primary Arena entrance for those arriving from the Civic Plaza, with the back-of-house consuming most of the footprint of the ground floor (Figure 15). An unassuming service drive corridor from Kapi'olani Boulevard would split the Arena dressing rooms and Sports Pavilion locker rooms, providing a secure artist drop-off location. The service corridor would be sized to allow emergency vehicle access to the service corridor in the event of traffic congestion at the garage entries. Food, beverage, and retail spaces along Kapi'olani would provide daily dining options, not just during events.

Figure 15. Ground Level Plan – Arena and Sports Pavilion

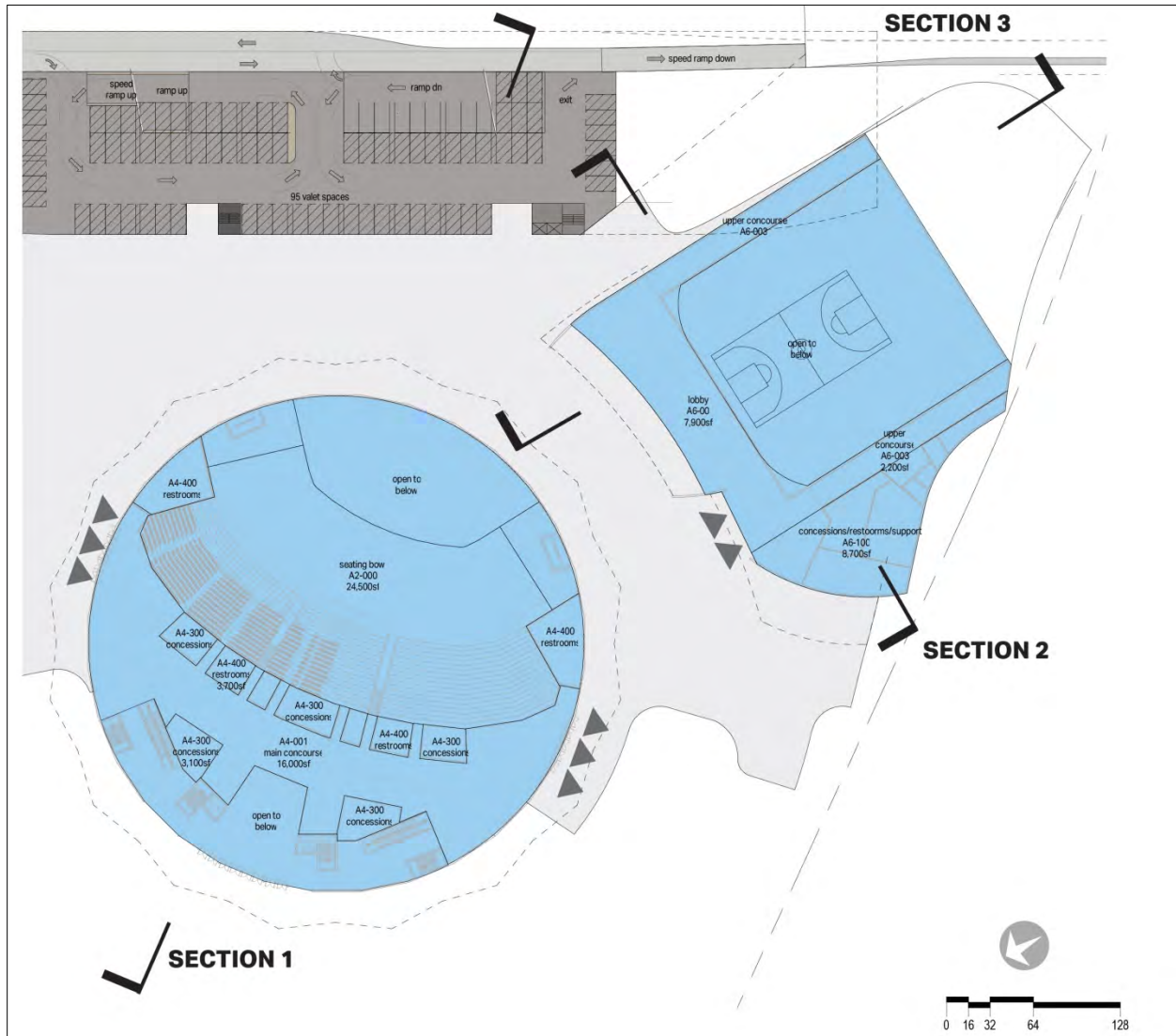


Note: The L-shaped lines indicate the angles of the cross sections available; if not provided in the EA, they can be found in the Master Plan.

Level 2 Plan

The Arena and Sports Pavilion main concourses are proposed as the primary entrances from the parking garage, with access directly from the Terrace (Figure 16). The Arena's main concourse would have concessions, restrooms, and merchandise while overlooking the ground floor lobby and the newly reconfigured fish pond in the Civic Plaza. Patrons would be able to circulate to their seats through loges at the main concourse and descend to their seats. Premium group seating areas with amenities located on the far left and right sides of concourse would provide patrons with a unique viewing experience.

Figure 16. Level 2 Plan – Arena and Sports Pavilion

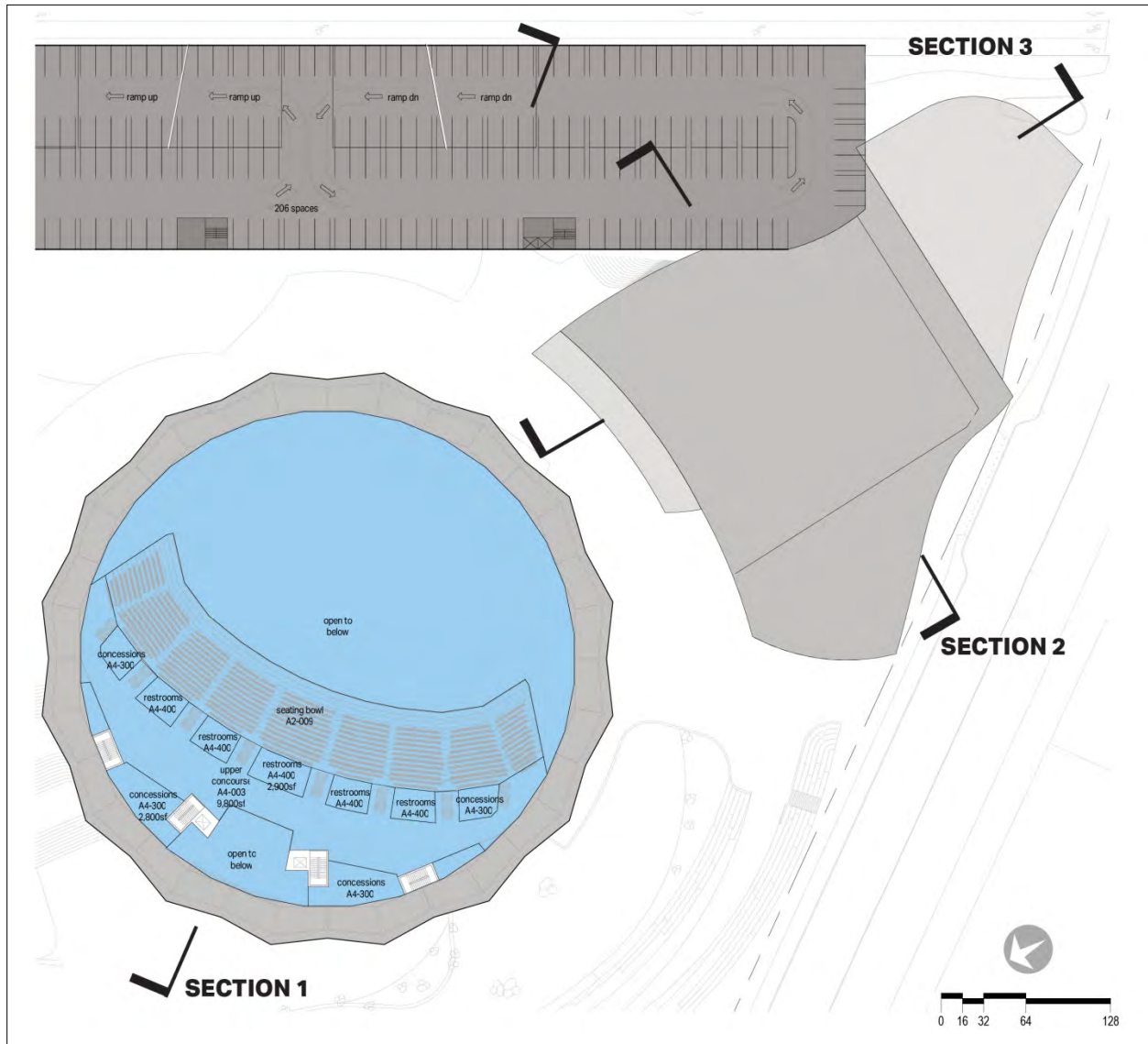


Note: The level numbering does not include Level 3, which is not usable square footage and is simply the open space above Level 2 that allows for cathedral ceilings. The L-shaped lines indicate the angles of the cross sections available; if not provided in the EA, they can be found in the Master Plan.

Level 4 Plan

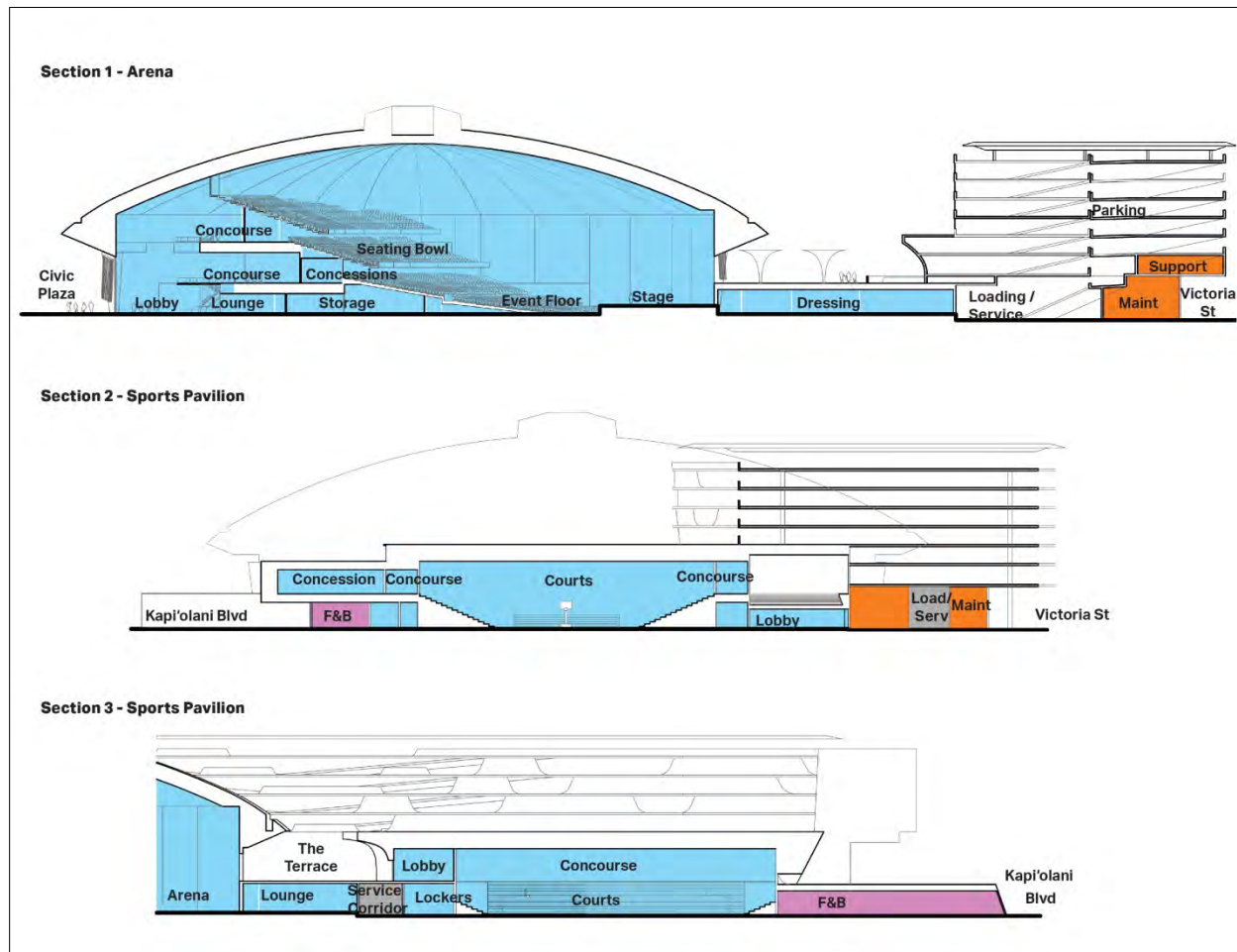
From the ground floor, escalators would bring patrons to their seats on the concourse or use elevators to enter the upper concourse. The upper concourse, serving the upper two tiers of seating, would also have access to concessions, merchandise, and restrooms while overlooking the main concourse and ground floor lobby below (Figure 17). Although higher than the event floor, seats at the rear of the upper concourse would still be much closer to the stage compared to the last row in the existing seating configuration.

Figure 17. Level 4 Plan – Arena and Sports Pavilion



Note: The L-shaped lines indicate the angles of the cross sections available; if not provided in the EA, they can be found in the Master Plan.

Figure 18. Sections 1, 2, and 3 – Sports Pavilion



1.3.10 Streetscapes

Following the publication of the Master Plan, changes to the transportation surface features were analyzed. Although this EA analyzes the impacts of the Master Plan, the City felt the FEA would be improved by analyzing the impacts of the revised features and provide the most transparency to the public. See Table 11 for a list of features that were altered from the Master Plan, and Appendix C for the Traffic Impact Assessment Report (TIAR).

Ward Avenue

The Ward Avenue edge would create a connected, unified, vegetated, and welcoming face for the Blaisdell Center in alignment with the HCDA's Mauka Area Plan designation as a "promenade street" and primary pedestrian corridor (HCDA 2011). As the primary drop-off location for transportation network, taxi, taxi and ride share companies at the center of the site, a broad lay-by lane is proposed to be incorporated, removing the need for curb cuts and vehicular conflicts with pedestrians and bikes (Figure 19). The drop-off location would allow visitors easy access to the Exhibition Hall and Arena, which would be enhanced by the linear water feature flowing along its side. A row of street trees would shade the sidewalk and provide a visual buffer to the busy Ward Avenue. A bioswale is also proposed to stretch along Ward Avenue, between the sidewalk and the building, helping to retain and filter stormwater.

The feature would also serve as an integrated security measure to prevent undesired vehicular access to the public spaces and buildings. Transitions would be marked by vegetation, lighting, and furniture to help with wayfinding and ensure security across the site. The Master Plan for Blaisdell Center is compatible with CCH-planned improvements to Ward Avenue including on-street bike lanes and future city bus stops. These improvements are consistent with the *City and County of Honolulu Complete Streets Design Manual* (CCH 2016), and would enhance the pedestrian and bike infrastructure to support district connectivity mauka to the art museum and makai to the future rail station.

Figure 19. Bike Lane Improvements – Mauka Section



Ward Avenue Bike Lane Improvements - Mauka Section

Figure 20. Bike Lane Improvements – Makai Section



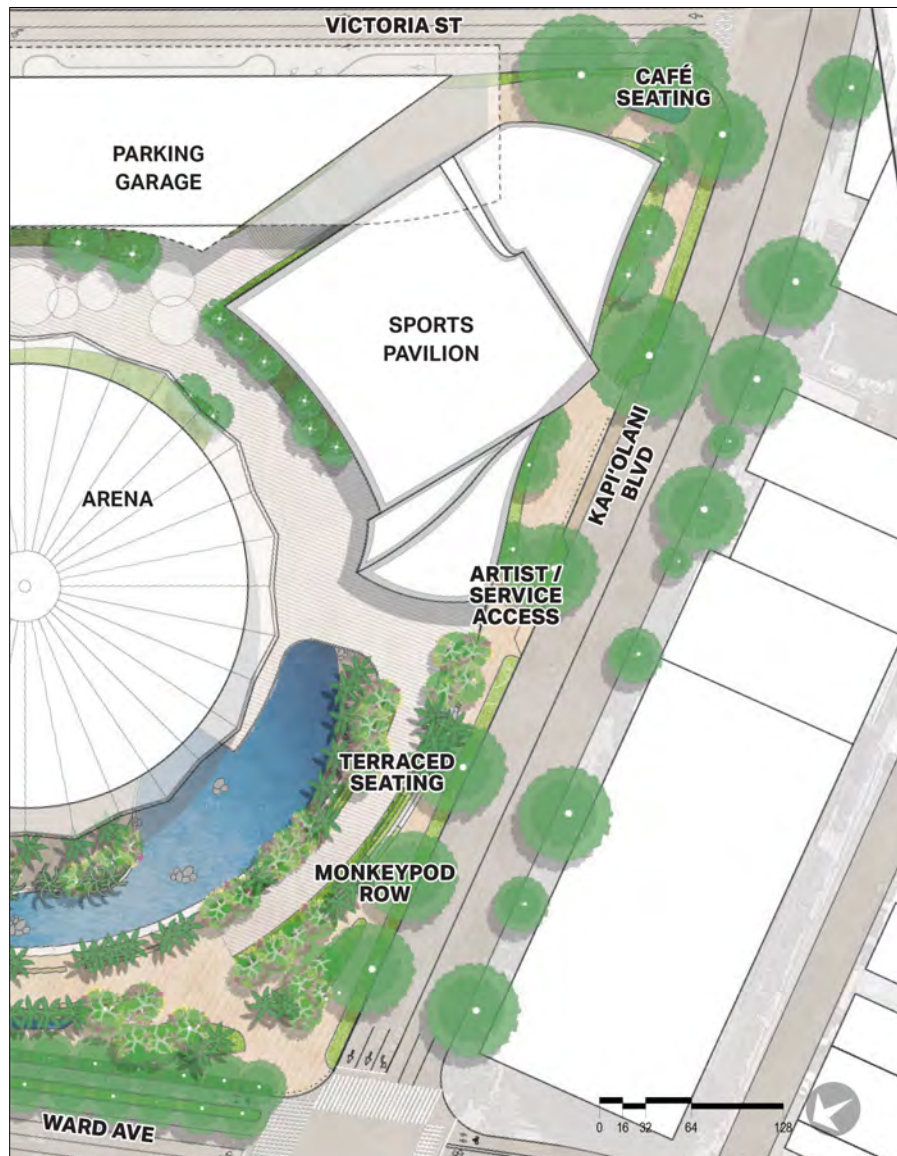
Victoria Street

Handling most of the site's vehicular and service traffic, Victoria Street would be configured consistent with guidelines documented in the *Honolulu Complete Streets Design Manual*, but would be retained by DES to allow for operational flexibility to control traffic flow and lane direction according to the needs of specific events. A continuous pedestrian path would be provided on the Diamond Head-side of the street with raised crosswalk connections to a central drop-off located on the 'Ewa-side of the street. This would allow for pedestrian access and circulation along this edge of the site, but the majority of pedestrian infrastructure and improvements are focused along Ward Avenue. Pedestrian facilities do not cross the storm drain culvert located between the Blaisdell property and McKinley High School.

Kapi'olani Boulevard

The Kapi'olani Boulevard edge of the site would preserve the existing monkeypod trees, providing a shaded walkway and streetscape that creates continuity with the neighborhood blocks beyond. It is proposed as an activated urban edge that transitions from the Sports Pavilion entrance to a café with outdoor seating to the vegetated, terraced ramp (Figure 21). The Arena would come into sight as visitors pass the café and the vegetated ramp slopes down. An artists' service drive between the café and Sports Pavilion would provide quick, secure access to dressing rooms as an alternative to other drop-off options during times of high traffic volumes.

Figure 21. Streetscape – Kapi’olani Boulevard



1.4 Project Timeline and Project Funding

1.4.1 Project Timeline

The project’s planning phase is complete and has entered the early design phase, which is expected to last approximately 18 months. Each of the four phases is summarized below:

- Phase I – Feasibility Study and Conceptual Land Use Plan (2015–2016)
 - **February 10, 2015:** Public Workshop #1
 - **2015–2016:** Outreach with Stakeholders
 - **Fall 2016:** Feasibility Study and Conceptual Land Use Plan Published

- Phase II – Master Plan, Technical Studies, and Environmental Assessment (2016–2019)
 - **2017:** Site/Building Assessment and other technical studies
 - **July 13, 2017:** Public Workshop #2
 - **Fall 2017:** Begin Environmental Assessment
 - **November 8, 2017:** Public Workshop #3
 - **March 2018:** Master Plan report completed
 - **Winter 2018:** Publish Draft Environmental Assessment
 - **Spring 2019:** Publish Final Environmental Assessment
- Phase III – Design period of performance (early 2018–2019)
 - **Fall 2018: Complete** Schematic Design
 - **TBD:** Design Development
 - **TBD:** Construction Drawings
 - **TBD:** Request for Proposals
- Phase IV – Construction (TBD, expected to take approximately 3 years)

1.4.2 Estimated Project Costs

Following the publication of the Master Plan, the planning process continued and the construction costs were updated. Although this EA analyzes the impacts of the Master Plan, the City felt the EA would be improved by analyzing the impacts of the most up-to-date project costs, and would in turn provide the most transparency to the public.

A summary of the estimated construction costs is provided in Table 1. Funding for the project would be provided primarily through city bonds, but potential public private partners would be sought.

Table 1. Summary of Project Costs

	Space ID	Space Name	Gross Area (sf)	Current Cost (\$)
A1	Z2	CAMPUS SITE TOTAL	550,000	\$ 77,140,752
A2	E	ARTS ENSEMBLE TOTAL	54,214	\$ 11,283,950
	F2	COMMERCIAL (SATELLITE CITY HALL) TOTAL	3,839	\$ 1,643,783
	G	GARAGE TOTAL	951,050	\$ 109,750,473
	T1	TRADES / SHOPS TOTAL	25,755	\$ 5,732,316
	T2	CENTRAL UTILITY PLANT TOTAL	29,388	\$ 18,801,870
A3	C	CONCERT HALL TOTAL	117,442	\$ 58,827,518
A4	B	BOX OFFICE TOTAL	2,945	\$ 822,651
	D	DEPT. OF ENTERPRISE SERVICES TOTAL	12,206	\$ 2,870,255
	P	PERFORMANCE HALL TOTAL	74,782	\$ 41,271,142
	X	EXHIBITION HALL TOTAL	197,381	\$ 75,987,333
A5	A	ARENA TOTAL	216,704	89,262,474
A6	SP	SPORTS PAVILION TOTAL	74,481	31,383,596
Misc.	F1	FOOD & BEVERAGE TOTAL	25,000	9,703,459
D1	Z1	DEMOLITION TOTAL	534,662	13,126,248
Total of A1, A2, A3, A4, A5, A6, D1			1,785,187 SF	\$ 547,607,819
General conditions			10%	\$ 54,760,782
OH/Fee			8%	\$ 48,189,488
Contingency for Design/Development			10%	\$ 65,055,809
Escalation to start in 2020			8%	\$ 57,249,112
Construction Total			\$ 433 /SF	\$ 772,863,011
			<i>SF Excludes Campus & Demolition</i>	
			<i>\$ Includes Campus & Demolition</i>	

1.5 Project Background

1.5.1 Daniel Rose Center for Public Leadership (2014)

Since 1964, the Blaisdell Center has welcomed locals and visitors to the 22-ac. campus with the Concert Hall, Arena, and Exhibition Hall. First built as state-of-the-art facilities, the 55-year-old campus needs repair and renovation. Following a recommendation from the ULI Daniel Rose Center for Public Leadership in Land Use, Mayor Kirk Caldwell initiated a feasibility study as the first step in a Master Plan

process to ensure that the Blaisdell Center can continue to meet the needs of the people of O‘ahu and Hawai‘i.

1.5.2 Feasibility Study and Land Use Alternatives (2015–2016)

The planning process for the Blaisdell Center commenced in 2015 with an existing conditions assessment, community outreach, market analysis, development of vision statement and guiding principles, study of comparable facilities (in San Francisco, Seattle, and Kansas City), alternatives generation, selection of a preferred alternative, and a financial analysis.

At the first public workshop in February 2015 (Public Workshop 1), approximately 170 participants articulated their past and current experiences at the Blaisdell Center, as well as their vision for its future. Participants recalled some of their best memories at the Blaisdell Center—graduations, concerts, basketball games, craft fairs, and Broadway shows, to name a few. All major facilities at the Blaisdell Center were cited as important for hosting different types of events.

Based on the existing conditions assessment, community input from Public Workshop 1, and market research, three conceptual alternatives for the future of the Blaisdell Center were created to review the range of potential development. The alternatives ranged from maintaining the current configuration of facilities to constructing new venues throughout the site with additional uses. A preferred alternative was selected for refinement based on a physical, financial, and construction feasibility assessment and as the result of public input and meetings with stakeholders and community leaders.

A range of land uses were explored—a vertical and horizontal mix of uses including residential, institutional, hotel, commercial, and retail uses, enhanced parks, and a plaza to encourage gathering on the Blaisdell Center campus outside of ticketed events. A high-level financial analysis was performed to refine the preferred alternative, including exploration of various funding mechanisms to pay for improvements to the Blaisdell Center. Based on the existing conditions, analysis, public outreach, stakeholder interviews, market analysis, vision, and principles, three land use alternatives were developed for the future of the Blaisdell Center (AECOM 2016):

- **Alternative 1:** Alternative 1 is the “status quo” plan. It retains all three major buildings (with renovations) including the Concert Hall, Exhibition Hall, and Arena, as well as the parking structures in the current configuration.
- **Alternative 2:** Alternative 2 retains the existing Concert Hall and Arena with renovations, and proposes a new Exhibition Hall with meeting rooms and a new parking structure (designed with improved efficiency and truck access to all the facilities).
- **Alternative 3:** Alternative 3 proposes the most change of all the alternatives. Alternative 3 retains the existing Concert Hall with renovations, and proposes the following new facilities: Exhibition Hall, Arena, and parking structure (designed with improved efficiency and truck access to all the facilities).

The land use program for the preferred alternative includes the following:

- A new multipurpose venue and education studios that provide a mixture of practice and learning spaces to the existing Concert Hall. This allows greater scheduling flexibility for the Concert Hall, promotes more innovative types of events, and extends periods of active use.
- Retail space along the front of the Exhibition Hall that serves to activate the central open space and create an additional draw of patrons on non-performance days. Commercial and retail space

extends along Kapi'olani Boulevard not only to activate the urban edge, but also to encourage longer patron visitation before and after events.

- Trades, warehouse, and administration support space would be provided in the meeting and event space facilities. Trash and recycling areas are also proposed in the reconfigured loading zones.
- The new parking structures would be more efficient with at least 2,000 spaces, provide direct access to the Exhibition Hall and Arena, consolidate loading zones, and provide at least 500 more parking spaces than are currently configured on site.
- The design of the open spaces around the facilities would provide a cost-effective approach to transforming the Blaisdell Center into a park-like setting as a destination and neighborhood amenity, increasing the opportunity for public programming and providing additional rentable areas.

Recommended development for the major facilities are as follows:

- **Concert Hall:** Recommended improvements include a new multipurpose venue, expanding and enclosing the lobby to provide air-conditioned pre-function space, renovated bathrooms, and improved concessions. A new roof terrace at the balcony level was suggested as a unique indoor/outdoor experience and to reduce congestion during intermission. Renovations should include Americans with Disabilities Act of 1990 (ADA) compliance and address safety concerns by providing access to the balcony and upper seating.
- **Exhibition Hall:** Recommendations include developing a new exhibition hall and parking structures with additional 500 parking spaces, improved access, including loading and storage areas, covered pre-function terraced areas, open space, and water features.
- **Arena:** Recommended improvements include enclosing the façade in glass, ADA compliance, safety improvements, additional food and beverage opportunities, mechanical upgrades and modernization, retail and commercial development incorporating Complete Streets elements along Kapi'olani Boulevard, extension of Victoria Street, new café and Box Office, and centralized plazas and open space.

1.5.3 Master Plan Development (2017)

Based on the selection of the preferred alternative (Alternative 2), the master planning effort commenced in 2017. The master planning process further defined the preferred alternative into a conceptual plan, which is the proposed action analyzed in this EA.

1.6 Methods for Determining Level of Impact

In accordance with HAR Section 11-200-12, an agency uses thirteen administrative criteria to determine the significance of impacts. No impacts resulting from the proposed action reach the significance criteria, as outlined in the rules; this is discussed in further detail in Section 10.2.

1.6.1 Direct and Indirect Impacts

To assess the level of direct and indirect impacts of the proposed action, impact criteria were developed (Table 2). These impact criteria were used to evaluate the effect of the proposed action on each resource by magnitude or intensity, geographic extent of impact, context of the resource, and duration. A set of three levels (e.g., low, medium, and high) were defined for each assessment criterion, as shown below.

Table 2. Description of Impact Assessment Criteria

Impact Analysis	
Magnitude and Intensity	
Low	A change in the resource condition is minimal and does not noticeably alter the resource’s function in the urban environment.
Medium	A change in the resource condition is measurable or observable, and an alteration in the urban environment is noticeable and detectable.
High	A change in a resource condition is measurable or observable, and the alteration in resource’s function is clear and consistently observable.
Geographic Extent	
Local	Impacts are limited to the immediate project area.
Regional	Impacts would extend beyond the project area, affecting the immediate project area, into the area of concern, and potentially the entire Honolulu region.
Island-wide	Impacts would potentially affect the entire island of Oahu.
Context	
Common	The affected resource is considered usual or ordinary in the region, is not depleted, and is unprotected by legislation. The resource does not fill a distinctive or irreplaceable role in the region.
Important	The affected resource is protected by legislation, and/or fills a distinctive role in the region that is irreplaceable.
Unique	The affected resource is protected by legislation, fills a distinctive role in the ecosystem or urban environment, and is uncommon or depleted in the region.
Duration	
Temporary	Impacts would last for the duration of construction activities.
Long-term	Impacts would be long-term and would continue during operations of the new facility.

1.6.2 Summary Impact Levels

Once the resources were analyzed using the methods described above, a summary level of impact was identified to more simply explain the anticipated impacts (e.g., beneficial, no impact, negligible, minor, moderate, and major), shown in Table 3.

Table 3. Impact criteria levels and description for each respective resource

Impact Level	Description of Impact Level
Beneficial	Project implementation would improve the condition of common resources or increase resource availability to the general public.
No Impact	There is no impact from the proposed project on the resource for any criterion.
Negligible	Impacts are generally low in intensity (cannot be measured or observed), are of localized extent, and do not affect unique resources. Impacts are generally temporary in nature.
Minor	Impacts are unlikely but possible, and/or tend to be low in intensity, are local or regional in extent, and common resources may experience more intense impacts. Impacts are generally temporary in nature.

Impact Level	Description of Impact Level
Moderate	Impacts are unavoidable with mitigation measures, may be of medium or low intensity, with potential for local or regional impacts. Resources are important in context and impacts may be temporary or long-term.
Major	Impacts are generally medium or high intensity, long-term or permanent in duration, of a regional or island wide extent, and affects important or unique resources. Involves an irrevocable commitment of a unique resource. Impact is long term.

A summary of direct and indirect impacts is provided in Section 8. Cumulative Impacts are analyzed in Section 10.3.

2 Socioeconomic Environment: Affected Environment, Potential Impacts, and Mitigation Measures

2.1 Demographics

2.1.1 Affected Environment

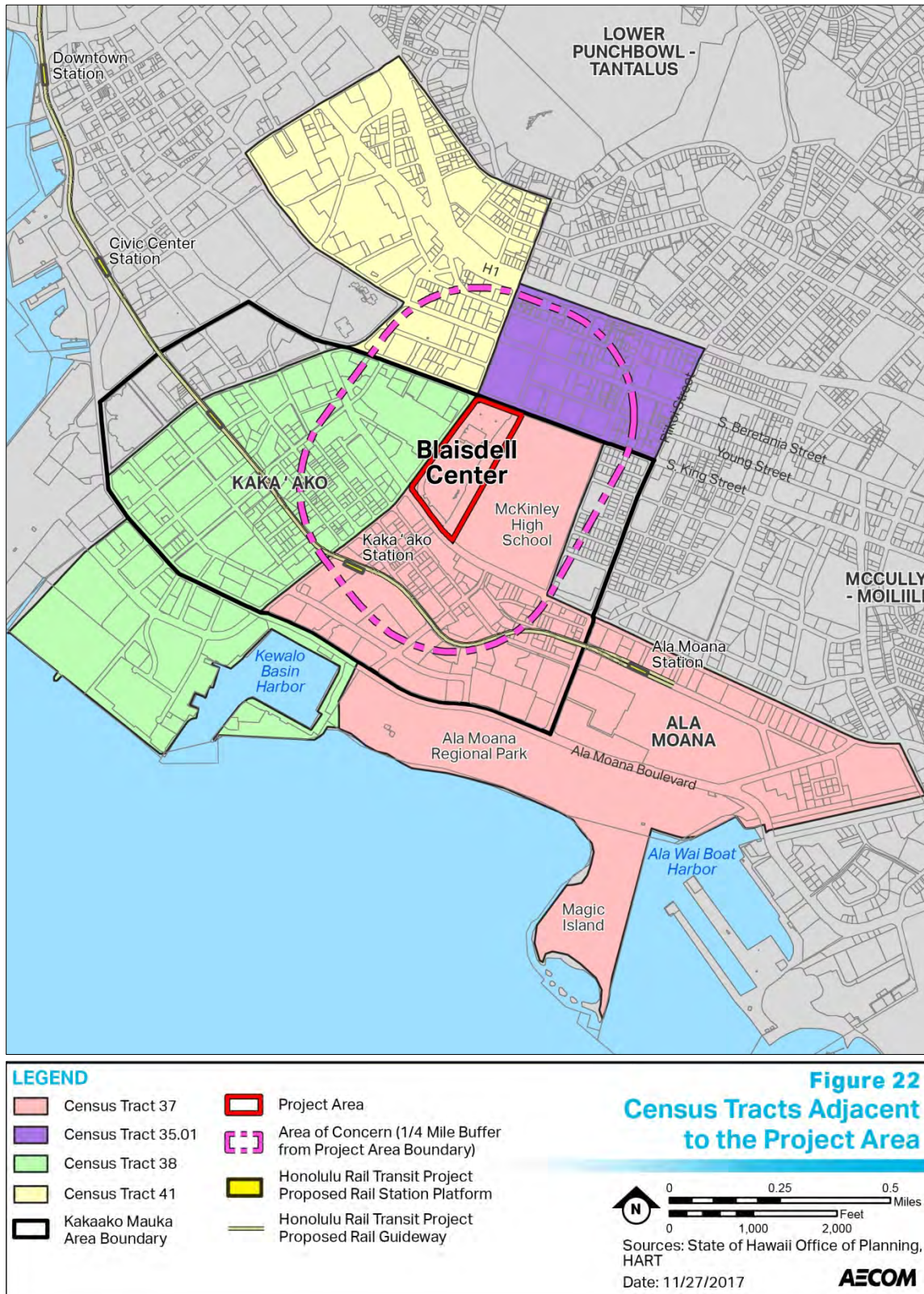
This section evaluates the existing socioeconomic conditions within and the potential impacts to the Project's Area of Concern; the Blaisdell Center's local area (defined as the four Census Tracts neighboring the project area); and the HCDA Mauka Area (Figure 22). The HCDA and the Mauka Area are discussed in more detail in Sections 4.6 (Land Use) and 9 (Relationship to Land Use Plans, Policies, and Controls).

Population and Demographics

Honolulu County includes the entire island of O'ahu, where approximately 70 percent (%) of the state's population resides. In 2010, the United States (U.S.) Census Bureau estimated the Honolulu County population to be 955,775 individuals. According to the Hawai'i Community Development Authority's Mauka Area Plan, the resident population of O'ahu is expected to grow to 1.05 million individuals by the year 2030 and 1.09 million by 2040, representing an average growth of about 4% and 10% over 20 and 30 years, respectively (EDAW, Inc. 2009; DBEDT 2012).

In 2010, the Blaisdell Center's local area had an estimated population of 16,335 residents, comprising approximately 1.7% of Honolulu County's population. The median age of local area residents is 45.8 years old (USBoundary.com 2017). The population of Honolulu County is 40.8% Asian, 19.4% White, and 19.1% identifying with two or more races; 28.5% of the people in Honolulu County speak a non-English language, and 92% are U.S. citizens. The project's local area includes Census Tracts 37, 38, 41, and 35.01 (Table 5), and the Blaisdell Center is within Census Tract 37 (USCB 2010).

Figure 22. Census Tracts Adjacent to the Project Area



Note: A small portion of Census Tract 36.01 falls within the Area of Concern, but was excluded from analysis due to a lack of direct access to the project area resulting from the large separation created by the McKinley High School's campus.

Table 4. Resident population by Census Tract in local area

	Census Tract 37: Ala Moana	Census Tract 38: Kaka’ako	Census Tract 41: Queen’s Hospital	Census Tract 35.01: Academy of Arts	Total: Local Area Census Tracts	Total Honolulu County
Total Resident Population (Individuals)	5,579	3,970	4,504	2,282	16,335	955,775
Census Tract Area (Square Miles)	0.68	0.45	0.26	0.11	1.49	—

Source: USCB 2010

The Mauka Area grew from a population of about 6,180 individuals to approximately 20,000 individuals from 2000 to 2010, and that growth is expected to continue (EDAW, Inc. 2009; HCDA 2011). The Mauka Area Plan estimates that the population within the Mauka Area would grow from approximately 20,000 individuals in 2010 to 30,253 individuals by 2030 (HCDA 2011).

Housing

In 2010, the local area had a total inventory of 9,688 housing units with a 12.7% vacancy rate, suggesting that many of these housing units are primarily used for vacation homes. Housing consists of mostly mid- to high-rise residential developments ranging from workforce housing and reserved housing units to luxury condominiums in multi-family settings (USCB 2010).

Table 5. Housing units available 2010 by Census Tract

	Census Tract 37: Ala Moana	Census Tract 38: Kaka’ako	Census Tract 41: Queen’s Hospital	Census Tract 35.01: Academy of Arts	Total: Local Area Census Tracts	Total Honolulu County
Households	2,817	2,113	2,274	1,238	8,442	311,047
Housing Units	3,659	2,260	2,396	1,353	9,668	336,899
Occupied	2,817	2,113	2,274	1,238	8,442	311,047
Vacant	842	147	122	115	1,226	25,852

Source: USCB 2010

The Mauka Area’s central location between downtown Honolulu and Waikīkī continues to see an increase in area property values, leading to further reinvestment and redevelopment of the area. As such, the amount of mixed-use residential and commercial floor space is increasing, and would likely continue to increase over the next several decades (HCDA 2011).

Employment and Income

The urban Honolulu labor force totals approximately 476,100 persons with 466,800 of those individuals employed; thus, urban Honolulu currently has a very low unemployment rate of 1.9% (Table 6).

Table 6. Current Labor Force and Employment Data for Urban Honolulu (November 2017)

Labor Force Data	
Total Labor Force Available (Individuals)	476,100
Employed Individuals	466,800
Unemployed Individuals	9,200
Unemployment Rate	1.9%
Jobs by Major Economic Sector	
Mining, logging, construction	29,100
Manufacturing	11,200
Trade, Transportation, and Utilities	88,700
Information	7,800
Financial Activities	21,200
Professional and Business Services	70,200
Education and Health Services	66,100
Leisure and Hospitality	73,500
Other Services	21,100
Government	101,300
Total Nonfarm Employment	490,200

Note: Jobs numbers are not seasonally adjusted.
Source: U.S. Bureau of Labor Statistics 2017.

In Honolulu County, total jobs are projected to increase from 476,100 to 611,800 by 2030 (DBEDT 2012). In the Mauka Area, jobs are also expected to increase over the 20-year period, increasing from 58,644 jobs in 2010 to 67,010 jobs in 2030 (HCDA 2011).

Household incomes in Honolulu County vary widely by census tract. The median household income for Honolulu County in 2015 was \$77,273, but ranged from \$50,762 to \$84,286 in the Blaisdell Center’s local area (Table 7). In general, the median household income shows rising trends across the County, as well as in the Blaisdell Center’s local area (USCB 2017).

Table 7. Median household income for local area census tracts

	Census Tract 37: Ala Moana	Census Tract 38: Kaka’ako	Census Tract 41: Queen’s Hospital	Census Tract 35.01: Academy of Arts	Average: Local Area Census Tracts	Honolulu County
Median Household Income (\$)	84,286	75,126	50,762	55,160	66,333.5	77,273

Source: USCB 2017 American Community Survey.

Operations and Market Conditions

Businesses within the Area of Concern primarily provide retail or other commercial services for local residents. As a result, Blaisdell Center visitors currently account for a minor portion of local business sales. Current businesses vary considerably, ranging from smaller service-based businesses (e.g., automobile shops, warehousing, small goods manufacturing) to larger retail commercial businesses. The commercial retail establishments tend to be concentrated along the major roads, while the smaller service establishments are concentrated in the central Kaka'ako neighborhood. High-end retail stores are becoming more prevalent, such as the luxury car dealerships located on the 'Ewa side of the Blaisdell Center along Ward Avenue. An important feature of the Mauka Area are the small parcel neighborhoods, defined as groups of small parcels of land less than 20,000 sq. ft. in size and owned by individual landowners; these small businesses are concentrated in central Kaka'ako and are an integral part of the local economy (HCDA 2011; EDAW, Inc. 2009).

Between 2010 and 2014, the total combined rental days of the Concert Hall, Arena, and Exhibition Hall ranged from 400 to 540 per year. Annually, over 800,000 visits are typically made to the Blaisdell Center. In 2017, the average number of annual tickets sold was 421,800, and the current attendance and facilities utilization represents roughly 50% of its capacity. Daytime pedestrian traffic to the site is limited. The 2016 Blaisdell Center Feasibility Study found that the facility's relatively low weekday use is at least partially due to the lack of attractions for daily/weekly visitation to the Blaisdell Center. Improved retail and restaurant facilities were recommended to bring visitors to the site, beyond its Arena and Concert Hall attendance (AECOM 2016).

Between 2010 and 2014, the Blaisdell Center's annual sales averaged approximately \$5.6 million. Facility rentals and equipment services averaged \$3.1 million (55%) and concession sales were \$2.5 million (45%). The Blaisdell Center generally breaks even on an operating basis, and if administrative costs for the DES are allocated across all of its facilities (i.e., including golf courses, the zoo, etc.), the annual operation generates a modest positive net revenue for the County's General Fund. The Blaisdell Center benefits from a position of market strength as one of the State's few options for major concerts, shows, and exhibitions. As a result, despite its outdated facilities, the Blaisdell Center has retained a significant percentage of market share due to the limited supply of other comparable venues (AECOM 2016).

2.1.2 Impact Analysis

2.1.2.1 Short Term Impacts

The proposed redevelopment is not expected to result in any direct adverse socioeconomic impact to the local area's population or housing inventory since no displacement of existing local housing units would be required by the project's construction activities.

Construction costs are currently estimated to be \$772.9 million. Construction of the Blaisdell Center's new and renovated facilities could provide some short-term positive economic benefits for residents of Honolulu County through construction jobs and construction spending, with its resulting indirect and induced multiplier effect on the local economy.

The temporary shutdown of the Blaisdell Center and disruption to operations during construction could result in short-term adverse economic impacts from elimination of events at the Blaisdell Center, reduced visitor traffic, and spending at local businesses. HCDA has a Relocation Program designed to minimize or ameliorate any serious negative impacts to those that may be displaced, such as loss of employment or business, imminent loss of shelter, and monetary losses. The HCDA's program provides

assistance to State and County displacing agencies and those that may be displaced, as well as assisting with the coordination of relocation activities, which could serve to mitigate potential negative impacts. Impacts could be further mitigated if the relocation of these events occurred within the Area of Concern.

To mitigate the impact of construction activities on local business' sales, best management practices (BMPs) would be implemented to the extent practical while maintaining public safety; such practices include noise and dust abatement, traffic control, and maintenance of pedestrian access to surrounding sidewalks.

As is typical with public assembly facilities, the revenues currently generated by the Blaisdell Center are not enough to cover major replacement or capital improvement costs for substantial renovation, systems upgrades, or rebuilding. Additionally, there would be an unavoidable loss to DES revenue during construction, as the facility would be closed. CCH funds would be required to finance the project and it is anticipated that the CCH would use bonds to fund the project. The city is also investigating public/private partnerships as a means of funding the project.

Based on the above analysis, there is no short-term impact to population, demographics, or housing expected as a result of the proposed redevelopment in the short term.

Temporary impacts to operations and market conditions are moderate as they are unavoidable with mitigation measures, and are of medium intensity, as the facility must be shut down for the duration of construction. Current tenants and users of the Blaisdell facilities would be required to find alternate spaces. No concerts or events would be held at the facilities for the duration of construction resulting in moderate impacts to these users.

2.1.2.2 Long Term Impacts

The proposed action is not likely to result in any direct adverse socioeconomic impacts to the local area's population or total housing inventory since no displacement of existing local housing units or businesses would result from the Blaisdell Center's proposed redevelopment. The project would not include the construction of any housing and, consequently, no direct population growth impacts would occur. Additional employment opportunities for residents of Honolulu County would likely be available following project completion.

The key objective of the HCDA's Mauka Area Plan is to encourage the development of "urban village" neighborhoods where people can live, work, shop, and recreate within their neighborhood (HCDA 2011). It is anticipated that redevelopment of the Blaisdell Center would further increase housing and property values in the area, which is consistent with the general trend in the Mauka Area. It is likely that median incomes would also increase in the surrounding census area tracts with increased housing values.

The extension of the Blaisdell Center's service life and the improvements in its operations and amenities may result in positive long-term economic impacts to the local and regional economy. The positive impacts may result from the attraction of visitors and increased use and spending at the Blaisdell Center and the local area.

The project's proposed new retail and food and beverage facilities are expected to have only limited potential sales-shift impacts on existing local businesses. There are relatively limited retail and food and beverage businesses located within the Area of Concern and most provide services for local residents. Potential sales-shift impacts would likely be offset by the increased market opportunities from the

expected growth in visitor traffic by tourists and locals alike. The project would not displace surrounding businesses and should increase the area's vitality by increasing visitor use.

It is anticipated that the proposed action would result in increased ticket sales and increased revenues. Factors expected to contribute to the Blaisdell Center's increased future usage include increased events and additional onsite attractants such as new restaurants, cafés, retail, and the Satellite City Hall. The market analysis suggests that the Arena and Concert Hall event attendance could increase substantially following project completion (AECOM 2016). It also states that based on conservative assumptions, there is market potential for retail space and restaurants as part of the renovated Blaisdell Center. These would provide greater local employment opportunities, which would be a positive economic impact on the local and regional economy.

The proposed action would, at a minimum, maintain the current level of use and revenue levels over the long term, which would be expected to prevent any future economic losses from the Blaisdell Center redevelopment project. Finally, when completed, the operation and maintenance of the new facilities are expected to be more cost-effective than the current facility's operations. This should result in long-term comparative cost savings which, when combined with greater utilization, should allow the Blaisdell Center to improve its financial performance and increase future operating profits for the city.

In conclusion, impacts to population and demographics are negligible, as the potential change in income associated with increased housing and property values are relatively low in intensity, limited to a local geographic extent, and do not affect a unique resource. There is no direct long-term impact to housing associated with the project.

2.2 Public Services

2.2.1 Affected Environment

This section discusses public services in the general project vicinity. Public services include protective services such as police and fire stations, hospitals, and any schools that service the area.

2.2.1.1 *Police and Emergency Response*

The project area is located within the Honolulu Police Department's (HPD) District 1, Central Honolulu Patrol District, Sector 3. The Sector 3 police district-Beat 170 encompasses the Blaisdell Center, McKinley High School, and the commercial, industrial, and residential area generally 'Ewa of Ward Avenue.

The nearest police station is the Honolulu Police Department located at 801 South Beretania Street, which is two blocks 'Ewa and mauka of the project area. The close proximity of this central police facility would likely facilitate a rapid response time to disturbances, emergencies, or crimes occurring in or around the project area (Figure 23).

2.2.1.2 *Fire Services*

The Honolulu Fire Department stations closest to the project area are the following:

- Makiki Station (Fire Company 3)
- Kaka'ako Station (Fire Company 9)
- Downtown Station (Fire Company 1)

Each station is approximately one mile from the project area. Police and fire facilities are shown in Figure 23.

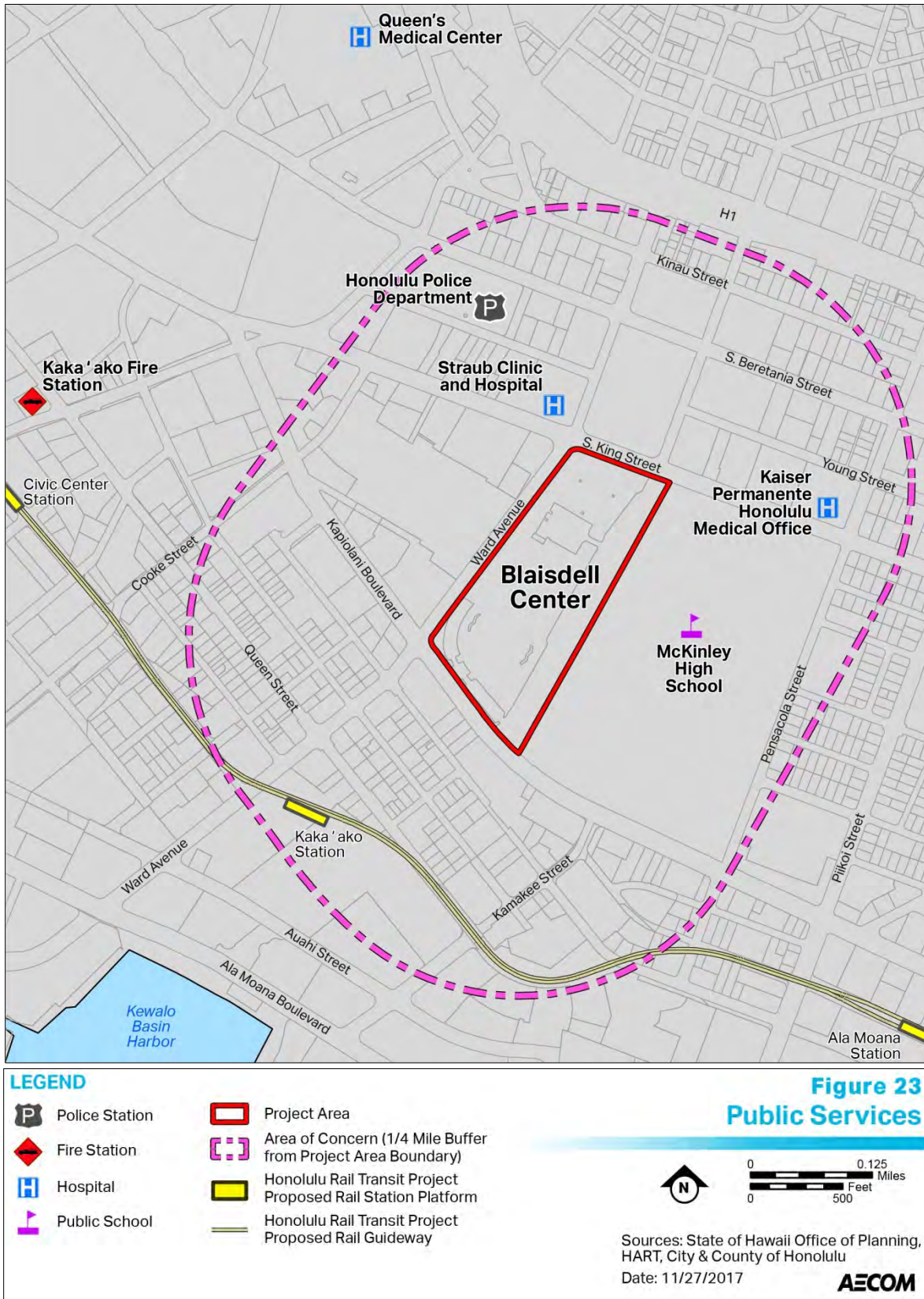
2.2.1.3 Schools and Education

The project area is located within the Kaimukī-McKinley-Roosevelt Complex Area in the Honolulu District of the Department of Education. The neighborhoods immediately surrounding the project area are served by Ka‘ahumanu Elementary, Royal Elementary, Stevenson Middle, and Central Middle School. McKinley High School serves as the high school for students in the area; the campus is contiguous to the project area.

2.2.1.4 Health Care Services and Hospitals

The neighborhoods surrounding the project area are served by several major medical facilities. Straub Medical Center is across Ward Avenue on the ‘Ewa side of Thomas Square. The comprehensive Queen’s Medical Center, further ‘Ewa on Beretania Street, serves as the leading medical referral center in the Pacific as well as the only Level I trauma center in the State. The Kaiser Permanente Honolulu Medical Office is also located a short distance from the project area in the Diamond Head direction, along South King Street.

Figure 23. Public Services



2.2.2 Potential Impacts

A significant impact to public services would include any activity that would increase the need for additional services or facilities from the police, fire department, or educational facilities in the project area. Significant impacts to the educational facilities, for example, may include any development of facilities that allow for an increase in the student population, such as the development of extensive housing.

Since the project is a redevelopment and expansion of an existing use and does not include housing, it would not affect the overall population in the area. While additional events at the expanded facilities may result in increased incidents of crime or potential fires, or increased demand for medical services, it is not anticipated that this demand would be significant. The increase presence of large numbers of people at the site during various events would occur during scheduled times and days, allowing public service providers to plan ahead. The project is not anticipated to lead to an increased burden on the public services in the project vicinity.

2.2.2.1 Short-term Impacts

There would be no increase in demand for school and educational services, police and emergency response, or health care services and hospitals during the construction phase as this phase is temporary in nature.

2.2.2.2 Long-term Impacts

This project would result in renewed and updated facilities at the project area. The types of uses being considered under this current proposed project are the same or similar to those currently existing on the site. There would be no long-term impacts to public services when these new facilities are operational. While an increase in activity at the site would likely occur when all the new and expanded facilities are complete, this increase would not result in significant long-term impacts to public services.

In conclusion, there is no associated short-term impact to public services. In the long-term impacts to public services is negligible, as occasional large events at the Blaisdell Center may require police presence, although this would be mitigated through the hiring of private security services for large events.

3 Natural Environment: Affected Environment, Potential Impacts, and Mitigation Measures

3.1 Climate

3.1.1 Affected Environment

The project area is located on the coastal plain of southwest O‘ahu, within the primary urban center (PUC) of Honolulu. The climate in the project area is characterized by abundant sunshine, relatively constant temperature, infrequent storms, moderate humidity, and prevailing northeasterly trade winds. Average wind speeds range from 4 to 12.5 mph throughout the year (Giambelluca et al. 2013). There are two dominant seasons—summer from May to October, and winter from November to April. Generally, summer months are warmer (averaging 81.4 degrees Fahrenheit [°F]), while winter months are cooler (averaging 72.9°F). The site has an average annual rainfall of 28 inches per year, with highest rainfall occurring in the winter and the driest months occurring in the summer (Giambelluca et al. 2013). The relative humidity ranges between 56% and 72%. The northeasterly prevailing trade winds bring cool air from the north Pacific most of the year, with the occasional exception of Kona, or southerly, winds that bring warm and humid weather primarily during winter months.

Land cover in the project area is considered medium to high intensity development. High intensity development is known to create an urban heat island (UHI) effect. The UHI effect occurs as a result of impermeable and dry surfaces. When urban surfaces such as roofs and pavement are exposed, they can become dried to temperatures exceeding the ambient air temperature, resulting in hotter surface temperatures in urban areas compared to air temperatures in adjacent residential and rural areas. According to the United States Environmental Protection Agency (EPA), the average difference in temperature for a city with high intensity development ranges from 1.8 to 5.4°F, but can be as much as 21°F in extreme cases (Sherrod et al. 2007; EPA 2017). The effect of UHIs is reduced with the use of vegetation, landscaping, and water features. Because the Blaisdell Center site currently features grassy, permeable, and maintained landscaping with high heat capacity, the UHI is reduced in the project vicinity (EPA 2017).

Hawai‘i has begun to experience, and will continue experiencing, the impacts of climate change in many forms, such as an increase in the average air temperature, decline in overall rainfall, more frequent heavy rainfall events and droughts, rising ocean acidity, and sea level rise (SLR) (CCH CCC 2018a). On June 5, 2018, the City and County of Honolulu adopted the Climate Change Brief to establish the factual basis of climate change and reinforce the need and urgency for climate change mitigation. The *Sea Level Rise Guidance* was adopted on the same date, directing all city departments and agencies to use specified SLR data and reference documents for mitigating SLR related impacts to our city (CCH CCC 2018b). On July 16, 2018, in response to the *Climate Change Brief* and the *Sea Level Rise Guidance*, Mayor Kirk Caldwell issued a formal directive to all city departments and agencies to take action to address, minimize the risks from, and adapt to the impacts of climate change and SLR (CCH CCC 2018c). The *Sea Level Rise Guidance* suggested using the widely accepted SLR planning benchmark of 3.2 feet for planning purposes through the mid-century.

3.1.2 Potential Impacts

Significant impacts to climate are defined as alterations to local temperatures, rainfall, humidity, or wind pattern.

3.1.2.1 Short-term Impacts

The proposed project is not expected to have direct short-term impacts on climate in the Honolulu region. The effect of the UHI is not expected to be exacerbated or changed by construction activities occurring at the project area, as the project is already located in a highly urbanized area.

3.1.2.2 Long-term Impacts

The project area is already located in an urbanized and developed environment. The proposed development and the operation of the facilities at the project area are not expected to change local climate.

The effect of the UHI is not expected to be exacerbated or changed by the final outcome of the redevelopment at the project area. The project design is focused on redevelopment rather than development and does not involve any significant additions of impermeable surfaces (e.g., brick, asphalt, or concrete) that would change the land cover and permeability of the project area. Project design would utilize trade winds and passive cooling systems to cool the outdoor gathering areas. Landscaping and water features would remain an important part of the Blaisdell Center's designed landscape, helping to reduce the UHI effect in the city's urban center. The effect of UHI is further reduced on-site with building design and siting locations, which would utilize trade winds to cool outdoor spaces (AECOM 2018a).

To the extent practical, the Master Plan focuses on using integrated green building design principles aimed to reduce the total ecological footprint of the campus and its facilities into the future. Design principles aimed at reducing utility consumption, and thus reducing total greenhouse gas emission production, include: centralization of the Blaisdell Center's air conditioning systems; installation of photovoltaic panels on the Exhibition Hall roof; building arrangement to utilize trade winds to cool outdoor spaces; and use of energy efficient LED lighting, light control systems, and daylighting in all facilities where practicable (AECOM 2018a). In conclusion the proposed project would have no impact on climate.

The long-term impacts from climate change to the operation of the Blaisdell Center would mostly result from more extreme weather. In addition to the aforementioned green building design principles, the project also incorporates sustainable design features, such as water conservation, rainwater harvesting, and surface water runoff harvesting and control (AECOM 2018a). These sustainable designs would increase the climate change adaptation capability of the Blaisdell Center throughout its life span. SLR caused by climate change and its impacts to the project are discussed in Section 3.6, Natural Hazards.

3.2 Topography

3.2.1 Affected Environment

Terrain in the Area of Concern is relatively flat with no notable topographical features. AECOM's topographical survey performed March 2017 determined that the elevation at the project area ranges from 4 to 14 ft. above MSL, where the elevations above MSL are based on the Honolulu County datum. The elevation of the project area declines from north to south, from mauka to makai. There are no major topographical features in the identified project area (AECOM 2017d).

3.2.2 Potential Impacts

Significant impacts to topography would include any action that significantly alters the natural topographical features of a region, such as the removal of a mountain top or the construction of a large canal.

3.2.2.1 Short-term Impacts

The proposed project would not have any short-term impact on the unique and significant topographical features in the project area. Small changes in topography on the project area would be a result of the Terrace design. There are no significant topographical features in the project's vicinity that could be affected by the proposed project.

3.2.2.2 Long-term Impacts

The Blaisdell Center redevelopment project design utilizes terracing to create additional outdoor spaces for use by the community on top of the Terrace and to co-locate all back-of-house functions and facilities beneath the Terrace. The two-story Terrace would change the relatively flat topography in the area by creating an additional level of outdoor space; the Terrace itself would resemble a small hill on the property. The proposed project would not have any irrevocable impact on the topography in the project's vicinity. There are no significant or notable existing topographical features in the projects vicinity that could be affected by the proposed project. Therefore, the long-term impact on topography in the project area is minor, as it is low in intensity, is limited to the extent of the project area, and does not affect unique resources.

3.3 Geology

3.3.1 Affected Environment

Two large volcanoes, Wai'anae and Ko'olau, formed the island of O'ahu starting approximately 3.9 million years ago. The island of O'ahu consists of remnants from the shield and rejuvenated stages of each volcano. The project area is located on the southern flank of the Ko'olau volcanic mountain range on the lower edge of Mount Tantalus, Pu'u 'Ōhi'a (Sherrod et al. 2007). Mount Tantalus erupted during a time of rejuvenated volcanism approximately 100,000 years ago (Sherrod et al. 2007). Sediments under the project area consist of the alluvium eroded from the volcanoes and fluvial and ocean deposits inter fingered with coral reefs that form the Honolulu Coastal Plain.

The project area can be divided into two major geology types: vent deposits and fill material. Most of the current property is built atop the remaining cinders of Tantalus; therefore, the northern end of the project area consists of vent deposits. The rock type in the southern area is mostly fill material, but also consists of various forms of coral, coralline sands, gravels, and clays (Sherrod et al. 2007; Geolabs, Inc. 2017).

Based on the geotechnical exploration of the site, the surface of the project area generally consists of fill material, which covers a loose to medium dense layer of cinder sands. Below the cinder sands, a generally dense to very dense, medium-hard upper coral ledge (9 to 30 ft. thick) was encountered at depths between 8 to 14 ft. Alluvial deposits consisting of silty clay were encountered at depths of 40 to 45 ft. The lower coral ledge, consisting of coralline reef and coralline detritus, was encountered at depths of 54 to 72 ft. and extends to the maximum depths explored at 101.5 to 103.5 ft. Borings in the south part of the project boundary encountered clay lagoon deposits above the coral ledge, and cinder sands below the surface fill. The upper coral ledge declines from north to south. At the southernmost boring sites, the upper coral ledge was not encountered; the absence is likely due to the erosion of the alluvial stream channel (Geolabs, Inc. 2017).

3.3.2 Potential Impacts

Significant impacts to geology would include any significant modification to the materials that make up the underlying subsurface. Significant impacts to soils would also include any action that alters the integrity of the surface soil layer. Impacts to soils might also take place if activities cause substantial erosion, such that the surface layer of soil is depleted over time.

3.3.2.1 Short-term Impacts

The proposed project is not expected to have any short-term impact on the geologic conditions in the project area. The project is not located within any geologically sensitive area.

3.3.2.2 Long-term Impacts

The Blaisdell Center is located within a previously modified and heavily altered urban environment; the proposed project is not expected to have any long-term impact on the geologic conditions in the project area. The project is not located within any geologically sensitive area.

3.4 Soils

3.4.1 Affected Environment

Soil within the project area boundary is classified by NRCS as Makiki Clay-Loam (MKA) type soils (Figure 24). The MKA is described by the NRCS as "0-3% slope, dark brown clay loam, 20-inch thick, subsoil 10-inch thick, dark brown clay loam that has sub-angular block structure. It contains cinders and rock fragments. Under subsoil 24-inch thick, similar material below this is volcanic cinder" (USDA NRCS 2000). Soil conditions are considered good in the northern portion of the immediate project area and poor in the south portion of the immediate project area (EDAW, Inc. 2009). The McKinley High School rifle range has been identified as a potential source for lead-contaminated soils, as the existing rifle range abuts the Blaisdell Center project area along Victoria Street.

3.4.2 Potential Impacts

3.4.2.1 Short-term Impacts

During construction, disturbance of topsoil and vegetation would occur on a localized basis, with disturbance primarily occurring around the existing structures. The project as proposed would require a large amount of excavation and fill. Standard BMPs would be followed to minimize soil erosion during the construction phase. These BMPs include watering loose soils during construction and planting groundcover over disturbed areas once construction is complete. Additional BMPs prevent impact to drainage facilities along the adjacent streets, particularly along Kapi'olani Boulevard and Ward Avenue, where drainage flows along the downward slope of the site from mauka to makai. Standard BMPs, such as compost filter socks, would be installed following manufacturer instructions to prevent direct impacts of erosion during the construction phase of the project.

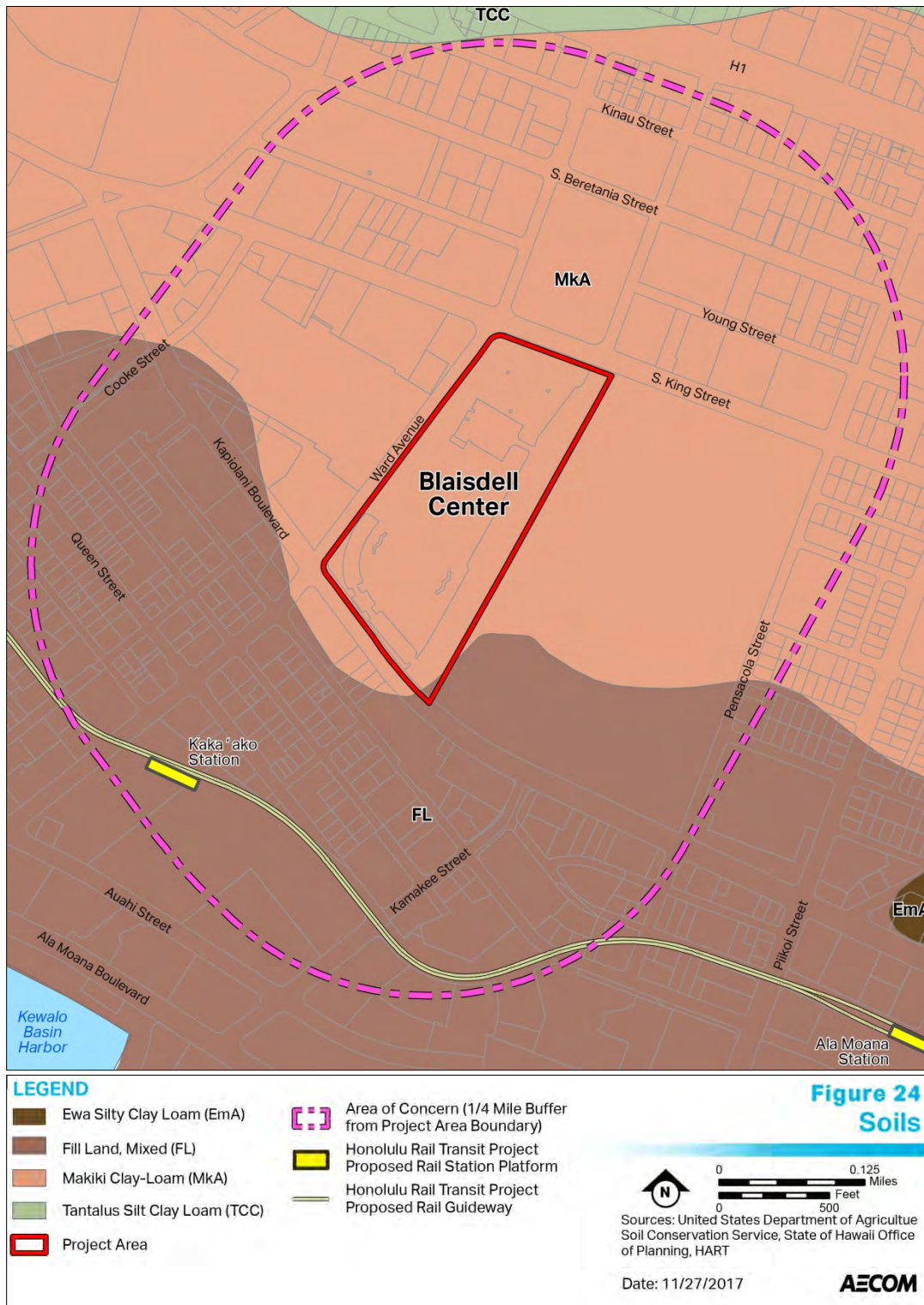
Due to the proximity of the Blaisdell Center to the McKinley High School rifle range, soils would be sampled and tested to determine lead concentration prior to major ground disturbing activities. If lead concentrations are found to exceed the limits set forth by the State of Hawai'i Department of Health (DOH), appropriate soil disposal and remediation protocols would be implemented. Impacted or contaminated soils would be disposed offsite. Applicable guidelines set forth by the DOH Hazard Evaluation and Emergency Response Office would be followed during sampling and ground disturbing activities, if contaminated soils are determined to be present.

Impacts to soils are negligible as the impact would be limited to the project area, is generally low in intensity, and the area has been previously disturbed.

3.4.2.2 Long-term Impacts

Following construction, disturbed areas would be replanted or covered to prevent any soil erosion. It is anticipated that there would be extensive excavation occurring and fill materials would be used. Areas that are excavated would be filled to meet landscaping needs, mitigating any significant long-term impact to the soils in the project area when the project is completed. No cumulative, irretrievable, or irrevocable impacts to soil are expected to occur in the project area. There is no impact to soils long-term.

Figure 24. Soils



3.5 Hydrogeology

3.5.1 Affected Environment

There are two primary separate groundwater bodies beneath the Blaisdell Center site—a deep confined aquifer known as the Nu‘uanu aquifer system and a second near-surface unconfined water body. The confined Nu‘uanu aquifer is an important drinking water source for Honolulu. The Honolulu Board of Water Supply (BWS) services one well in the immediate project vicinity and another well in Thomas Square Park (Tom Nance Water Resource Engineering 2017). The Nu‘uanu aquifer is confined at depth between the cap rock of coralline material and unweathered volcanics (Tom Nance Water Resource Engineering 2017). The second water body is a locally recharged, lens-type aquifer of brackish water that floats atop more saline groundwater. This waterbody feeds the water features and fishpond at the Blaisdell Center.

During the geotechnical engineering study, groundwater was encountered at depths between 4.6 to 10.3 ft. (Geolabs, Inc. 2017). Due to the proximity of the project area to the Pacific Ocean, groundwater depths in the project area vary with tidal fluctuations, storm events, rainfall, and time of the year.

3.5.2 Potential Impacts

Hydrogeology or groundwater conditions would be significantly impacted by any action that alters or hinders the flow of water through the subsurface. Significant impact to groundwater would also occur if actions changed the composition of the groundwater itself, such as if the pumping rate exceeded the recharge rate and saltwater intrusion were to occur.

3.5.2.1 Short-term Impacts

There is no significant threat to the hydrogeological conditions in the project area. Groundwater from the Nu‘uanu aquifer at the Blaisdell Center project area is confined by the cap rock and impermeable volcanic layers. Due to the depth of the groundwater interface and the impermeability of the subsurface layers above this aquifer, there is no possibility that the short-term construction activities would impact the Nu‘uanu groundwater aquifer (Tom Nance Water Resource Engineering 2017). The second groundwater body of concern in the project area is the brackish-water-lens type aquifer; short-term impacts to this groundwater body would result from the necessity to dewater or drain a waterlogged area during construction activities (Tom Nance Water Resource Engineering 2017). If dewatering occurs during construction activities, proper BMPs would be followed in accordance with Section 402 of the Clean Water Act. BMPs would be outlined in the required NPDES permit and corresponding Storm Water Pollution Prevention Plan. Because this waterbody is brackish, there is no threat to freshwater supply that would occur from any potential on-site dewatering potentially required during construction activities.

3.5.2.2 Long-term Impacts

The confined Nu‘uanu aquifer would not be impacted in the long term by the project due to the depth and the confinement of the groundwater body. The confined aquifer would in no way be impacted by the excavations and activities associated with the project. In the second brackish groundwater body, building foundations to depths below the groundwater would not create any issues such as impeding groundwater flow. The building features would not create higher groundwater levels (Tom Nance Water

Resource Engineering 2017). The brackish waterbody, sourced from well 1851-62, would continue to feed the water features and the fishpond at the Blaisdell Center; however, the fishpond is proposed to be moved to a new location adjacent to the Arena on the corner of Ward Avenue and Kapi'olani Boulevard. To continue using this water as a source for the fishponds, a water use permit from the State Commission on Water Resources is needed. No cumulative, irretrievable, or irrevocable impacts to groundwater are expected to occur in the project area.

3.6 Natural Hazards

Natural hazards impacting the Hawaiian Islands include flooding, tsunami inundation, hurricanes, volcanic eruptions, earthquakes, and landslides. The effect of these natural hazards on a given area varies depending on the area's location; its topography and elevation; the vegetation and land use within the area; and the area's proximity to the ocean. Climate change is expected to exacerbate the frequency and intensity of some natural hazards in Hawai'i including increased flooding associated with SLR, hurricanes, and storm events. Natural hazards associated with the project area are identified and described below.

3.6.1 Seismic Hazards

3.6.1.1 *Affected Environment*

Worldwide, most major earthquakes occur along the boundaries of major tectonic plates. These earthquakes are a result of the release of friction when plates slide or sink past each other, releasing energy in the form of seismic waves, thus leading to terrestrial trembling as the seismic wave travels through the earth's crust. In Hawai'i, most earthquakes are a result of volcanic activity, as the islands are located along a hotspot, rather than along a tectonic plate boundary. According to the United States Geological Service (USGS) Hotspots are areas where magma within the mantle melts the crust above. They can be found on or within plate boundaries; thus, faults, or large rock fractures, throughout the Hawaiian Islands are a result of current or previous volcanic activity and rock mass movement at these hotspots (USGS 2002).

On O'ahu, earthquakes can occur as a result of slippage of minor faults or bending in earth's mantle; this type of earthquake is very rare. The island of O'ahu is located in Seismic Zone 2A, which is characterized as being susceptible to earthquakes that may cause minor damage to structures since there is a relatively low probability of damaging seismic conditions. Zone 2A is not associated with a particular fault zone. The threat of an earthquake occurring on the project area is no greater than most other areas around O'ahu (USGS 2002).

Today, earthquakes occur most frequently in the southern region of the currently volcanically active Hawai'i Island. However, due to the nature of these earthquakes, and the depth at which they occur, they are usually smaller in magnitude and impact. While the majority of earthquakes on Hawai'i Island do not pose a threat to human life or property, large and significant earthquakes do occur at times. Significant earthquakes have the potential to be registered on neighboring islands and potentially generate tsunamis that could impact O'ahu (Section 3.6.2, Flooding and Tsunami Hazards).

3.6.1.2 *Potential Impacts*

Significant impacts that would occur as a result of a natural hazard event such as an earthquake, tsunami, or hurricane vary based on the intensity, duration, and location of such event. The impacts felt

by these natural hazards are most commonly a result of the hazard or event itself, rather than a specific project action or outcome. The new or rehabilitated structures proposed at the Blaisdell Center would be required to comply with current CCH building codes. Current codes are more stringent and advanced compared to codes in effect during the construction of the original facilities. Compliance with these new building codes would help ensure that the new facilities are better able to perform structurally and functionally during possible natural hazard events. In addition, the proposed action would not directly cause or exacerbate the effect of any natural hazard that could occur at the project area. Therefore, the impacts to or from the proposed action and natural hazards would be less than significant.

Short-term Impacts

Construction activities and engineering of facilities would comply with recommendations of the geotechnical report prepared as part of the Master Plan (Geolabs, Inc. 2017). If dewatering occurs on the project area, it would only occur in compliance with Department of Health and any other applicable CCH or State permits. Dewatering activities would be consistent with BMPs established for the industry, and in compliance with Department of Health Water Quality Branch regulations. With the application of BMPs, mitigation measures, and adherence to any requirements from applicable construction/dewatering permits, construction activities associated with the proposed project would not result in increased earthquake susceptibility in the project area, causing no significant impact on the geology of the site.

While an earthquake of significant magnitude is unlikely to occur in the project area during construction activities, an earthquake may pose a risk to construction equipment on site. Construction BMPs, such as securing loose equipment when not in use, would be implemented by the construction contractors as needed to prevent the effects of an earthquake on the equipment and equipment operators.

Long-term Impacts

The final project, when completed, would have no long-term significant effect on earthquake susceptibility or geological disruptions in the region. The proposed project facilities would be constructed in compliance with the current building code at the time of construction to ensure the buildings can better withstand the effect of anticipated earthquakes that may occur in the future in the project area.

3.6.2 Flooding and Tsunami Hazards

3.6.2.1 Affected Environment

Flooding

The project area is located within “Flood Zone X” as defined in the 2014 Flood Insurance Rate Maps. Areas within Flood Zone X are determined by the Federal Emergency Management Agency (FEMA) to be outside of the 0.2% annual change floodplain. Areas within this boundary are considered to have a low risk for flooding. Figure 25 shows the project area and its location relative to flood hazard zones on Kaka’ako’s mauka side.

Areas in Flood Zone X are considered to have a low risk for flooding; therefore, they are exempt from FEMA flood requirements, as well as the requirement to secure flood insurance.

Aside from a channelized drainage culvert extending the entire Diamond Head side of the property and adjacent to McKinley High School, there are no natural or artificial drainage-ways susceptible to overbanking or flooding during heavy rains.

Figure 25. Flood Map



SLR can result in passive flooding by seawater flowing into areas that are lower than the water level (Hawaii Climate Change Mitigation and Adaptation Commission 2017). The Intergovernmental Panel on Climate Change (IPCC) predicts up to 3.2 ft. (one meter [m]) of global SLR by the year of 2100, if GHG emissions continue to increase at the current rate (IPCC 2014). The State of Hawai'i initiated the efforts to assess Hawai'i's exposure to SLR and modeled chronic flooding hazards (coastal passive flooding, marine inundation, and coastal erosion) on the main Hawaiian Islands. The modeling used the 3.2 ft. (one m) SLR scenario to predict long-term (mid- to latter half of this century) exposure to coastal hazards and SLR, and the 1.1 ft. (0.3 m) SLR scenario to depict current or short-term hazards. These chronic flooding hazards were combined to define the SLR exposure area (Tetra Tech, Inc., State of Hawai'i, and Department of Land and Natural Resources, Office of Conservation and Coastal Lands 2017). The SLR exposure areas modeled with these different scenarios are presented in the *Hawaii Sea Level Rise Viewer* ("Hawai'i Sea Level Rise Viewer | PacIOOS" n.d.). United States Army Corps of Engineers and the National Oceanic and Atmospheric Administration (NOAA) also provide online tools, the NOAA Sea Level Rise Viewer (NOAA Office of Coastal Management n.d.). Based on historical SLR conditions, the NOAA Sea Level Rise Viewer displays estimated future SLR scenarios (Low, Intermediate Low, Intermediate High, High, and Extreme) with water level increase ranging from 0 to 10 ft. (comparing to the 2017 water level baseline) (Wilson Okamoto Corporation 2018).

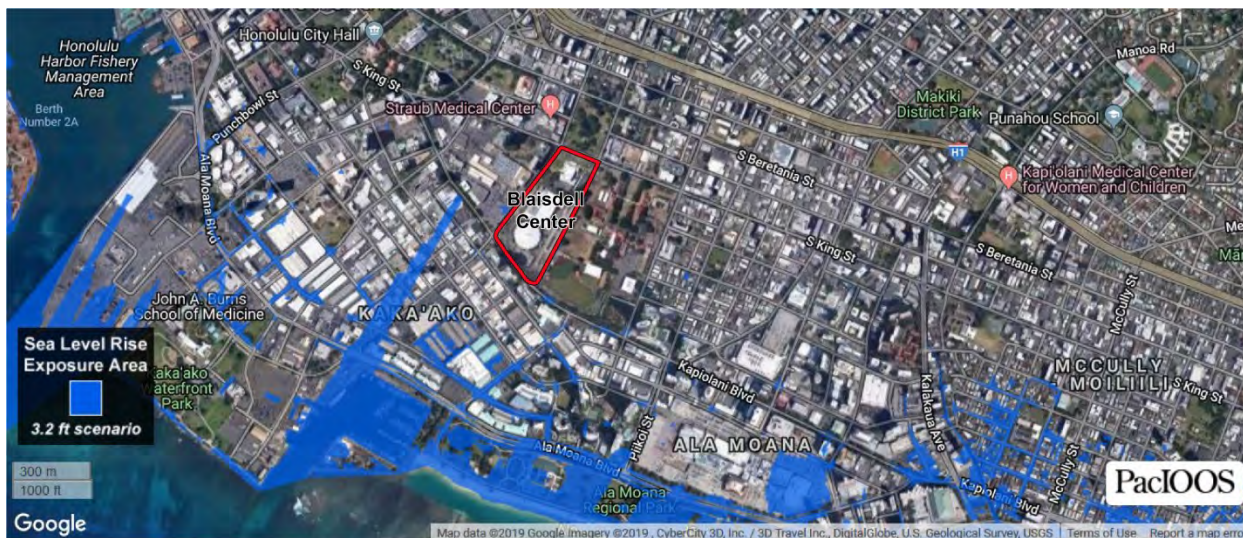
The *Sea Level Rise Guidance* (CCH CCC 2018b) states that up to the 3.2 ft. SLR scenario can be used as the planning benchmark by mid-century and up to the 6 ft. SLR scenario can be the planning benchmark in the later decades of the century. The SLR data suggests that the property itself will be minimally impacted by chronic flooding under the 3.2 foot SLR scenario, although the Pacific Islands Ocean Observing System's predictive dataset suggests adjacent storm drain systems along Ward Avenue and Victoria Street may experience chronic flooding under the 3.2 ft. SLR scenario. The SLR data from the National NOAA shows that the southern part of the project area (the Arena, the proposed Sports Pavilion, the southern portion of the Performance and Exhibition Halls, and the Parking Garage) is within the 6 ft. SLR inundation area. Figure 26 and Figure 27 show the SLR exposure areas under the 1.1 ft. and 3.2 ft. SLR scenarios, respectively. Figure 28 demonstrates the inundation area under the 6 ft. SLR scenario.

Figure 26. Sea Level Rise Exposure Area, 1.1-ft Scenario



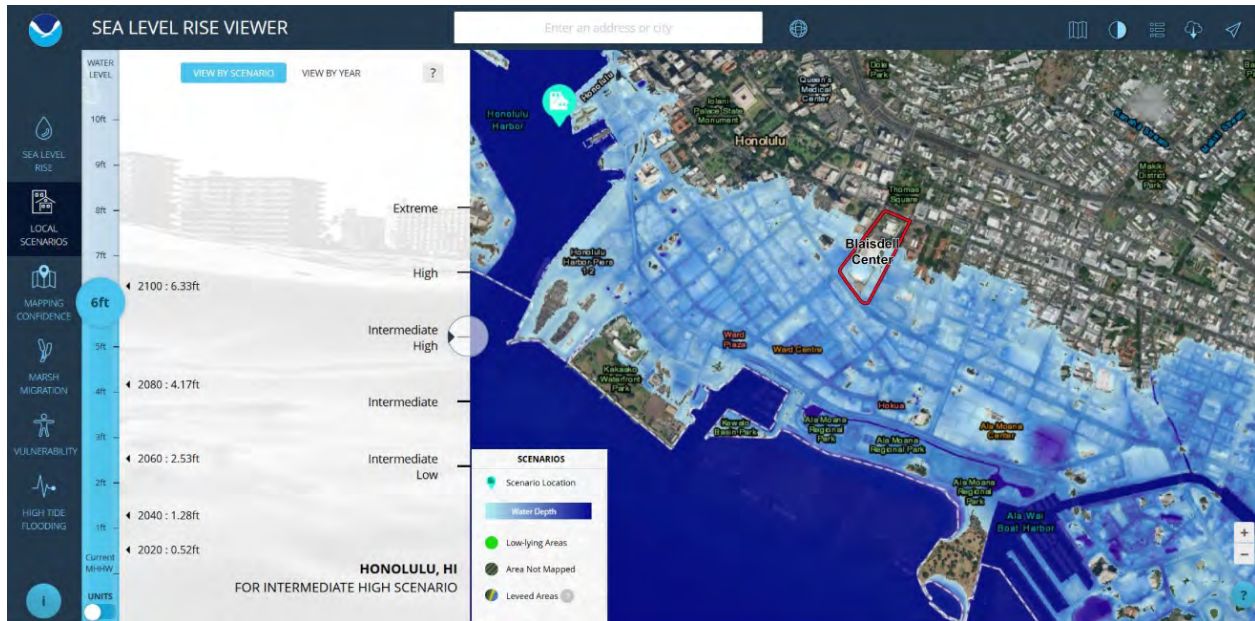
Source: "Hawai'i Sea Level Rise Viewer | PacIOOS" n.d.

Figure 27. Sea Level Rise Exposure Area, 3.2-ft Scenario



Source: "Hawai'i Sea Level Rise Viewer | PacIOOS" n.d.

Figure 28. Sea Level Rise Exposure Area, 6-ft Scenario



Source: NOAA Office of Coastal Management n.d.

Tsunamis

A tsunami is a long, high wave generated by an earthquake, coastal landslide, or a volcanic eruption. An extreme tsunami can flood inland areas hundreds of feet or more from the shoreline and can lead to serious property damage and loss of life. The impact a tsunami has on Honolulu depends largely on where the tsunami is generated and where it connects landside. A tsunami could be generated locally, e.g., from an earthquake or coastal landslide that occurs on Hawai'i Island. In this case, coastal zones of O'ahu may have only minutes to evacuate. A tsunami could also be generated as far away as the Aleutian Islands or other areas on the Pacific Rim, giving O'ahu coastal zones an estimated five hours to evacuate (USGS 2002). Historically, 26 tsunamis with elevation height exceeding one meter have made landfall in Hawai'i, with 10 having an impact on O'ahu. There has not been a large tsunami recorded in Hawai'i since 1976 (USGS 2002).

The Blaisdell Center site is located outside the State's designated tsunami evacuation zone; however, it is located within the extreme tsunami evacuation zone (Figure 29). The designated safe zone is located directly mauka of the Blaisdell Center. The safe zone begins along the mauka side of King Street and continues mauka of the project area). McKinley High School, directly east of the Blaisdell Center, currently serves as a tsunami shelter in the event of a non-extreme tsunami.

3.6.2.2 Potential Impacts

Short-term Impacts

During the construction phase, no drainage ways or channels which are susceptible to overbanking or flooding would be constructed. The flow capacity of the existing drainage culvert along the Diamondhead side of the project area would not be altered. Therefore, construction activities would have no impacts on the effect of flooding hazards in the area when heavy rains occur.

Climate change may cause more frequent rain storm events during the construction phase; however, the potential impacts would be similar to those the site currently experiences. BMPs would be implemented to prepare for these events and mitigate their impacts. Therefore, climate change is anticipated to have a less than significant short-term impact on the proposed project during the construction phase. SLR is not likely to have impacts on flooding within the project area during the construction phase, under any SLR scenario.

Construction activities would not cause or exacerbate the effects of Tsunami Hazards. During construction, the Blaisdell Center would be unable to serve as a community evacuation shelter in the event of a tsunami. If a tsunami were to occur during construction period, people would need to evacuate to other nearby shelters, which include McKinley High School, Ka'ahumanu Elementary School, Ka'ewai Elementary School, the Hawai'i Convention Center, or Lunalilo Elementary School. Short-term impacts from the proposed action would be minor as they are unlikely but possible, are local in extent, and affect common resources.

Long-term Impacts

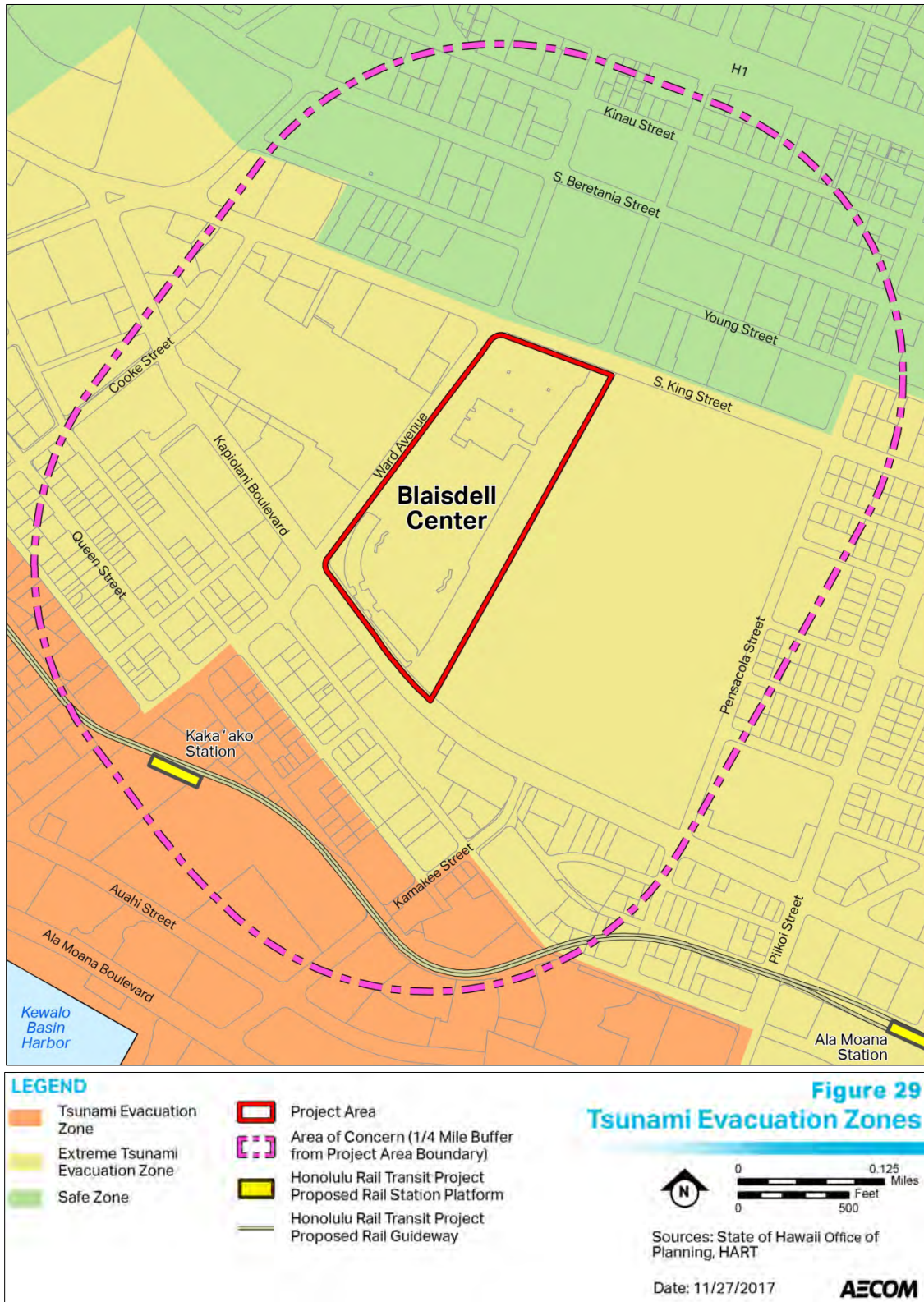
The proposed facilities, once operational, would not change the flow capacity of the existing drainage culvert, thus no impacts are expected from to the effects of a flooding event.

Under the 3.2 ft. scenario, SLR would not lead to passive flooding within the project area of the Blaisdell Center. The property itself is not adjacent to any potentially flooded highways. The adjacent storm drain systems outside of the project area along Ward Avenue and Victoria Street may experience chronic flooding. A groundwater conditions assessment and geotechnical study were completed for the property (Tom Nance Water Resource Engineering 2017). The groundwater conditions assessment discovered that groundwater levels, more so on the makai side of the project area, fluctuate with ocean tides and the mean ocean level changes driven by large scale meteorological events. Therefore, SLR would likely cause the groundwater levels to rise. However, it is unclear whether permanent inundation would occur within the project area as the result of the groundwater level rise. The 2017 geotechnical study provided recommendations for constructing safe and resilient structures, such as adopting a deep foundation system and well drained retaining structures above the groundwater. These recommendations would be followed during implementation of the Master Plan.

As recommended by the *Sea Level Rise Guidance* (CCH CCC 2018b), the NOAA 6 ft. SLR scenario can be used as the planning benchmark for long-term estimation. Under this scenario, by the year of 2100, the southern portion of the project area, along with the majority of Downtown Honolulu, Kakaako, and Ala Moana area, would be flooded by the wide spread inundation at a water level of 6 ft. No individual project, however, can effectively mitigate the 6-ft SLR. Regional or island scale sea walls, other types of manmade infrastructure or natural/nature-based green infrastructure (e.g., wetlands, coast restoration) would be required to protect these otherwise inundated areas, including the project area.

The impacts to or from the operation of the facilities and tsunami hazards are beneficial, as the new facility would have increased capacity and capability to safely serve as a community shelter in the event of an extreme tsunami. Retrofits and renovations that bring the Blaisdell Center up to current building codes would improve its capabilities as an evacuation shelter in the long-term.

Figure 29. Tsunami Evacuation Zones



3.6.3 Other Natural Hazards (Hurricanes, Volcanic Eruptions, Landslides, and Wildfires)

3.6.3.1 *Affected Environment*

Hurricanes

A hurricane is defined as a rotating low-pressure tropical wind storm with wind speeds greater than or equal to 74 miles per hour. The immediate impacts associated with a hurricane include impacts from extreme winds and flying debris, flooding from heavy rains, and coastal flooding from storm surge. A large hurricane could generate shoreline storm surge as high as 40 ft. in the Hawaiian Islands (USGS 2002). O'ahu could experience the above effects of a hurricane even if the island is not directly hit by the storm. Other impacts also associated with a hurricane can include major building damage, loss of electricity and utilities, and extensive road and infrastructure damage. While the Blaisdell Center is located outside of the immediate coastal flooding zone (Figure 25) and is located away from hazards associated with landslides and steep topography, it is vulnerable to all the non-storm surge related impacts described above in the event of a major hurricane. The State of Hawai'i Civil Defense states that the Blaisdell Center and McKinley High School have been designated as hurricane shelters (EDAW, Inc. 2009).

Volcanic Eruptions

Volcanic hazard is considered minimal due to the dormant status of the Ko'olau and Wai'anae volcanoes, with the last eruptions occurring millions of years ago. While not subject to actual volcanic eruptions, the island of O'ahu is subject to Kona, or southerly, winds that bring volcanic gasses from Hawai'i Island on an intermittent basis (Section 4.5).

Landslides and Wildfires

While landslides can be common on steep sloping areas around the island, the project area is relatively flat with a slight elevation change in the mauka direction from 4 to 12 ft. above MSL. Due to the gentle slope of the project area, the Blaisdell Center is not prone to landslides, slumping, or liquefaction. Located in the heavily urbanized core of Honolulu, neither the project area nor the surrounding area contains dense vegetation that could fuel wildfire. While Thomas Square, north of the project area, does contain manicured greenspace and large trees, this vegetation canopy and cover is formally landscaped and maintained. Thomas Square and its vicinity do not contain dense undergrowth and is therefore not conducive to wildfires.

3.6.3.2 *Potential Impacts*

Short-term Impacts

Construction activities could exacerbate the effect of hurricanes if loose materials are not secured prior to the event of a storm and become flying debris. To minimize this hazard, construction materials and equipment would be stored properly when not in use, consistent with construction BMPs. The BMPs prepared by the contractor may include provisions requiring the tie-down of heavy equipment in the event of a predicted pending storm event.

Construction activities would not cause or exacerbate the effect of any other natural hazard in the area. To prevent the ignition of a fire during construction activities, standard construction BMPs would be utilized during the construction phase. Vegetation would be maintained to prevent growth of excess understory that could fuel a wildfire, in compliance with current fire codes. Volcanic activity is unlikely since there are no active volcanoes on the island of O'ahu.

During construction, the Blaisdell Center would not be available to serve as a community evacuation shelter in the event of a hurricane or tsunami. If a hurricane or tsunami were to occur during construction period, people would need to evacuate to other nearby shelters, which include McKinley High School, Ka'ahumanu Elementary School, Ka'ewai Elementary School, the Hawai'i Convention Center, or Lunalilo Elementary School. It should be noted, hurricane evacuation shelters serve as a last resort option for residents and visitors who do not have a safer place to stay (State of Hawai'i, Hawai'i Emergency Management Agency 2018). The Department of Emergency Management stated that the city has 291,000 shelter spaces on Oahu, excluding the Blaisdell Center, the Hawai'i Convention Center, and Brigham Young University; these spaces are "sufficient" to meet sheltering needs during a "strong storm". The Blaisdell Center has never been used as an evacuation center for this purpose.

Short-term impacts from the proposed action would be minor as they are unlikely but possible, are local in extent, and affect common resources.

Long-term Impacts

The proposed Exhibition Hall is being designed as an essential facility. To best serve the community in case of natural events, it is recommended that the State of Hawai'i Emergency Management Agency be consulted during the design phase.

The final project when complete would have no long-term significant impact on wildfires, as vegetation would be maintained to prevent growth of excess understory that could fuel a wildfire.

3.7 Flora and Fauna

3.7.1 Affected Environment

3.7.1.1 Flora

Flora at the Blaisdell Center consists primarily of landscaped vegetation, with no significant amount of naturally occurring vegetation. Current landscaped vegetation includes grass lawns; different species of palm trees; hala (*Pandanus tectorius*); monkeypod trees (*Albizia saman*), plumeria trees (*Plumeria obtusa*), and planted hedges (ʻĀina Archaeology 2019). Trees of particular historical significance and importance are the coconut palms (*Cocos nucifera*) planted on the former Ward Estate; for more information on the coconut palms, see Section 4.1, Historic Architectural Resources.

3.7.1.2 Fauna

There is no designated critical habitat for listed endangered and threatened species, and no federally listed endangered or threatened species are known to actively occur in the project area.

The fauna present in the project area are primarily avifauna (birds) and mammals that are mostly non-native and adapted to the low-land urban environment. Avifauna present include various species of pigeons, the red-crested cardinal (*Paroaria coronata*), the common myna (*Acridotheres tristis*), and house sparrows (*Passer domesticus*). Other introduced and detrimental fauna common in the urban environment include mongoose, rats, and feral cats (PBR Hawai'i 2016).

One indigenous species is known to be present within the project area. The Manu-o-Kū, or white fairy tern (*Gygis alba*), are known to breed and nest in Thomas Square, located makai of the Blaisdell Center. Various trees and vegetation through the project area provide potential nesting sites for the terns,

primarily during the months of January through July, although year-round nesting does occur. The white fairy tern is an indigenous seabird with known breeding locations on O‘ahu and the Northwestern Hawaiian Islands. Breeding pairs on O‘ahu are known to nest in urban environments in large shrubs or trees and on man-made structures (USFWS 2016). During the primary breeding season, from January to July, the birds stay close to their nesting sites, and often return to their nest sites from year to year. Fairy terns do not build a nest that is typical for most bird species, but rather lay their eggs in tree knots, crooked branches, or other features that secure the eggs. Fledglings are generally dependent on their parents for up to two months (PBR Hawai‘i 2016; USFWS 2016).

The white fairy tern is the official bird of Honolulu and the State has officially designated the white fairy tern as “threatened”. The bird was and is used today as a traditional wayfinder and guide for Polynesian voyagers and therefore has significant cultural and historical significance (PBR Hawai‘i 2016). Primary threats to the fairy tern include non-native predators (rats and feral cats), insects (mosquitoes) and overfishing (USFWS 2016). While the white fairy tern has been designated a species of moderate concern by the U.S. Fish and Wildlife Service (USFWS), the International Union for Conservation of Nature has designated the species as of “least concern”. The fairy tern is federally protected under the Migratory Bird Treaty Act.

While the Hawaiian hoary bat, ‘ōpe‘ape‘a (*Lasiurus cinereus semotus*) is unlikely to be present in the project area due to the Blaisdell Center’s urban setting, all of the main Hawaiian Islands are within the species’ range. The bats nest in woody vegetation primarily in areas near rural lowland forests (USFWS 2012). The USFWS and the State of Hawai‘i Department of Land and Natural Resources (DLNR) recommend that trimming of trees exceeding 15 ft. should not occur during birthing season, which occurs from early June to mid-September (DLNR 2015). Monitoring for the mammal is particularly difficult due to animal’s elusive nature; surveys are recommended if the species is believed to be present.

3.7.2 Potential Impacts

Significant impacts to flora and fauna occur when an action has a “substantial effect on a rare, threatened or endangered species, or its habitat” (HAR Chapter 11-200-12). For most native flora and fauna, one of the most serious impacts is the destruction of critical habitat. Critical habitat is defined federally by the Endangered Species Act, as the “specific geographic areas that contain features essential to the conservation of an endangered or threatened species and that may require special management and protection” (16 U.S.C. §1532).

There is no designated critical habitat in the project’s vicinity, and it is unlikely that federally listed or endangered species occur in the project area (USFWS 2017).

3.7.2.1 Short-term Impacts

Flora

The vegetation in the project area consists entirely of landscaping and horticultural plantings. The landscaping in the area is not known to provide habitat for any listed threatened or endangered species. However, because the fairy tern is known to be present in the area, trees targeted for trimming or removal should be surveyed following the State Department of Fish and Wildlife’s fairy tern survey protocol, described above. The project would not have any adverse short-term impacts on the flora in the project area.

Fauna

The project is not likely to have significant adverse impacts on the fauna residing in the project area. Most mammals and birds that exist within the project area are primarily non-native and are well adapted to the urban environment. The white fairy tern is the only state-listed threatened bird known to be actively present in the project vicinity.

The white fairy tern, which is known to nest in the banyan trees located in Thomas Square (located directly mauka of the Blaisdell Center) are not suspected to nest at the Blaisdell project area; however, because of their known presence at Thomas Square, standard survey protocol should be followed to prevent potential adverse impacts to the white fairy tern during tree trimming or removal. Survey protocol includes looking for bird pairs in or around the tree, chicks in the trees, visible eggs, and/or adult birds with food in possession looking around the tree.

The USFWS recommends that tree-trimming for trees exceeding 15 ft. not occur between June 1 and September 15 to protect the hoary bat; additionally, it is recommended that tree trimming be avoided during the primary breeding season for the fairy tern between January and July. In the event it is not practicable to avoid trimming over such a long duration, surveying or monitoring should occur in accordance with USFWS recommendations.

Other primary threats to the white fairy tern and the hoary bat include predation by rats, feral cats, and mongoose; however, the project would not change the effects of predation on the white fairy tern, nor would the project affect the population size of the terns' predators.

Most seabird species do not nest or reside in the project vicinity, but seabird species flying over the project area can be temporarily impacted by construction lighting if used during nighttime construction. Bright overhead lighting can cause disorientation and subsequent effects when the birds become exhausted or collide with protruding features such as utility lines, guy wires, and towers (DLNR 2014). However, because project construction would primarily occur during typical daytime construction hours, approximately from 7 a.m. to 6 p.m. Monday through Friday, and 9 a.m. to 6 p.m. Saturdays, overhead construction lighting would not be a concern or threat to seabirds potentially flying over the project area at night. Therefore, the project would not have minor adverse short-term impacts on the fauna in the project area, as the associated impacts are unlikely but possible, low in intensity, and localized in extent.

3.7.2.2 Long-term Impacts

The mammals and birds that reside in the project area are primarily non-native and are well adapted to the urban environment. Therefore, it is not likely that the project would have a significant long-term adverse impact on the flora and fauna residing in the project area. To protect non-resident seabirds flying over the project area, any overhead lighting that is installed would have standard overhead bulb shielding to prevent casting light beams directly into the sky. When the project is complete, the fairy tern and the hoary bat, if present, would likely be able to return to normal mating and nesting behaviors.

No impact would occur as a result of the project long-term. Regular site landscaping and maintenance would continue on a regular basis to maintain the landscaped vegetation within the project area. It is anticipated that vegetation would be enhanced when design is complete. The existing monkeypod trees along Kapi'olani Boulevard edge of the site would be preserved. Plans for the coconut palms are further evaluated in the Historic Architectural Resources (Section 4.1).

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4 Built Environment: Affected Environment, Potential Impacts, and Mitigation Measures

This section may contain technical jargon or words unfamiliar to the general public. For this reason, we have provided a Glossary of Terms at the beginning of the document.

4.1 Historic Architectural Resources

4.1.1 Affected Environment

The Area of Concern defined for architectural resources includes those resources identified as historic within a 0.25-mile buffer of the 22-ac. project area (Figure 30). There are six listed historic properties within a 0.25-mile radius of the Blaisdell Center, not including the Blaisdell Center property itself (Table 8 and Figure 30):

- McKinley High School is the oldest public high school in Hawai'i; its 45.6-ac. campus, located at 1039 South Street, is adjacent to the Blaisdell Center along its 'Ewa boundary. Seven buildings on the school's campus, constructed between 1929 and 1937, are architecturally significant examples of the Spanish Colonial Revival style. The high school property is listed in the National Register of Historic Places (NRHP) as a district (HHF 2016).
- Thomas Square, a 6-ac. city park encompassing the block directly mauka of the Blaisdell Center, was constructed in 1843 and is one of the city's oldest public spaces. Bounded by King, Victoria, and Beretania streets and Ward Avenue, Thomas Square is listed in the NRHP and is significant for its association with the political history of the Kingdom of Hawai'i (HHF 2016).
- The Honolulu Academy of Arts at 900 South Beretania Street houses the Honolulu Museum of Art. It has been listed in the NRHP since 1972 and is significant in the areas of Art and Architecture (1925–1949) (HHF 2016).
- The Linekona (Lincoln) School, located at 1111 Victoria Street between Beretania and Young streets, is adjacent to the proposed off-site parking lot. Built in 1908, the NRHP-listed, architecturally significant property is considered an outstanding example of turn-of-the-century eclecticism with Georgian Revival and Romanesque design elements, as well as distinctive concrete block masonry faced to resemble blue basaltic lava rock (HHF 2016).
- The Makiki Christian Church at 829 Pensacola Street stands on the Diamond Head side of McKinley High School property within 0.25 miles of the Blaisdell Center. Built in 1931, the Makiki Christian Church is listed in the Hawai'i Register of Historic Places. The only example of a Christian church in the U.S. modeled after a sixteenth-century Edo-period Japanese castle, the building is unique and architecturally significant (HHF 2016).
- The Yee/Kobayashi Store, a historic building at 894 Queen Street, three blocks makai of the Blaisdell Center, is listed in the Hawai'i Register of Historic Places. This two-story wood frame commercial building was constructed in 1918; it is representative of the trade history of Kaka'ako and is a rare surviving representative of a small, wooden commercial building that was once common in the neighborhood (HHF 2016).

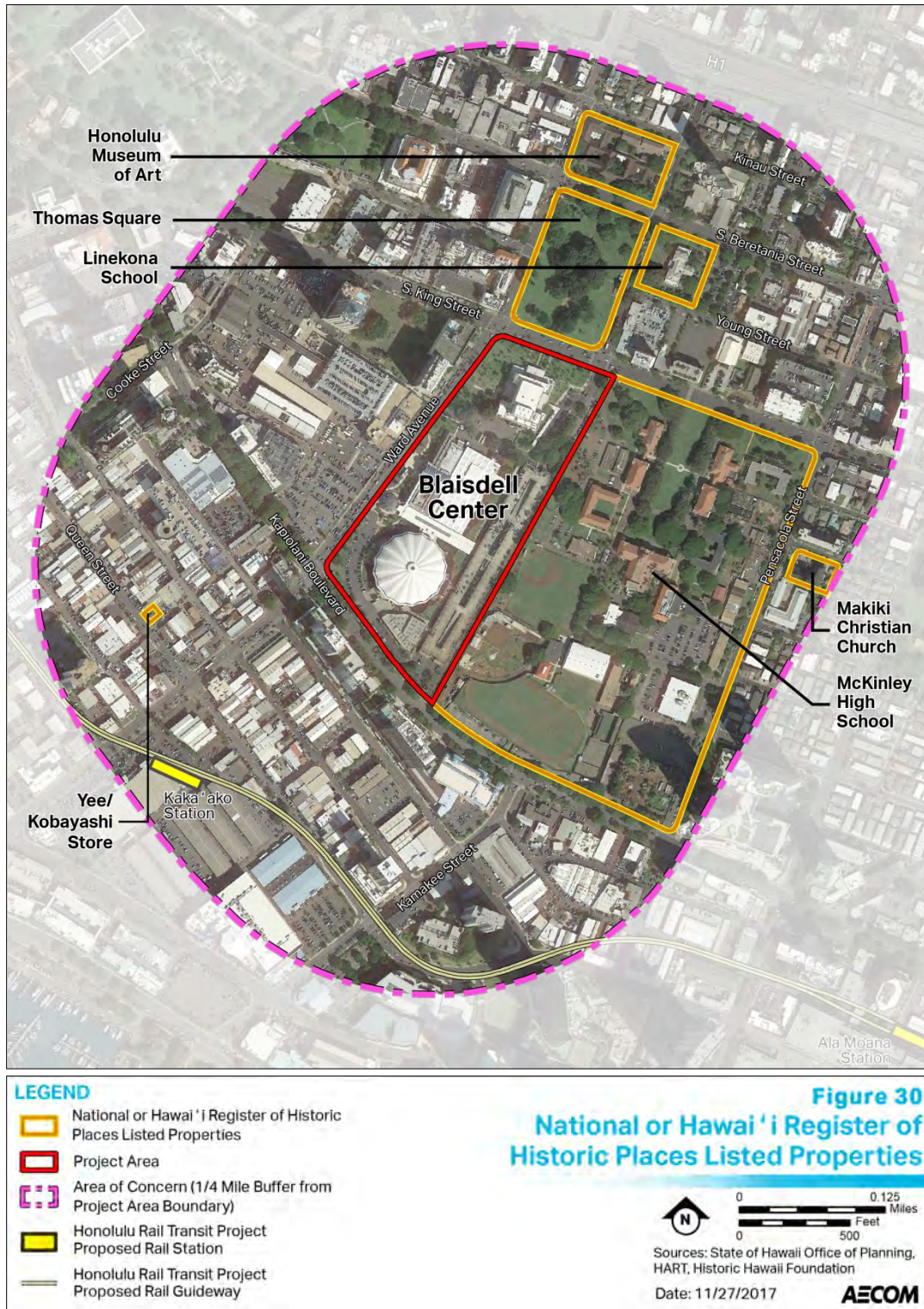
Table 8. Properties in the vicinity of the Neal S. Blaisdell Center that are listed in the Hawai'i Register of Historic Places and National Register of Historic Places

Photo	Name	Address	Listing Number
	McKinley High School	1039 South King Street	SIHP # 80-14-9926 NRHP # 80001281
	Thomas Square	1102 Victoria Street	SIHP # 80-14-9990 NRHP # 72000423
	Honolulu Academy of Arts	900 South Beretania Street	SIHP # 80-14-9989 NRHP # 72000415
	Linekona School	1111 Victoria Street	SIHP # 80-14-1339 NRHP # 80001279
	Makiki Christian Church	829 Pensacola Street	SIHP # 80-14-9719
	Yee/Kobayashi Store	894 Queen Street	SIHP # 80-14-9739

SIHP = State Inventory of Historic Places

Also, in the vicinity of the project area is the King Street Catholic Cemetery (on TMK parcel 12104004), which, while not listed, is considered an eligible historic site.

Figure 30. National or Hawai'i Register of Historic Places Listed Properties



In addition to the above listed properties, the Blaisdell Center itself is eligible for listing in the NRHP. The Blaisdell Center is more than 50 years old, has associations with significant designers and artists, and exemplifies the Regional Modern style of the Hawai'i Statehood Period. It is likely eligible at the state level under National Register criteria A, B, and/or C.

While a formal Determination of Eligibility has not been prepared, Historic American Buildings Survey (HABS) documentation was completed in 2017 for the property, focusing on the Concert Hall, Arena, and landscape, based on the recommendations of consulting parties during the initial phase of the Master Plan project. The Exhibition Hall was excluded from the HABS because it has lost its historic integrity due to major alterations to the original building during a renovation in the 1990s.

The remaining character-defining features of the Blaisdell Center, based on the HABS documentation, include the following:

- Concert Hall
 - Geometry and massing, with symmetrical front section and rectangular forms at different heights to serve various building functions
 - Modular gridded concrete exterior
 - Mission barrel tile screens
 - Materials: concrete, terrazzo, wood, glazed ceramic tile, split-faced marble
 - Curved form of concert hall balcony edge
 - Curved form of lobby interior wall (materials have been altered)
 - Continental seating in auditorium
 - Wood stage and proscenium
 - Symmetrical rectangular entrance canopy with concrete columns
 - Rounded ticket booths and bronze lettering
 - Exterior lobby and symmetrical arcaded lānai extending along façade and around part of Diamond Head and 'Ewa sides
 - Copper bas relief mural by Hawaiian artist Bumpei Akaji (1921–2002)
 - Italian chandeliers
 - Balcony windows on east and west elevations
- Arena
 - Geometry and massing
 - Parabolic concrete roof
 - Exposed concrete structure
 - Modular bays
 - Concrete spandrel
 - Art panels over each entrance by Hawaiian artist Bumpei Akaji (1921–2002)
 - Concrete materials (structure, walls, risers)
 - Open air concourse defined by arena, concessions, and water features
 - Arena stadium style seating with concrete risers and theater-style seats
 - Flexible floor plan for different events
- Landscape
 - Water features
 - Coconut palm grove at Concert Hall
 - Large concrete planters

4.1.2 Potential Impacts

The proposed Master Plan has the potential for short- and long-term impacts, and direct and indirect impacts to historic buildings and structures. The impacts to the Blaisdell Center buildings, including the Concert Hall and Arena, would result from the planned updates to the building interiors and surrounding landscape.

While the Master Plan does not call for substantial changes along the Diamond Head property boundary, it is possible that future site circulation modifications could take place along that property line, and could result in changes or impacts to the margin of the NRHP-listed historic McKinley High School property. Any potential impacts to historic properties that are not foreseen in the Master Plan, but that become evident as design development progresses, would be addressed through the standard process of historic preservation consultation with the State Historic Preservation Division (SHPD) as required under HRS Chapter 6E.

4.1.2.1 Short-term Impacts

Short-term impacts are defined as approximately three years for construction, during which the entire property would be closed to the public and construction activities would physically alter the buildings and their setting. Adjacent and nearby historic properties would also be impacted in the short term due to construction vehicle traffic, noise, and related short-term disruptions such as temporary street closures.

Construction would include the demolition of portions of the Arena, Concert Hall, and landscape that would be rebuilt to achieve the proposed new design for the overall facility. This would include selective demolition within the historic buildings, with retention and protection of some historic character-defining features and the removal and reconstruction in-kind of others. Short-term impacts to historic architectural resources prior to mitigation would be major, as they would be medium to high in intensity, local in extent, permanent in duration, and unavoidable with mitigation measures.

As mitigation, in an effort to reduce these impacts, the CCH would retain a qualified historic architect as an integral part of the design team and review process during the design and construction phases of the project with the intent to minimize or reduce adverse impacts to the historic integrity of the Concert Hall and Arena. Construction techniques would be established and monitoring would take place to ensure that work is undertaken in compliance with the U.S. Secretary of Interior's (SOI) Standards or the Treatment of Historic Properties. Measures to ensure that historic character-defining features to be retained are protected from damage during the construction phase, and that those that must be removed and reconstructed are reinstated in a way that retains their historic character.

The CCH would implement standard BMPs aimed at minimizing impacts to nearby properties, including historic properties, e.g., fugitive dust abatement and traffic management. Therefore, in the short term, impacts to the nearby historic resources would be minor as they would be low in intensity, regional in extent, and significant impacts are avoidable with mitigation measures.

4.1.2.2 Long-term Impacts

Long-term impacts to historic architectural resources would be most noticeable within the Blaisdell Center property after the designs are implemented. The Master Plan does not yet address a level of detail that would allow fine-grained assessment of impacts to the buildings, but it does indicate

alterations to the entire property that would be refined as part of the future design development. The long-term impacts would include physical alterations such as the removal of the non-historic Exhibition Hall and maintenance building and the addition of an elevated Terrace along the Diamond Head side of the property. To make the buildings more functional and update them to support current and future venue needs, physical changes to the historic Arena and Concert Hall buildings would be made. These alterations to historic character-defining features and other non-character-defining elements of the buildings as identified in the Master Plan are described in greater detail below; however, they are expected to be further refined as the design is developed in later phases. The Master Plan also expresses the design intent to minimize impacts of these alterations to the historic character of the Arena and Concert Hall buildings. These changes as characterized in the Master Plan would constitute major impacts to historic architecture, as they would be high in intensity, permanent in duration, and local in extent.

While adverse impacts are not fully avoidable, mitigation measures have the potential to reduce the intensity of the impacts. Because the Master Plan is conceptual in nature, all possible mitigation measures are not fully specified or known; the project would undergo future evaluation through the HRS Chapter 6E historic preservation review process to address as-yet unknown impacts from conditions that may arise in the future engineering and design phases. The project would develop a Detailed Mitigation Plan as part of the 6E process and would be required to comply with SHPD requirements to qualify for the necessary building permits for any construction to occur.

The CCH would employ various measures to minimize alteration to the historic character of the buildings, such as undertaking building documentation and identification of significant historic character-defining features prior to design development; and involving a SOI-qualified historic architect throughout the design and construction phases of the project.

In the property's landscape, the addition of the Terrace, new water features and outdoor use spaces would transform the existing character profoundly. However, because of previous changes to the landscape of the Blaisdell Center since its initial design, many historic features are no longer extant or have lost integrity. Impacts to historic character-defining features that exist in the landscape today would be moderate: unavoidable, of medium intensity, with potential for local impacts.

Impacts to the historic character of the landscape would be partially mitigated by the retention of some features and the addition of new, similar features. For example, some of the coconut palm trees within the character-defining grove at the Concert Hall would be retained, and other trees added in the area. The character-defining water features, such as the rock-edged ponds at the Diamond Head side of the Exhibition Hall and around the Arena, would be modified or removed, with new water features added throughout the property, potentially reusing some of the materials, such as rocks. While their designed character would be altered, water features would still play an important role in defining the property's appearance and providing features to direct visitor movement, as the current water features were designed to do.

At the Concert Hall, the Master Plan states that its goal is to minimize exterior building alterations in respect to historic character. The modular gridded concrete exterior materials, arcaded lānai, main façade on King Street, and exterior massing would retain their appearance. However, the following potential, permanent impacts to its character-defining features may occur based on the Master Plan proposed concept:

- The Concert Hall's geometry and massing, with rectangular forms at different heights to serve various building functions, would remain similar, with the proposed addition of an upper balcony lobby with windows that would be visible along the mauka facade. If developed in the design, would alter the existing upper fenestration (the arrangement of windows and doors on the elevations of a building) of the Concert Hall. The addition to the 'Ewa side of a new outdoor café area has the potential to alter the form of this side of the building at the ground level, although design refinements undertaken with the involvement of a historic architect and in compliance with SOI treatment standards could mitigate impacts to the building's appearance.
- Recommended changes to the lobby area in the Master Plan include improved vertical circulation, concessions, and washrooms. These have not yet been designed, although they could result in the removal or alteration of some historic character-defining features of the Concert Hall lobby. Specific mitigation is anticipated to be developed as part of the design process and associated historic preservation review.
- The addition of transparent glazing to replace some solid portions of the lobby walls is proposed, but the character-defining arcaded lānai and mission barrel tile screens would be retained and existing damage to the tile screens repaired in compliance with SOI standards, under the supervision of a historic architect.
- The existing character-defining materials such as concrete, terrazzo, wood, glazed ceramic tile, and split-faced marble, generally appear to be retained in the Master Plan; however, a detailed design for new materials has not yet been undertaken. Mitigation, developed in historic preservation review and under the supervision of a historic architect, could include retaining these materials where possible; replacing them in-kind; and, when adding new materials, ensuring that the new materials are harmonious, compatible, and unobtrusive, in compliance with SOI standards for the treatment of historic properties under the Rehabilitation approach defined therein (NPS 2017).
- No changes are proposed to the character-defining curved form of the concert hall balcony edge or the curved form of the lobby's interior wall.
- The Master Plan proposes to retain the character-defining continental seating in the auditorium, while adding ADA-compliant wheelchair seating positions. The Master Plan identifies seating details as a subject of future design development. These would be developed in compliance with SOI standards and under the supervision of a historic architect.
- While stage systems, acoustics, lighting, and back-of-house changes are recommended, no specific changes are identified to the existing wood stage and proscenium (the part of the stage in front of the curtain).
- The Master Plan retains the existing symmetrical rectangular entrance canopy with concrete columns, rounded ticket booths, and exterior lobby and arcaded lānai, extending along the facade.
- The Master Plan recommends restoring the Bumpai Akaji copper bas relief mural to its original location on the curved wall, or retaining and reconfiguring it elsewhere as part of the new development. Treatment of the historic bas relief mural would be undertaken in compliance with SOI standards and under the supervision of a qualified conservator.
- The Master Plan does not address potential alterations that could affect smaller character-defining details such as the Italian chandeliers, concrete planters, etc. As the design is developed for these details, the historic preservation review process and the involvement of a historic architect would support compliance with SOI standards for treatment of historic properties.

At the Arena, the proposed action would rebuild the interior performance area in a new configuration. This would result in a permanent change to the historic character-defining architectural features of the interior of the arena, e.g., the removal of the Arena stadium-style seating with concrete risers, the

flexible floor plan with central performance/event space, and the addition of a theater-style seating arrangement and performance stage. These changes would be mitigated through the historic preservation review process and with the involvement of a historic architect as part of the design team. Some changes may involve documentation prior to demolition or addition of interpretive materials to mitigate these alterations, but these would be developed as part of the design process and compliance with the HRS Chapter 6E historic preservation review process.

On the Arena's exterior, the addition of a raised Terrace would alter the Diamond Head side of the building. The open-air concourse defined by the arena, concessions, and water features would be substantially altered with the addition of a partially transparent curtain wall on the inside edge of the large tapered columns to enable improved vertical circulation between the two levels of seating and allow for lobby air conditioning and storage. Character-defining features that would remain intact in the proposed Master Plan concept include the Arena's exterior geometry and massing, parabolic concrete roof, exposed concrete structure, modular bays, concrete spandrel, and concrete materials. As with other Master Plan concepts, these recommended changes would be developed further and are subject to potential alteration in the engineering and design process. Mitigation would be developed through involvement of a historic architect and through future consultation as part of the design development process.

The Master Plan does not identify plans for retention or removal of the Bumpei Akaji art panels currently hanging over the entranceways. However, changes are anticipated to the exterior stairway entrances where these panels are currently located. Because the addition of an expanded upper lobby area within the proposed transparent curtain wall would place a floor level at or near the level of the panels' current locations, it appears likely that they would be affected by the design and need to be moved.

The CCH would include a SOI-qualified historic architect on the project team during the design and construction phases of the project with the intent to alleviate any significant impacts to the historic integrity of the Concert Hall and Arena.

Long-term indirect impacts on historic properties in the study area could result from changes to traffic patterns, such as changed use of Victoria Street (Section 4.7). However, urban traffic on surrounding streets is already heavy and is not anticipated to increase substantially over current event and rush hour levels with planned traffic mitigation measures (Section 4.7). Views from the McKinley High School historic campus would be altered by the new, taller parking structure, although views have already been incrementally changed by the numerous other high-rise buildings that have been constructed in recent years throughout the vicinity. Therefore, in the long-term, indirect impacts to the nearby historic resources would be expected to result in minor impacts.

The changes characterized in the Master Plan would constitute major impacts to historic architecture, as defined in our impact criteria, since they would be high in intensity, permanent in duration, and local in extent. However, mitigation measures would be included at each step of the way to minimize, avoid, and offset impacts, as described above. Further, although there would likely be impacts to Historic Architectural Resources, they do not reach the criteria for significance, as defined by HAR Section 11-200-12 and described in Section 10.2.

4.2 Archaeological Resources

4.2.1 Affected Environment

In order to identify any archaeological and cultural resources in the project area, a Cultural Impact Assessment (CIA) was completed in 2019 (Appendix B) and the SHPD is being consulted to determine if an Archaeological Inventory Survey Plan (AISP) is necessary. The CIA identifies archaeological and traditional cultural resources and practices that may be relevant to the project area and may be affected by the proposed activities. The CIA defines a larger study area, which in this case, includes the entire 'ili of Kewalo, in order to provide context for cultural traditions; this area is much larger than the project area evaluated in this Environmental Assessment.

While many archaeological studies have occurred within the CIA study area, which encompasses a vast urban region, the Blaisdell Center property has not been subject to any archaeological surveys to date, nor have any significant archaeological sites been identified in the project area. The CIA did not identify any major archaeological findings to date in or directly adjacent to the project area. However, based on nearby archaeological investigations and historical documentation of the activities that are known to have occurred in the vicinity, there is some potential for subsurface features in the project area related to agricultural practices, fishponds, and human burials. Based on a review of the historical record and secondary studies, there may be a few features located in the project area remaining from the Ward estate and nineteenth-century land uses. Some of these are apparent on the surface, while other features may be evident in subsurface deposits. However, much of the property was disturbed in the mid-twentieth century, during the construction of the Blaisdell Center.

The SHPD would be consulted to determine what actions are appropriate prior to beginning any ground disturbing activities in the project area. For additional historical context, background information, and details, please refer to the CIA (Appendix B) and to the HABS for more information regarding the Blaisdell Center (AECOM 2018b).

While no archaeological sites have been confirmed in the project area, the CIA identified the following historical features, including surface and subsurface features, some of which are evident on the property today and others of which may have the potential to remain as archaeological resources:

- **'Auwai (ditch)** – Prior to the 1950s, the project area was part of the Ward family estate known as “The Old Plantation.” As part of their landholdings in the area, the Wards had a permanent easement for an 'auwai (ditch) that extended from the property’s lagoon to the sea, through Kewalo. Makaloa grass, which was used to make mats and hats, grew along the 'auwai and provided one source of income for the family (Hustace 2000, 7–55). A drainage ditch built in the 20th century along the Diamond Head boundary of the Blaisdell property differs in alignment and materials from previous ditches associated with the Ward-era pond system.
- **Ponds** – During the mid-nineteenth century, documentation associated with the Māhele 'Āina land redistribution mentions ponds in the area. Royal Patent No. 306 encompassed the Blaisdell Center property and mentions “the large fishpond” or “long fishpond” (loko i'a nui), which had two huts beside it ('Āina Archaeology 2019). In the later nineteenth century, this pond was modified into a lagoon that was a defining feature of the Ward family estate. The lagoon was a large, roughly rectangular, water body fed by a spring or well. This lagoon served as the basis of the ponds featured at the Blaisdell Center, but was heavily reconfigured in the 1960s when the complex was constructed. The water features today do not resemble the Ward-era lagoon in terms of historic character.

- **Springs/wells** – The Ward estate was known for its lush gardens and lagoon. An 1875 article on the Ward estate published in the Pacific Commercial Advertiser stated that “The property is well-watered by means of pumps driven by windmills, there being an inexhaustible supply of water a few ft. below the surface of the plains” (‘Āina Archaeology 2019). One of these subsurface springs remains active on the property today, providing plentiful water to fill the ponds. Another spring or well, closer to the corner of Ward and Kapi‘olani, was capped in the 1970s. For further information regarding groundwater and springs, see Section 3.4, or the groundwater conditions report (Tom Nance Water Resource Engineering 2017).
- **Coconut palm grove** – A coconut palm grove, reportedly containing as many as 6,000 trees was planted as part of the development of the Ward family’s estate in the nineteenth century. This notable, scenic grove later came to define the property (AECOM 2018b; ‘Āina Archaeology 2019). During the 1960s construction of the Blaisdell Center, the CCH tried to retain and preserve some of the coconut trees, at the urging of the public. The coconut grove surrounding the Concert Hall today, although substantially smaller than the Ward-period grove, includes some trees from the original estate planting.

4.2.2 Potential Impacts

No major archaeological sites have been identified in the project area or close enough to be directly or indirectly affected by the proposed action. However, there are many properties within the vicinity that have not been subject to archaeological surveys, including the 22.4-ac. project area itself. While the project area has been altered to a large extent over past years through fill operations and the construction of the Blaisdell Center, it remains possible that subsurface archaeological resources may exist on the property. Historical documentation identifies the potential for subsurface features related to agricultural practices, fishponds, human burials, and Ward estate structures.

The proposed action has the potential to impact cultural features that are known to remain from the historical period, including water features (ditch, pond, and springs), and coconut palm grove; however, all of these features have been altered to some extent since the historical period. The site’s water features, for example, have little to no resemblance to the traditional fishponds and Ward-era lagoon. The coconut palm grove has been significantly reduced from its Ward Estate appearance, when it was reported to have had nearly 6,000 trees. However, the remaining coconut trees continue to be a character-defining feature of the current facility design (Section 4.1).

4.2.2.1 Short-term Impacts

Implementing the proposed Master Plan could have short-term impacts on undiscovered archaeological resources on the Blaisdell Center property due to the excavation required to demolish existing features, such as the Exhibition Hall, paved areas, water features, and parking garage. Any demolition activities that include ground disturbance have the potential for impacts to archaeological resources. Likewise, short-term impacts of construction activities that disturb the ground surface, such as pile driving, excavating foundations, planting trees, and water feature and utility work, all have the potential for impacts to currently unidentified archaeological resources.

However, an archaeological survey (AIS) is anticipated prior to any ground disturbing construction activities would begin. Construction monitoring may also be necessary, depending upon the findings of the AIS. In addition, throughout the property, construction contractors would be required to adhere to standard BMPs regarding the protection of archaeological resources, including identification, stop work,

and notification measures. With these measures in place, short-term impacts to archaeological resources would be minor, and are expected to be low in intensity and limited to a local extent.

4.2.2.2 Long-term Impacts

The construction phase of the Master Plan could result in long-term impacts to potential, but yet unidentified, archaeological sites in the project area as a result of irreversible ground disturbance and permanent new construction. The proposed action aims to preserve much of the remaining coconut grove. Should archaeological resources be discovered, all appropriate measures would be adhered to for their protection; and as a result, long-term impacts to archaeological resources would be expected to be minor as irreversible ground disturbance has the potential to impact archaeological sites permanently. However, the impact is preventable with mitigation measures that include an AIS, construction monitoring, and data recovery in compliance with all relevant regulations and best practices regarding archaeological resources.

4.3 Cultural Practices and Traditions

Refer to the Final Cultural Impact Assessment (‘Āina Archaeology 2019) for additional, detailed information on cultural practices and traditions. Information below is summarized from the CIA.

4.3.1 Affected Environment

Historically, traditional practices occurred in surrounding areas prior to the existence of the Blaisdell Center. Today, a dense urban development has pre-empted many of those traditional practices. However, some continue today or have been revived with a connection to the Blaisdell Center property. For example, the Blaisdell Center has taken on a cultural role for the community as a venue for prominent hula competitions that continue to take place there today, such as the Queen Lili‘uokalani Keiki Hula Competition, which has taken place each year at the Blaisdell Center since 1993. Cultural connections to water have been an essential part of the character of this area since pre-contact times and up to the present, and the continuing presence of water at the Blaisdell Center has cultural value. Additionally, the property is historically associated with members of the Hawaiian royal family who were part of the Ward family and resided and visited at “the Old Plantation.”

The makai portion of the property lies in the ‘ili (district subdivision) of Kewalo, which, prior to modern urban development, was a marshy expanse used intensively by Hawaiians for wetland agriculture and aquaculture, including extensive fishponds and, closer to the coast, salt ponds in the vicinity known as Kaka‘ako (AECOM 2018b; ‘Āina Archaeology 2019). Marshy areas were home to useful grasses such as pili and mahiki grass, which were used for weaving baskets and mats and thatching roofs, among other uses. Aquaculture was practiced in extensive lo‘i, including a pond that once laid on what is now the Blaisdell Center property. Land Commission Awards from the Māhele ‘Āina land divisions of the mid-19th century indicate ‘āpana (parcels) were used for house lots, lo‘i kalo (taro ponds), and kula ‘āina (agricultural fields). Kalo/taro (*Colocasia esculenta*), ‘uala/sweet potato (*Ipomoea batatas*), ‘awa (*Piper methysticum*), kō/sugar cane (*Saccharum officinarum*), and wauke/paper mulberry (*Broussonetia papyrifera*) were some of the plants cultivated in Kewalo (‘Āina Archaeology 2019). These traditional practices were displaced by twentieth-century urban development, which altered the landscape drastically.

While no traditional spiritual associations have been identified related to the Blaisdell Center property, there are known areas of cultural significance in the nearby vicinity. In general, contributors to the

CIA mentioned the value of traditional associations with the area's springs, brackish water flow, and connection to nearby ocean waters, as well as the perpetuation of traditional place names. Additionally, Kewalo was known for distinctive ceremonial sites such as the Pu'ukea Heiau, and for the trails across it, that connected the population centers of Waikiki and Honolulu ('Āina Archaeology 2019). Some of these trails were later formalized into roads, forming the armature of Honolulu's city street system. Because all of these practices and their locations and context have been altered by dense urban redevelopment throughout the vicinity and on the Blaisdell Center campus, the planned project does not result in significant impacts to these past practices.

However, there are present-day cultural practices at the Blaisdell Center, such as hula. The Blaisdell Center has been the main performance venue for the King Kamehameha Chant and Hula Competition since 1973 and the Queen Lili'uokalani Keiki Hula Competition since 1993. The center itself is now etched in the genealogy of these events and has taken on an important role in honoring the Hawaiian mō'i (royal family) and the tradition of hula ('Āina Archaeology 2019).

4.3.2 Potential Impacts

Throughout the project area and its surroundings, twentieth-century reclamation of land and subsequent urban development have completely covered and transformed the traditional landscape. Traditional practices ceased in this vicinity after extensive urban development, including activities such as mass grading, filling of marshes and ponds, paving, and construction of buildings altered the landscape's natural systems upon which these land uses relied. The importance of water is reflected in the inclusion of water features as a prominent characteristic of the landscape as shown in the Master Plan for the Blaisdell Center. In the plan, some traditional names and concepts are incorporated into the new landscape and buildings, with potential for further addition of traditional Hawaiian naming and interpretive elements as the design is developed in the future. The inclusion of a performance facility in the Master Plan to accommodate hula hālau, as well as new indoor and outdoor spaces for other smaller, community-based cultural events and activities. The Master Plan supports the continuation or revival of traditional cultural practices and activities, resulting in potential long-term positive impacts.

4.3.2.1 Short-term Impacts

The CIA noted that informants were concerned that the proposed action could result in short-term construction impacts to traditionally valued water resources, due to increased runoff from construction activities; however, construction activities would be required to manage soil and water on the site in compliance with local and state ordinances.

The short-term closure, anticipated to last approximately three years, would have an adverse impact on the cultural practice of hula at the property. The organizers of the two major competitions would need to seek a new venue during this interval, which would affect multiple years of these annual events. Because of a low number of appropriate venues in the region, this would negatively impact the cultural practice associated with the hula events. The construction-period closure of the entire Blaisdell Center campus would constitute a minor adverse impact to cultural practices, due to its regional impact, low intensity, and temporary duration.

4.3.2.2 Long-term Impacts

The CIA noted that informants are concerned that the proposed action could result in impacts to traditionally valued water resources; however, the design proposed in the Master Plan would introduce more and varied water features on the property, including interpretations of traditional water uses in the area that are not currently represented by the pond system on the property today. The inclusion in the Master Plan of additional performance spaces would have a positive impact on traditional cultural practices by providing new venues and smaller and more varied indoor and outdoor spaces for hula as well as for ceremonial activities that are currently not accommodated at the property.

The CIA also noted that informants discussed the importance of a “Hawaiian Sense of Place” and suggested ways to bring a Hawaiian presence through the incorporation of traditional place names, mo’olelo, and native plantings (‘Āina Archaeology 2019). As discussed above, Hawaiian cultural elements are planned for the Blaisdell’s redesign including traditional names and landscaping with the potential for further interpretive elements as the design is developed in the future.

Finally, the CIA captured concerns from kumu hula and hālau hula regarding their ability to return to the Blaisdell Center upon reopening (‘Āina Archaeology 2019). The city is committed to continued outreach to competition organizers and hālau hula regarding the needs of performers and supporting groups, as well as input on the types of plants that might benefit hula practitioners; these actions would positively affect the cultural uses of the property in the long term. Additionally, as the city seeks agreements with future operators, they will include requirements regarding community programming to ensure that the Blaisdell Center remains a home for cultural practices and traditions, such as hula. It is the city’s hope that hālau hula see their futures in the Blaisdell’s future.

Therefore, in the long term, Master Plan implementation is expected to have a beneficial impact on Cultural Practices and Traditions.

4.4 Noise

4.4.1 Affected Environment

Noise is defined as sound that is undesirable because it interferes with speech, communication, and hearing; is intense enough to damage hearing; or is otherwise annoying. The decibel (dB), a logarithmic unit that accounts for the large variations in amplitude is the accepted standard unit for the measurement of sound. A-weighted sound levels (dBA) are commonly used to account for the frequency response to the human ear. The term “A-weighted” refers to a filtering of the sound signal to emphasize frequencies in the middle of the audible spectrum and to deemphasize low and high frequencies in a manner corresponding to the way the human ear perceives sound.

Generally, an increase of 3 dBA (or doubling the sound power) is considered barely noticeable to the human ear.

Exposure to noise levels exceeding the defined maximum permissible levels set forth by the DOH for a prolonged time period may have significant adverse impacts on human health and life quality. These maximum permissible sound levels are defined in three different zoning districts (Table 9). The project area is considered as Class B, as it is zoned for mixed-use and prevalent land use in the area includes multi-family dwellings, apartments, commercial, and light industrial activities (EDAW, Inc. 2009). The maximum permissible sound levels for both the construction activities and future outdoor events from

stationary noise source including construction equipment at the Blaisdell Center is 60 dBA during the day and 50 dBA at night.

Table 9. Maximum Permissible Sounds Levels during Daytime and Nighttime Hours

Zoning Districts	Daytime (7 AM to 10 p.m.)	Nighttime (10 p.m. to 7 AM)
Class A – residential, conservation, preservation, public space, open space	55 dBA (exterior)	45 dBA (exterior)
Class B – multi-family dwellings, apartments, business, commercial, hotel, resort	60 dBA (exterior)	50 dBA (exterior)
Class C – agriculture, country, industrial	70 dBA (exterior)	70 dBA (exterior)

Source: HAR §11-46-4.

The Blaisdell Center is located within the PUC for Honolulu; therefore, ambient noise in the neighborhood of the Blaisdell Center is primarily contributed from sources such as activities from the Blaisdell Center and road traffic.

Noise currently sourced from the Blaisdell Center includes noise from stationary sources (e.g., operation of industrial equipment, mechanical air conditioners, and generators) and crowds attending events and outdoor activities. Trucks and other vehicles used to move staging and event equipment on-site also contribute to noise sourced from the Blaisdell Center. Concerts that occur inside the concert hall or arena do not produce excessive noise beyond the Blaisdell Center site, as the noise is contained within the buildings.

Outside noise sources include noise from vehicular traffic (including busses, emergency vehicles, and other cars), noise from outside stationary sources (neighboring air conditioning units, generators, etc.), and occasional noise from overhead aircraft. The dominant outside noise source for the project area is from vehicular traffic, as the project area is surrounded by major arterial roads including Kapi’olani Boulevard, Ward Avenue, and South King Street. These roads carry large volumes of traffic that lead to higher levels of vehicular noise. Parks, schools, hospitals, commercial businesses, residential condominiums, and light industrial shops surround the Blaisdell Center; the multi-use nature of the surrounding area leads to high traffic volume, further increasing the traffic noise. A noise study was conducted within the same Area of Concern for the McKinley High School Athletic Complex Master Plan Final Environmental Assessment. The study found that noise levels at residences along Kapi’olani Boulevard and Ward Avenue, the two arterial roads hugging the project area, was higher than 66 dBA (Group 70 International, Inc. 2011; Lee Sichter LLC 2015). This ambient level is considered comparable for typical urban commercial use with average baseline noise levels between 60 and 70 dBA (Caltrans 1998).

4.4.2 Potential Impacts

In accordance with Hawai’i Revised Statutes (HRS) §19-342F, the DOH regulates noise issues when noise levels exceed maximum permissible sound levels for a stationary source including construction equipment. A noise permit is required by DOH if noise levels are expected to exceed the defined maximum permissible sound level for a prolonged period of time at any point at or beyond the property line.

4.4.2.1 Short-term Impacts

Short-term impacts from noise are expected to occur during the construction phase of the project. These temporary impacts on local noise levels would include noise from equipment operating at the project site and delivery vehicles traveling to and from the site. These impacts would also vary during construction with the highest noise levels likely occurring during pile driving activity. It is anticipated that construction equipment use would likely cause the exceedance of the permissible limits defined for multi-use space. A Community Noise Permit would be obtained from DOH to ensure compliance with HAR §11-46-2.

The project construction phase is expected to last approximately 3 years, including 6–8 weeks of earth-moving activities (demolition and minor grading). To mitigate the anticipated noise impacts during this phase of the project, construction would only occur during normal construction hours (7:00 a.m. to 6:00 p.m., Monday through Friday, and 9:00 a.m. to 6:00 p.m., Saturdays). In addition, the earth-moving activities as well as other noise-intensive activities would, when feasible, avoid the hours that McKinley High School is in session. The use of certain demolition and construction equipment would be limited to the hours of 9:00 a.m. to 5:30 p.m., Monday through Friday. During foundation construction, impact drivers would be used for installing approximately 180 piles over a likely duration of two months. Impact pile driving creates repetitive impulsive sound at a high noise level.

It is anticipated that McKinley High School would be affected by the construction activities due to the close proximity of some classroom buildings with the project construction site. The English and the Community Based Instruction Program buildings are approximately 200 ft. from the existing Blaisdell Center parking garage that would be demolished and reconstructed. According to an acoustic study conducted in Kaka'ako, the noise level inside of natural ventilated and air-conditioned structures can be approximately 10-20 dBA less than the exterior noise when the noise source is 200 ft. or more away (Y. Ebisu & Associates 2012). Interior noise levels can be further reduced by 5-10 dBA if all doors and windows facing the construction site are closed. Therefore, closing the classroom doors and windows facing the project area would help to alleviate the project construction noise impacts on students and teachers at McKinley High School.

Typical construction equipment noise reference levels are presented in Table 10. Airborne noise levels generated by construction equipment (or by any point source) decrease at a rate of approximately 6 dB per doubling of distance away from the source. Therefore, the high noise level of 101 dB from impact driving measured at 50 ft. could result in highest increases in noise at sensitive receptors around the project site particularly at McKinley High School with the potential level as high as 95 dBA which is well above the ambient noise condition. Other sensitive noise receptors such as the patients at the Straub Medical Center are more than 300 ft. away from the nearest construction area. The noise level would be approximately 87 dBA outside of buildings that are 300 ft. away from the loudest pile driving noise source. The noise levels inside of those air-conditioned buildings would further reduce to 57-77 dBA depending on the building's sound proofing.

Although such occurrences are short in duration and temporary, the following noise control measures are recommended to the maximum extent practicable to minimize these potentially adverse effects in the community:

- Reduce the impact sound of the ram hitting the pile cap by placing a resilient pad in the anvil chamber; and
- Reduce the discharge sound of the hammer's air exhaust by installing a rectangular steel enclosure lined with acoustically-absorptive material to provide both sound absorption and a limp mass noise barrier.

Given the high impulsive energy created by impact driving, potential ground borne vibration adverse impact could occur to nearby structures. The shaking of structures is commonly attributed to ground-borne vibration. Ground-borne vibration originates from an event – such as an earthquake or a detonation – that radiates vibration energy through the ground. When the energy reaches a structure, the face of the nearest foundation or underground structural wall responds to the ground-borne vibration and spreads waves of energy throughout the structure. The amount of structural vibration from ground-borne vibration is a function of the:

- Magnitude of the energy source;
- Distance from the source;
- Response characteristics of the transmitting media (rock and soil); and
- Response characteristics of the structure itself – different kinds of construction materials react differently to vibration.

The metric typically used for addressing vibration impact is peak particle velocity (PPV), in inches per second (in/sec), to measure the maximum instantaneous positive or negative peak of the vibration signal. The U.S. Bureau of Mines recommends in its report entitled Structure Response and Damage Produced by Ground Vibration from Surface Mine Blasting (Siskind et al. 1989) that:

- A PPV of 0.5 in/sec is the maximum ground-borne vibration threshold to prevent damage; and
- A PPV of 2.0 in/sec is the threshold level for ground-borne vibration at which minor structural damage may begin to occur in 0.01% of structures (or 1 structure in 10,000).

To create a PPV of 2.0 in/sec from an impact driver, the structure would have to be within 25 ft. on a normal ground.

Based on the above analysis, short-term impacts from noise would be moderate, as they are of medium intensity with mitigation, and have potential for regional impact affecting important resources (e.g., McKinley High School).

4.4.2.2 Long-term Impacts

Upon completion of construction activities, the Blaisdell Center would resume similar type of activities within the confines of each facilities—concerts, meetings, vendor events, milestone activities. The activities would occur inside the Blaisdell Center venue or within the premises; although the site may be utilized as public programming is implemented. During these events, speakers or other noise emitting sources would be directed toward the audience to prevent excessive noise from traveling outside of the Blaisdell Center property. In compliance with the provisions of HAR §11-46, noise permits would be

obtained from DOH for outdoor events that are expected to emit noise with higher sound level than the maximum permissible noise level for multi-use space.

In general, vehicular noise increases proportionally with the traffic volume. The doubling of the traffic volume (equivalent to a 3-dBA increase) would result in a barely perceptible noise increase which can be used as a measure of potential traffic noise adverse impacts at receptors along the affected roadway network. Based on the traffic impact analysis results discussed in the EA, the increase in traffic volume under the proposed action at each analyzed intersection would be less than doubling of the level under the no-build condition resulting in less than 3 dBA noise increase, a barely perceptible change.

The project would have negligible long-term impacts on noise because the impacts are local in extent and do not affect unique resources.

Table 10. Typical Construction Equipment Noise Levels (dBA at 15 meters)

Equipment Type	Typical Noise Levels
Earthmoving:	
Loaders	85
Backhoes	80
Dozers	85
Scrapers	89
Graders	85
Truck	88
Pavers	89
Roller	74
Material Handling:	
Concrete Mixers	85
Concrete Pumps	82
Cranes	83
Derricks	88
Stationary:	
Pumps	76
Generators	81
Air Compressors	81
Impact:	
Pile Drivers (impact)	101
Pile Drivers (Sonic)	96
Jack Hammers	88
Pneumatic Tools	85
Other:	
Saws	76
Rock Drill	98

Source: (USDOT 2006)

4.5 Air Quality

4.5.1 Affected Environment

Air pollution is caused by both human-induced and natural sources. Examples include industrial sources (power plants and refineries); mobile sources (cars, trucks), agricultural sources (cane burning), and natural sources (windblown dust and volcanic activity). Most commercial, industrial, and transportation activities and their associated air quality effects occur on the island of O‘ahu, where the project area is located.

To protect public health and welfare and to prevent the deterioration of air quality, the U.S. Environmental Protection Agency (EPA) has established the National Ambient Air Quality Standards (NAAQS) for detection of certain harmful pollutants using two standards for six contaminants. These contaminants, referred to as criteria pollutants, are carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), lead (Pb), sulfur dioxide (SO₂). The primary standards set limits to protect public health, including the health of “sensitive” populations, such as, asthmatics, children, and the elderly. The secondary standards set limits to protect public welfare, including protection against decreased visibility, and damage to animals, crops, vegetation, and buildings. DOH has also established the Hawai‘i Ambient Air Quality Standards (HAAQS) to regulate these pollutants.

The DOH is responsible to monitor ambient air quality conditions throughout the state. Near the project area, there are two monitoring stations in downtown Honolulu—on the roof of the DOH building at Kīna‘u Hale and the other at the State of Hawai‘i DLNR Division of Aquatic Resources Ānuenuue Fisheries Research Center near the entrance to the Sand Island State Recreation Area, respectively. According to the most recent DOH-published monitoring data, no exceedances of the NAAQS or HAAQS for all criteria pollutants were recorded in the past three years.

Areas where measured ambient levels of a criteria pollutant concentration are below the NAAQS are designated by the EPA as being “in attainment,” per the Clean Air Act. Areas where a criteria pollutant level equals or exceeds the NAAQS are designated as being in “nonattainment.” A “maintenance area” is one that has been re-designated from nonattainment status to attainment status, and has an approved maintenance plan under §175 of the Clean Air Act. According to EPA, the State of Hawai‘i has been designated as an attainment area for all criteria pollutants. Therefore, in general, Honolulu, where the project area is located, is considered to have good air quality condition.

4.5.2 Potential Impacts

Air pollution can cause harm to human health and the environment when pollutant concentrations are high enough. Air quality is generally affected by local climate and the amount of pollution-generating activities in the area.

4.5.2.1 Short-term Impacts

The ambient air quality at the project area may be impacted by two types of short-term air pollution: fugitive dust and exhaust fume. Fugitive dust would likely be generated from construction vehicle movements as well as construction activities, such as demolition and excavation. Another source of short-term air pollution is the exhaust fume generated by the movement of both on-site and on-road construction vehicles and equipment operation. However, it is anticipated that such emission generating activities would not occur at the same location more than five years. Therefore, according to

CFR 93.123(c)(5), CO, PM₁₀, and PM_{2.5} localized hot spot analyses are not required to consider construction-related activities which cause temporary increases in emissions. Furthermore, the application of the BMPs, such as watering down the construction site, reducing truck idling time, utilizing new equipment, etc., can reduce the impacts caused from temporary construction activities. The proposed action would implement these measures to the maximum extent practicable, thus resulting in minor impacts to air quality in the short term. Impacts to air quality are minor as they would be low in intensity, primarily regional in extent (e.g., fugitive dust, exhaust fumes), and affect common resources, rather than unique or important resources.

4.5.2.2 Long-term Impacts

In the long term, the air quality could be impacted by increased vehicle emissions as a result of potentially higher volume of vehicles visiting the project area, especially when events are held on site. Vehicle emissions are highest during engine idling time because the air flow around the vehicle could be insufficient for the exhaust to be dissipated.

Primary vehicle-related air pollutants with potential of local impacts are CO. PM₁₀ and PM_{2.5} can also be of concern from mobile sources, especially from heavy-duty diesel trucks and buses. Lead emissions from gasoline-fueled vehicles have been virtually eliminated through the use of unleaded gasoline, and are no longer of concern. Potential emissions of SO₂ from mobile sources are insignificant in comparison with non-mobile emission sources. Therefore, potential air quality impacts of vehicular emissions of CO and PM (PM₁₀ and PM_{2.5}) are of possible concern associated with the change in traffic patterns as a result of the proposed action.

Although the Honolulu area is in an attainment area for localized pollutants, CO and PM, to satisfy the HEPA requirements, the EA elects to follow the same guidelines and procedures established for nonattainment pollutants in 40 CFR 93.123 through an analysis addressing localized CO, PM₁₀, and PM_{2.5} concentrations.

The guideline identifies certain categories of projects to be considered for a CO hot spot analysis (40 CFR 93.123[b][1]) including for projects affecting intersections that are at Level-of-Service (LOS) D, E, or F, or those that would change to LOS D, E, or F because of increased traffic volumes related to the project. Based on the traffic analysis results at each affected intersections around the project site, the only intersection with potential to have LOS D, E, or F conditions with increased traffic under the 2030 build condition is the intersection of South King Street/Victoria Street. Under the proposed condition, the intersection LOS for through traffic would change from D to F during weekend peak hours. However, the traffic study shows that with the proposed design change at the intersection, the LOS would remain the same as the existing condition and traffic volume at this intersection would remain in comparable levels. Furthermore, such volume increases are based on comparisons of existing and future 2030 with project condition, and it is anticipated that the CO emissions at this intersection as a result of increased volume would be offset by the implementation of federal vehicle emission control programs through 2030 in the future. Therefore, the CO microscale impact analysis is not warranted resulting in no significant CO impacts.

For PM (PM₁₀, and PM_{2.5}) localized hot spot analysis, the guideline also identifies several categories of such projects (40 CFR 93.123[b][1]) focusing on the change of vehicle mix and volume involving significant increase in diesel vehicle volume. Since the project would not induce a significant increase in diesel vehicular traffic, no PM microscale impact analysis is warranted. Therefore, it can be concluded

that the proposed action would not cause or contribute to a CO or PM (PM_{2.5} or PM₁₀) NAAQS or HAAQS violation in the project area.

The proposed action's indirect impacts on air quality include those that may result from increased usage of the facilities, and a corresponding increase in traffic. These indirect impacts and mitigation measures are further discussed in the Transportation Section of the EA, Section 4.7. Impacts to air quality are minor as they are relatively low in intensity, and affect common resources.

4.6 Land Use

4.6.1 Affected Environment

The current land use in the project area and its vicinity is guided by the land use plans set forth by the CCH, as well as those set forth by the HCDA, described herein. While the property is owned by the CCH, land use at the Blaisdell Center is zoned by HCDA as "public use". In conformance with the public use designation, the Blaisdell Center serves as a gathering place for the community to attend concerts and shows, exhibitions and festivals, graduations, outdoor markets, meetings, and other important cultural attractions. The current land use in the area's vicinity can be described as mixed-use, as the area contains a diverse range of public, residential, commercial, civic, and light industrial usage (Figure 31). Land use is mixed both horizontally and vertically. Within the project area there are high-rise commercial and residential towers, medical facilities, schools, civic and cultural buildings, one-story commercial businesses, warehouses, and restaurants. Many buildings can be dated to when the area was first developed in the early 20th century, while other buildings are recent developments that are part of the area's redevelopment plan adopted in 2011 (HCDA 2011).

Since the adoption of the HCDA Mauka Area Plan, the area has experienced significant growth and redevelopment interest. Most of the redevelopment interest is located makai of the project area, where high-rise condominium construction has acted as a catalyst for growth. This development is complemented by large-scale retail and business developments, such as the recent expansion of Ala Moana Center; the mixed-use expanded retail and entertainment corridor along Auahi Street; and the future routing of the rail system through the area. A rail station would be located two blocks makai of the project area, further establishing the mixed land use envisioned for the area.

4.6.1.1 State Land Use Regulations

Pursuant to Act 153, Session Laws of Hawai'i (SLH) 1976, authority was granted by the State Legislature to the HCDA to supersede the application of county land use ordinances in special "Community Development" districts. Under the act, HCDA, a state agency, has the authority to regulate development, zoning, and land use within these districts. These districts include the development districts of Kaka'ako, Kalaeloa, and He'eia Harbor area. The project area is located in the Mauka Area of HCDA's Kaka'ako Community Development District and is subject to HCDA's Mauka Area Plan and Rules (HCDA 2011, 2005). Design guidance and principles are provided in the Mauka Area Plan, general themes for development emphasize:

- Outstanding pedestrian environment
- A network of green streets
- Enhancing the urban character
- Providing for maximum road connections
- A strong mauka-makai linkage

- Supporting the small-lot, mixed-use pattern of central Kaka’ako
- Supporting HCDA transit-oriented development (TOD)

The project area is also designated by HCDA as part of the Thomas Square Neighborhood. This designation is part of the Regulating Plan for the Mauka Area. The purpose of the Regulating Plan is to designate locations where different building form standards apply.

The Thomas Square Neighborhood is centered on Thomas Square, a community park with significant cultural and historic importance (EDAW, Inc. 2009). Some of Honolulu’s major cultural and educational venues – the Honolulu Museum of Art facilities, the Blaisdell Center, and McKinley High School – are located in the vicinity of Thomas Square. Kaka’ako Community Development District Rules for the Mauka Area state, “the Thomas Square zone would continue as a civic focal point for the Mauka Area through its civic buildings and uses facilitating educational, performance and entertainment endeavors. Buildings would provide large setbacks with complementary mature landscaping” (HAR §15-217).

In addition to land use designations, viewshed designations also play an important part of maintaining the character and sense of place within the Kaka’ako Mauka Area. Ward Avenue marks the ‘Ewa boundary of the project area and is also designated a “View Corridor” in the Mauka Area Plan. View corridors are proposed in the Mauka Area Plan to preserve views and visual assets and integrate new development into the existing urban skylines in a consistent and harmonious way to enhance the quality of the community.

4.6.1.2 City Land Use Regulations

Due to its importance as the cultural and arts center of Honolulu, the project area is designated by the CCH as a Cultural District. The Cultural District is anchored by the aforementioned Honolulu Museum of Art mauka of the project area along Beretania Street, Thomas Square, and extends down to Kapi’olani encompassing the entire Blaisdell Center property.

The CCH also established the “Thomas Square/Honolulu Academy of Arts Special District”, recognizing the historic and aesthetic importance of the area. This district “establishes building height, setback, landscaping and other design controls to protect the character of the area” (HCDA 2011). The boundary of this City Special District extends south of King Street to encompass the Concert Hall of the Blaisdell Center, as well as open space areas contiguous to Ward Avenue extending down to Kapi’olani Boulevard.

It should be noted that while the project area itself is fully governed by land use regulations of HCDA’s Kaka’ako Community Development District Mauka Area Plan, the area just mauka of the project area is outside HCDA jurisdiction, and therefore within the CCH’s zoning requirements. Thomas Square, directly mauka of the Blaisdell Concert Hall, is a general preservation zoning district (P-2); the areas abutting the park are zoned Community Business Mixed Use (BMX-3); and other areas surrounding the project area have zoning designations for Community Business (B-2) and Medium Density Apartments (A-2) (Figure 32).

Figure 31. Hawai'i Community Development Authority Kaka'ako Community Development District, Mauka Area Neighborhoods

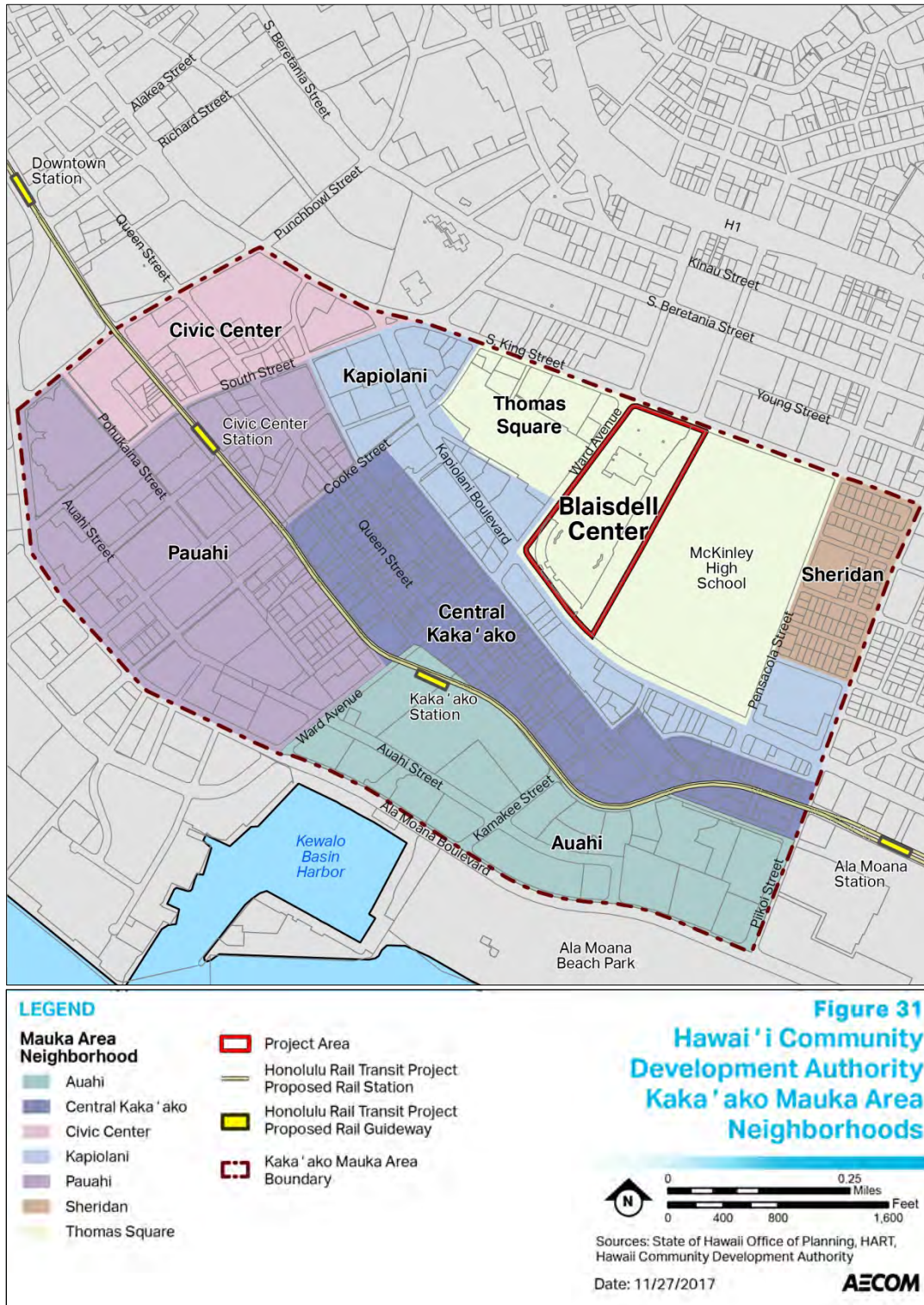
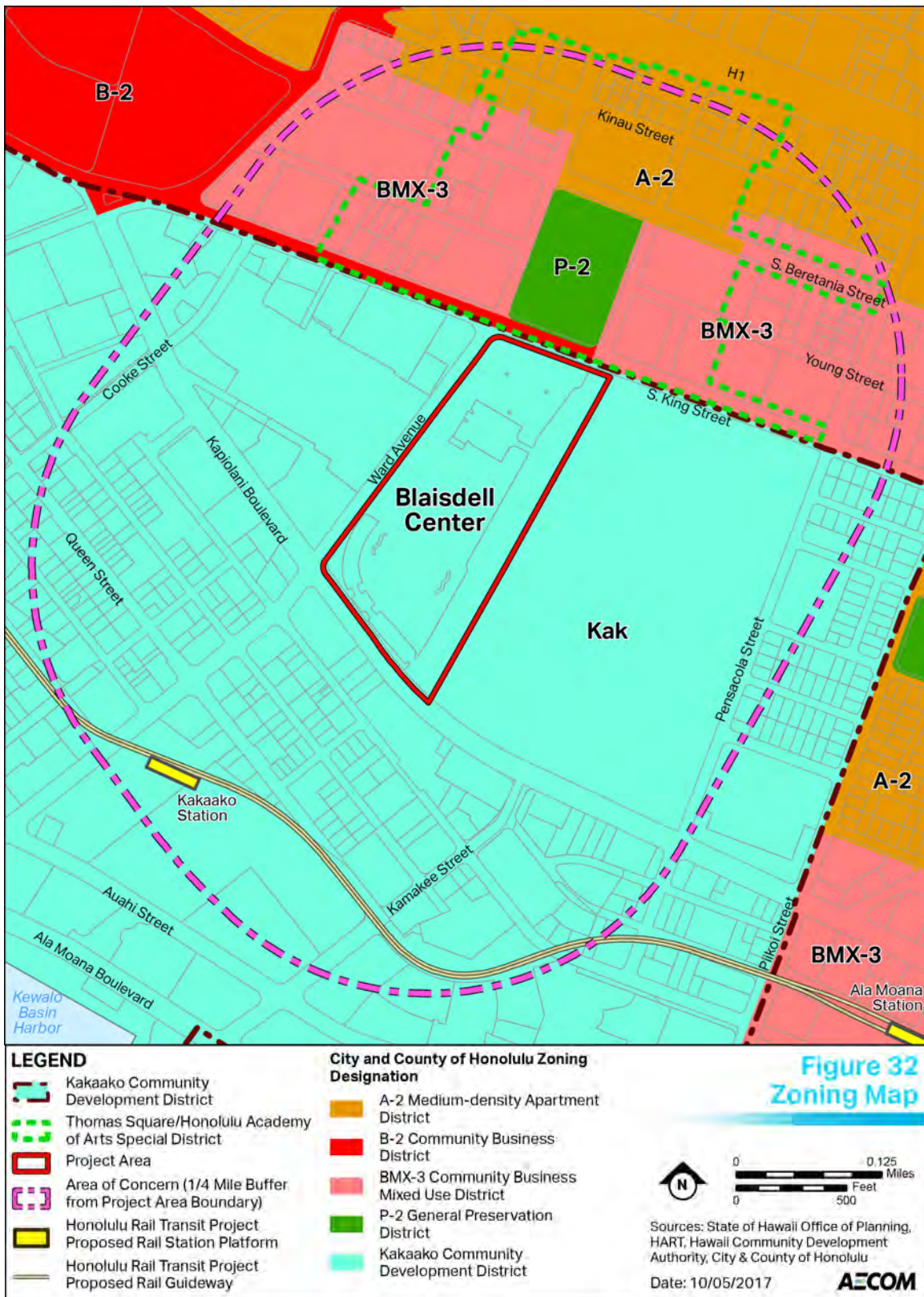


Figure 32. City and County of Honolulu Zoning designations



4.6.2 Potential Impacts

A significant impact to current land use would include any development, or redevelopment that significantly changes the existing surroundings or character of an area. A significant impact would also include any development that does not conform to the land-use plans and designations set forward by the planning authorities. Examples of a significant land use impact may include the development of industrial facilities such as a large power plant within a business district; the development of a high-rise condominium in a residential neighborhood where buildings do not exceed three stories; or the conversion of agricultural land to a residential neighborhood.

4.6.2.1 Short-term Impacts

In the short term, while construction activities are being carried out, the permitted activities would cease. However, construction activities would not alter the existing and planned use of the property, which would be restored when construction is complete. Therefore, no significant impacts would occur to land use as a result of the proposed action.

Short-term impacts to land-use can be classified as minor, as the facility could not fulfill its intended use as public space. The impact is low in intensity, limited to the project area, and affects a common resource.

4.6.2.2 Long-term Impacts

The final outcome of the planned redevelopment ultimately does not change the role of the Blaisdell Center as the city's (and state's) flagship public gathering facility. The venue would still serve as a place for the community to gather and enjoy concerts and shows, exhibitions and festivals, graduations, meetings, and other important cultural attractions. The purpose of the proposed project is ultimately to enhance this purpose, and allow for more plentiful and diverse events to occur, ultimately enhancing the sense of place felt by the community when enjoying the facilities. The outcome of the project would ultimately enhance the aesthetics and functionality of the area while resulting in modern, technically advanced facilities able to attract current entertainment and events of interest to the local population.

The impact of the project on the designated view corridor located on Ward Avenue 'Ewa boundary of the project area is discussed further in Section 4.9, Visual Resources. All plan proposals would be in conformance with current land-use designations outlined by both the CCH as well as those set forward by HCDA's Kaka'ako Mauka Area Plan and Rules. The project would comply with the rules set by HCDA Mauka Area Plan and would obtain the necessary improvement and development permit required by HCDA. Master Plan Implementation ultimately improves the intended land-use as a public space, thus the project would have a beneficial impact long-term.

4.7 Transportation

After the Master Plan was finalized in March 2018, additional discussions pertaining to surface transportation features were conducted. Table 11 shows the features that were altered from the Master Plan. A Traffic Impact Assessment Report (TIAR) was performed based on these altered features and is appended to this EA as Appendix C.

Table 11. Features Altered from Master Plan

Street	Feature	Master Plan (March 2018)	Schematic Design (October 2018)
King Street	Passenger loading zone	Displace existing bus stop	None
	Channelized right-turn lane	Eliminated	Eliminated
	Diamond Head bound lanes turning into Blaisdell Center	One exclusive right-turn lane and one shared through/right-lane	One exclusive right-turn lane
Ward Avenue	Mid-block crosswalks between S. King Street and Kapi'olani Boulevard	Two-unsignalized mid-block	One-signalized mid-block
	Driveway	Eliminated	Eliminated
	Passenger loading zone	Eliminated	Loading bay for Transportation Network and taxi companies only
	Bus stop bays	None-bus stops in travel lane.	One standalone, one integrated with right-turn lane to S. King Street
	Bike facilities	Makai-bound bike lane and two-way cycle track on Koko Head sidewalk area	Makai and mauka-bound buffered bike lanes
Kapiolani Boulevard	Vehicle dropoff bays	Two	None
Victoria Street	Kapiolani Boulevard ingress/egress	Two/two lanes	One/two lanes
	King Street ingress/egress	Six lanes—4 ingress/2 egress	Five lanes—2 ingress/3 egress
	King Street and Kapiolani Boulevard connector	Two-lane, undivided roadway	Two-lane, undivided roadway
	Parking operations	Pay before you leave system	Pay before you leave system

4.7.1 Affected Environment

The Blaisdell Center is located on the fringe of the Civic Center area of Honolulu. South King Street, Ward Avenue, and Kapi'olani Boulevard are roadways adjacent to the Blaisdell Center. Victoria Street intersects with South King Street and provides direct access into the site. Kamake'e Street intersects Kapi'olani Boulevard Diamond Head of the Blaisdell Center and provides access for the Victoria-Ward development area. The TIAR describes the configurations of these roadways and key intersections in greater detail.

Primary access to the Blaisdell Center occurs at the South King Street/Victoria Street intersection with secondary access from Kapi'olani Boulevard. Access to the Box Office and vendor and performer parking

is provided from Ward Avenue. Passenger drop-off areas are located on South King Street and on Ward Avenue.

The parking at the Blaisdell Center is comprised of at-grade surface and garage parking. There are 1,508 parking stalls on-site at the Blaisdell Center. In addition to parking for events, weekday daytime parking is offered for employees of the CCH and surrounding businesses. Weekend parking is reserved for attendees of Blaisdell Center events only. There is also a service parking lot located between the Blaisdell Concert Hall and the Exhibition Hall that is used as a loading zone and performer and vendor parking. During events, Elite Parking, the company that manages parking at the Blaisdell Center, operates valet parking, where currently approximately 120 to 140 vehicles utilize this service. Overflow parking is absorbed within the surrounding areas for large events.

4.7.1.1 Existing Traffic Volumes

Existing Year 2017 weekday AM and PM peak traffic periods were counted on Wednesday, October 18, 2017. The AM peak hour was identified to occur between 7:15 a.m. and 8:15 a.m., and the PM peak hour was identified to occur between 4:45 p.m. and 5:45 p.m. The Year 2017 weekday peak traffic period also included a weekday event traffic period, which occurred near the end of the PM peak traffic period count. The weekday event peak hour was identified to occur between 6:00 p.m. and 7:00 p.m. Figure 33 summarizes the vehicular turning movement counts for the existing weekday AM and PM peak hour time periods.

Pedestrian counts were conducted at the South King Street/Victoria Street intersection. During the weekday peak hour periods, the heaviest pedestrian volumes were observed to be those crossing Victoria Street and the driveway to the Blaisdell Center. In the AM peak hour, pedestrians crossing these roadways were more than double the volume crossing South King Street. There was a total of 82 pedestrians per hour headed in the 'Ewa to Diamond Head direction and 25 pedestrians per hour in the Diamond Head to 'Ewa direction crossing Victoria Street and the entrance to the Blaisdell Center. There was a total of 25 pedestrians per hour in the makai to mauka direction and 22 pedestrians per hour in the mauka to makai direction crossing South King Street. During the PM peak hour, the pedestrian volumes crossing Victoria Street and the entrance to the Blaisdell Center were still found to be larger than the volume crossing South King Street. The pedestrian volumes were 54 pedestrians per hour in the 'Ewa to Diamond Head direction, and 41 pedestrians per hour in the Diamond Head to 'Ewa direction. Crossing South King Street, the pedestrian volumes were 36 pedestrians per hour in the makai to mauka direction, and 28 pedestrians per hour in the mauka to makai direction.

An existing Year 2017 weekend event count was conducted on Sunday, October 15, 2017. All three of the Blaisdell Center's major facilities had events either starting or ending during the data collection. The event PM peak hour was identified to occur between 3:00 p.m. and 4:00 p.m. Figure 35 summarizes the vehicular counts for the weekend peak hour time period.

The heaviest pedestrian traffic during the weekend event count was found to be crossing South King Street. The pedestrian volume was 284 pedestrians per hour in the 'Ewa-side crosswalk and 29 pedestrians per hour in the Diamond Head-side crosswalk. The total of pedestrians crossing South King Street in the makai to mauka direction was 35 pedestrians per hour. The pedestrian volume crossing Victoria Street and the entrance was 135 pedestrians per hour in the Diamond Head to 'Ewa direction and 28 pedestrians per hour in the 'Ewa to Diamond Head direction. This particular pattern of pedestrian volumes is indicative that the peak count occurred at the time that most events were starting, reflecting an orientation of pedestrian traffic toward the Blaisdell Center. The large magnitude of pedestrian traffic

on the weekend event peak hour versus the weekday PM peak hour correlates with the event activity at the Blaisdell Center during those time periods. The weekend time period surveyed a condition with all three major venues active, while the weekday time period surveyed a condition with only one of the major venues active. The former condition resulted in a full parking situation, with attendees using alternative parking areas off-site, hence leading to greater pedestrian traffic.

4.7.1.2 Existing Intersection Operating Conditions

The existing Year 2017 traffic turning movements were used to evaluate traffic operations at the following intersections:

- South King Street and Victoria Street
- South King Street and Ward Avenue
- Kapi’olani Boulevard and Ward Avenue
- Kapi’olani Boulevard and Blaisdell driveway
- Kapi’olani Boulevard and Kamake’e Street

Detailed descriptions of these intersection configurations are contained in the TIAR (Appendix C).

The signalized intersections were analyzed using the method described in Chapter 16 of the 2010 Highway Capacity Manual through the 2010 Highway Capacity Software. The LOS for signalized intersections is a qualitative index that references a performance measure such as intersection delay to express the quality of traffic service. The traffic turning movement volumes that were used to evaluate intersection operations are documented in the Transportation Impact Analysis Report for the Blaisdell Center Master Plan.

Table 12 summarizes the existing Year 2017 weekday AM and PM commuter peak hour operations at the four signalized intersections of South King Street/Victoria Street, South King Street/Ward Avenue, Kapi’olani Boulevard/Ward Avenue, and Kapi’olani Boulevard/Kamake’e Street.

Table 12. Existing Weekday Peak Hour Intersection Operations

Intersection	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
South King Street/Victoria Street	21.4	C	13.5	B
South King Street/Ward Avenue	20.5	C	28.2	C
Kapi’olani Boulevard/Ward Avenue	40.2	D	36.7	D
Kapi’olani Boulevard/Kamake’e Street	10.8	B	11.3	B

Notes: Based on counts conducted on: Wednesday, 10/18/17.

AM Peak Hour: 7:15 a.m.–8:15 a.m., PM Peak Hour: 4:45 p.m.–5:45 p.m.

sec/veh = seconds per vehicle

As shown in Table 12, all intersections evaluated operate at LOS D or better during both peak hours which indicates acceptable operations for urban peak hour conditions.

Table 13. Existing Weekday Event Peak Hour Intersection Operations

Intersection	Event PM Peak Hour	
	Delay (sec/veh)	LOS
South King Street/Victoria Street	13.5	B
South King Street/Ward Avenue	21.1	C
Kapi'olani Boulevard/Ward Avenue	56.1	E
Kapi'olani Boulevard/Kamake'e Street	13.4	B

Notes: Based on counts conducted on: Wednesday, 10/18/17.

Event Peak Hour: 6:00 p.m.–7:00 p.m.

sec/veh = seconds per vehicle

Table 13 summarizes the intersection operations during the weekend event peak hour at the same analysis intersections.

As shown in the South King Street/Victoria Street, South King Street/Ward Avenue, and Kapi'olani Boulevard/Kamake'e Street intersections operate at LOS C or better during the event peak. The Kapi'olani Boulevard/Ward Avenue intersection operates at LOS E, indicating significant delay and congestion, not unusual for a high demand urban intersection.

Table 14. Existing Weekend Peak Hour Intersection Operations

Intersection	Event PM Peak Hour	
	Delay (sec/veh)	LOS
South King Street/Victoria Street	14.7	B
South King Street/Ward Avenue	18.9	B
Kapi'olani Boulevard/Ward Avenue	40.1	D
Kapi'olani Boulevard/Kamake'e Street	10.9	B

Note: Based on counts conducted on: Sunday, 10/15/17

Weekend Event Peak Hour: 3:00 p.m.–4:00 p.m.

sec/veh = seconds per vehicle

As shown in Table 14, the overall intersection operations at South King Street/Victoria Street, South King Street/Ward Avenue, and Kapi'olani Boulevard/Kamake'e Street operate well at LOS B. The Kapi'olani Boulevard/Ward Avenue intersection operates at LOS D, consistently the most heavily loaded intersection in the study area.

4.7.1.3 Existing Transit Facilities

A full description of the bus routes and bus stops serving the Blaisdell Center are contained in the TIAR for the Blaisdell Master Plan located in Appendix C.

The bus stops at or near the Blaisdell Center are served by Routes 1, 1L, 2, 2L, 3, 9, 13, 15, 17, 18, 40, 52, 53, 62, A, C, and E.

Routes 1, 1L, 2, and 2L serve the South King Street/South Beretania Street corridor in the Blaisdell area. These routes serve Blaisdell primarily via Stop #135 on the makai side of South King Street, directly in front of Blaisdell Concert Hall. Routes 3, 9, 13, 40, 52, 53, and 62 serve the Kapi'olani Boulevard corridor and utilize the stops near the Kapi'olani Boulevard/Ward Avenue intersection. These routes serve the Stop #433 on the mauka side of Kapi'olani Boulevard for 'Ewa-bound buses and Stop #598 on the makai side that serve the Diamond Head-bound buses. City Express Route A and County Express Routes C and E also serve the Kapi'olani Boulevard corridor but utilize stops at the Kapi'olani Boulevard corridor but utilize stops at the Kapi'olani Boulevard/Kamake'e Street intersection. Stop #431 on the mauka side serves 'Ewa-bound buses and Stop #600 on the makai side serves the Diamond Head-bound buses. Route 15 provides access to the upper Makiki area and travels on Ward Avenue. There are two bus stops on the 'Ewa side of Ward Avenue (Stop #3909 and Stop #3910) between South King Street and Kapi'olani Boulevard. Routes 17 and 18 also provide access to Makiki, but service bus stops further away from Blaisdell on Pensacola Street. The three stops that serve these routes are on the 'Ewa side of Pensacola Street between South King Street and Kapi'olani Boulevard (Stop #1375, Stop #1376, and Stop #2099).

4.7.1.4 Existing Bicycle Facilities

Opened in December 2014, the King Street Cycle Track is a two-way bicycle facility located on the mauka side of South King Street adjacent to Thomas Square. The cycle track follows a 'Ewa-Diamond Head route between Alapa'i Street and Isenberg Street.

There are currently three Bikeshare Hawai'i (Biki) stations at the Blaisdell Center, though they continue to expand their services and that number could increase. One station is located on the 'Ewa side facing Ward Avenue, one on the makai side facing Kapi'olani Boulevard, and one on the mauka side facing South King Street.

4.7.1.5 Existing Pedestrian Facilities

Roadways in the vicinity of the Blaisdell Center have sidewalks on both sides of the street. Crosswalks exist at all intersections evaluated in this TIAR. Crosswalks also exist across the Blaisdell Center entrances and exits, except for the Kapi'olani Boulevard driveway. There are also two mid-block, unsignalized crosswalks on Ward Avenue between Kapi'olani Boulevard and South King Street.

During heavy pedestrian events, pedestrians traveling along the sidewalk located makai of South King Street and vehicles on South King Street turning into Blaisdell Center at Victoria Street often come into conflict. Part of this issue is caused by the channelized right-turn lane into the Blaisdell Center formed by a "pork chop" island. This channelized right-turn lane is accessed via a driveway as opposed to a curb cut like the rest of the Blaisdell Center driveway at Victoria Street.

4.7.2 Potential Impacts

4.7.2.1 Short-term Impacts

It is estimated that if construction of the Blaisdell Center renovation can begin by the year 2020, the renovations could be complete within a few years. Therefore, the short-term transportation impact evaluation is focused on the impacts during construction of the Blaisdell Center renovations.

Figure 33. Existing Year 2017 Weekday AM and PM Peak Hour Traffic Volumes

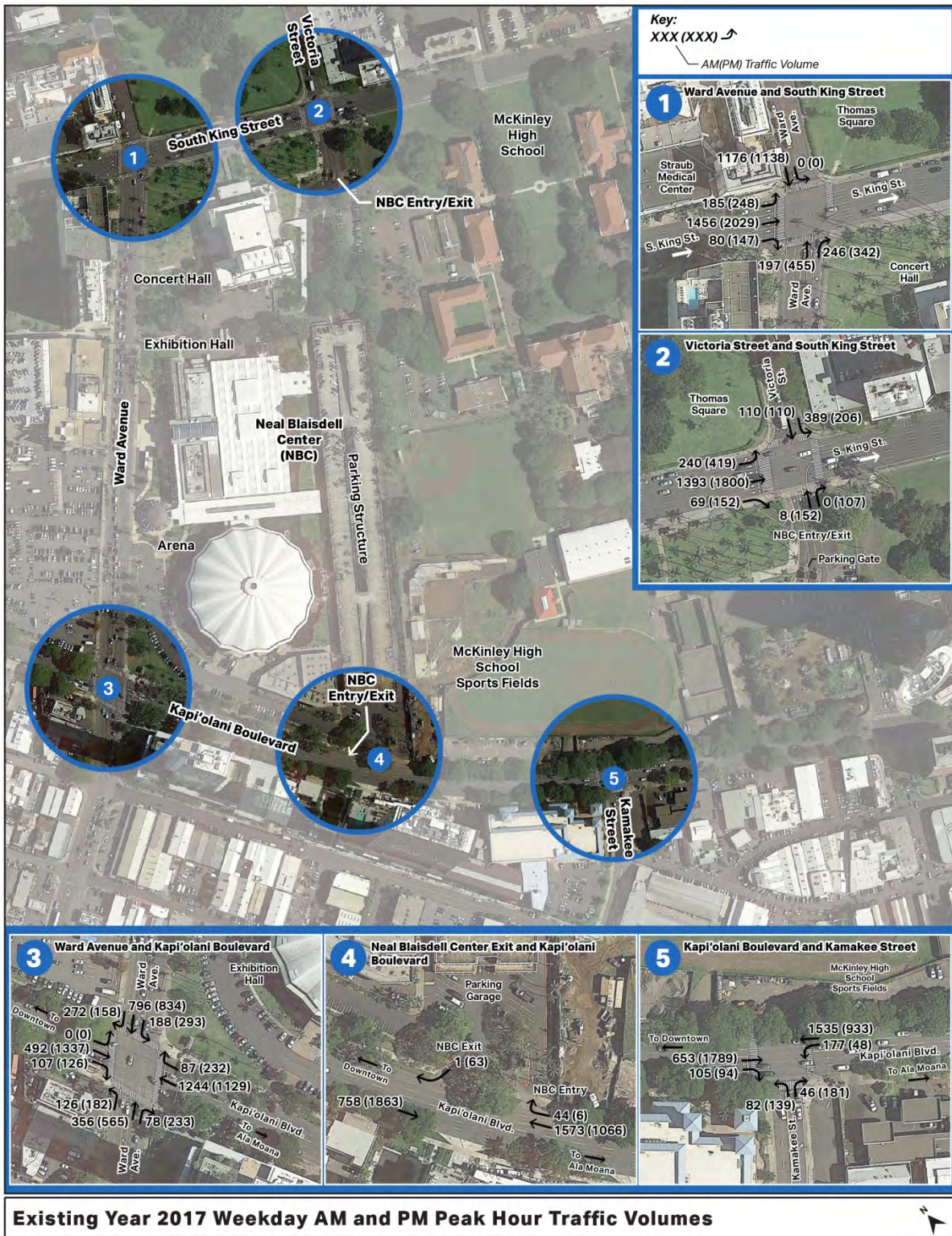


Figure 34. Existing Year 2017 Weekday Event Peak Hour Traffic Volumes

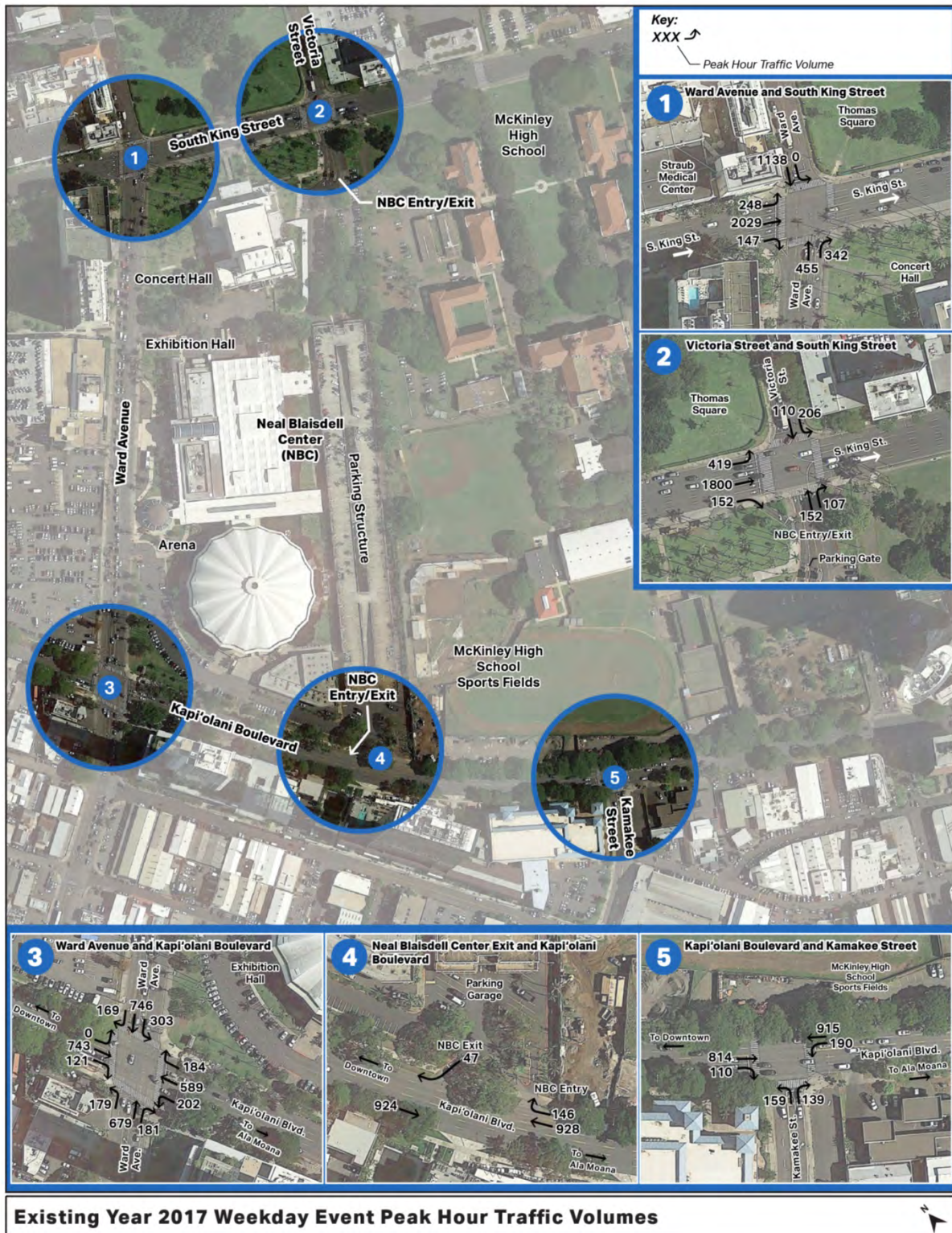
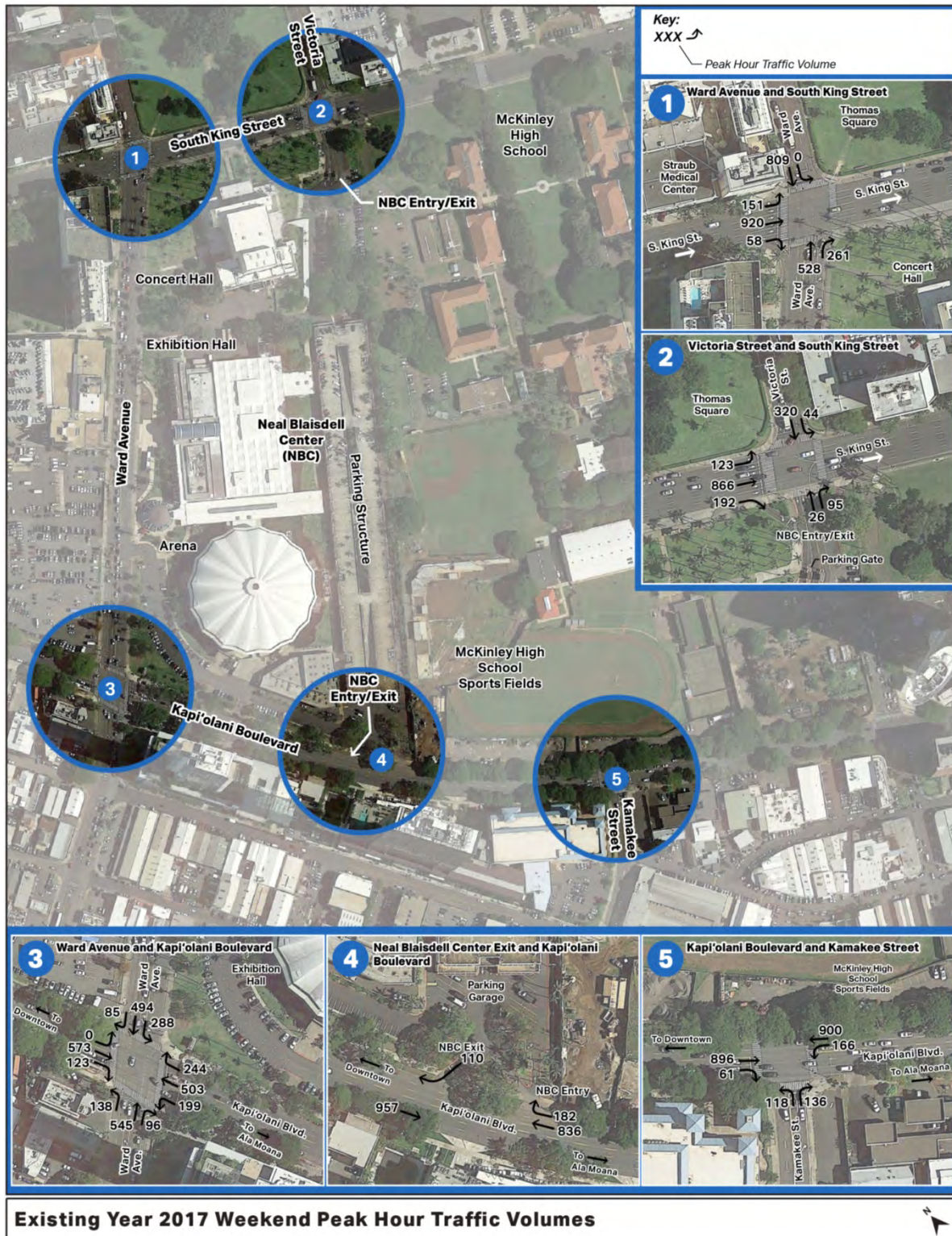


Figure 35. Existing Year 2017 Weekend Peak Hour Traffic Volumes



Weekday Daytime Parking

The major short-term transportation impact of the Blaisdell Center renovation would be the loss of parking during construction. This evaluation assumes that the Blaisdell Center would close completely during construction with no events being held at the site. With no events at the Blaisdell Center, the loss of event parking would not affect the surrounding area. It is not known where the events currently held at the Blaisdell Center would move to while the facilities are closed, but it is reasonable to assume that there would be added activity at replacement venues and that those replacement venues would handle parking appropriately.

In addition to providing parking for events, the Blaisdell Center provides employee parking for the CCH and surrounding businesses during the daytime on weekdays. Employee parking is not provided during the weekday evenings or during the weekend. Elite Parking, the group that manages parking at the Blaisdell Center, currently offers parking to the employees of several of the surrounding businesses such as HECO and The Queen's Medical Center in addition to the CCH. Elite Parking also offers monthly and daily parking to individuals. There are approximately 700 registered monthly parkers, and an average of about 450 of the 700 park at the Blaisdell Center on a typical day. There are approximately 600 vehicles a day that use daily parking facilities on site. Weekday daytime parkers would be displaced by the construction; however, there is some experience with this displacement. When there are major daytime events at the Blaisdell Center, daily parkers are restricted from parking on-site, so parking is available for event parking. This occurs infrequently, but when it does occur, the weekday daytime parkers are required to find alternative parking or to use alternative transportation modes. The difference is the duration of the current displacements rarely last for more than a day. During the construction period, however, this displacement would last for a few years. It is reasonable to assume in this situation that the weekday daytime parkers would need to find alternative parking elsewhere.

If the current weekday daytime parkers cannot find alternative parking, they would need to consider using alternative transportation modes. Fortunately, the transit system is very robust in the vicinity of the Blaisdell Center. The project area is served by Routes 1, 1L, 2, 2L, A, C, E, 3, 9, 13, 40, 52, 53, 62, 15, 17, and 18. Routes 1, 1L, 2, and 2L serve the South King Street/South Beretania Street corridor in the area. City Express Route A, Country Express Routes C and E, and Local Routes 3, 9, 13, 40, 52, 53, and 62 serve the Kapi'olani Boulevard corridor. Routes 15, 17, and 18 provide access to the Makiki area. The transit vehicles on these routes have the capacity to accommodate potential increase in demand. The King Street Cycle Track provides a strong bicycle backbone along South King Street and pedestrian facilities in the area are excellent.

Construction Vehicle Traffic

Construction vehicle and truck movements to and from the project site may impact traffic operations on roadways surrounding the Blaisdell Center during times of intense construction activity. Standard practice is to direct major truck activity to off-peak time periods to minimize impact to commuter peak period traffic operations. It is expected that practice would be applied during construction. Additionally, during the construction period, it is expected that the contractor would be instructed that no travel lanes and intersection movements in the project vicinity would be closed except for unusual circumstances. Bus stops as well as pedestrian facilities in the project vicinity are not expected to be affected. The King Street Cycle Track adjacent to Thomas Square would not be affected. The three Biki stations located at the Blaisdell Center may at some point during construction be physically affected. Therefore, Biki may want to adjust service during the construction period to align with demand.

For the reasons described above, short-term impacts to weekday daytime parking and from construction vehicle traffic are expected to be moderate, as the loss in parking spaces during construction is of moderate intensity and would have a moderate effect on parking facilities at a regional level.

4.7.2.2 Long-term Impacts

Long-term transportation impacts for the Blaisdell Center renovation were assessed for the year 2030. Given the relatively short time period between the potential year of completion and the year 2030 time frame used for the long-term transportation impact evaluation, it is judged that the Year 2030 analyses would be the most appropriate to identify the transportation impacts of the completed Blaisdell Center renovation.

Within the area, access to the site, vehicular and pedestrian circulation within the site, parking, and the passenger/freight loading operations would be affected by the changes proposed in the Master Plan. Access to the site along South King Street and Kapi'olani Boulevard would remain, while the access to parking from Ward Avenue would be removed. Passenger loading areas along South King Street and Ward Avenue would be improved and a small special-purpose passenger loading zone would be added along Kapi'olani Boulevard. Revisions to parking operations are proposed to expedite entry into the site, reducing impacts to surrounding roadways. These components, in turn, affect vehicular, pedestrian, and bicycle flow around the site and on the routes leading up to the site.

Future Roadway Configurations

Roadway conditions are not expected to change significantly from the existing roadway configuration, with the exception of Ward Avenue. Currently, the City and County of Honolulu Department of Transportation Services (DTS) is planning to install bike lanes on Ward Avenue between South King Street and Kapi'olani Boulevard. This improvement will be discussed in more detail in the section on pedestrian and bicycle facilities, but it would require the removal of a small amount of on-street parallel parking on both sides of Ward Avenue. This improvement is expected to be implemented within the year 2020 time frame.

The Blaisdell Master Plan also proposes a minor change on South King Street at the Blaisdell Driveway/Victoria Street intersection. There is currently a city bus stop pull out on South King Street in front of the Blaisdell Center Concert Hall. It is proposed to extend this bus pull out to the Blaisdell Center's Driveway, thereby creating an exclusive right-turn lane into Blaisdell Center.

DTS also plans to implement two new bus bays along the Diamond Head side of Ward Avenue, one near Kapi'olani Boulevard and the other near South King Street. The Blaisdell Center Master Plan provides enough space to accommodate the bus bays.

Right-turn lanes from mauka-bound Ward Avenue to Diamond Head bound South King Street and from Diamond Head-bound South King Street into the Blaisdell driveway are also modified. In the case of Ward Avenue, the planned exclusive right-turn lane would be lengthened to provide the bus bay planned by DTS and in the case of South King Street, the existing bus bay would be extended to the Blaisdell Driveway to create an exclusive right-turn lane. Both right-turn lanes would be able to accommodate approximately 10 vehicles, which is adequate to handle the projected vehicle queues.

The Blaisdell Master Plan also proposes a passenger drop-off/pick-up pull out on the Diamond Head side of Ward Avenue, between the two bus stops.

A more direct driveway through the Blaisdell site is proposed to connect South King Street and Kapi'olani Boulevard and referred to as the "Victoria Street extension". While this direct driveway may be open to general traffic during non-event hours, it is not meant to be a public roadway and would be a two-lane, undivided road with one-lane in each direction. It is planned for this driveway to incorporate traffic calming measures such as raised crosswalks or speed humps to maintain low vehicular speeds.

Projected Year 2030 Traffic Volumes

Examination of historical trends of traffic volumes along the roadways surrounding the Blaisdell Center indicates a stable situation with very little growth in traffic volumes. This trend is expected to continue in the future; therefore, existing peak traffic volumes are used to represent future 2030 background traffic volumes not associated with the Blaisdell Center. A more detailed discussion of this assessment is included in the TIAR (Appendix C).

The number of parking spaces available to the general public was used to estimate future Blaisdell Center-generated traffic volumes. The Blaisdell Center Master Plan proposes an increase in the number of parking stalls on-site from 1,508 to 2,142. However, this number includes the ground level parking stalls, designated for use by vendors, performers, and delivery vehicles. The total number of parking stalls available to the general public is 2,035 parking stalls, with 718 stalls in the mauka garage and 1,317 stalls in the makai garage. This parking count was used to estimate the peak Blaisdell Center-generated traffic based on models developed by Walker Parking Consultants for the Blaisdell Center project. The traffic generated by the mauka and makai parking garages were estimated independently, since it was assumed that traffic in each garage would be oriented to South King Street for the mauka garage and Kapi'olani Boulevard for the makai garage.

The estimated vehicular volume was assumed to be distributed over the two-hours prior to the start of an event with 55 percent arriving in the hour immediately before the event and 45 percent arriving during the hour starting two hours preceding the event.

Traffic generated by Blaisdell Center are directionally distributed based on traffic patterns that result from the replacement of the existing parking garage with two semi-independent parking garages oriented separately to South King Street and to Kapi'olani Boulevard. The primary access point for the makai garage, which is the larger of the two, is on Kapi'olani Boulevard. The mauka garage, which is accessible from the South King Street/Victoria Street intersection, has a little more than half the number of stalls available in the makai garage. This configuration results in the proportion of the total peak hour traffic entering Blaisdell Center from South King Street decreasing from the current traffic pattern.

Figure 36 illustrates projected paths for vehicles accessing the mauka and makai parking garages.

The future background and future Blaisdell Center-generated traffic were combined to create the future Year 2030 traffic volumes. Figure 37, Figure 38, and Figure 39. illustrate the projected Year 2030 weekday AM and PM peak hour traffic volumes, the projected Year 2030 weekday event peak hour traffic volumes, and the projected Year 2030 weekend PM event peak hour traffic volumes, respectively.

Figure 36. Projected Future Blaisdell Center Access Traffic Patterns

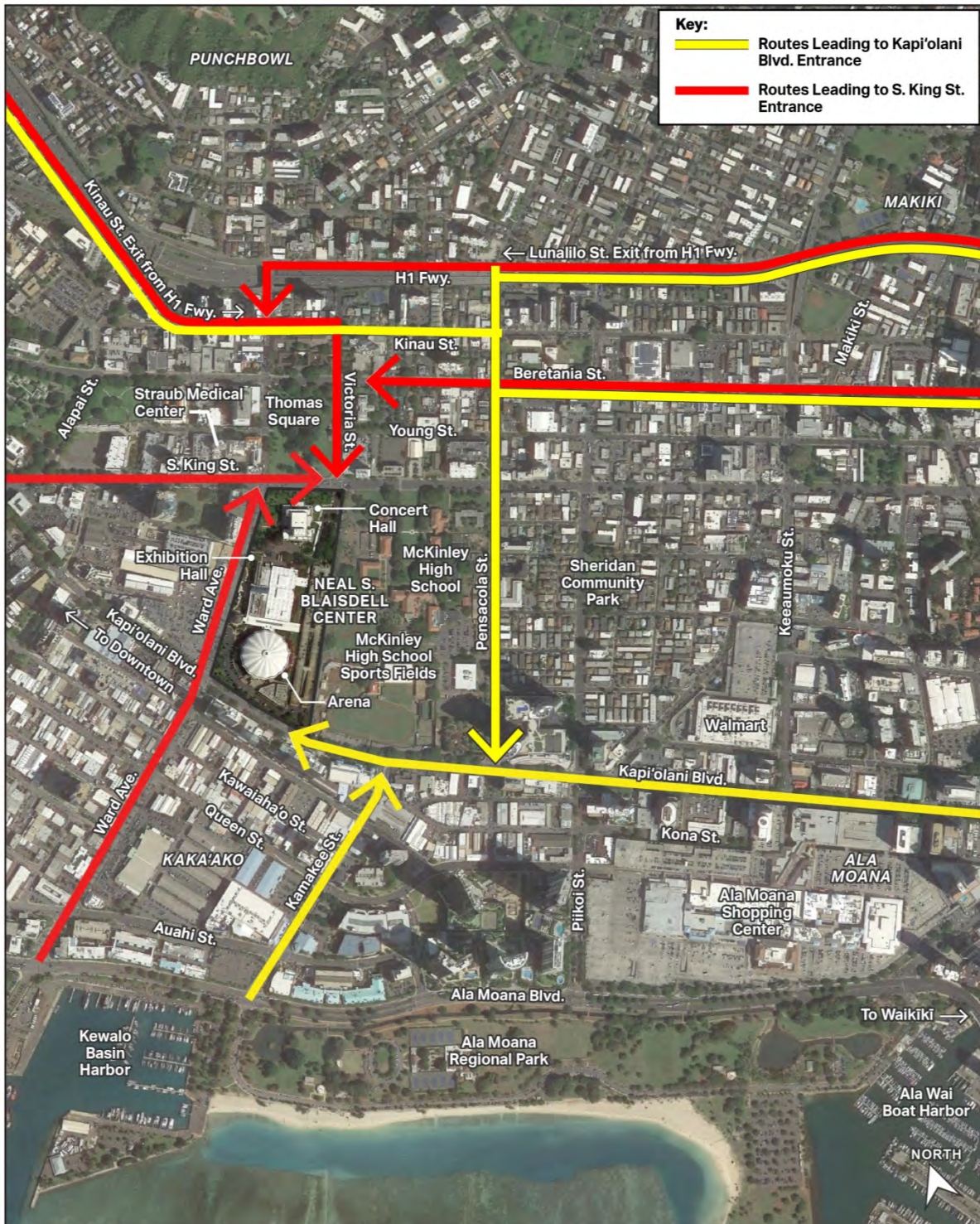


Figure 37. Projected Year 2030 Weekday AM and PM Peak Hour Traffic Volumes

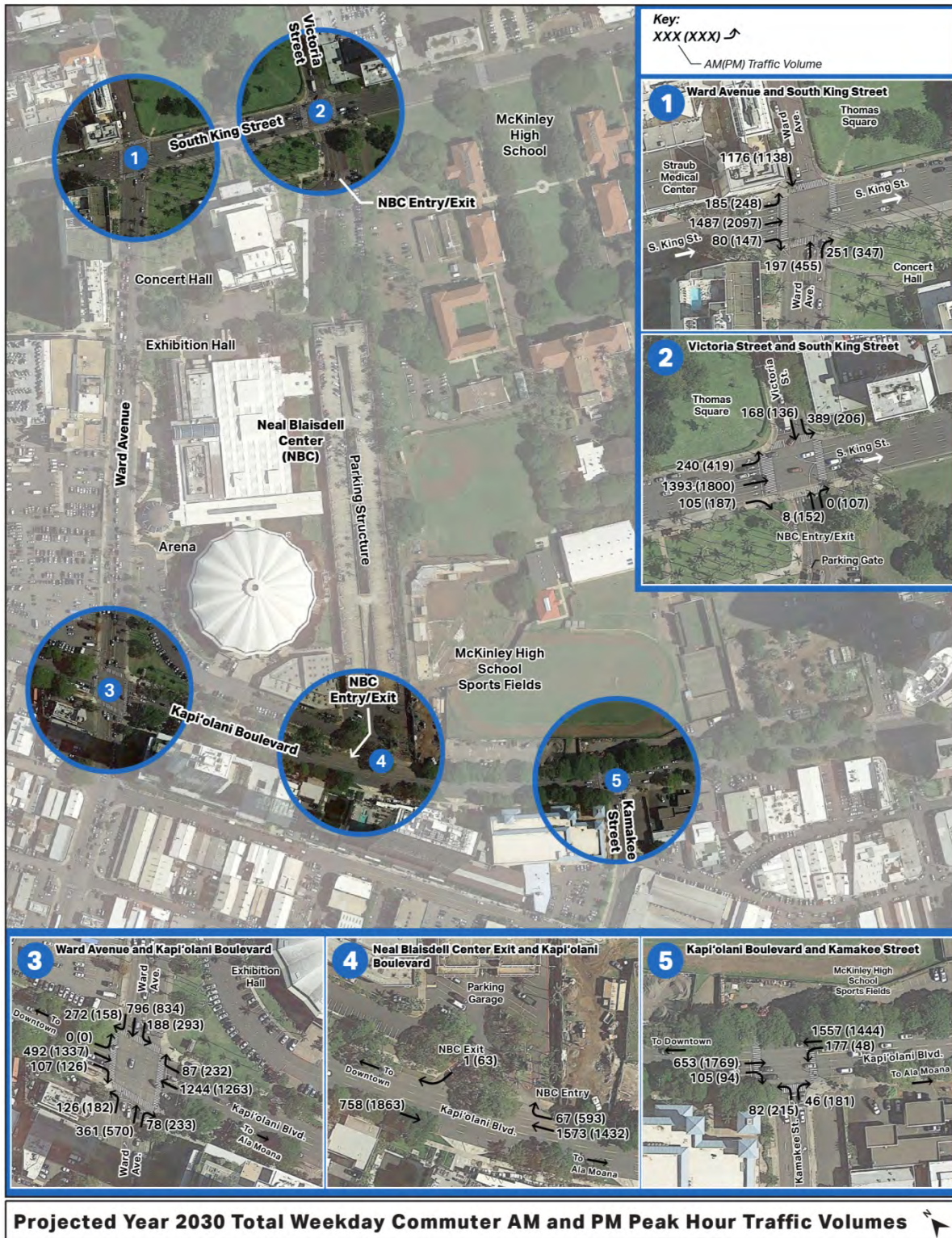


Figure 38. Projected Year 2030 Weekday Event Peak Hour Traffic Volumes

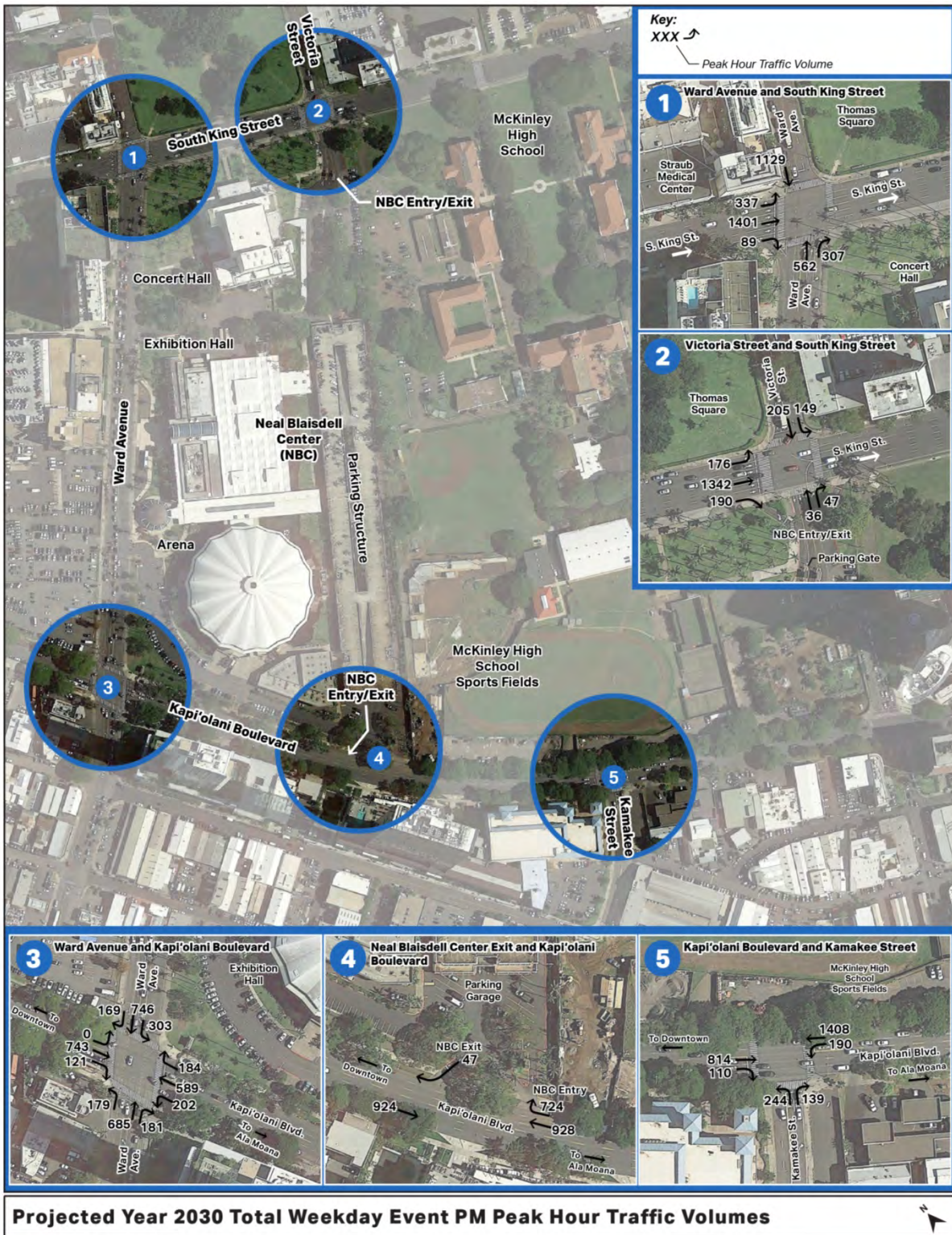
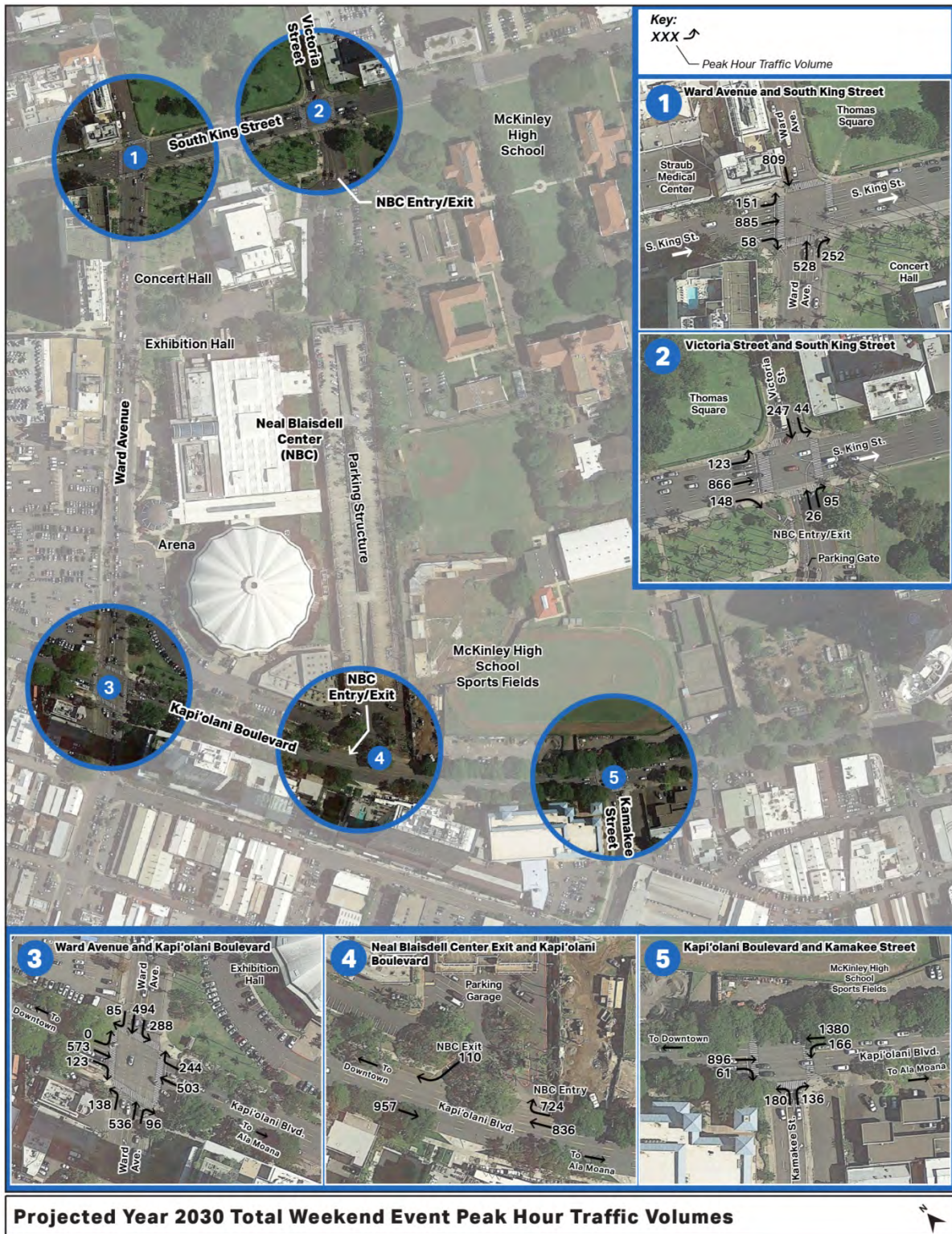


Figure 39. Projected Year 2030 Weekend Peak Hour Traffic Volumes



Projected 2030 Intersection Operating Conditions

The projected Year 2030 peak hour volumes illustrated in Figure 37 and Figure 39 were evaluated using the signalized intersection capacity method documented in the Highway Capacity Manual (Transportation Research Board of the National Academies 2010).

Table 15 through Table 18 summarize and compare the existing and projected 2030 weekday AM, PM, weekday event, and weekend event peak hour intersection operating conditions, respectively, at the four signalized intersections of South King Street/Victoria Street, South King Street/Ward Avenue, Kapi’olani Boulevard/Ward Avenue, and Kapi’olani Boulevard/Kamake’e Street. Because background traffic growth is judged to be very low, the existing Year 2017 peak hour intersection operations can be considered representative of projected year 2030 peak hour traffic conditions without the proposed Blaisdell Center Master Plan improvements.

Table 15. Existing and Projected Weekday AM Peak Hour Intersection Operations

Intersection	Existing AM Peak Hour		Projected 2030 AM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
South King Street/Victoria Street	21.4	C	21.4	C
South King Street/Ward Avenue	20.5	C	20.5	C
Kapi’olani Boulevard/Ward Avenue	40.2	D	40.2	D
Kapi’olani Boulevard/Kamake’e Street	10.8	B	10.9	B

Notes: Existing Weekday AM Peak Hour occurred between 7:15 a.m. and 8:15 a.m.
Based on turning movement counts conducted on Wednesday, 10/18/17.

Table 16. Existing and Projected Weekday PM Peak Hour Intersection Operations

Intersection	Existing PM Peak Hour		Projected 2030 PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
South King Street/Victoria Street	13.5	B	13.6	B
South King Street/Ward Avenue	28.2	C	28.2	C
Kapi’olani Boulevard/Ward Avenue	36.7	D	36.8	D
Kapi’olani Boulevard/Kamake’e Street	11.3	B	11.9	B

Note: Existing PM Peak Hour occurred between 4:45 p.m. and 5:45 p.m.
Based on turning movement counts conducted on Wednesday, 10/18/17.

Table 17. Existing and Projected Weekday Event Peak Hour Intersection Operations

Intersection	Existing Weekday Peak Hour		Projected 2030 Weekday Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
South King Street/Victoria Street	13.5	B	13.7	B
South King Street/Ward Avenue	21.1	C	21.1	C
Kapi'olani Boulevard/Ward Avenue	56.1	E	56.2	E
Kapi'olani Boulevard/Kamake'e Street	13.4	B	15.5	B

Note: Existing PM Peak Hour occurred between 6:00 p.m. and 7:00 p.m.
Based on turning movement counts conducted on Wednesday, 10/18/17.

Table 18. Existing and Projected Weekend Event Peak Hour Intersection Operations

Intersection	Existing Weekend Peak Hour		Projected 2030 Weekend Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
South King Street/Victoria Street	14.7	B	12.7	B
South King Street/Ward Avenue	18.9	B	18.9	B
Kapi'olani Boulevard/Ward Avenue	40.1	D	40.0	D
Kapi'olani Boulevard/Kamake'e Street	10.9	B	11.8	B

Note: Existing Weekend Event Peak Hour occurred between 3:00 p.m. and 4:00 p.m.
Based on turning movement counts conducted on Sunday, 10/15/17.

As shown in Table 15 through Table 18, the existing and projected 2030 LOS and intersection delays are similar for the four intersections. The intersections typically operate at LOS D or better during the peak hour periods, which is acceptable for urban peak hour conditions. The Kapi'olani Boulevard/Ward Avenue intersection is projected to operate at LOS E during the weekday event peak, which indicates operations involving congestion and delay, but this situation occurs already occurs currently and the projected 2030 conditions are similar.

Pedestrian-Vehicle Conflicts

In addition to the substantial volume of traffic moving into and out of the Blaisdell Center site, there are substantial numbers of pedestrians walking to and from Blaisdell Center. Vehicles and pedestrians cross paths at both the South King Street and the Kapi'olani Boulevard access driveways. Observations indicate that vehicle-pedestrian conflicts are already an issue and they are expected to grow as the magnitude of traffic accessing Blaisdell Center grows.

A key issue is the conflict between vehicles turning right into a Blaisdell Center driveway from the adjacent major roadway while pedestrians are crossing the Blaisdell Center driveway at the same time. This occurs at both the South King Street driveway and the Kapi'olani Boulevard driveway. In the case of

the signalized South King Street driveway, both right-turning vehicles and pedestrians crossing the driveway receive the green/walk signal at the same time with the understanding that vehicles must yield to pedestrians. However, when there is a large volume of pedestrians, drivers find it hard to execute their right-turn maneuver and some drivers end up forcing their way through the pedestrian flow. With higher vehicular volumes entering through the Kapi'olani Boulevard entrance, pedestrians may have difficulty finding a gap to cross this driveway during large events as well.

There are several actions that could address this issue. One is to hire special duty officers during major events to manage the conflict.

Another involves modifying the traffic signal phasing to separate the traffic and pedestrian movements. Of course, this option is only available if the intersection is signalized, meaning at this time, this option only applies to the South King Street/Victoria Street intersection. There are two sub-options: lead or lag right-turn and all-pedestrian phase.

Lead or lag right-turn phasing would assign right-turning traffic to a separate signal phase. Using the lag right-turn as an example, when the signal on South King Street turns green for through traffic and pedestrians crossing the Blaisdell Center Driveway, vehicles making right turns into the Blaisdell Driveway would be held with a red arrow signal. After the pedestrians have been given a reasonable opportunity to cross the driveway, a green arrow would allow the right-turning traffic to proceed.

In all-pedestrian phasing, pedestrians crossing all roadways would be assigned their own signal phase. No traffic would move during this all-pedestrian phase.

The primary difference between lead/lag right-turn phasing and all-pedestrian phasing is that the lead/lag right-turn phasing impacts mainly the right-turning vehicles while all-pedestrian phasing affects all vehicle movements. The operational impacts of lead/lag right-turn phasing are similar to that of the special duty officer. All-pedestrian phasing is the safest option but has the greatest impact on intersection operations. Because of this, this sub-option was analyzed to identify the worst case operational impacts.

Table 19 illustrates the operational implications of implementing all-pedestrian signal phasing at the South King Street/Victoria Street intersection for the projected year 2030 weekday PM commuter peak hour, weekday PM event peak hour, and the weekend event peak hour. The all-pedestrian phasing would have the greatest impact during the PM commuter peak hour, dropping operations from a LOS B to LOS D. This situation has the potential to also impact the adjacent South King Street/Ward Avenue intersection. The impacts to the weekday PM event peak hour and the weekend event peak hour time periods are less but still significant. However, the overall intersection LOS, even for the weekday PM commuter peak hour time period is not unreasonable if confined to this intersection alone.

Table 19. South King Street/Victoria Street Intersection Operations with All Pedestrian Phase

Scenario	Existing Signal Phasing		All Pedestrian Phase	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Weekday PM Commuter Peak Hour	13.6	B	46.7	D
Weekday PM Event Peak Hour	13.7	B	27.5	C
Weekend Event Peak Hour	12.7	B	32.7	C

Notes: Weekday PM commuter peak hour: 4:45 p.m. – 5:45 p.m.
Weekday PM Event peak hour: 6:00 p.m. – 7:00 p.m.
Weekend Event peak hour: 3:00 p.m. – 4:00 p.m.
sec/veh = seconds per vehicle

There is clearly a trade-off between enhanced pedestrian safety and traffic operations on a major arterial roadway. If all-pedestrian signal phasing is pursued, it is important to conduct detailed traffic simulation to provide reasonable assurance that the operational impacts would not extend to other intersections in a manner that would jeopardize roadway system mobility.

In the current Blaisdell Center Master Plan, the Kapi’olani Boulevard/Blaisdell Center Driveway is not signalized. Therefore, the method to address pedestrian-vehicle conflicts there would be through the use of special duty officers.

Future Transit Facilities

When the Honolulu Authority for Rapid Transportation’s (HART) elevated rail transit system becomes operational in this area, it is assumed that bus routes would be modified to connect to the rail stations. It is expected that local bus routes would continue to run on South King Street and Kapi’olani Boulevard, and the existing bus stops adjacent to Blaisdell Center are maintained in the future scenarios.

In anticipation of the rail system, DTS is planning the addition of two bus bays on the Diamond Head-side of Ward Avenue between South King Street and Kapi’olani Boulevard. The Blaisdell Master Plan acknowledged and accommodates the two future bus stops. Potential designs for these bus stops within the context of the Blaisdell Master Plan have been reviewed and found consistent with the *City and County of Honolulu Complete Streets Design Manual* (CCH 2016).

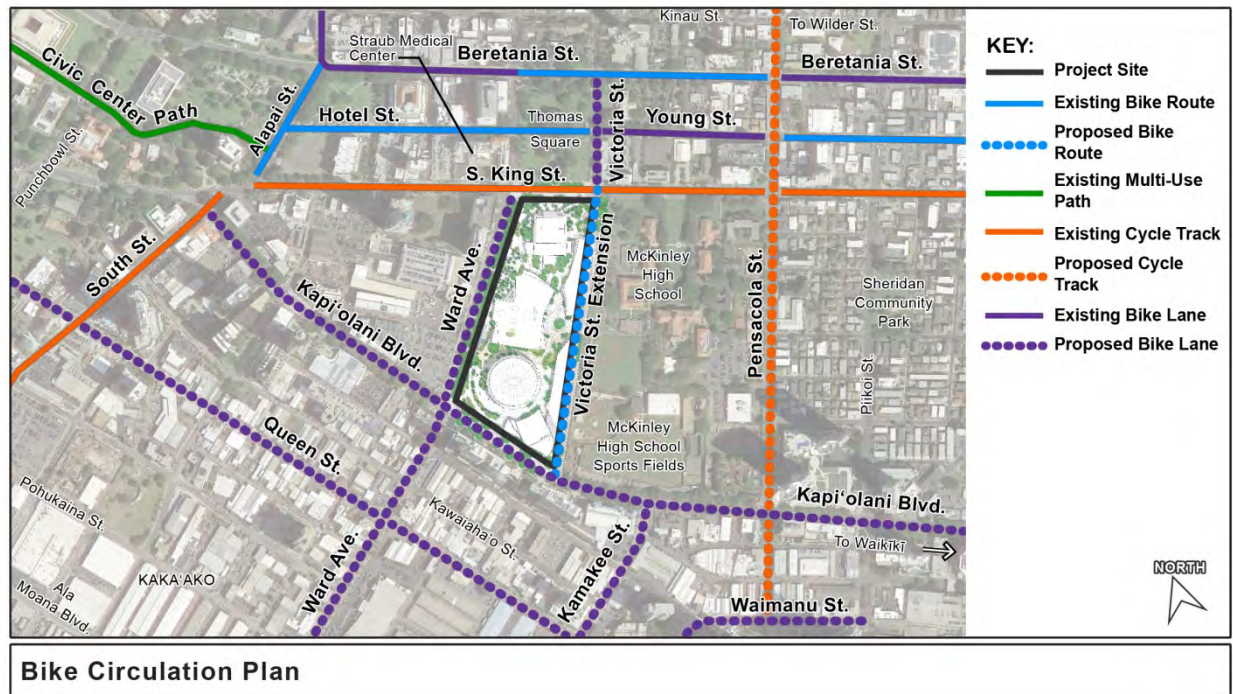
Future Bicycle Facilities

The DTS-Traffic Engineering Division (TED) is in the process of updating its 2012 O’ahu Bike Plan. DTS-TED shared an in-progress version of the update and the bicycle circulation plan for the Blaisdell Center Master Plan is consistent with this update. Figure 40 illustrates a bike circulation plan that incorporates existing and future bicycle facilities in the vicinity of the Blaisdell Center.

The King Street Cycle Track is assumed to remain. Biki stations would continue to be located around the Blaisdell Center site. The exact locations of these stations are still being planned, but they would be located to enable convenient access to the Biki system.

The Department of Transportation Services is in process of updating its 2012 O’ahu Bike Plan. The plans for the Victoria Street extension would be a proposed bicycle route through the extension to provide bicycle connectivity to the surrounding bicycle facilities.

Figure 40. Bike Circulation Plan



Bicycle facilities include a multi-use path, bicycle lanes, a cycle track, and bicycle routes. A multi-use path is a facility that is dedicated for non-motorized travel such as pedestrians and bicyclists that is shared between those modes. A bicycle lane is a portion of the road designated for bicyclists through the use of striping and typically unidirectional with the flow of traffic. A cycle track is similar to a bicycle lane, but includes a physical barrier that separates motorized traffic from bicycle traffic. Cycle tracks implemented in Honolulu usually provide two-way travel for bicycles. A bicycle route is a recommended route for bicyclists on streets shared with motorized traffic that do not have a bike lane or a cycle track. Bike routes are designated through use of signage and pavement markings such as a shared-lane marker (sharrows).

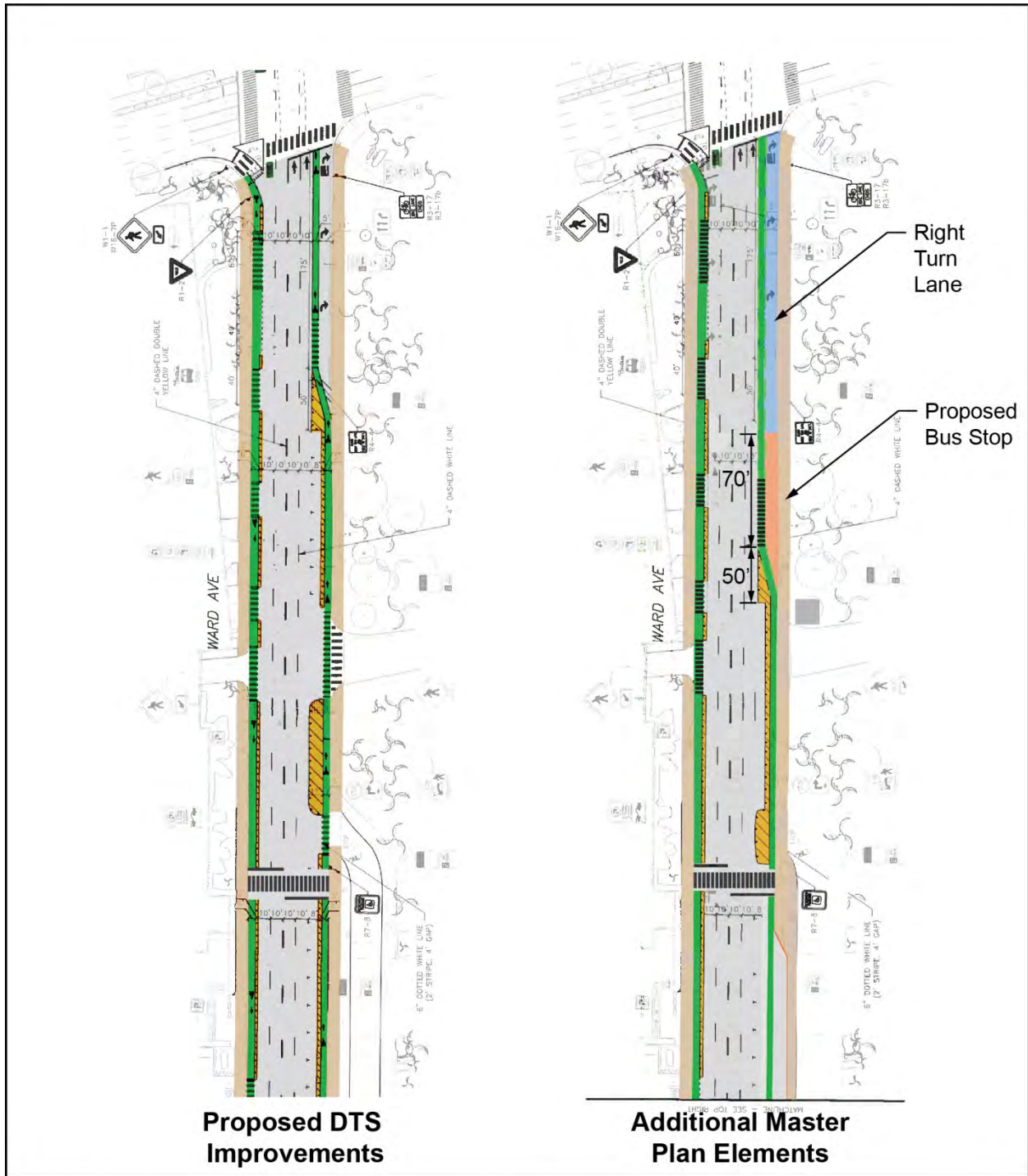
The Bike Circulation Plan shown in Figure 40 shows that the Victoria Street extension would be a bicycle route in the future. This scheme is compatible with the plan for the Victoria Street extension to be an internal site driveway that would be open to the general public during non-event hours. The addition of a bicycle route through the Blaisdell campus along the Victoria Street extension would augment planned bike lanes on Ward Avenue and enhance bicycle circulation in the vicinity of the Blaisdell Center.

DTS is planning to implement a project to install bicycle lanes Ward Avenue between South King Street and Kapi’olani Boulevard. The preliminary design is completed, and the project is proceeding toward final design phase with the intent to implement the improvements by year 2020.

Improvements proposed in the Blaisdell Center Master Plan are compatible with the planned DTS improvements on Ward Avenue. Figure 41 and Figure 42 illustrate how the Blaisdell Master Plan elements would be compatible with the planned DTS improvements. The bicycle lanes are shown in green.

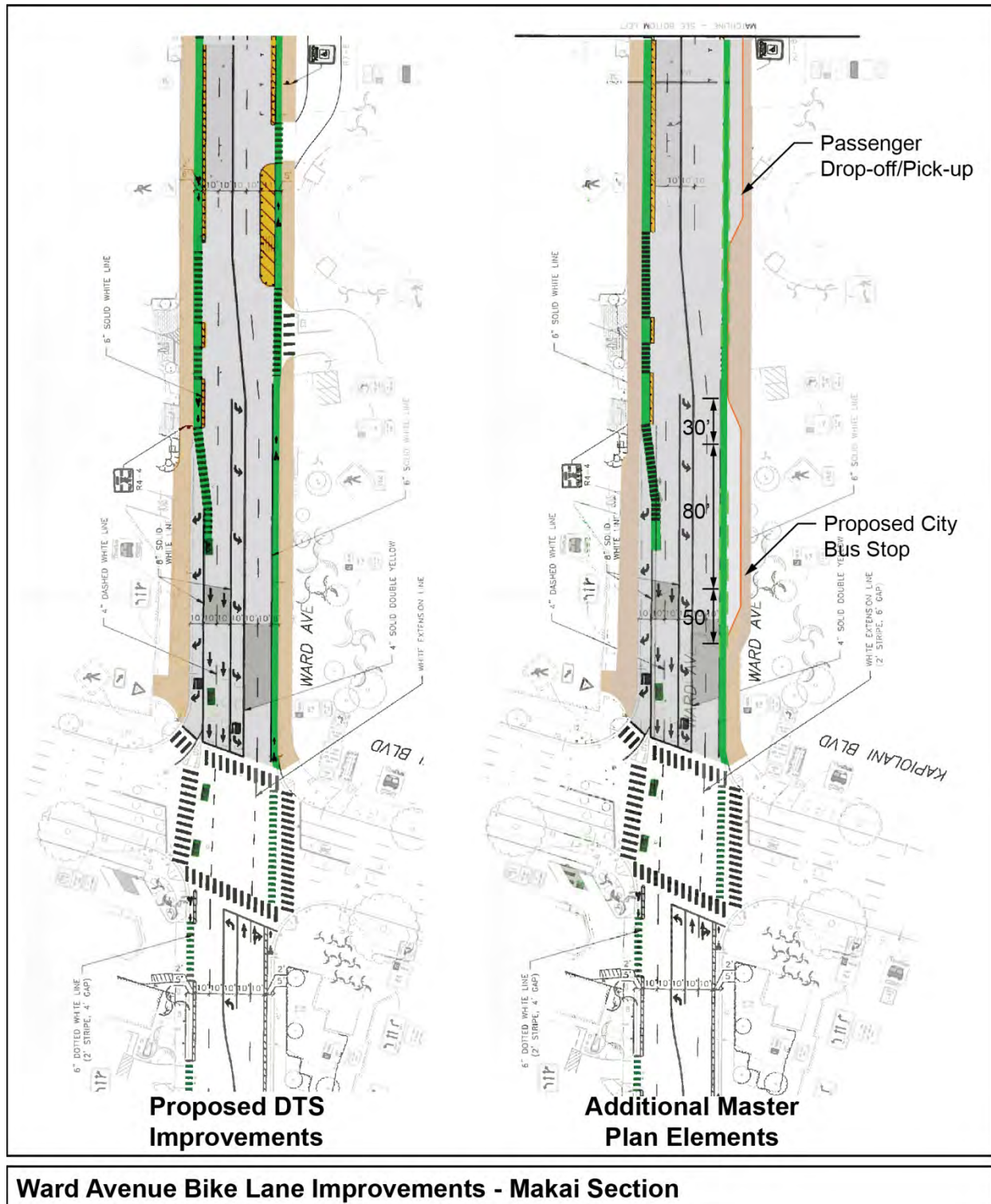
Biki bike share stations would continue to be located around the Blaisdell campus. The exact locations of these stations are still being planned, but they would be located to enable convenient access to the Biki system.

Figure 41. Ward Avenue Bike Lane Improvements – Mauka Section



Ward Avenue Bike Lane Improvements - Mauka Section

Figure 42. Ward Avenue Bike Lane Improvements –Makai Section

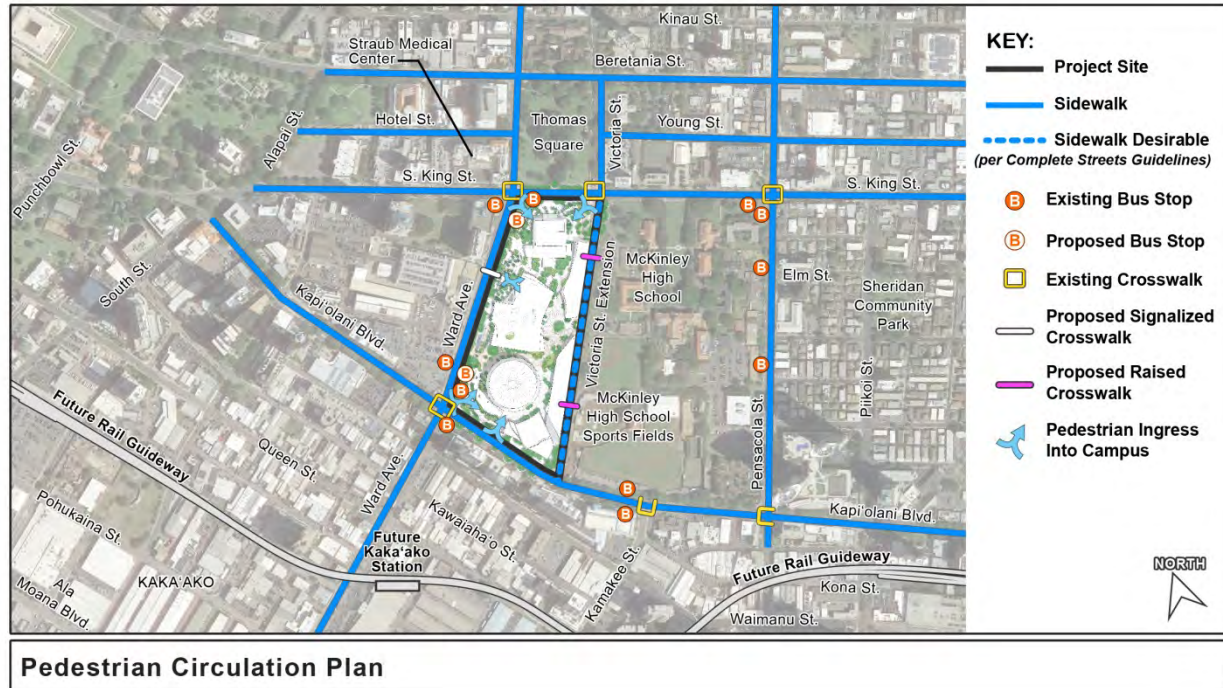


Future Pedestrian Facilities

The DTS-Transportation Planning Division (TPD) is currently in the process of developing the O’ahu Pedestrian Circulation Plan. TPD was consulted to evaluate pedestrian circulation in the vicinity of the

Blaisdell Center. Figure 43 illustrates a pedestrian circulation plan based on the consultation with TPD. Existing sidewalks are available for pedestrians on most of the roadways. Two major elements of the pedestrian circulation plan include a pedestrian pathway along the Victoria Street extension and a merged mid-block crosswalk on Ward Avenue.

Figure 43. Pedestrian Circulation Plan



To facilitate increased pedestrian traffic between South King Street and Kapi'olani Boulevard by decreasing the size of the block between Ward Avenue and Pensacola Street, a continuous pedestrian walkway is proposed along the Victoria Street extension. This pedestrian pathway would be located on the Diamond Head-side of the Victoria Street extension, adjacent to the culvert between the Blaisdell Center and McKinley High School. Providing a continuous sidewalk on the 'Ewa-side of the Victoria Street extension would be difficult as a sidewalk on this side of the Victoria Street extension would be discontinuous due to bus loading zones and accesses to the parking garage.

The *City and County of Honolulu Complete Streets Design Manual* guidelines indicate that a desirable width of the sidewalk is 6 feet for a public-facility development. The restricted width through the Victoria Street extension limits the width to 5 feet. This width satisfies ADA requirements and measures have been proposed in the railing design to minimize encroachment in the sidewalk to maximize the pedestrian area. This walkway achieves the primary goal of providing a continuous pedestrian path between South King Street and Kapi'olani Boulevard.

Between South King Street and Kapi'olani Boulevard, there are currently two unsignalized mid-block crosswalks. DTS is planning to merge these two mid-block crosswalks into one mid-block crosswalk and to signalize this merged mid-block crosswalk. DTS has informed the community about this future modification. The consolidation of the crosswalk and signalization are currently being programmed into the city's capital budget and is projected to be implemented in the short-range future.

The Blaisdell Center Master Plan schemes are compatible with the proposed DTS improvements and there has been coordination to assure that the location of the merged crosswalk and traffic signal would work with both interim and future conditions. Figure 41 illustrates the location of the future merged crosswalk and traffic signal. The future merged crosswalk would be located just makai of the existing mauka driveway of the passenger drop off lane fronting the Exhibition Hall.

4.8 Parks, Open Space

4.8.1 Affected Environment

As shown in Figure 44, within the Area of Concern, there are three public parks: Thomas Square Park, Kawaiahaʻo Mini Park (pocket park), and Kolowalu Park. The area of these parks totals 9 acres. These parks are considered either active or passive parks. Active parks can be used for programmed recreational activities such as festival events and league sports. Passive parks tend to be used for passive recreational activities, such as sitting, walking and picnicking. Pocket parks contain minimal hardscape and are no more than 0.25 acres in size (HAR §15-217, 2011). Their small sizes are attributed to their association with infill development in urban areas.

Thomas Square Park is a community-based public park located on the mauka side of the project area. The 6.5 ac. site is used for both active community events and passive recreation. Typical activities at the park include dog shows, plant sales, and cultural gatherings such as the Northern Cherokee Nation Pow Wow (PBR Hawaiʻi 2016). In addition to providing open space for public utilization, Thomas Square Park is a place of historic and cultural significance. Named after Admiral Richard Darton Thomas, the park is the site where the five-month illegal British occupation of the Kingdom of Hawaiʻi by Lord George Paulet ended as Admiral Thomas officially transferred the islands back to Kamehameha III. During the ceremony to mark the restoration, Kamehameha III said the words which have become the State motto: Ua Mau ke Ea o ka ʻĀina i ka Pono (“The sovereignty of the land is perpetuated in righteousness”). The British flag was lowered and the Hawaiian flag was raised. To mark the event, the annual Lā Hoʻihoʻi Ea is celebrated at Thomas Square. Thomas Square Park is registered on both the NRHP and the Hawaiʻi Register of Historic Places (HRHP).

Kawaiahaʻo Mini Park, on the corner of Cooke and Kawaiahaʻo Street, is a 0.2 ac. pocket park managed by the CCH. This park features a lawn area and benches shaded by trees. The shaded seating attracts residents and workers from the surrounding area to utilize the park for relaxing and lunching.

Kolowalu Park, formerly known as the Queen Park, traverses Queen Street between Kamakeʻe and Waimanu streets and consists of mauka and makai sections, totaling 2.6 ac. in area. The park contains walking paths, benches and children’s play equipment, and is actively used by the community.

Open space can be defined as a noncontiguous, unbuilt and unobstructed space at ground elevation between and adjacent to public and private structures (HCDA 2005). The Mauka Area Rules (DBEDT 2011) divided open spaces into five categories: green, square, plaza, playground, and courtyard. Table 20 presents the description and illustration of these categories of open space. The lawn area (3 ac) adjacent to the Concert Hall and Exhibition Hall is classified as green open space (Figure 44; Table 20). In addition to open space classified under these five categories, the King Street Catholic Cemetery (2.6 ac) and the athletic fields at McKinley High School (16.0 ac) are also considered as open space (Figure 1.5, HCDA 2011). Within the Area of Concern, there are approximately 32 ac. of open space, including Thomas Square Park, which is also classified as a park (Figure 44).

Figure 44. Parks and Open Space

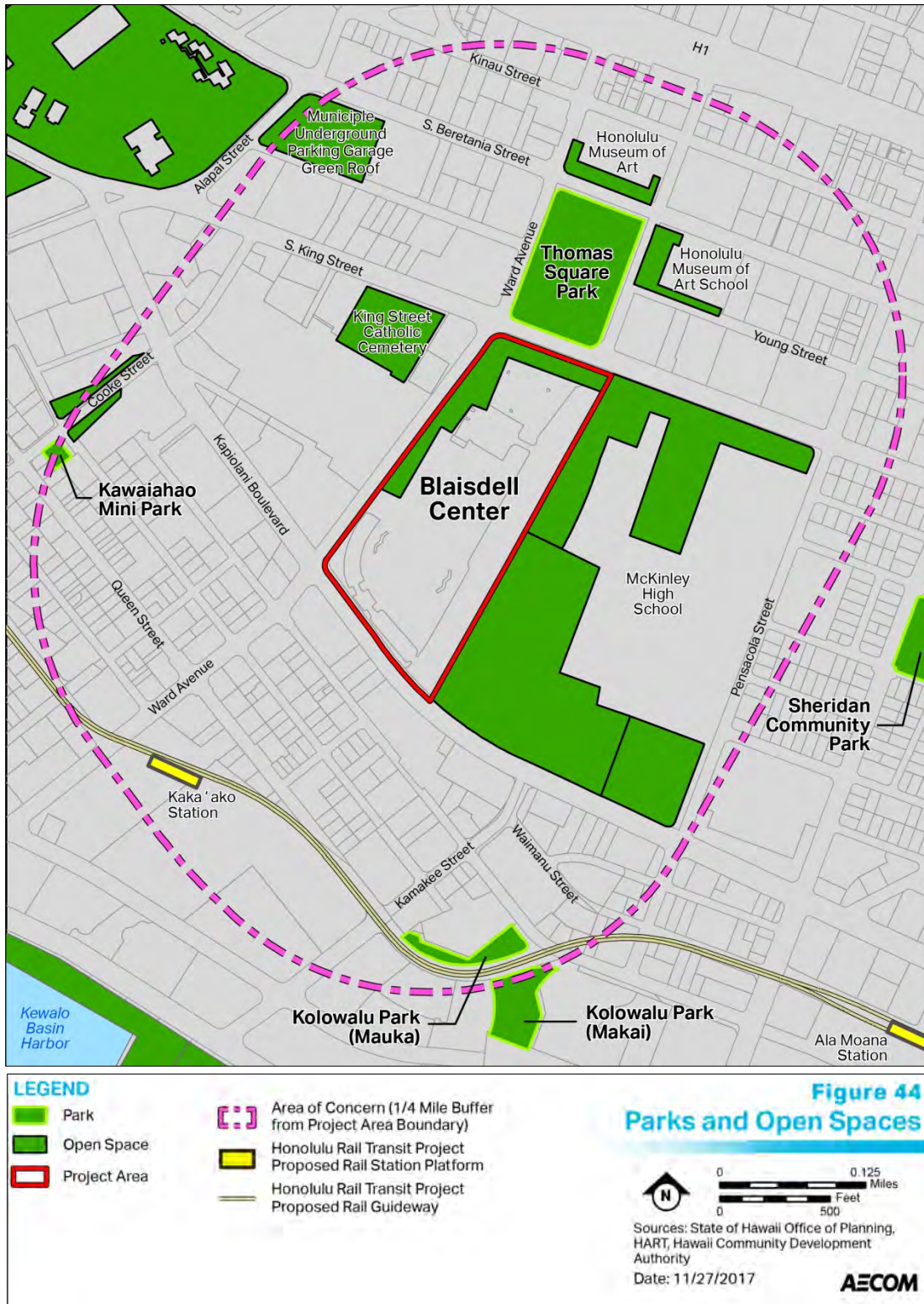

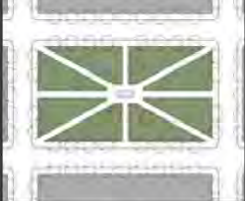





Table 20. Open Space Categories

TYPE	DESCRIPTION	ILLUSTRATIVE DIAGRAM	EXAMPLES WITHIN PROJECT AREA OF CONCERN
Green	An open space available for passive recreation. A green may be spatially defined by landscaping rather than building frontage. Its landscape shall consist of lawn and trees, naturalistically disposed with minimal hardscape. The minimum size of a Green is ¼ acre and the maximum is 5 acres. Example: Makai Gateway Park.		Lawn outside of the Concert Hall and Exhibition Hall at Blaisdell Center; MHS landscaped campus; lawn outside of the Honolulu Museum of Art and the Honolulu Museum main buildings; green roof of the Municipal underground parking garage at the intersection of South Beretania Street and Alapai Street
Square	An open space available for passive recreation and civic purposes. A square is spatially defined by building frontages. Its landscape shall consist of paths, lawns and trees, formally disposed with hardscape elements. Squares shall be located at the intersection of important thoroughfares. The minimum size of a Square is 1/4 acres and the maximum is 2 acres. Example: Sir Admiral Thomas Square.		Thomas Square
Plaza	An open space available to civic purposes and commercial activities. A plaza shall be spatially defined by building frontages. Its landscape shall consist primarily of hardscape and pavement and strategically placed trees and /or palms. Plazas shall be located at the intersection of prominent streets. The maximum size of a plaza is 1/4 acre. Example: Tamarind Park at the corner of Bishop and South King Streets.		Plaza in front of the Pacific Park Plaza building featuring sitting benches around wide walkways; a strip of store-front plaza along Cooke Street featuring outdoor furniture shaded by lanai umbrellas and trees along the sidewalk.
Play-ground	An open space designed and equipped for the recreation of children and families. A playground shall be fenced and may include an open shelter. Playgrounds shall be interspersed within Parks and Greens. There shall be no minimum or maximum size. Example: Mother Waldron Neighborhood Park and Sheridan Community Park.		
Court-yard	An open space internal to the block and available for passive recreation for the adjacent land uses. A courtyard is spatially defined by building frontage on all sides. Its landscaping shall primarily consist of pavement, trees and palms are optional. Size as per Building Type standards. Examples: Various Chinatown courtyards and Kamehameha Schools Building at King and South Streets.		

Source: Mauka Area Rules, DBEDT 2011.

4.8.2 Potential Impacts

Significant impacts to parks and open space include any action that curtails the range of beneficial uses of parks and open space. The curtailment may result from actions directly impacting the size or affecting user experience in the existing parks and open spaces. Examples of significant impacts to parks and open space could include development encroaching onto park lands and open space, construction or other project-related activities that create noise or visual impacts to users, or impacts to the accessibility of the parks and open space.

4.8.2.1 *Short-term Impacts*

The overall acreage available to users of Thomas Square Park would not be encroached on by the construction activities at the Blaisdell Center. Except for ingress/egress and unique occasions, the construction and staging areas would be limited within the boundary of the Blaisdell Center project property during the entire construction phase. Users of Thomas Square Park, especially within the south section, could be temporarily impacted by construction noise during daytime construction hours. Potential impacts could be reduced by limiting the construction hours and maintaining construction vehicles and equipment (Section 4.8.2). There could also be short-term impacts to visual resources from construction vehicles and equipment being visible to the Thomas Square Park users, thereby diminishing the park experience. Another potential impact to the Thomas Square Park users would be on park access/parking. There is a limited amount of vehicle parking around the vicinity of the Thomas Square Park. The parking garage at the Blaisdell Center is currently utilized by employees of the CCH and surrounding businesses during workdays. Throughout at least part of the construction phase, the Blaisdell Center parking garage would no longer be available for use, which would give rise to a shortage of parking spaces in the vicinity and could impact park users who normally drive to the Thomas Square Park. However, all these short-term impacts would be less than significant due to their relative level of severity and temporary time period occurring throughout the construction phase only.

The Kawaiahaʻo Mini Park and Kolowalu Park are both located more than 1,000 ft. away from the Blaisdell Center. Construction at the Blaisdell Center would not result in changes to the overall area of these two parks. Because of the long distances and the level of vehicular traffic, construction-related noise between each of these parks and the Blaisdell Center would not impact the park users' experience. Due to the intervening buildings and landscaped areas, the construction vehicles and equipment would not be visible from these parks. Additionally, access to these two parks would not be impacted by the Blaisdell Center construction activities. Users of the Kawaiahaʻo Mini Park typically access the park by foot from Cooke Street and Kawaiahaʻo Street. The Kolowalu Park can be accessed from Waimanu Street and Queen Street, which are not expected to be impacted by the Blaisdell Center construction. Therefore, the construction at the Blaisdell Center is not expected to cause short-term impacts on the Kawaiahaʻo Mini Park and Kolowalu Park.

The Blaisdell Center would be fenced off and closed to the public during the construction period, including the lawns outside of the Concert Hall and Exhibition Hall (a total of approximately 3 ac.). Closing the Blaisdell Center lawns would impact the open space at the project site. However, this short-term impact would be minor, as impacts are low in intensity, associated with a common resource due to the availability of ample nearby open space and the effects are limited to the extent of property.

4.8.2.2 *Long-term Impacts*

Redevelopment of the Blaisdell Center would not reduce the acreage of any of the four parks within the Area of Concern. Operations at the redeveloped Blaisdell Center may generate more exterior noise due to increased outdoor gatherings and performances that could affect Thomas Square Park users. However, these activities would likely be small in scale, located at distant locations, and occur during hours when Thomas Square was not heavily used. Therefore, long-term impacts from activities at the Blaisdell Center would be less than significant to the park experience at Thomas Square Park.

The Blaisdell Center redevelopment aims to make better use of the available open space on-site and transform much of the outdoor space to more active open space. Recommended in the Blaisdell Center Master Plan (AECOM 2018c), street trees, and other coordinated plantings on both sides of South King

Street would visually connect the Blaisdell Center with the Thomas Square Park. The central water feature in front of the Concert Hall, as described in the Blaisdell Center Master Plan, “enhances the formal relationship between the Concert Hall and Thomas Square.” The Master Plan proposes to increase the number of parking stalls from the current 1,467 stalls to 2,300 stalls in total. The parking space increase could alleviate the current parking pressure in the vicinity, and consequently improve the accessibility for the Thomas Square Park users who prefer to access the park by vehicle. Additionally, enhancements are proposed to the South King Street crossings at Ward Avenue and Victoria Street to improve connectivity with Thomas Square Park. These intersection enhancements would improve the walkability between the Blaisdell Center and thereby the experience of Thomas Square Park users. Therefore, the streetscape enhancements, increased parking, improved crossings from the redeveloped Blaisdell Center project would have beneficial impact on the Thomas Square Park user’s experience.

Due to the distances and intervening buildings and landscape areas between the Blaisdell Center and the Kawaiaha’o Mini Park and Kolowalu Park, these two parks would not be impacted by the operation of the redeveloped Blaisdell Center.

The proposed project includes a total of 12.2 ac. of public open space on-site (a 3.8-ac. increase from the current condition). Unlike the current scattered and fragmented open space at Blaisdell Center, the proposed landscape forms a network that surrounds and connects the proposed buildings within the entire campus. The new open space layout would not only improve the open space on the ground level, but also create a cohesive Terrace linking venue at the second floor and provide exterior courtyards to activate upper levels of the Blaisdell Center. The improved open space would also act as a neighborhood and community amenity and attract more active and passive uses. Therefore, the redesigned landscape at the Blaisdell Center would have beneficial impacts to open space.

4.9 Visual Resources

4.9.1 Affected Environment

The Blaisdell Center is located in the PUC (i.e., metropolitan Honolulu), an area designated to accommodate major growth in population and economic activities on O’ahu. Development within the PUC is governed by the PUC Development Plan (PUCDP), which specifically identifies the following significant panoramic views and vistas:

- The Ko’olau and Wai’anae Mountain Ranges and their foothills;
- The Pacific Ocean, Pearl Harbor’s East Loch, Ford Island, Honolulu Harbor, Keehi Lagoon and Kewalo Basin, and their respective shorelines; and
- The craters of Leahi (Diamond Head), Puowaina (Punchbowl), and Aliamanu.

Panoramic views of areas along the Ko’olau range and Puowaina (Punchbowl) are those requiring specific protection, as they pertain to changes that may occur from the proposed action. Other significant views identified in the PUCDP are not visible from the project area.

Within the 0.25-mile Area of Concern, the Blaisdell Center is visible from high-rise residential buildings, some low to mid-rise commercial buildings, as well as the adjacent Thomas Square Park and McKinley High School.

Figure 45 shows ten key observation points (KOPs) from which view assessments were performed. Table 21 describes the existing visual resources from each KOP. All field observations were made at ground level.

Limited value makai views are available from the Blaisdell Center (Photos 2, 4, 6, 8, 14, and 18). The topography between the Blaisdell Center and the nearby shoreline is relatively flat, with an approximate elevation change of less than 10 ft. between the site and the shoreline. Consequently, most of the makai views from the Project Area are obstructed by existing development along Kapi‘olani Boulevard, Ward Avenue, and along Ala Moana Boulevard. This area—between the Blaisdell Center and Ala Moana Boulevard—has been slated for high-rise development with the approval of two master planning efforts by major landowners in Kaka‘ako; therefore, future makai-oriented views are expected to remain obstructed.

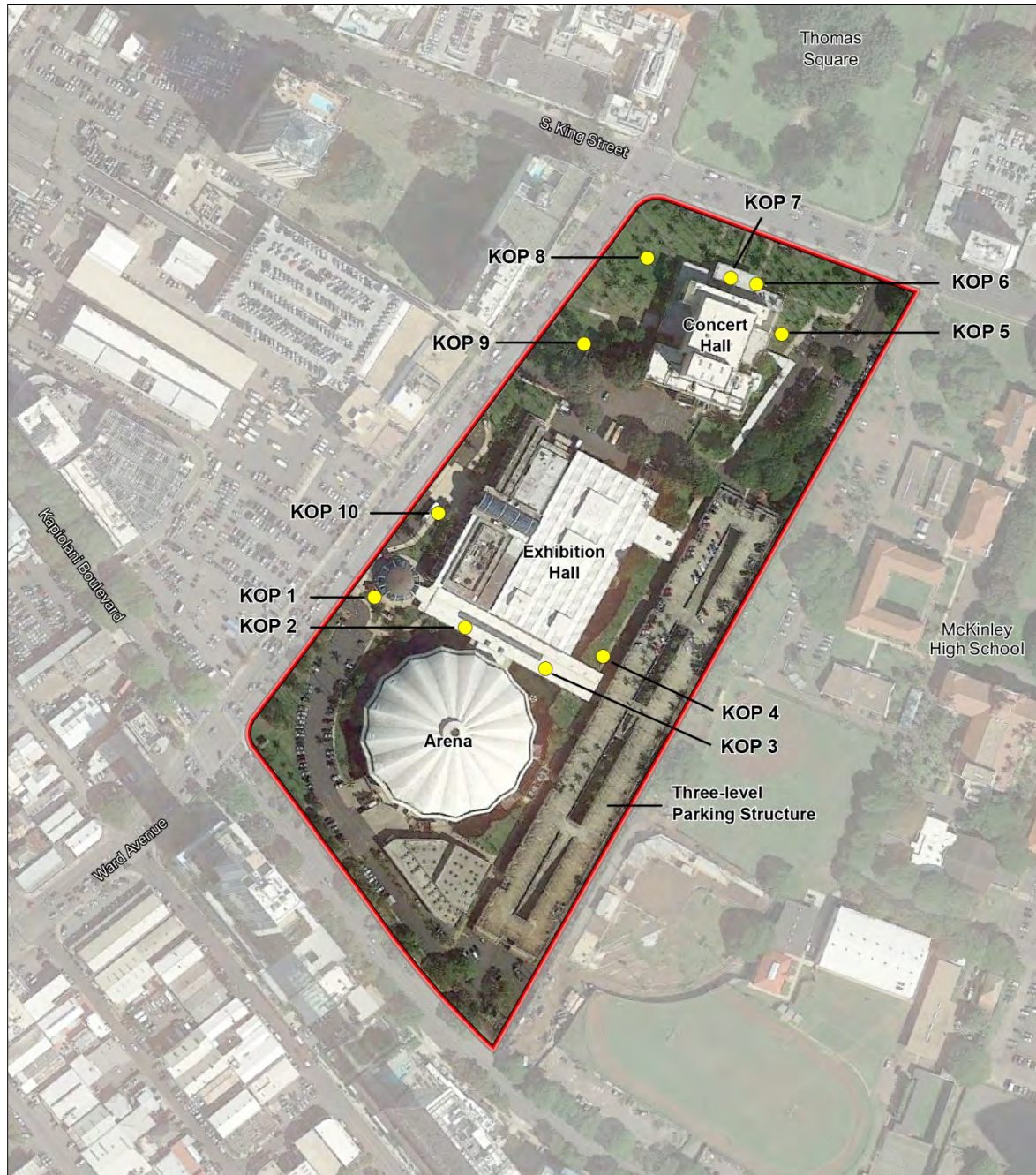
There are some mauka views of the Ko‘olau Mountain Range (Makiki-Tantalus) and the craters of Puowaina (Punchbowl) available from the lawn around the Concert Hall and from the area in front of the Exhibition Hall (Table 21). However, these views are already partially obscured by the existing trees at Thomas Square and by existing mid to high-rise buildings (Photos 9 through 13, 15, and 17).

Table 21. Visual Resources at Key Observation Points

Key Observation Point (KOP)	Photo Number	Location within Project Area	Existing Visual Resources
1	1,2	Box Office	No significant views detected.
2	3,4	Breezeway between the Exhibition Hall and Arena (near Box Office)	No significant views detected; View of existing fishpond.
3	5,6	Breezeway between the Exhibition Hall and Arena (near parking garage)	No significant views detected; View of existing fishpond.
4	7,8	Walkway between the Exhibition Hall and the parking garage	No significant views detected; View of existing fishpond.
5	9	Lawn fronting the east side of the Concert Hall	Obscured view of Ko‘olau Range (Makiki-Tantalus); Obscured view of Punchbowl; View of Thomas Square Park and McKinley High School.
6	10	Lawn fronting the entrance of the Concert Hall, east of the center of the entrance	Obscured view of Ko‘olau Range (Makiki-Tantalus); Obscured view of Punchbowl; View of Thomas Square Park and McKinley High School.
7	11	Lawn fronting the entrance of the Concert Hall, center of the entrance	Obscured view of Ko‘olau Range (Makiki-Tantalus); Obscured view of Punchbowl; View of Thomas Square Park.

Key Observation Point (KOP)	Photo Number	Location within Project Area	Existing Visual Resources
8	12, 13, 14	Lawn fronting the west side of the Concert Hall	Obscured view of Ko'olau Range (Makiki-Tantalus); Obscured view of Punchbowl; View of Thomas Square Park.
9	15, 16	Walkway outside of the parking area between the Concert Hall and Exhibition Hall	Obscured view of Ko'olau Range (Makiki-Tantalus); Obscured view of Punchbowl; View of Thomas Square Park.
10	17, 18	Blaisdell Center driveway fronting the Exhibition Hall	Obscured view of Ko'olau Range (Makiki-Tantalus); Obscured view of Punchbowl.

Figure 45. Blaisdell Center Site Visit Key Observation Points



LEGEND

- Key Observation Point (KOP)
- ▭ Project Area

Figure 45
Blaisdell Center Site Visit
Key Observation Points



Sources: State of Hawaii Office of Planning, HART,
Hawaii Community Development Authority
Date: 11/27/2017

AECOM



Photo 1. Looking mauka (landward direction) from the Box Office (KOP1)



Photo 2. Looking makai from Box Office (KOP1)



Photo 3. The breezeway between the Exhibition Hall and Arena near the Box Office (KOP2)



Photo 4. Looking makai from the breezeway between the Exhibition Hall and Arena (KOP2)



Photo 5. Breezeway between the Exhibition Hall and Arena near parking garage (KOP3)



Photo 6. View of the water feature fronting the Arena (KOP3)



Photo 7. Looking mauka from the walkway between the Exhibition Hall and the parking garage (KOP4)



Photo 8. Looking makai from the walkway between the Exhibition Hall and the parking garage (KOP4)



Photo 9. Looking mauka provides an obscured view of the Ko’olau Range (Makiki-Tantalus) and the Punchbowl from the lawn fronting the east side of the Concert Hall (KOP5)



Photo 10. Looking mauka provides an obscured view of the Ko’olau Range (Makiki-Tantalus) from the lawn fronting the entrance of the Concert Hall (KOP6)



Photo 11. Looking mauka provides an obscured view of the Ko'olau Range (Makiki-Tantalus) from the lawn fronting the entrance of the Concert Hall (KOP7)



Photo 12. Looking mauka provides an obscured view of the Punchbowl from the lawn fronting the west side of the Concert Hall (KOP8)



Photo 13. Looking mauka provides an obscured view of the Ko'olau Range (Makiki-Tantalus) from the lawn fronting the west side of the Concert Hall (KOP8)



Photo 14. View of lawn fronting the west side of the Concert Hall (KOP8)



Photo 15. Looking mauka provides an obscured view of the Ko'olau Range (Makiki-Tantalus) and Punchbowl from the outside of the parking area between the Concert Hall and Exhibition Hall (KOP9)



Photo 16. View of Ward Avenue from the walkway outside of the parking area between the Concert Hall and Exhibition Hall (KOP9)



Photo 17. Looking mauka provides an obscured view of the Ko'olau Range (Makiki-Tantalus) and the Punchbowl from the driveway fronting the Exhibition Hall (KOP10)



Photo 18. View of Ward Avenue from the driveway fronting the Exhibition Hall (KOP10)

4.9.2 Potential Impacts

Significant impacts to visual resources would include any development that impairs the existing significant panoramic views and vistas identified by the PUCDP.

4.9.2.1 Short-term Impacts

Mauka views of the Ko'olau Ridge and Punchbowl are mostly obstructed by existing trees and buildings. Therefore, the existing significant panoramic views and vistas identified by the PUCDP would not be impacted from the proposed action.

Construction activities would be contained within the fenced off 22.4 ac. project site. The fencing would obstruct and mitigate views of heavy equipment, construction materials, demolition activities, and building construction. While the aesthetics of the Blaisdell Center would be impacted by the presence of this large fenced area, this short-term impact would be temporary and limited only throughout the construction phase. Therefore, short-term impacts to visual resources at the Blaisdell Center would be moderate, as they would be of medium intensity, are of local extent, and the aesthetics of the Blaisdell Center are considered important in context.

4.9.2.2 Long-term Impacts

Post redevelopment, the building heights of the Concert Hall and the Arena would remain unchanged. The existing 3-story garage building would be replaced by the new 7-story, 101 ft. tall (above MSL) garage building. The building height of the new four-level Performance Hall would increase to 69 ft. (above MSL) comparing to the Exhibition Hall that would be demolished. The limited ground-level makai views from the Blaisdell Center would be expected to be similar to those seen today; and may become even more obstructed due to the planned high-rise development throughout the Kaka'ako area. The obscured mauka views from the ground level of the Blaisdell Center of the Ko'olau Ridge and Punchbowl would also be more obstructed comparing to those seen today, thus not impacted by the proposed action. It is likely that the public would have better makai and mauka views from the Lo'i Terrace and the Performance Hall Lanai (24 ft. above MSL), which could be considered a potential beneficial impact to visual resources from the project site. Ultimately, changes to the views from the ground level are generally low in intensity (no new high-rise associated with the project), and do not affect any unique designated viewsheds; therefore, would have negligible long-term impacts to visual resources.

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5 Infrastructure and Utilities: Affected Environment, Potential Impacts, and Mitigation Measures

5.1 Hydrology and Stormwater Drainage

5.1.1 Affected Environment

Groundwater conditions are described in Section 3.5 of this EA; this section discusses surface water conditions and stormwater drainage at the project area. The Blaisdell Center is located within a highly urbanized area, consisting primarily of impervious surfaces and landscaped vegetation that drains to stormwater conduits, which are in turn directed to the ocean (Figure 46). Due to the nature of the built environment, there are currently no significant natural surface water features such as streams, lakes, wetlands, or ponds within the project area.

The surface water features at the Blaisdell Center are constructed, rather than natural. The main constructed surface water feature at the Blaisdell Center is the fishpond. This feature currently draws water from the brackish basal aquifer and continuously pumps approximately 1 million gallons of water into the pond system, per day. The pond's water is currently discharged from the makai end of the pond system into the CCH's storm drain system (Tom Nance Water Resource Engineering 2017). The continuous pumping that occurs at the fishpond is a function of providing appropriate water circulation through the fishpond, and the pumping does not serve as an avoidance measure for groundwater intrusion on the site (Tom Nance Water Resource Engineering 2017).

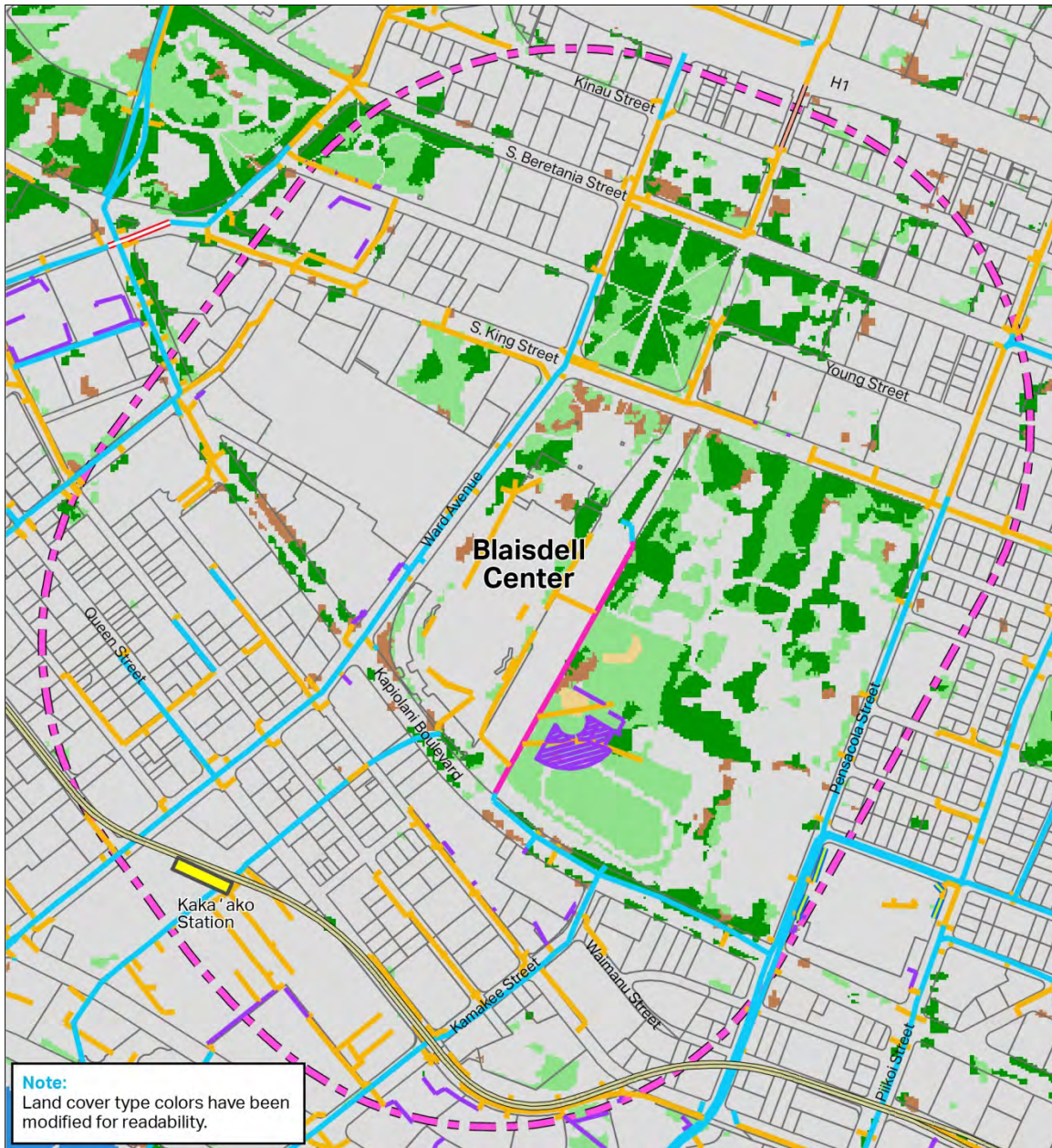
Surface stormwater flow, or runoff, follows the general topography of the project area, which slopes from mauka to makai, toward the south and southwest (Section 3.2). Runoff from the project area either percolates back into the ground, in landscaped or swale areas, or reaches the CCH stormwater conduits. Currently, there are two primary CCH stormwater conduits that serve the Blaisdell Center. There is one box culvert located along Ward Avenue and a second box culvert about 400 ft. to the east of Ward Avenue each servicing the Blaisdell Center (Figure 46). Each culvert flows southwest and empties into the Kewalo Basin Small Boat Harbor that connects to the Pacific Ocean (Figure 46).

Along the eastern property line with McKinley High School, there is an open ditch (AECOM 2017a). The surveyed property boundary is directly on the 'Ewa ditch wall, with the ditch itself and its Diamond Head wall falling on DOE property in the McKinley parcel. Water flows mauka to makai along the ditch. The head of the ditch is fed by multiple outlets from drop inlet drains that collect stormwater runoff from the paved parking areas on the Blaisdell property and from the athletic field area of the McKinley property. These diminish towards the King Street end with the ditch tapering off to a grass swale. At its makai end, the ditch drains into a box culvert/street drain on the mauka side of Kapiolani Boulevard and is conveyed from there into the city street stormwater drain system. The depth and width of the ditch varies along its length. At the Kapiolani end, the ditch is 3 ft. deep and 8 ft. wide, with concrete at the bottom. Moving mauka, the ditch becomes shallower, and is less than 2 ft. deep about halfway along the property line, where it enters a culvert for about 20 ft. Mauka of the culvert it is 2 ft. deep, with paving giving way to grass surfacing at the bottom and the walls reduced to curb height. The ditch diminishes to ground level near King Street, with no stone wall or curb along the mauka end.

5.1.2 Potential Impacts

A significant adverse impact to surface water or hydrology conditions would include any action that significantly alters the existing land cover such that the surface water flow of the area is significantly changed. An example of this includes the addition of extensive impervious surface cover, on a previously pervious surface, such as the addition of concrete or buildings in a landscaped or vegetated area. Significant impacts to surface water conditions would also include any activity that significantly affected the quality of the surface water, or produced significant pollutant discharge through stormwater runoff. This would occur if there were to be significant grading or removal of the vegetation (grubbing) occurring on site. In accordance with Section 402 of the Clean Water Act, land disturbance exceeding 1 ac. requires a National Pollution Discharge Elimination System (NPDES) construction permit, which would be acquired prior to the start of construction. A Storm Water Quality Strategic Plan would also be needed.

Figure 46. Stormwater Infrastructure and Impervious Surfaces



LEGEND		Figure 46	
Stormwater Conduit Type		Impervious Surface	Stormwater Infrastructure and Impervious Surfaces
Arch Pipe	Box Culvert	Open Space Developed	
Corrugated Metal Pipe	Ditch	Open Water	
Reinforced Concrete Pipe	Swale	Scrub Shrub	
Other	Other	Area of Concern (1/4 Mile Buffer from Project Area Boundary)	Sources: State of Hawaii Office of Planning, HART, NOAA Coastal Change Analysis Program (C-CAP), City & County of Honolulu Date: 11/27/2017
Land Cover Type		Honolulu Rail Transit Project Proposed Rail Station Platform	
Bare Land		Honolulu Rail Transit Project Proposed Rail Guideway	AECOM
Evergreen			

5.1.2.1 Short-term Impacts

Demolition and construction activities would disturb most of the ground surface of the 22.4-ac site. During construction, runoff from activities may enter the CCH's municipal drainage system, particularly during rainy periods. Standard construction BMPs would be implemented by the contractor during construction to minimize stormwater runoff and the erosion of sediments. Erosion standards and guidelines, as well as Water Quality Rules would be adhered to during construction to reduce pollution associated with construction activities.

Measures outlined in the required NPDES permit would address direct impacts from construction, and would outline requirements to avoid cumulative impacts from erosion or fugitive dust caused by construction. Standard BMPs for construction to reduce stormwater runoff and sediment erosion associated with construction activities include, but are not limited to, the use of compost socks placed around storm drain inlets, covering of exposed surfaces during non-work hours or during significant rainstorms, use of erosion control mats, and use of construction staging areas to avoid sediment track-out. BMPs such as vehicle and equipment maintenance would also be implemented and monitored to minimize potential pollutants.

Adherence to BMPs, erosion standards and guidelines, Water Quality Rules, and NPDES permit requirements and the preparation of a Storm Water Quality Strategic Plan would result in less than significant short-term impacts to stormwater drainage from construction activities.

5.1.2.1 Long-term Impacts

The project design would incorporate low impact development design principles that reduce runoff and promote the infiltration of surface water on site. Design principles that encourage the reclamation and productive use of runoff water and wastewater discharges are an important part of Master Plan implementation. Low-impact design techniques such as bioswales, bioretention and biofilters, permeable pavement, and stormwater harvest and reuse would lead to an overall positive impact on stormwater runoff and drainage conditions in the project area. The low impact development systems would be designed to store and infiltrate stormwater onsite for the 1-inch, 24-hour storm. For storms greater than the 1 inch 24-hr stormwater that is not infiltrated on-site would continue to follow the general topography of the area, flowing south and southwest into the existing drainage conduits. The proposed new bioswale and bioretention basins would stretch along Ward Avenue between the sidewalk and the bike lane to retain and filter stormwater, having an overall positive long-term impact on the stormwater drainage for the facility. The CCH stormwater conduits would not be changed by the project.

The fishpond, which currently pumps brackish water from the basal aquifer and discharges into the CCH's municipal stormwater system, would be removed and would be replaced with a new fishpond. The new brackish fishpond would continue to receive brackish water from the basal aquifer well and would be circulated with natural features (e.g., floating wetlands) and mechanical filtration to reduce nutrient concentrations (from fish) and associated algal growth. The brackish pond would feature dynamic storage volume and the brackish well water would be used to top off the pond as needed, due to water loss from evaporation or pond maintenance. The dynamic storage volume system would replace the current system which constantly flushes brackish water through the existing fishponds. Overflows from the brackish water pond into the city storm sewer are only designed to occur for storm intensities greater than a 1-inch 24-hour storm.

In addition to the brackish water fishpond, new freshwater ponds or “lo’i terraces” would be constructed to harvest stormwater. These systems would be designed to overflow into the bioretention/biofilters. It is anticipated that the water from the bioretention/biofilters would only overflow into the city storm drain systems during storms that exceed intensities greater than a 1-inch 24-hour storm.

It is anticipated the proposed project would have a beneficial impact on surface water resources, as the low impact development design methods will reduce the total runoff improving storm water drainage in the long-term.

5.2 Water

5.2.1 Affected Environment

The water system that supplies the Blaisdell Center with potable water is part of the city’s BWS, Honolulu Low Service Area. All potable water serving the Blaisdell Center is pumped from various sources all located in the Honolulu District. The water system near the Blaisdell Center consists of both transmission mains and fire hydrants. There are fire hydrants located along Ward, Kapi’olani, and King Streets at a maximum distance of 350 ft. (EDAW, Inc. 2009). Fire hydrant lines are located adjacent to the interior roadways, there is one large fire hydrant line located along Ward Avenue. The facility currently irrigates outdoor landscaped areas using potable water.

Water meters are located on the premises along the Ward Avenue side of the property; meters include a 6” compound meter and a 6” detector check meter. The water system would be required to meet current water meter standards and obtain CCH approval (AECOM 2017a).

During pre-assessment consultation, the State Commission on Water Resource Management indicated that there are currently two well sources on the property regulated by the State Commission on Water Resource Management. Well 3-1851-062 is estimated to provide 1 million gallons per day of brackish caprock water to the fishpond system. There is currently no water use permit for this existing use. A water use permit is needed to continue using this water. The commission also noted that well 3-1851-063 is located on the property; the well is classified as an abandoned lost source. If found during construction, the well would need to be properly sealed by a licensed contractor with a C-57 license and a well abandonment permit would be needed. The Commission also stated that the proposed water supply source for the project is in a designated water management area, and a water use permit is required prior to the use of water, which may be conditioned on the requirement to use dual line water supply systems for new commercial developments.

5.2.2 Potential Impacts

5.2.2.1 Short-term Impacts

The facilities would continue to be served by the existing water main from the BWS, and the existing fire protection systems would remain in place during construction. It is not anticipated that construction activities would impact any BWS water utility line, as water main lines are located along interior roadways (EDAW, Inc. 2009). It is not anticipated that potable water utility usage would be significantly impacted by construction activities. The project construction would not significantly increase potable water demand; therefore, no mitigation measures are proposed. Therefore, there is no impact on potable water resources associated with construction activities.

5.2.2.2 Long-term impacts

It is anticipated that indoor potable water usage would increase upon completion of the project due to increased facility usage and new facilities. New facilities expected to contribute to increased water usage include the new on-site kitchen, the new Sports Pavilion, new Performance Hall, and additional restroom facilities in the concert hall, new arts ensemble, new Satellite City Hall, and new food and beverage outlets. The Blaisdell Center is classified as a high-volume facility by the BWS; because of this classification non-compliant non-water saving toilets are permitted. Existing features would be retrofitted to have low-flow water conservation-type fixtures, where possible. Low-flow water conservation fixtures would also be used in new buildings, in compliance with city rules and regulations.

Fire hydrants would be located throughout the Blaisdell Center property in accordance with NFPA standards. Hydrants would be located within 12 ft. of fire department access roads, distance from hydrants to the buildings would not exceed 400 ft., and the maximum distance between fire hydrants would not exceed 500 ft.

To minimize the potable water consumed for irrigation purposes, landscaping and stormwater use/re-use measures would be implemented in designs, to the extent practicable. Planting with native plants, as opposed to lawns, would further decrease the need for potable water irrigation. Additionally, the collection of water from the roof of the Arena, as well as collection of HVAC condensate would be considered during the design phase. All irrigation would be supplemented with stormwater. The Blaisdell Center would continue to supplement irrigation with BWS potable water, as needed, should stormwater and collected condensate be insufficient.

5.3 Sanitary Sewer Systems

5.3.1 Affected Environment

The Blaisdell Center consists of 5 buildings, 3 of which have wastewater and plumbing facilities (Arena, Concert Hall, and the Exhibition Hall/Meeting Rooms). The storage building and the parking structure do not have waste water or sewage lines. The CCH has an 8-inch sewer line located on Ward Avenue that currently services the Blaisdell Center's sewer system.

Plumbing service within the Arena serves the public restroom facilities, stage/locker room restrooms, and food service stations. Plumbing service in the Exhibition Hall services the public restroom facilities, a food service station, and storm drainage. Plumbing service in the Concert Hall services public restroom facilities, stage/locker room restrooms, food service stations, and storm drainage. The current quantity of plumbing fixtures meets DOH requirements as defined in HAR §11-11-9. The Blaisdell Center is considered a "high-volume usage facility" by the BWS. Therefore, non-water saving type toilets are permitted. Most of the domestic and waste lines throughout the area are concealed or buried. The plumbing lines on-site are reported to be "old and prone to failure," patch work has been done when required (AECOM 2017c).

The Blaisdell Center's food concessions are considered a high fat, oils, and grease (FOG) generating facility by the CCH Department of Wastewater Management. There is currently a grease interceptor at the end of the concession area's waste line for the Exhibition Hall. The interceptor serves to prevent the coagulation of fats, oils, and grease prior to connecting with the CCH's municipal sewer system (EDAW, Inc. 2009; AECOM 2017c). The second concessions facility in the Arena does not have a grease receptor

or interceptor at the end of its waste line; however, this concession area does not cook or prepare food; if foods were to be cooked a grease receptor would be required.

5.3.2 Potential Impacts

5.3.2.1 Short-term Impacts

It is anticipated that new on-site utility lines for waste water and sewer would be required for connections adjacent to the project area (Geolabs, Inc. 2017, 35). Construction of water or sanitary sewer lines would be limited to the project area only, and standard BMPs would be followed to ensure sewer lines are not hit or impacted by construction activities. If necessary, the contractor can restrict sewer during construction. For utility lines that are to be built on site, the contractor would follow standard BMPs to prevent runoff generated from excavation. It is anticipated that construction activities would not increase the production of wastewater on site; therefore, no short-term impacts are expected to the sanitary sewer system.

5.3.2.2 Long-term Impacts

Waste water and sewage would continue to be carried off-site by the CCH's 8-inch sewer line located on Ward Avenue. Grease interceptors would be installed at the waste lines in all concession areas where food is cooked or prepared to prevent coagulation of fats, oils, and grease in accordance with the CCH Department of Wastewater Management, and the HCDA's Mauka Area Plan (EDAW, Inc. 2009). The facility itself would be brought up to compliance with State Department of Health Regulations.

Upon completion of the project, the usage of wastewater systems would return to near normal conditions, with the total waste water production likely increasing with increased usage of the facility. However, because the facility requires upgrades to its on-site utility line connections it is not anticipated that there would be a significant long-term impact to wastewater and sewage systems. Improvements would increase capacity of the facility's system, thus improving and mitigating any impact to wastewater and sewage systems. Therefore, the proposed project is anticipated to have a negligible effect on the CCH's sewage system, as impacts would be low in intensity, limited to the local extent, and affect a common resource. It is anticipated that the CCH storm drain systems can effectively accommodate the anticipated increase in sewage output (EDAW, Inc. 2009).

5.4 Solid Waste

5.4.1 Affected Environment

Solid waste from the Blaisdell Center is primarily general municipal waste, which includes food waste and packaging materials. There are currently trash bins located throughout the buildings, with additional receptacles located on the property. The solid waste produced by the Blaisdell Center is collected by the CCH's Department of Environmental Services.

5.4.2 Potential Impacts

5.4.2.1 Short-term Impacts

It is anticipated the project would lead to an increase in solid waste generation during the construction phase of the project. This would occur through the following activities: building demolition, landscaping, re-building, and retrofitting. Solid waste would also be produced by other general construction activities. All waste would be characterized and disposed of properly in accordance with the CCH's Department of Design and Construction and contractor requirements. Demolition waste would increase because of demolition and site clearing at the project area. Demolition is planned for the existing parking structure and the Exhibition Hall and adjoining meeting rooms.

A Construction and Waste Management Plan (CWMP) would be completed prior to the demolition any Blaisdell Center facilities. The CWMP would document the means and methods that would be followed by contractors and subcontractors in order to minimize and effectively dispose of demolition and construction wastes. In general, materials from demolition would be recycled when it is feasible to do so. Prior to demolition, buildings would be inventoried for lead-based paint and polychlorinated biphenyl-, mercury-, and asbestos-containing materials. Such materials, if found, would be handled in accordance with Universal Waste Regulations. Any other construction waste, which cannot be diverted to a recycling center, would be directed to the appropriate facility for proper waste disposal.

It is anticipated that the project would also produce compost/recycling green waste from landscaping. Green waste would be directed to the appropriate facility for proper disposal or incineration. To minimize the solid waste production from construction and landscaping activities, waste would be utilized on-site where applicable, or recycled when feasible.

Soil, land clearing debris, and hazardous material shall be disposed of per relevant codes and regulations. It is anticipated that contaminated soils could be present at the Blaisdell Center location (Section 3.4), regulations set forth by DOH would be followed when excavating contaminated soils (Section 3.4.2.1).

While it is anticipated that construction activities would greatly increase the production of waste due to construction activities, all appropriate measures would be adhered to in the collection, handling, and disposal of the waste materials. Short-term impacts are expected to be moderate, as the production of solid waste is of medium intensity, with regional impact, and affects common resources.

5.4.2.2 Long-term Impacts

It is not anticipated that solid waste would be significantly increased after project completion. Following the completion of construction, it is likely that the waste stream would return to normal, with waste production slightly increasing with additional facilities coming online and increased facility usage. Waste reduction measures would be considered in the design phase. The proposed project would not generate sufficient solid waste to have a significant adverse impact on public health or the environment. Long term impacts to solid waste generation is negligible, as it is of low-intensity, localized in extent, and affects a common resource.

5.5 Electrical Power Supply and Communication Systems

5.5.1 Affected Environment

An Electrical and Utility Assessment was conducted for the project in April and May of 2017. Utility electric service is provided to the Blaisdell Center by HECO via two dedicated 12.47kV circuits terminating in the Arena's West Vault primary switchgear. The medium voltage 12.47kV is distributed around the site via concrete encased ducts. HECO does not own transformers on site. The arena building receives electric supply via a concrete encased duct bank originating at the southwest corner of the property, along Kapi'olani and Ward Avenue.

The service from the West Vault Electrical Room is distributed to the arena's east vault, the Exhibition Hall, and the Concert Hall buildings; all feeders are routed in concrete encased ducts and routed along the west side of the property. The parking structure receives its electricity from the transformer that serves the Concert Hall; the electricity for the parking structure is routed through duct banks on the East side of the property between the parking ramp and Exhibition Hall. In a 12-month period, from April 2016 to April 2017, HECO recorded peak demand of 1,652 kW, occurring between August 25 and September 26, 2016 (AECOM 2017b).

There is a diesel generator plant located at the storage building, which distributes electrical power to the facility in the event of power outages. The generator system seems to currently serve non-emergency standby loads. The operation of the generator is not automated, only manual, and thus would require additional work to be brought up to code for emergency capabilities.

The 2017 utility assessment reported that the telecommunications system observations were limited to the main pathway routing between buildings. The main telecommunications service (telecom) enters the main telecom room, which is adjacent to the West Vault Electrical room in the arena. Pathways were observed on the property's west side. The pathways distributed communications from the arena to the Exhibition Hall and concert hall facilities. Underground ducts routed along the south end of the property link the Arena Telecom Room to the storage building and parking ramp (AECOM 2017b).

5.5.2 Potential Impacts

5.5.2.1 Short-term Impacts

It is likely that construction activities would temporarily increase the total power and energy demand with highest consumptive use occurring during the peak daytime construction hours. Contractors would hook into utility lines to power their equipment increasing overall utility consumption at the project area. However, the contractors would be required to utilize temporary power in order to rehabilitate or replace the existing utility metering and distribution switchgear. It is not likely that construction activities would have a significant impact on the public electric utility as it is anticipated that there would be enough energy production during peak construction hours to feed the increased utility consumption. Therefore, it is anticipated that there would be minor impacts to the electric utility, as the utility consumption is low in intensity, is regional in extent, and affects a common resource. Construction activities would have no impact on telecommunications systems in the project area. While telecom on the Blaisdell site would not be impacted during the construction phase, there is both a HECO microwave link crossing the vicinity of the project area and existing HECO fiber facilities running adjacent to the project area. All underground utilities would be identified and flagged prior to any ground disturbance.

Coordination would occur with HECO pertaining to its microwave link that crosses the property to ensure it is not impacted by large construction equipment or other construction materials on the site.

5.5.2.2 Long-term Impacts

HECO would continue to supply the electric utility to the Blaisdell Center after completion of the project. Based on the Electrical and Utility Assessment, the existing utility service appears to have sufficient capacity for future system expansion. The major distribution equipment system, which has become obsolete, would be considered for replacement and/or rehabilitation to minimize system outages (AECOM 2017b). The on-site power generator system would be brought up to code. These updates would be completed during construction.

The redevelopment project would bring the Blaisdell Center's facilities up to the current building electric codes required by the State. Energy conservation measures would also be an important part of future renovations. To the degree possible, the project design strives to build using green design measures to reduce utility consumption. With increased use of the facilities, it is likely that average utility usage would increase; however, with retrofits and energy efficient upgrades it is anticipated that there would not be a significant net increase in utility consumption. Long-term impacts to the electrical power supply is therefore anticipated to be negligible, as impacts would be low in intensity, local in extent, and affect a common resource. Telecommunication systems would not be impacted by the proposed project.

6 Alternatives to the Proposed Action

Although first built as state-of-the-art facility, the now 55-year-old campus is in need of facility, systems and infrastructure upgrades, and renovation. Following a recommendation from the ULI Daniel Rose Center for Public Leadership in Land Use, Honolulu Mayor Kirk Caldwell endorsed a feasibility study as the first step in a Master Plan process. It was determined that redevelopment is the most cost-effective way to help sustain, expand, and modernize the site to showcase Hawai'i's arts and culture for the next 50 years and beyond.

6.1 Alternatives Considered

Based on the existing conditions, technical analyses, public outreach, stakeholder interviews, market analysis, vision, and principles, the following alternatives were developed:

Alternative 1 (No Action Alternative):

Alternative 1 is the “status quo”, or the No Action Alternative. The No Action Alternative retains all three major buildings (with minor renovations) including the Concert Hall, Exhibition Hall, and Arena, as well as the parking structures in the current configuration. Many issues have been identified for the Blaisdell Center, which include financial challenges, operational issues (outdated models, technology and security measures), physical challenges (aging facilities, lack of digital infrastructure), traffic congestion issues and lack of parking. The market analysis and research concluded that it is more cost effective to renovate the Concert Hall and Arena than to maintain the aging and outdated facilities. Under the No Action Alternative, the existing issues would not be resolved and the maintenance of the existing facilities would be less cost effective and escalate over time (AECOM 2015, 2016).

Alternative 2 (Preferred Alternative):

Alternative 2 retains the existing Concert Hall and Arena with renovations and proposes a new Exhibition Hall with meeting rooms and a new parking structure (designed with more efficiency and truck access to all the facilities). Alternative 2 is the Preferred Alternative (see Section 1.1 for a detailed description of the proposed action) because: a) all three venues (Exhibition Hall, Concert Hall and Arena) are heavily used and needed; b) renovating the Arena is the most cost effective approach compared to constructing a new facility; c) the Concert Hall and Arena are considered to hold significant historic values that deserve to be preserved; and d) the Exhibition Hall space has the lowest replacement cost and the largest potential to consolidate the building footprint by utilizing a stacking program, justifying the decision to rebuild this component (AECOM 2015).

6.2 Alternatives Considered, but Dismissed

Alternative 3:

Alternative 3 proposed the most change of all the alternatives. Alternative 3 would retain the existing Concert Hall with renovations, but proposed the following new facilities: Exhibition Hall, Arena, and parking structure (designed with improved efficiency and truck access to all the facilities). However, market research and existing conditions analyses of the current Arena concluded that renovating the Arena is the most cost-effective approach compared to constructing a new facility. Moreover, eligible historic status of both the Arena and Concert Hall contributed to the desire to preserve significant portions of the original structure. Therefore, Alternative 3 was dismissed.

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7 Stakeholder Consultation

7.1 Public Workshop 1 (February 10, 2015)

The first public workshop was held to introduce the purpose and need for the Blaisdell Center Master Plan project and provide an opportunity for the general public to become engaged in the planning process by providing their perspectives on the project vision, goals, potential opportunities, policies, programs, and plans. The meeting was attended by over 165 members of the public.

Before the meeting began, attendees were shown a looping slideshow featuring experiences at the Blaisdell Center to jog their memories, as well as images from the great performing art and entertainment venues around the world to incite inspiration. Mayor Kirk Caldwell provided the opening remarks to formally introduce the project to the community. The city introduced the project team and provided different ways the audience could engage in the planning process: 1) Comment cards were provided to all attendees to be filled out; and 2) Participants could also log on to <http://blaisdellcenter.mindmixer.com> to provide feedback during and after the workshop. The event presentations and small group discussions were focused around the three themes of the past, present and future of the Blaisdell Center.

After the presentation, the participants were provided with the following question: What is your vision for the Blaisdell Center? There were many ideas generated by the public and they varied from management by a private entity (as opposed to continuing the city) to co-operative spaces shared by different arts communities, food truck events, big screens for outdoor performances, maintenance of the current iconic look, and elimination of particular facilities. Below are the most common themes for the future improvement of the Blaisdell Center that were discussed among the small groups.

- Make the Blaisdell Center a world-class destination
- Maintain a campus with multiple venues
- Provide more amenities: food concessions, restaurants, cafés, and shops
- Activate outdoor gathering spaces with plazas, events and activities
- Pursue private-public partnerships and revenue generating opportunities
- Balance new development with open space and iconic architecture
- Integrate the site's rich history, including the natural spring, into its design and programming
- Curate thoughtful programming: big and small programs, local and national-scale productions alike
- Design energy efficient and sustainable facilities
- Connect to the surrounding areas: Kaka'ako, McKinley High School, Punchbowl, Capital District

The next steps for the CCH's consultant team were to gather information on the surrounding context and perform market research. Information gathered was then used to generate alternatives that factored in the input collected during the day.

7.2 Public Workshop 2 (July 13, 2017)

Based on input from the first public workshop in February of 2015, the CCH developed initial designs for the redevelopment of the Blaisdell Center. To share these new plans, the CCH invited the public to reconvene at the Blaisdell Center's Hawai'i Suites on Thursday, July 13, 2017 to report back the progress of the Blaisdell Center Master Plan, share the current Site Plan, and gather feedback on-site Plan

elements and activities. The conversations, comments, and activities were shared by the 109 participants in attendance.

7.2.1 Site Plan Reflections

After a recap of the Feasibility Study conducted in 2015 and a presentation of the most current Site Plan, attendees were asked to provide feedback on the venues/facilities of the current Site Plan during Activity #1. Facilitators asked attendees what they were most excited about. In group discussion format, with maps to reference and record thoughts on, participants described what elements, venues and facilities they were most excited about with the current Site Plan. Facilitators asked two prompting questions: 1) What facility is your favorite? and 2) What activity or element is your favorite? Attendees most favored facilities in the following order: Concert Hall and Arena, the new Performance Hall, the new Exhibition Hall, and the new Sports Pavilion. Favorite activities that were most noted included: outdoor performances, the fishponds, meaningful water features, and outdoor gathering places. Other notable mentions included the need for better handicap accessibility, sustainable elements, and the inclusion of more parking. Other suggestions, concerns, and comments were recorded along with the activity answers. Off-topic questions and concerns were written down on “parking lot” sheets, addressed by the facilitators when possible and reflected in Appendix A. Overall, attendees were excited about the Site Plan and new facilities, but saw concerns when it came to the phasing and cost of the project.

7.2.2 Water

In Activity #2, attendees were asked to provide feedback on the incorporation of water in the current Site Plan. Facilitators asked attendees how they would like to see water expressed on the site. Attendees were given a collection of 28 images with different expressions of water, including features that were active, visual, and ecological. They were asked to choose at least one image that resonated with them at the Blaisdell Center and finish the sentence: “My vision for water at the Blaisdell Center is...” After completing the activity, participants were encouraged to share back in group discussion format why they selected that particular image and how they envision water at the site. The top three water features/qualities that were identified by attendees were fishponds, cultural expressions of water (e.g., lo’i), and ecological uses for water.

7.2.3 Public Spaces

In Activity #3, attendees were asked to provide feedback on the public spaces that are proposed in the new Site Plan. Facilitators asked attendees what kind of outdoor spaces they envisioned at the Blaisdell Center. A large activity sheet with 19 images was placed at each table. Attendees were asked to place a blue sticker on their top three public space or public activity choices and then to place a green sticker on their least favorite choice. With a post-it note, they were asked to explain why they chose their favorite and least favorite space or activity. The top five public spaces or activities identified were:

1. Live Music/Kanikapila
2. Fishponds
3. Festivals
4. Hula Performances
5. Outdoor Terraced Seating

The bottom five public spaces or activities identified were:

1. Modern Public Art
2. Outdoor Internet Café
3. Passive Kids Play/Sand Area
4. Modern Architecture/Landscape
5. Modern Outdoor Seating

It is clear from the results that most attendees were not impressed with modern art or architecture, preferring more natural landscapes that included cultural activities.

In addition to the feedback gathered through the facilitated activities, facilitators again captured attendee's memories at the Blaisdell Center through comment cards left on the tables. The comment cards asked attendees to answer the question, "My favorite memory of the Blaisdell Center is..." The cards were collected and comments added to the other input received during the workshop.

7.3 Public Workshop 3 (November 8, 2017)

Public Workshop 3 was conducted as an Open House where professionals and experts from the design team were assigned to stations around the room to answer community' questions and/or go into greater detail about each Master Plan component. Comment stickers were located at each station for the public to fill out and post on comment boards. The stations included: 1) Site Planning, 2) Concert Hall & Performance Hall, 3) Exhibition Hall, Meeting Rooms and DES Office, 4) Arena and Sports Pavilion, 5) Overall Conceptual Master Plan. The following summarizes the feedback collected from each of the breakout stations and includes all of the Meeting Minutes (AECOM 2018c, Appendix D).

7.3.1 Site Planning

The public was excited about the general site plan with specific interests in building operations, including safety, water, and parking. However, there was concern about the impacts on neighbors and the traffic impacts in the community. Attendees also specified interest in learning more about the Terrace, the use of native plants, and creating more entertainment opportunities.

7.3.2 Concert Hall and Performance Hall

In general, the public was very enthusiastic about the upgrades to the Concert Hall while maintaining its historic aesthetic. In addition, the public was excited about the addition of the Performance Hall and looks forward to attending more performances on the campus. Attendees look forward to receiving more detailed information about the design of the spaces.

7.3.3 Exhibition Hall, Meeting Rooms, and DES Office

In general, the public was very supportive of the size of the proposed Exhibition Hall, and they were intrigued by the flexible spaces. However, there was concern about the details including ceiling height, loading spaces, location of the Box Office, and the ability to close off the skylights when needed. Attendees were also looking for more detail as to how the space would work logistically.

7.3.4 Arena and Sports Pavilion

In general, the public was pleased with the plan once they were able to receive more detail regarding the seating configuration of the proposed redesign of the interior of the arena. They were glad that the space would retain its historic aesthetic but with significant upgrades. Promoters were concerned about loading and specific event details. The staff was interested in receiving more detail about rigging, parking, and storage.

7.3.5 Memories Are Made Here Comment Cards

In addition to the feedback gathered through facilitated activities, facilitators also captured additional memories of the Blaisdell Center through comment cards left on the tables. The comment cards asked attendees to answer the question, "My favorite memory of the Blaisdell Center is..." The cards were collected and comments added to the other input received during the workshop.

7.3.6 Conclusion

Overall, meeting attendees were excited about the direction of the Master Plan while there seemed to be remaining questions about the maintenance and operations of the campus. The public looks forward to receiving more detail about the design of each element of the campus, and they were excited to come to the campus on an ongoing basis for more than just shows. Attendees also enjoyed the opportunity to provide comments and speak with the team of design professionals.

7.4 Pre-Assessment Consultation

The purpose of pre-assessment consultation is to consult with federal, state, and local agencies; organizations; and individuals that may take interest in, or be affected by, the outcome of the project. Early consultation is an important part of the EA process. A total of 36 pre-assessment consultation letters were mailed prior to the preparation of the Draft EA. A total of 8 comments were received. Copies of written responses are included in Appendix A. Table 22 shows to whom letters were sent, and if comments were received from the identified stakeholder.

7.5 Draft EA Public Comment Period

The Draft EA was published in the November 8, 2018 edition of The Environmental Notice by the Office of Environmental Quality Control. The Draft EA or notification of its availability was sent to the following agencies, organizations, stakeholders, interested individuals, and elected officials listed in Table 22. The 30-day public comment period ended on December 10, 2018 and a total of 11 comments were received. All comment letters received regarding the Draft EA have been responded to and are included in the Final EA along with their corresponding response letters as Appendix A, as required by Section 343-5, HRS.

Table 22. Stakeholders Consulted as part of the Pre-Assessment and Draft EA Public Comment Period

Stakeholder	Pre-Assessment	Comment Received	Draft EA	Comment Received
Government of the State of Hawai'i				
Department of Accounting and General Services	✓	✓	✓	
Department of Business, Economic Development and Tourism	✓		✓	
Department of Business, Economic Development and Tourism, Research Library	✓		✓	
Department of Business, Economic Development and Tourism, Strategic Industries Division	✓		✓	
Department of Business, Economic Development and Tourism, Office of Planning	✓	✓	✓	✓
State of Hawai'i, Department of Education, Hawai'i State Library, Hawai'i Document Center	✓		✓	✓
State of Hawai'i, Department of Health, Environmental Health Administration	✓		✓	
State of Hawai'i, Department of Land and Natural Resources, State Historic Preservation Division	✓		✓	
State of Hawai'i, Department of Land and Natural Resources Land Division	✓	✓	✓	
State of Hawai'i, Department of Transportation	✓	✓	✓	
University of Hawai'i, Office of Capital Improvement	✓	✓	✓	
University of Hawai'i, Environmental Center	✓		✓	
University of Hawai'i, Thomas H. Hamilton Library	✓		✓	
Office of Hawaiian Affairs	✓		✓	

Stakeholder	Pre-Assessment	Comment Received	Draft EA	Comment Received
Hawai'i Community Development Authority	✓	✓	✓	
Government of the City and County of Honolulu Agency				
City and County of Honolulu, Board of Water Supply	✓		✓	✓
City and County of Honolulu, Department of Customer Services and Municipal Library	✓		✓	
City and County of Honolulu, Department of Design and Construction	✓		✓	
City and County of Honolulu, Department of Environmental Services	✓		✓	
City and County of Honolulu, Department of Facility Maintenance	✓		✓	✓
City and County of Honolulu, Fire Department	✓	✓	✓	✓
City and County of Honolulu, Department of Community Services	✓		✓	
City and County of Honolulu, Department of Planning and Permitting	✓		✓	✓
City and County of Honolulu, Department of Parks and Recreation	✓	✓	✓	
City and County of Honolulu, Police Department	✓		✓	✓
City and County of Honolulu, Department of Transportation Services	✓	✓	✓	
Elected and Other Officials				
The Honorable Brian Schatz U.S. Senate	✓		✓	
The Honorable Mazie Hirono U.S. Senate	✓		✓	
The Honorable Tulsi Gabbard U.S. House of Representatives	✓		✓	
The Honorable Colleen Hanabusa U.S. House of Representatives	✓		✓	
State Representative Scott Saiki	✓		✓	

Stakeholder	Pre-Assessment	Comment Received	Draft EA	Comment Received
Honolulu City Council Carol Fukunaga	✓		✓	
Kaka'ako Neighborhood Board	✓		✓	✓
Makiki Neighborhood Board	✓		✓	
Others				
Hawaiian Electric Company	✓		✓	✓
Historic Hawai'i Foundation	✓	✓	✓	✓
Kalihi-Palama Culture and Arts Society, Inc.			✓	✓
Honolulu Liquor Commission			✓	
Department of the Prosecuting Attorney			✓	
Honolulu Authority for Rapid Transportation			✓	
First Insurance of Hawaii			✓	
Goodwill Hawaii			✓	
Straub Medical Center			✓	
Velocity Honolulu			✓	
Queen's Medical Center			✓	
Mercedes-Benz Hawaii			✓	

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8 Summary of Impacts from the Preferred Alternative

Resource Area	Impact Summary	Short-term Impact	Mitigation Measure	Long-term Impact	Mitigation Measure
Socioeconomic Environment					
Population and Demographics	There is no anticipated increase in population associated with project. It is likely median incomes would increase as property values increase. There are no effects on median age or race anticipated as a result of the proposed action.	No Impact	No mitigation recommended.	Negligible	No mitigation recommended.
Housing	The proposed action would have no impact to total housing inventory in the project area. The project may contribute to increased property values in the surrounding areas over the long-term.	No Impact	No mitigation recommended.	No Impact	No mitigation recommended.
Operations and Market Conditions	Short-term displacement of regular facility user groups during construction is expected; there would also be a loss in generated revenue. Long-term, there is an anticipated increase in facility usage with an associated increase in generated revenue.	Moderate	Standard construction BMPs to mitigate affect to adjacent businesses. Existing users of Blaisdell facilities would need to find alternative facilities during construction.	Beneficial	No mitigation recommended.
Public Services	Impacts to public services are generally not anticipated from the proposed action. Large events may require police or private security presence.	No Impact	No mitigation recommended.	Negligible	Private security services may be hired for large events to prevent the potential need for police presence.
Natural Environment					
Climate	There are no anticipated impacts to the local climate including temperatures, rainfall, humidity, or wind patterns associated with major facilities renovation and/or new construction. Urban heat islands would not be exacerbated by proposed project.	No Impact	No mitigation recommended.	No Impact	Green building design principles to reduce overall ecological footprint of the building and reduce effect of Urban Heat Island would be implemented.
Topography	Impacts to topography are limited to a localized area as the result of the terrace design. No significant alterations to the natural topographical features would occur.	No Impact	No mitigation recommended.	Minor	Impacts on topography from terrace design increase area available for public space, no mitigation recommended.
Geology	The proposed project is not expected to have any impact on the geologic conditions in the project area. The project is not located within any geologically sensitive area.	No Impact	No mitigation recommended.	No Impact	No mitigation recommended.
Soils	The area has been previously disturbed. During construction, disturbance of topsoil and vegetation would occur on a localized basis. No cumulative, irretrievable, or irrevocable impacts to soil are expected to occur in the project area. Disturbed areas during construction phase would be replanted or covered to prevent any soil erosion. Areas that are excavated would be filled to meet landscaping needs.	Negligible	Standard BMPs would be followed to prevent erosion and runoff of topsoil. Additional BMPs would be implemented to prevent impact to drainage facilities along the adjacent streets.	No Impact	No mitigation recommended.
Hydrogeology	The two water bodies of concern would not be impacted by the proposed project. The confined Nu'uano water body would not be impacted the proposed project. There is no threat to freshwater supply.	No Impact	During dewatering, if required, appropriate construction BMPs would be implemented to protect the shallow brackish water body on site.	No Impact	No mitigation recommended.

Resource Area	Impact Summary	Short-term Impact	Mitigation Measure	Long-term Impact	Mitigation Measure
Seismic Hazards	Construction activities associated with the proposed project would not result in increased earthquake susceptibility in the project area, causing no significant impact on the geology of the site. The final project would have no long-term significant effect on earthquake susceptibility or geological disruptions in the region.	No Impact	Adherence to any requirements from applicable construction/dewatering permits. Appropriate construction BMPs such as tying down loose equipment while not in use would be implemented to prevent impacts in the event of an earthquake.	No Impact	No mitigation recommended.
Flooding and Tsunami Hazards	The project area is located within a low flooding risk area. Construction activities would not cause or exacerbate the effect of any flooding or tsunami hazards in the area. Retrofits and renovations that bring the Blaisdell Center up to current building codes would improve its capabilities as an essential facility in the long-term.	No Impact	No mitigation recommended.	Beneficial	No mitigation recommended.
Other Natural Hazards (Hurricanes, Volcanic Eruptions, Landslides and Wild Fires)	Construction activities could exacerbate the effect of hurricanes if loose materials are not secured prior to the event of a storm and become flying debris. Construction activities would not cause or exacerbate the effect of any other natural hazard in the area. After construction, the Exhibition Hall would be an essential facility to serve the community. Other buildings within the project area would not be designated as hurricane evacuation shelters or essential facilities. As the Blaisdell Center has never been used as a hurricane evacuation shelter, the proposed facilities, once operational, are not expected to have impacts on the effects of a hurricane. Landscaping in the project area is not anticipated to cause or exacerbate any impacts from these natural hazards in the project area.	Minor	Construction materials and equipment would be stored properly when not in use, consistent with construction BMPs. The BMPs prepared by the contractor may include provisions requiring the tie-down of heavy equipment in the event of a predicted pending storm event. The public has other options to seek shelter in the event of a hurricane or natural disaster. To prevent the ignition of a fire during construction activities, standard construction BMPs would be utilized during the construction phase. Vegetation would be maintained to prevent growth of excess understory that could fuel a wildfire, in compliance with current fire codes.	No Impact	No mitigation recommended.
Fauna and Flora	White-fairy terns could be present at the project site, while unlikely construction impacts could occur to the terns during tree and vegetation removal. There would be no impacts to endangered flora, as the vegetation in the project area consists solely of landscaped vegetation.	Minor	Trees would be surveyed prior to removal for nesting terns and Hawaiian hoary bats. No night construction would be permitted. Lights would be directed toward the ground to avoid impact to seabirds flying overhead.	No Impact	No mitigation recommended.

Resource Area	Impact Summary	Short-term Impact	Mitigation Measure	Long-term Impact	Mitigation Measure
Built Environment					
Historic Architectural Resources	<p>In the short term, impacts to historic buildings include the construction activities that would physically alter the buildings and their setting through selective demolition, as well as retention and removal/reconstruction of character-defining features. Adjacent and nearby historic properties would also be impacted in the short term due to construction vehicle traffic, noise, and related short-term disruptions such as temporary street closures.</p> <p>Physical alterations would impact the buildings in the long term. The addition of a terrace, new water features, and outdoor use spaces would change the look and function of the project site, but an Architectural Historian would be available to assist the design and construction teams identify character-defining features.</p>	Major	Mitigation measures include oversight by a historic architect in the design and construction phases, with the intent to minimize and reduce impacts to historic integrity. Character-defining features to be retained would be protected during construction, and others would be reconstructed. All work would be done in compliance with Secretary of Interior Standards for the Treatment of Historic Properties.	Major	The Master Plan aims to minimize and avoid impacts to historic architectural integrity through multiple mitigation measures (see temporary impacts mitigation measures, which also apply to long-term). The project would also develop a detailed Mitigation Plan as part of the HRS Chapter 6E historic preservation review process.
Archaeological Resources	Due to the excavation and ground disturbance required to demolish existing features, there is potential for the discovery of or impacts to subsurface features related to agricultural practices, fishponds, and human burials during construction. However, all activities would be done in Consultation with SHPD and according to BMPs. Due to the proposed excavation and ground disturbance, there is potential for discovery of and impact to subsurface features; however, all activities would be done in Consultation with SHPD and according to BMPs.	Minor	An Archaeological Inventory Survey (AIS) is pending prior to construction; contractor would follow guidelines addressed in corresponding AISP. If previously undiscovered archaeological resources, such as burials, artifacts, concentrations of charcoal or shells are found during construction activities, work shall cease in the immediate project vicinity and the find would be protected from further damage. The contractor shall immediately contact the State Historic Preservation Division.	Minor	Irreversible ground disturbance has the potential to impact archaeological sites permanently. In addition to archaeological survey in advance of construction, mitigation measures during construction would be followed.
Cultural Practices and Traditions	Present-day cultural practice of hula at Blaisdell, which is the primary venue of two major hula competitions, would experience temporary impacts as the facility would be closed for an anticipated three years. However, in the long term, this practice would be enhanced through the availability of improved facilities for hula activities. The project would have no impacts on traditional historical uses of the location prior to the Blaisdell Center because these traditional practices were already displaced by twentieth-century urban development, which altered the landscape drastically.	Minor	The impacts from construction would forestall the use of the space for currently held, annual hula competitions during the constructional period for an anticipated 3 years.	Beneficial	Satisfied by design: additional spaces that allow for traditional practices such as hula and ceremonies included in proposed plan. New landscape features would highlight and interpret the historic and cultural importance of water resources throughout the property.
Noise	Impacts from noise are temporary in nature and would be sourced from demolition, pile driving, and excavation activities associated with construction. No long-term impact would occur after completion of renovation and new facility construction. Short-term impacts from construction would be sourced from excavation activities. Long-term outdoor venues and gathering spaces may generate noise during special events when permitted.	Moderate	Community noise permit would be obtained; construction would be limited to daytime hours. If/when pile driving is occurring workers would wear hearing protection.	Negligible	To mitigate noise from special events, speakers and noise-emitting sources would be directed towards the audience. Noise permits would be obtained from DOH for outdoor events that are expected to emit noise with higher sound level than the maximum permissible noise level for multi-use space.

Resource Area	Impact Summary	Short-term Impact	Mitigation Measure	Long-term Impact	Mitigation Measure
Air Quality	Fugitive dust and exhaust fumes from construction equipment and activities are expected short-term from demolition and excavation. Long-term there are no anticipated impacts to air quality, potential impacts are secondary arising from potential for increased traffic volume in the area.	Minor	To mitigate fugitive dust and exhaust fumes standard construction BMPs would be followed. The site would be closed to public to reduce impact associated with decreased air quality.	Minor	Impacts to air quality could result from increased traffic associated with increased facility usage. See traffic analysis for mitigation measures.
Land Use	Short-term impact to land use due to nature of construction activities, facility would be closed during construction for demolition of buildings and renovations. Long-term no impacts to land use are anticipated. Long-term the landscaping would improve intended land-use as public space.	Minor	Impact to land-use is temporary and necessary for public safety. No mitigation recommended.	Beneficial	Satisfied by design, improves intended land use as public space. No mitigation recommended.
Transportation	Short term: Most significant impact from loss of parking facilities. Increase in construction traffic also anticipated. Long-term: there would be an increase in facility usage, design practices implemented to mitigate increased facility usage.	Moderate	Users of parking garage would need to find alternative parking options or alternative modes of transportation during renovation. Significant increase in construction traffic would be mitigated by directing major truck activity to off-peak time periods to minimize impact to commuter peak period traffic operations.	Beneficial	Design intended to decrease conflict conditions, and increase and encourage alternative modes of transportation, such as bike, rail, and pedal transportation.
Parks and Open Space	Impacts to parks and open space would be limited to the project site during construction closure. Long-term improvement of open space.	Minor	Closure of the property unavoidable for health and safety reasons, no mitigation recommended.	Beneficial	Satisfied by design, plan improves and increases total area of open space available to the public.
Visual Resources	Short-term impacts to views are anticipated as the property would be closed off to the public, and barrier walls would be set up around the property. In the long-term, changes the ground level view would be low intensity, not affecting any unique designated viewsheds.	Moderate	Impacts to visual resources from construction are necessary to ensure public health and safety.	Negligible	Satisfied by design, no mitigation recommended.
Infrastructure and Utilities					
Hydrology and Storm Drainage	Construction activities would temporarily increase erosion and sediment runoff as excavation and ground disturbing activities would be required for new buildings. In the long-term, there is no anticipated impact on hydrology and storm drainage resulting from the completion of the proposed project. It is anticipated that construction activities would temporarily increase erosion during excavation, grading, and landscaping activities.	Minor	Standard BMPs would be put in place to prevent excessive runoff and sediment erosion during the construction process. A NPDES permit would be obtained from the State DOH.	Beneficial	Satisfied by design, low impact development methods would reduce runoff improving storm drainage in the long-term. The fishpond circulation would be improved, and lo'i terraces would harvest stormwater.
Water	Potable water utility use anticipated to increase with increase facility use. Irrigation with fresh-water would continue at the site.	No impact	Potable water utilities not expected to be impacted by construction activities.	Negligible	Increased potable water utility consumption likely, water conservation fixtures installed where feasible.
Sanitary Sewer Systems	It is anticipated that construction activities would not increase the production of wastewater on site. There would likely be a long-term increase in sanitary waste with increased facility usage. Sanitary systems would not be impacted by landscaping in the long-term Potential impacts to sanitary sewer systems would be mitigated for using standard construction BMPs.	No Impact	Standard BMPs would be followed to ensure public sewer lines are not hit or impacted by construction activities.	Negligible	Some sanitary systems on-site would likely be upgraded to meet increased sanitary waste production. Impact to public utility would be negligible.

Resource Area	Impact Summary	Short-term Impact	Mitigation Measure	Long-term Impact	Mitigation Measure
Solid Waste	Solid waste generated from demolition is anticipated to be substantial. Long-term increased facility usage would be associated with more solid waste production. Significant green waste would be produced from landscaping during the construction phase of Master Plan implementation.	Minor	Buildings would be inspected for hazardous substances (asbestos, PCBs, mercury, lead) prior to demolition. Proper disposal in accordance with City Dept. of Environmental Services would be followed for all solid waste during construction.	Negligible	Increased facility usage would result in slightly increased solid/municipal waste production. Necessary and required recycling measures would be put in place to minimize impact.
Electrical Power Supply and Communication Systems	Contractors would hook into utility lines to power their equipment during construction and would be required to utilize temporary power for some work. It is anticipated that there would be enough energy production from the public utility during peak construction hours to feed the increased utility consumption. In the long-term, the redevelopment project would bring the Blaisdell Center's facilities up to the current building electric codes required by the State. Energy conservation measures would also be an important part of future renovations.	Minor	No mitigation recommended.	Negligible	Green design measures and energy efficient lighting would be implemented to reduce anticipated increases in utility consumption.

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9 Relationship to Land Use Plans, Policies, and Controls

This section describes the proposed project in relation to the applicable policies and controls of the State of Hawai'i and the CCH.

9.1 Federal Policies and Controls

The following federal policies and controls are applicable to the implementation of the Blaisdell Center Master Plan.

9.1.1 Coastal Zone Management Act

The National Coastal Zone Management Act (CZMA) of 1972 as codified in 16 U.S.C. § 1451-1464, Chapter 33 provides for the management of the nation's coastal resources. The goal of the CZMA is to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone." Hawai'i's Coastal Zone Management (CZM) program, pursuant to HRS Chapter 205A, is administered by the State Office Planning.

A CZM federal consistency review is not required for the implementation of the Blaisdell Center Master Plan as an Army Corps of Engineers permit is not required. However, compliance with the State CZM program, HRS §205A, is required to satisfy the requirements of HRS 343. Compliance with the State CZM program is discussed further in Section 9.2.7, State Plans, Policies, and Controls.

9.1.2 National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966, as codified in 54 U.S.C. 300101 et seq., provides for the preservation of historical and archaeological sites within the United States. The NHPA created the NRHP as well as the State Historic Preservation Offices. The NRHP serves as the official list of historic properties worthy of preservation, based on their elements, such as architecture, archaeology, or significance to a person or event. The NHPA is applicable to six listed historic properties within a 0.25-mile radius of the Blaisdell Center, not including the property itself. The Blaisdell Center itself is considered "Eligible" as it reached its 50th anniversary in 2014. These properties, and the impact of the Blaisdell Center redevelopment on these properties, are discussed in detail in Section 4.1.

National Register status does not trigger state or local historic protections. Federal funds are not being used for the project, and the Master Plan as proposed does not require federal permits; therefore Section 106 Consultation is not required. Historic Preservation Consultation with the SHPD, however, is required per HRS Chapter 6E.

9.1.3 Americans with Disabilities Act

ADA, as codified in 42 U.S.C. § 12101, sets requirements for accessibility by persons with physical disabilities on public accommodations. To comply with ADA standards, any new or reconstructed sidewalks, pathways, and public access to new structures would be constructed to meet ADA requirements.

9.2 State Plans, Policies, and Controls

Various state plans, policies, and controls serve as guidelines for development within the State of Hawai‘i; these include the Hawai‘i State Plan, State Functional Plans, Special District Plans (Kaka‘ako Mauka Area), and TOD plans. The following describes the relationship between these plans and the implementation of the Blaisdell Center Master Plan.

9.2.1 State Environmental Review Law (Chapter 343, Hawai‘i Revised Statutes)

The State’s Environmental Review Law requires an Environmental Assessment for specific actions. An Environmental Assessment is required for certain actions when State or County lands or funds are used. This EA was prepared in accordance with HRS Chapter 343 as the implementation of the Blaisdell Center Master Plan is located on County property, and uses County funds.

9.2.2 State Land Use Law

The State Land Use Law, as codified in HRS Chapter 205, established the State Land Use Commission and authorizes this body to designate all lands in the state into one of four districts: Urban, Agricultural, Rural, or Conservation. Per Chapter 205, the Blaisdell Center is located within the Urban Land Use District. Compliance with this designation is further discussed in Section 4.6, Land Use.

9.2.3 Hawai‘i State Plan

In accordance with HAR §11-200-10(4), the following section describes how the project is consistent with the goals, objectives, and policies set forth in Hawai‘i Revised Statutes (HRS) Title 13, Chapter 226: The Hawai‘i State Planning Act. The State Planning Act was signed into law in 1978 to “improve the planning process, to increase the effectiveness of government and private actions, to improve coordination among different agencies and levels of government, to provide for wise use of Hawai‘i’s resources and to guide the future development of the State” (HRS § 226-1). The Hawai‘i State Plan sets goals, objectives, policies, and priority guidelines for growth, development, and allocation of resources throughout the state. Overall theme, goals, objectives, policies, and guidelines of the Hawai‘i State Plan outlined in HRS Chapter 226 and their applicability to the Blaisdell Center, are discussed below.

HAWAI‘I STATE PLAN, CHAPTER 226, HRS PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	C	N/C	N/A
HRS § 226-1: Findings and Purpose.			
HRS § 226-2: Definitions.			
HRS § 226-3: Overall Theme.			
HRS § 226-4: State Goals.			
<p>Goals: In order to guarantee, for the present and future generations, those elements of choice and mobility that insure that individuals and groups may approach their desired levels of self-reliance and self-determination, it shall be the goal of the State to achieve:</p> <ol style="list-style-type: none"> 1. A strong, viable economy, characterized by stability, diversity and growth that enables fulfillment of the needs and expectations of Hawai‘i’s present and future generations. 	X		

HRS § 226-4: State Goals.			
2. A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.	X		
3. Physical, social and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring and of participation in community life.	X		
Discussion: Master Plan implementation helps the State reach all of goals defined above, as the project would enhance the local economy through the creation of jobs and public space; improves the beauty and cleanliness around the Blaisdell Center property; and provides a central gathering space that would nourish the sense of community.			

HRS § 226-5: Objectives and policies for population.			
Objective: It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic and social objectives contained in this chapter.			
Policies:			
1. Manage population growth statewide in a manner that provides increased opportunities for Hawai'i's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each County.			X
2. Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.			X
3. Promote increased opportunities for Hawai'i's people to pursue their socioeconomic aspirations throughout the islands.			X
4. Encourage research activities and public awareness programs to foster an understanding of Hawai'i's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawai'i's population.			X
5. Encourage federal actions and coordination among major governmental agencies to promote a more balanced distribution of immigrants among the states, provided that such actions do not prevent the reunion of immediate family members.			X
6. Pursue an increase in federal assistance for states with a greater proportion of foreign immigrants relative to their state's population.			X
7. Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area.			X
Discussion: The Blaisdell Center redevelopment would neither guide population growth on the island, nor be inconsistent or contrary to any policies outlined in HRS 226-5. The redevelopment would, in general, provide increase in economic opportunities through employment at the Center and the enhanced artistic, sport, entertainment, cultural and recreational opportunities in the community.			

HRS § 226-6: Objectives and policies for the economy in general.			
Objective: Planning for the State's economy in general shall be directed toward achievement of the following objectives:			
1. Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawai'i's people, while at the same time stimulating the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.			X

HRS § 226-6: Objectives and policies for the economy in general.			
2. A steadily growing and diversified economic base that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands.			X
Policies:			
1. Promote and encourage entrepreneurship within Hawai'i by residents and nonresidents of the State.			X
2. Expand Hawai'i's national and international marketing, communication, and organizational ties, to increase the State's capacity to adjust to and capitalize upon economic changes and opportunities occurring outside the State.			X
3. Promote Hawai'i as an attractive market for environmentally and socially sound investment activities that benefit Hawai'i's people.			X
4. Transform and maintain Hawai'i as a place that welcomes and facilitates innovative activity that may lead to commercial opportunities.			X
5. Promote innovative activity that may pose initial risks, but ultimately contribute to the economy of Hawai'i.			X
6. Seek broader outlets for new or expanded Hawai'i business investments.			X
7. Expand existing markets and penetrate new markets for Hawai'i's products and services.			X
8. Assure that the basic economic needs of Hawai'i's people are maintained in the event of disruptions in overseas transportation.			X
9. Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.			X
10. Encourage the formation of cooperatives and other favorable marketing arrangements at the local or regional level to assist Hawai'i's small scale producers, manufacturers, and distributors.			X
11. Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.			X
12. Encourage innovative activities that may not be labor-intensive, but may otherwise contribute to the economy of Hawai'i.			X
13. Foster greater cooperation and coordination between the government and private sectors in developing Hawai'i's employment and economic growth opportunities.			X
14. Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.			X
15. Maintain acceptable working conditions and standards for Hawai'i's workers.			X
16. Provide equal employment opportunities for all segments of Hawai'i's population through affirmative action and nondiscrimination measures.			X
17. Stimulate the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.			X
18. Encourage businesses that have favorable financial multiplier effects within Hawai'i's economy, particularly with respect to emerging industries in science and technology.			X
19. Promote and protect intangible resources in Hawai'i, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.			X

HRS § 226-6: Objectives and policies for the economy in general.			
20. Increase effective communication between the educational community and the private sector to develop relevant curricula and training programs to meet future employment needs in general, and requirements of new or innovative potential growth industries in particular.			X
21. Foster a business climate in Hawai'i—including attitudes, tax and regulatory policies, and financial and technical assistance programs—that is conducive to the expansion of existing enterprises and the creation and attraction of new business and industry.			X
Discussion: While not directly resulting in achieving economic objectives and policies outlined in HRS 226-6, after the initial construction phase, the project would act as a catalyst to stimulate the development and expansion of economic activities associated with enhanced artistic, sport, entertainment, cultural and recreational opportunities in the community.			

HRS § 226-7 Objectives and policies for the economy agriculture.			
Objective: Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:			
1. Viability of Hawai'i's sugar and pineapple industries.			X
2. Growth and development of diversified agriculture throughout the State.			X
3. An agriculture industry that continues to constitute a dynamic and essential component of Hawai'i's strategic, economic, and social well-being.			X
Policies:			
1. Establish a clear direction for Hawai'i's agriculture through stakeholder commitment and advocacy.			X
2. Encourage agriculture by making best use of natural resources.			X
3. Provide the governor and the legislature with information and options needed for prudent decision making for the development of agriculture.			X
4. Establish strong relationships between the agricultural and visitor industries for mutual marketing benefits.			X
5. Foster increased public awareness and understanding of the contributions and benefits of agriculture as a major sector of Hawai'i's economy.			X
6. Seek the enactment and retention of federal and state legislation that benefits Hawai'i's agricultural industries.			X
7. Strengthen diversified agriculture by developing an effective promotion, marketing, and distribution system between Hawai'i's producers and consumer markets locally, on the continental United States, and internationally.			X
8. Support research and development activities that provide greater efficiency and economic productivity in agriculture.			X
9. Enhance agricultural growth by providing public incentives and encouraging private initiatives.			X
10. Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs.			X
11. Increase the attractiveness and opportunities for an agricultural education and livelihood.			X
12. Expand Hawai'i's agricultural base by promoting growth and development of flowers, tropical fruits and plants, livestock, feed grains, forestry, food crops, aquaculture, and other potential enterprises.			X

HRS § 226-7 Objectives and policies for the economy agriculture.			
13. Promote economically competitive activities that increase Hawai'i's agricultural self-sufficiency.			X
14. Promote and assist in the establishment of sound financial programs for diversified agriculture.			X
15. Institute and support programs and activities to assist the entry of displaced agricultural workers into alternative agricultural or other employment.			X
16. Facilitate the transition of agricultural lands in economically nonfeasible agricultural production to economically viable agricultural uses.			X
17. Perpetuate, promote, and increase use of traditional Hawaiian farming systems, such as the use of loko i'a, mala, and irrigated lo'i, and growth of traditional Hawaiian crops, such as kalo, uala, and 'ulu.			X
18. Increase and develop small-scale farms.			X
Discussion: The Blaisdell Center redevelopment would neither assist in achieving the agricultural related goals nor be inconsistent or contrary to any policies outlined in HRS 226-7.			

HRS § 226-8: Objectives and policies for the economy visitor industry.			
Objective: Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawai'i's economy.			
Policies:			
1. Support and assist in the promotion of Hawai'i's visitor attractions and facilities.	X		
2. Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawai'i's people.	X		
3. Improve the quality of existing visitor destination areas.	X		
4. Encourage cooperation and coordination between the government and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities.	X		
5. Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawai'i's people.	X		
6. Provide opportunities for Hawai'i's people to obtain job training and education that will allow for upward mobility within the visitor industry.			X
7. Foster a recognition of the contribution of the visitor industry to Hawai'i's economy and the need to perpetuate the aloha spirit.			X
8. Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawai'i's cultures and values.	X		
Discussion: Master Plan implementation would provide visitor attractions and facilities, and encourages the cooperation between government and private sector through the provision of additional spaces for retail vendors on City property. The addition of an Arts Ensemble and performance space for hālau hula further supports this objective and perpetuates the aloha spirit.			

HRS § 226-9: Objective and policies for the economy federal expenditures.			
Objective: Planning for the State's economy with regard to federal expenditures shall be directed towards achievement of the objective of a stable federal investment base as an integral component of Hawai'i's economy.			
Policies:			
1. Encourage the sustained flow of federal expenditures in Hawai'i that generates long-term government civilian employment.			X
2. Promote Hawai'i 's supportive role in national defense.			X
3. Promote the development of federally supported activities in Hawai'i that respect state-wide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawai'i's environment.			X
4. Increase opportunities for entry and advancement of Hawai'i's people into federal government service.			X
5. Promote federal use of local commodities, services, and facilities available in Hawai'i.			X
6. Strengthen federal-state-county communication and coordination in all federal activities that affect Hawai'i.			X
7. Pursue the return of federally controlled lands in Hawai'i that are not required for either the defense of the nation or for other purposes of national importance, and promote the mutually beneficial exchanges of land between federal agencies, the State, and the counties.			X
Discussion: The Blaisdell Center redevelopment would neither assist in achieving the federal related goals nor be inconsistent or contrary to any policies outlined in HRS 226-9.			

HRS § 226-10: Objectives and policies for the economy potential growth and innovative activities.			
Objective: Planning for the State's economy with regard to potential growth activities shall be directed towards achievement of the objective of development and expansion of potential growth activities that serve to increase and diversify Hawai'i's economic base.			
Policies:			
1. Facilitate investment and employment growth in economic activities that have the potential to expand and diversify Hawai'i's economy, including but not limited to diversified agriculture, aquaculture, renewable energy development, creative media, health care, and science and technology-based sectors.			X
2. Facilitate investment in innovative activity that may pose risks or be less labor-intensive than other traditional business activity, but if successful, will generate revenue in Hawai'i through the export of services or products or substitution of imported services or products.			X
3. Encourage entrepreneurship in innovative activity by academic researchers and instructors who may not have the background, skill, or initial inclination to commercially exploit their discoveries or achievements.			X
4. Recognize that innovative activity is not exclusively dependent upon individuals with advanced formal education, but that many self-taught, motivated individuals are able, willing, sufficiently knowledgeable, and equipped with the attitude necessary to undertake innovative activity.			X
5. Increase the opportunities for investors in innovative activity and talent engaged in innovative activity to personally meet and interact at cultural, art, entertainment, culinary, athletic, or visitor-oriented events without a business focus.	X		

HRS § 226-10: Objectives and policies for the economy potential growth and innovative activities.			
6. Expand Hawai'i's capacity to attract and service international programs and activities that generate employment for Hawai'i's people.	X		
7. Enhance and promote Hawai'i's role as a center for international relations, trade, finance, services, technology, education, culture, and the arts.	X		
8. Accelerate research and development of new energy-related industries based on wind, solar, ocean, underground resources, and solid waste.			X
9. Promote Hawai'i's geographic, environmental, social, and technological advantages to attract new or innovative economic activities into the State.			X
10. Provide public incentives and encourage private initiative to attract new or innovative industries that best support Hawai'i's social, economic, physical, and environmental objectives.			X
11. Increase research and the development of ocean-related economic activities such as mining, food production, and scientific research.			X
12. Develop, promote, and support research and educational and training programs that would enhance Hawai'i's ability to attract and develop economic activities of benefit to Hawai'i.			X
13. Foster a broader public recognition and understanding of the potential benefits of new or innovative growth-oriented industry in Hawai'i.			X
14. Encourage the development and implementation of joint federal and state initiatives to attract federal programs and projects that would support Hawai'i's social, economic, physical, and environmental objectives.			X
15. Increase research and development of businesses and services in the telecommunications and information industries.			X
16. Foster the research and development of nonfossil fuel and energy efficient modes of transportation.			X
17. Recognize and promote health care and health care information technology as growth industries.			X
<p>Discussion: The project is consistent with the majority of the objectives and policies of HRS 226-10. The redevelopment of Blaisdell Center would result in enhanced, modern facilities to allow investors and talent to meet and interact at cultural, art, entertainment, culinary, athletic or visitor-oriented events without a business focus. With expanded and modern facilities, more international programs and activities may be attracted to Hawai'i. This, in turn, may generate employment for Hawai'i's people.</p>			

HRS § 226-10.5: Objectives and policies for the economy information industry.			
<p>Objective: Planning for the State's economy with regard to telecommunications and information technology shall be directed toward recognizing that broadband and wireless communication capability and infrastructure are foundations for an innovative economy and positioning Hawai'i as a leader in broadband and wireless communications and applications in the Pacific Region.</p>			
<p>Policies:</p>			
1. Promote efforts to attain the highest speeds of electronic and wireless communication within Hawai'i and between Hawai'i and the world, and make high speed communication available to all residents and businesses in Hawai'i;			X
2. Encourage the continued development and expansion of the telecommunications infrastructure serving Hawai'i to accommodate future growth and innovation in Hawai'i's economy;			X

HRS § 226-10.5: Objectives and policies for the economy information industry.			
3.	Facilitate the development of new or innovative business and service ventures in the information industry which would provide employment opportunities for the people of Hawai'i;		X
4.	Encourage mainland- and foreign-based companies of all sizes, whether information technology-focused or not, to allow their principals, employees, or contractors to live in and work from Hawai'i, using technology to communicate with their headquarters, offices, or customers located out-of-state;		X
5.	Encourage greater cooperation between the public and private sectors in developing and maintaining a well- designed information industry;		X
6.	Ensure that the development of new businesses and services in the industry are in keeping with the social, economic, and physical needs and aspirations of Hawai'i's people;		X
7.	Provide opportunities for Hawai'i's people to obtain job training and education that would allow for upward mobility within the information industry;		X
8.	Foster a recognition of the contribution of the information industry to Hawai'i's economy; and		X
9.	Assist in the promotion of Hawai'i as a broker, creator, and processor of information in the Pacific.		X
Discussion: Policies and objectives of HRS 226-10 are not applicable to the Blaisdell Center project.			

HRS § 226-11: Objectives and policies for the physical environment land-based, shoreline, and marine resources.			
Objective: Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawai'i's scenic assets, natural beauty, and multi-cultural/historical resources.			
1.	Prudent use of Hawai'i's land-based, shoreline, and marine resources.	X	
2.	Effective protection of Hawai'i's unique and fragile environmental resources.		X
Policies:			
1.	Exercise an overall conservation ethic in the use of Hawai'i's natural resources.		X
2.	Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.		X
3.	Take into account the physical attributes of areas when planning and designing activities and facilities.	X	
4.	Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.	X	
5.	Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.		X
6.	Encourage the protection of rare or endangered plant and animal species and habitats native to Hawai'i.	X	
7.	Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.		X
8.	Pursue compatible relationships among activities, facilities, and natural resources.	X	
9.	Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.	X	

HRS § 226-11: Objectives and policies for the physical environment land-based, shoreline, and marine resources.			
Discussion: Objectives outlined above are important components of the Master Plan, conformance with the above objectives are addressed in Section 1 of this EA.			

HRS § 226-12: Objectives and policies for the physical environment scenic, natural beauty, and historic resources.			
Objective: Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawai'i's scenic assets, natural beauty, and multi-cultural/historical resources.			
Policies:			
1. Promote the preservation and restoration of significant natural and historic resources.	X		
2. Provide incentives to maintain and enhance historic, cultural, and scenic amenities.			X
3. Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.	X		
4. Protect those special areas, structures, and elements that are an integral and functional part of Hawai'i's ethnic and cultural heritage.	X		
5. Encourage the design of developments and activities that complement the natural beauty of the islands.	X		
Discussion: Objectives outlined above are important components of the Master Plan, conformance with the above objectives are addressed in Section 4 of this EA.			

HRS § 226-13: Objectives and policies for the physical environment land, air, and water quality.			
Objective: Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:			
1. Maintenance and pursuit of improved quality in Hawai'i's land, air, and water resources.	X		
2. Greater public awareness and appreciation of Hawai'i's environmental resources.			X
Policies:			
1. Foster educational activities that promote limited environmental resources.			X
2. Promote the proper management of Hawai'i's land and water resources.	X		
3. Promote effective measures to achieve desired quality in Hawai'i's surface, ground, and coastal waters.	X		
4. Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawai'i's people.			X
5. Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.	X		
6. Encourage design and construction practices that enhance the physical qualities of Hawai'i's communities.	X		
7. Encourage urban developments in close proximity to existing services and facilities.	X		
8. Foster recognition of the importance and value of the land, air, and water resources to Hawai'i's people, their cultures, and visitors.			X

HRS § 226-13: Objectives and policies for the physical environment land, air, and water quality.			
Discussion: Objectives outlined above are important components of the Master Plan, conformance with the above objectives are addressed in Section 1 and 4 of this EA.			

HRS § 226-14: Objective and policies for facility systems in general.			
Objective: Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.			
Policies:			
1. Accommodate the needs of Hawai'i's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.	X		
2. Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.	X		
3. Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.	X		
4. Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.	X		
Discussion: The Blaisdell Center redevelopment is consistent with the policies of HRS 226-14. This capital improvement is consistent with the development goals of the civic center of Honolulu and as the main multi-use civic gathering and entertainment area for the state. The project is being pursued in response to changing public and vendor demands for modern public facilities as a reasonable cost. Possible use of public private partnerships is being explored for the operation and maintenance of the facilities.			

HRS § 226-15: Objectives and policies for facility systems solid and liquid wastes.			
Objective: Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:			
1. Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.	X		
2. Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.			X
Policies:			
1. Encourage the adequate development of sewerage facilities that complement planned growth.	X		
2. Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.	X		
3. Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.			X
Discussion: The Blaisdell Center redevelopment would be consistent with the objectives and policies of HRS 226-15. Modern designs for the disposal of solid and liquid wastes would be incorporated to complement the planned development. Reuse and recycling would be promoted as required by state and city laws while other efficiencies would be explored for incorporation into the design and operation of the Center.			

HRS § 226-16: Objectives and policies for facility systems water.			
Objective: Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.			
Policies:			
1. Coordinate development of land use activities with existing and potential water supply.	X		
2. Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.			X
3. Reclaim and encourage the productive use of runoff water and wastewater discharges.	X		
4. Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.			X
5. Support water supply services to areas experiencing critical water problems.			X
6. Promote water conservation programs and practices in government, private industry, and the general public to help ensure adequate water to meet long-term needs.	X		
Discussion: The objectives outlined above are important components of Master Plan implementation, and are discussed further in Section 5.1, Hydrology and Stormwater Drainage and Section 5.2, Water.			

HRS § 226-17: Objectives and policies for facility systems transportation.			
Objective: Planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to all:			
1. An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.	X		
2. A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.	X		
Policies:			
1. Design, program, and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter;	X		
2. Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives;	X		
3. Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties;	X		
4. Provide for improved accessibility to shipping, docking, and storage facilities			X
5. Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs;	X		
6. Encourage transportation systems that serve to accommodate present and future development needs of communities;	X		
7. Encourage a variety of carriers to offer increased opportunities and advantages to interisland movement of people and goods;			X
8. Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs;			X
9. Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification;			X

HRS § 226-17: Objectives and policies for facility systems transportation.			
10. Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawai'i's natural environment;			X
11. Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation;	X		
12. Coordinate intergovernmental land use and transportation planning activities to ensure the timely delivery of supporting transportation infrastructure in order to accommodate planned growth objectives; and	X		
13. Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.	X		
Discussion: Objectives outlined above are important components of Master Plan implementation, and are discussed further in Section 4.7, Transportation.			

HRS § 226-18: Objectives and policies for facility systems energy			
Objective: (a) Planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to all:			
1. Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;			X
2. Increased energy security and self-sufficiency through the reduction and ultimate elimination of Hawai'i's dependence on imported fuels for electrical generation and ground transportation;	X		
3. Greater diversification of energy generation in the face of threats to Hawai'i's energy supplies and systems;	X		
4. Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use; and			X
5. Utility models that make the social and financial interests of Hawai'i's utility customers a priority.			X
Policies: (b) To achieve the energy objectives, it shall be the policy of this State to ensure the short- and long-term provision of adequate, reasonably priced, and dependable energy services to accommodate demand. (c) To further achieve the energy objectives, it shall be the policy of this State to:			
1. Support research and development as well as promote the use of renewable energy sources;			X
2. Ensure that the combination of energy supplies and energy-saving systems is sufficient to support the demands of growth;			X
3. Base decisions of least-cost supply-side and demand-side energy resource options on a comparison of their total costs and benefits when a least-cost is determined by a reasonably comprehensive, quantitative, and qualitative accounting of their long-term, direct and indirect economic, environmental, social, cultural, and public health costs and benefits;			X
4. Promote all cost-effective conservation of power and fuel supplies through measures including:			
A) Development of cost-effective demand-side management programs;	X		
B) Education;			X
C) Adoption of energy-efficient practices and technologies; and	X		
D) Increasing energy efficiency and decreasing energy use in public infrastructure;	X		

HRS § 226-18: Objectives and policies for facility systems energy			
5. Ensure, to the extent that new supply-side resources are needed, that the development or expansion of energy systems uses the least-cost energy supply option and maximizes efficient technologies;	X		
6. Support research, development, and demonstration of energy efficiency, load management, and other demand-side management programs, practices, and technologies;			X
7. Promote alternate fuels and transportation energy efficiency;	X		
8. Support actions that reduce, avoid, or sequester greenhouse gases in utility, transportation, and industrial sector applications; and			X
9. Support actions that reduce, avoid, or sequester Hawai'i's greenhouse gas emissions through agriculture and forestry initiatives.			X
10. Provide priority handling and processing for all state and county permits required for renewable energy projects;			X
11. Ensure that liquefied natural gas is used only as a cost-effective transitional, limited-term replacement of petroleum for electricity generation and does not impede the development and use of other cost-effective renewable energy sources; and			X
12. Promote the development of indigenous geothermal energy resources that are located on public trust land as an affordable and reliable source of firm power for Hawai'i.			X
Discussion: The Blaisdell Center redevelopment would generally be consistent with energy objective and policies in HRS 226-18. Objectives and policies outlined above are important components of Master Plan implementation, and are discussed further in Section 5.5 Electrical Power Supply and Communications Systems.			

HRS § 226-18.5: Objectives and policies for facility systems telecommunications			
Objective: Planning for the State's telecommunications facility systems shall be directed towards the achievement of dependable, efficient, and economical statewide telecommunications systems capable of supporting the needs of the people.			
Policies:			
1. Facilitate research and development of telecommunications systems and resources;			X
2. Encourage public and private sector efforts to develop means for adequate, ongoing telecommunications planning;			X
3. Promote efficient management and use of existing telecommunications systems and services; and			X
4. Facilitate the development of education and training of telecommunications personnel.			X
Discussion: Objectives and Policies of HRS 226-18.5 are not applicable to the Blaisdell Center redevelopment.			

HRS § 226-19: Objectives and policies for socio-cultural advancement housing.			
Objective: Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:			
1. Greater opportunities for Hawai'i's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more affordable housing is made available to very low-, low- and moderate-income segments of Hawai'i's population.			X
2. The orderly development of residential areas sensitive to community needs and other land uses.			X
3. The development and provision of affordable rental housing by the State to meet the housing needs of Hawai'i's people.			X
Policies:			
1. Effectively accommodate the housing needs of Hawai'i's people.			X
2. Stimulate and promote feasible approaches that increase housing choices for low-income, moderate-income, and gap-group households.			X
3. Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.			X
4. Promote appropriate improvement, rehabilitation, and maintenance of existing housing units and residential areas.			X
5. Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.			X
6. Facilitate the use of available vacant, developable, and underutilized urban lands for housing.			X
7. Foster a variety of lifestyles traditional to Hawai'i through the design and maintenance of neighborhoods that reflect the culture and values of the community.			X
8. Promote research and development of methods to reduce the cost of housing construction in Hawai'i.			X
Discussion: Objectives and Policies of HRS 226-19 are not applicable to the Blaisdell Center redevelopment.			

HRS § 226-20: Objectives and policies for socio-cultural advancement health.			
Objective: Planning for the State's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives:			
1. Fulfillment of basic individual health needs of the general public.			X
2. Maintenance of sanitary and environmentally healthful conditions in Hawai'i's communities.			X
3. Elimination of health disparities by identifying and addressing social determinants of health.			X

HRS § 226-20: Objectives and policies for socio-cultural advancement health.			
Policies:			
1.	Provide adequate and accessible services and facilities for prevention and treatment of physical and mental health problems, including substance abuse.		X
2.	Encourage improved cooperation among public and private sectors in the provision of health care to accommodate the total health needs of individuals throughout the State.		X
3.	Encourage public and private efforts to develop and promote statewide and local strategies to reduce health care and related insurance costs.		X
4.	Foster an awareness of the need for personal health maintenance and preventive health care through education and other measures.		X
5.	Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.		X
6.	Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring, and enforcement.		X
7.	Prioritize programs, services, interventions, and activities that address identified social determinants of health to improve native Hawaiian health and well-being consistent with the United States Congress' declaration of policy as codified in title 42 United States Code section 11702, and to reduce health disparities of disproportionately affected demographics, including native Hawaiians, other Pacific Islanders, and Filipinos. The prioritization of affected demographic groups other than native Hawaiians may be reviewed every ten years and revised based on the best available epidemiological and public health data.		X
Discussion: Objectives and Policies of HRS 226-20 are not applicable to the Blaisdell Center redevelopment.			

HRS § 226-21: Objectives and policies for socio-cultural advancement education.			
Objective: Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations.			
Policies:			
1.	Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.		X
2.	Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.		X
3.	Provide appropriate educational opportunities for groups with special needs.		X
4.	Promote educational programs which enhance understanding of Hawai'i's cultural heritage.		X
5.	Provide higher educational opportunities that enable Hawai'i's people to adapt to changing employment demands.		X
6.	Assist individuals, especially those experiencing critical employment problems or barriers, or undergoing employment transitions, by providing appropriate employment training programs and other related educational opportunities.		X
7.	Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning.		X

HRS § 226-21: Objectives and policies for socio-cultural advancement education.			
8. Emphasize quality educational programs in Hawai'i's institutions to promote academic excellence.			X
9. Support research programs and activities that enhance the education programs of the State.			X
Discussion: Objectives and Policies of HRS 226-21 are generally not applicable to the Blaisdell Center redevelopment. While the facilities proposed are not designed specifically for formal educational opportunities, there would likely be educational and cultural enhancement programs using the various facilities.			

HRS § 226-22: Objective and policies for socio-cultural advancement social services.			
Objective: Planning for the State's socio-cultural advancement with regard to social services shall be directed towards the achievement of the objective of improved public and private social services and activities that enable individuals, families, and groups to become more self-reliant and confident to improve their well-being.			
Policies:			
1. Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities.			X
2. Promote coordination and integrative approaches among public and private agencies and programs to jointly address social problems that will enable individuals, families, and groups to deal effectively with social problems and to enhance their participation in society.			X
3. Facilitate the adjustment of new residents, especially recently arrived immigrants, into Hawai'i's communities.			X
4. Promote alternatives to institutional care in the provision of long-term care for elder and disabled populations.			X
5. Support public and private efforts to prevent domestic abuse and child molestation, and assist victims of abuse and neglect.			X
6. Promote programs which assist people in need of family planning services to enable them to meet their needs.			X
Discussion: Objectives and Policies of HRS 226-22 are not applicable to the Blaisdell Center redevelopment.			

HRS § 226-23: Objectives and policies for socio-cultural advancement leisure.			
Objective: Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.			
Policies:			
1. Foster and preserve Hawai'i's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.	X		
2. Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.	X		
3. Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.	X		
4. Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.	X		

HRS § 226-23: Objectives and policies for socio-cultural advancement leisure.			
5. Ensure opportunities for everyone to use and enjoy Hawai'i's recreational resources.	X		
6. Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.	X		
7. Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawai'i's people.			X
8. Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.	X		
9. Encourage the development of creative expression in the artistic disciplines to enable all segments of Hawai'i's population to participate in the creative arts.			X
10. Assure adequate access to significant natural and cultural resources in public ownership.	X		
Discussion: Blaisdell Center Master Plan implementation serves to further advance the above objectives through provision of facilities and space designed to accommodate and enhance cultural, artistic, and recreational needs.			

HRS § 226-24: Objective and policies for socio-cultural advancement individual rights and personal well-being.			
Objective: Planning for the State's socio-cultural advancement with regard to individual rights and personal well-being shall be directed towards achievement of the objective of increased opportunities and protection of individual rights to enable individuals to fulfill their socio-economic needs and aspirations.			
Policies:			
1. Provide effective services and activities that protect individuals from criminal acts and unfair practices and that alleviate the consequences of criminal acts in order to foster a safe and secure environment.			X
2. Uphold and protect the national and state constitutional rights of every individual.			X
3. Assure access to, and availability of, legal assistance, consumer protection, and other public services which strive to attain social justice.			X
4. Ensure equal opportunities for individual participation in society.			X
Discussion: Objectives and Policies of HRS 226-24 are not applicable to the Blaisdell Center redevelopment.			

HRS § 226-25: Objectives and policies for socio-cultural advancement culture.			
Objective: Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawai'i's people.			
Policies:			
1. Foster increased knowledge and understanding of Hawai'i's ethnic and cultural heritages and the history of Hawai'i.			X
2. Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawai'i's people and which are sensitive and responsive to family and community needs.			X
3. Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawai'i.			X
4. Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawai'i's people and visitors			X

HRS § 226-25: Objectives and policies for socio-cultural advancement culture.			
Discussion: Objectives and Policies of HRS 226-25 are generally not applicable to the Blaisdell Center redevelopment. While the facilities proposed are not designed specifically for formal cultural advancement and educational opportunities, there would likely be educational and cultural enhancement programs using the various enhanced facilities.			

HRS § 226-26: Objectives and policies for socio-cultural advancement public safety.			
Objective: Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:			
1. Assurance of public safety and adequate protection of life and property for all people.			X
2. Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic wellbeing of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.			X
3. Promotion of a sense of community responsibility for the welfare and safety of Hawai'i's people.			X
Policies related to public safety:			
1. Ensure that public safety programs are effective and responsive to community needs.			X
2. Encourage increased community awareness and participation in public safety programs.			X
Policies related to criminal justice:			
1. Support criminal justice programs aimed at preventing and curtailing criminal activities.			X
2. Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.			X
3. Provide a range of correctional resources which may include facilities and alternatives to traditional incarceration in order to address the varied security needs of the community and successfully reintegrate offenders into the community.			X
Policies related to emergency management:			
Ensure that responsible organizations are in a proper state of readiness to respond to major war-related, natural, or technological disasters and civil disturbances at all times.			X
Enhance the coordination between emergency management programs throughout the State.			X
Discussion: Objectives and Policies of HRS 226-26 are not applicable to the Blaisdell Center project.			

HRS § 226-27: Objectives and policies for socio-cultural advancement government.			
Objective: Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives:			
1. Efficient, effective, and responsive government services at all levels in the State.			X
2. Fiscal integrity, responsibility, and efficiency in the state government and county governments.			

HRS § 226-27: Objectives and policies for socio-cultural advancement government.			
Policies:			
1.	Provide for necessary public goods and services not assumed by the private sector.		X
2.	Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.		X
3.	Minimize the size of government to that necessary to be effective.		X
4.	Stimulate the responsibility in citizens to productively participate in government for a better Hawai'i.		X
5.	Assure that government attitudes, actions, and services are sensitive to community needs and concerns.		X
6.	Provide for a balanced fiscal budget.		X
7.	Improve the fiscal budgeting and management system of the State.		X
8.	Promote the consolidation of state and county governmental functions to increase the effective and efficient delivery of government programs and services and to eliminate duplicative services wherever feasible.		X
Discussion: Objectives and Policies of HRS 226-27 are not applicable to the Blaisdell Center project.			

C = Consistent, N/C = Not Consistent, N/A = Not Applicable

9.2.4 Hawai'i State Functional Plans

The Hawai'i State Plan is implemented through the development of functional plans and county general plans. State Functional Plans are prepared by various state agencies, with community input and focus on specific areas including agriculture, conservation lands, education, employment, energy, health, historic preservation, housing, human services, recreation, tourism, and transportation (State of Hawai'i 1986). State Functional Plans have the following objectives that are relevant to the proposed Blaisdell Center redevelopment:

9.2.4.1 Employment

The proposed Blaisdell Center Master Plan generally complies with the overall objectives of the Employment Functional Plan (State of Hawai'i 1990).

These objectives include:

- Improve the qualifications of entry level workers and their transition to employment.
- Develop and deliver education, training and related services to ensure and maintain a quality and competitive workforce.
- Improve labor exchange.
- Improve the quality of life for workers and families.
- Improve planning of economic development, employment and training activities.

Plan Conformance: While the closure of the Exhibition Hall for demolition and the temporary closure of the Arena and Concert Hall during renovations would decrease the number of employees at the site, this would be mitigated by the hiring of construction workers, architects, engineers, contractors, and professionals to implement the proposed Master Plan. Long-term, this expanded facility, with enhanced

uses and additional events, would likely result in an increase in employment, expanded workforce skills, and an increase in economic opportunities for O‘ahu citizens.

9.2.4.2 Historic Preservation

Objectives of the Historic Preservation Functional Plan include:

- Identification of historic properties
- Protection of historic properties
- Management and treatment of historic properties

Plan Conformance: As the Blaisdell Center passed its 50 year anniversary in 2014, it is now eligible for listing on the National Register of Historical Places and as a State of Hawai‘i Historic Site. As part of the review of this project, historical, archaeological and cultural analyses are being completed including documentation of the features of all the existing developments at the site. This project would be in compliance with the objectives of the Historic Preservation Functional Plan including its overarching goal to identify, preserve and manage historic and cultural properties in the State of Hawai‘i. These topics and studies are further discussed in Sections 4.1, 4.2, and 4.3 of this EA.

9.2.4.3 Tourism

Objectives of the Tourism Functional Plan include:

- Development, implementation and maintenance of policies and actions which support the steady and balanced growth of the visitor industry.
- Development and maintenance of well-designed visitor facilities and related developments which are sensitive to the environment, sensitive to neighboring communities and activities and adequately serviced by infrastructure and support services (DBEDT 1990).

Plan Conformance: The Blaisdell Center currently hosts a range of events and concerts, drawing visitors from O‘ahu, neighbor islands, and other states and countries. With modern, expanded facilities, the CCH can continue to draw events, concerts and business and hopefully experience growth in all three. With the retention and possible expansion of the number of events with completion of this project, the Blaisdell Center would contribute to the steady, diverse and balanced growth of the visitor industry on O‘ahu and the State. Transportation improvements would be incorporated into the project, as well, making the Blaisdell Center more accessible for tourists.

9.2.4.4 Transportation

Objectives of the Transportation Functional Plan include:

- Construct facility and infrastructure improvements in support of Hawai‘i’s thriving economy and growing population base.
- Develop a transportation system balanced with an array of new alternatives.
- Foster innovation and use of new technology in transportation.
- Pursue land use initiatives which help reduce travel demand.
- Encourage resident quality of life improvements through improved mobility opportunities and travel reduction (DBEDT 1991).

Plan Conformance: The Blaisdell Center project would harness and implement various recommendations of recent mobility policy documents such as the O’ahu Bike Plan, the Statewide Pedestrian Plan, the *City and County of Honolulu Complete Streets Design Manual* (CCH 2016), and the Kaka’ako TOD Overlay Plan to help meet the objectives of the Transportation Functional Plan. The mixed-use design of the Blaisdell Center, along with pedestrian and bicycle mobility enhancements that would encourage access to a planned rail station (approximately a ten minute walk away), would likely reduce the need for vehicles and their use of fossil fuels. The transportation improvements, such as bike facilities and bus accommodations, planned as part of this project and impacts on the transportation network are further described in Section 4.7.

9.2.5 HCDA Mauka Area Plan

The HCDA Kaka’ako Community Development District Mauka Area Plan and Rules sets forth policies and directions for both public and private development and public improvements with the vision “to ensure the community development district becomes the most sustainable, livable urban community in the State, a place where people can work, live, visit, learn and play (HCDA 2011, 1). Policies set forth in the Plan are found in HRS Section 206E-33.

Key concepts and objectives of the Mauka Area Plan include:

- Promotion of mixed-use neighborhoods
- Strong connection with surrounding neighborhoods
- Civic buildings location on prominent sites within neighborhoods centers
- High quality public space
- Use of sustainable site design and green building techniques
- Streets designed to accommodate multiple modes of transportation and to balance the need for access, circulation, and mobility

The implementation of the Blaisdell Master Plan helps to advance all the key objectives of the Mauka Area Plan identified above. The HCDA Mauka Area Plan and the Blaisdell Center project compliance with the Mauka Area Plan, is further discussed in the Socioeconomic and Land Use sections of this report (Sections 2 and 4.6).

9.2.6 Kaka’ako TOD Overlay Plan

The Kaka’ako TOD Overlay Plan anticipates the planned construction of rail transit through the HCDA Kaka’ako Community Development District, including a planned rail stop within a ten-minute walk of the Blaisdell Center (HCDA 2016). As described in the Plan, “The intention of the TOD Overlay Plan is to foster development that creates well-used and well-loved urban places that are safe, comfortable, diverse, attractive and representative of the diverse character in the Kaka’ako community, while providing safe and comfortable streets and convenient access to the district’s three future light metro stations” (HCDA 2011). The Kaka’ako Community Development District is further divided into neighborhoods. The Blaisdell Center is located within the Thomas Square District. An EIS was prepared for the Kaka’ako TOD Overlay Plan, which included an analysis of the Blaisdell Center Master Plan.

The TOD Overlay Plan objectives and policies are based on the six “D”s of pedestrian-focused, transit-oriented, community development: Destinations, Distance, Design, Density, Diversity, and Demand Management.

The following TOD Overlay Plan objective descriptions are applicable to the Blaisdell Center Master Plan:

Distance: Create a well-connected street network using Complete Streets principles.

The State of Hawai'i Complete Streets policy is outlined in Act 54 "The department of transportation and the county transportation departments shall adopt a complete streets policy that seeks to reasonably accommodate convenient access and mobility for all users of the public highways—including pedestrians, bicyclists, transit users, motorists, and persons of all ages and abilities." Complete Streets principles from the TOD Overlay Plan are outlined in Chapter 6 of the Overlay Plan.

Plan Conformance: The project proposes to partially open Victoria Street, between King Street and Kapi'olani Boulevard providing additional vehicular, bicycle and pedestrian connectivity. In addition, as part of the TOD Overlay Plan, Ward Avenue is identified as a pedestrian and bicycle priority street. As part of the TOD Overlay Plan, Ward Avenue is identified as a pedestrian and bicycle priority street with recommendations for wide sidewalks to key destinations along with enhanced crossings at intersections. The Blaisdell Center Master Plan also proposes widened sidewalks along Ward Avenue, enhanced median landscaping, and a dedicated bike lane.

Design: Create places for people.

Create streets and public spaces that are carefully designed with the needs of people in mind. The public realm should be safe, comfortable, and inviting for people of all abilities and ages.

Plan Conformance: The Blaisdell Center serves as a community place for people. The proposed Blaisdell Center would provide enhanced features that would further activate this entire area for public use, especially during times when major events are not occurring on the site. Water features, extensive landscaping, promenades and plazas, cafés, small performance areas, and terraces would position the Blaisdell Center as a destination for gathering, picnicking and strolling. Vehicle parking would be consolidated into two stacked parking garages, allowing the areas surrounding the buildings to be completely accessible to pedestrians.

Diversity: Encourage a mix of uses.

Create an internally diverse and vibrant mixed-use community through the provision of a range of housing choices, services and facilities which improve the quality of life for residents and businesses.

Plan Conformance: The proposed redevelopment of the Blaisdell Center would include the expansion of the facility to include new uses such as the Arts Ensemble, a smaller performance hall, a Satellite City Hall, and a small Sports Pavilion. The intent is to add enhanced facilities to the site to increase the number and diversity of activities on the site. The provision of parking in two connected garages at the rear of the property allows the significant increased public space to be used for unstructured and casual recreation and public gathering throughout the day (HCDA 2016).

9.2.7 State of Hawai'i Coastal Zone Management Program

The entire State of Hawai'i is included in the State's Coastal Zone Management (CZM) Program Area. As is codified in Chapter 205A of the HRS, each county in the State of Hawai'i provides its own laws and regulations to implement the Coastal Zone Management Program within its respective jurisdiction. The site is thus located within the coastal zone; however, the Blaisdell Center falls outside the Special Management Area (SMA) zone as designated in Chapter 205A, HRS. While not subject to SMA permit

requirements, the Blaisdell Center project would be reviewed for compliance with the objectives and policies of the CZM Program (HRS §205-A).

Applicable objectives of the Hawai'i CZM Program, along with how the Blaisdell Center Master Plan conforms to these objectives, are discussed below.

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS	C	N/C	N/A
RECREATIONAL RESOURCES			
Objective: (A) Provide coastal recreational opportunities accessible to the public.			
Policies:			
(A) Improve coordination and funding of coastal recreational planning and management; and			X
(B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:			X
(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;			X
(ii) Requiring replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds, and sand beaches, when such resources would be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;			X
(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;			X
(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;			X
(v) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;			X
(vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;	X		
(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and			X
(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of section 46-6.			X
Discussion: While not located near the shoreline, the proposed renovation would be designed to enhance public access. Additionally, the Master Plan adds enhancements to outdoor space, including water features and fish ponds. Water standards would be met to ensure the regulation of point and non-point sources of pollution that flow to shoreline outlets.			

HISTORIC RESOURCES	C	N/C	N/A
Objective: (A) Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.	X		

HISTORIC RESOURCES	C	N/C	N/A
Policies:			
(A) Identify and analyze significant archaeological resources;	X		
(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and	X		
(C) Support state goals for protection, restoration, interpretation, and display of historic resources.	X		
Discussion: Preserving and restoring the historic resources on the Blaisdell Center property is an important component of the Blaisdell Center Master Plan, and is discussed in detail in Sections 4.1, 4.2, and 4.3.			

SCENIC AND OPEN SPACE RESOURCES	C	N/C	N/A
Objective: (A) Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.	X		
Policies:			
(A) Identify valued scenic resources in the coastal zone management area;			X
(B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;			X
(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and			X
(D) Encourage those developments that are not coastal dependent to locate in inland areas.	X		
Discussion: This project would provide a significant increase in open space for public use as described in Sections 2.1.2 and 4.8 of this report. Much of this open space would be located where parking, shipping and receiving currently occur. As part of the design of the Blaisdell Center, much of these back-of-house uses would be placed at grade level, while the gathering space for the public would be constructed on elevated walkways, with plazas on top. These additional raised green spaces would result in increased public views and visual connections to other green space at Thomas Square and future landscaped medians along Ward Avenue.			

COASTAL ECOSYSTEMS	C	N/C	N/A
Objective: (A) Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.			
Policies:			
(A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;			X
(B) Improve the technical basis for natural resource management;	X		
(C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;			X
(D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and			X
(E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.	X		

COASTAL ECOSYSTEMS	C	N/C	N/A
<p>Discussion: The Blaisdell Center is not located along the coastline; however, to protect marine resources, particularly coral reefs, construction activities and completed renovations would be completed in accordance with applicable federal, state, and county regulations pertaining to stormwater management. Furthermore, the preferred alternative design implements low-impact development techniques, which would reduce storm-water runoff from the site. These measures are discussed further in Section 5.1.</p>			

ECONOMIC USES	C	N/C	N/A
<p>Objective: (A) Provide public or private facilities and improvements important to the State's economy in suitable locations.</p>			
<p>Policies:</p>			
(A) Concentrate coastal dependent development in appropriate areas;			X
(B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and			X
(C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:			X
(i) Use of presently designated locations is not feasible;			
(ii) Adverse environmental effects are minimized; and			
(iii) The development is important to the State's economy.			
<p>Discussion: The Blaisdell Center provides vital meeting, exhibition, and performance space in the State of Hawai'i. The facility landlord, DES, runs the Blaisdell Center as a financially self-sustaining entity; however, revenues do not cover capital costs. While generating revenue for the CCH, activities at the Blaisdell Center also benefit local businesses, such as event organizers and restaurants in the area. Many events bring visitors from outside O'ahu, generating additional money for the travel industry and local tax revenues. The Master Plans conformance with this objective is discussed further in Chapter 2.</p>			

COASTAL HAZARDS	C	N/C	N/A
<p>Objective: (A) Reduce hazard to life and property from tsunamis, storm waves, stream flooding, erosion, subsidence, and pollution.</p>			
<p>Policies:</p>			
(A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;	X		
(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;	X		
(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and	X		
(D) Prevent coastal flooding from inland projects.	X		
<p>Discussion: The Blaisdell Center is located outside of the designated 100-year Flood Plain, and it is located outside of the tsunami zone, but located within the extreme tsunami zone. Erosion, subsidence, and impact from storm waves are not an issue for the Blaisdell Center, as it is not located along the shoreline. There are no natural streams in the area; however, drainage ditches are located adjacent to the project area, this is further evaluated in Section 5.1. Natural Hazards; coastal hazards are further discussed in Section 3.6.</p>			

MANAGING DEVELOPMENT	C	N/C	N/A
Objective: (A) Improve the development review process, communication, and public participation in the management of coastal resources and hazards.			
Policies:			
(A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;			X
(B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and	X		
(C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.			X
Discussion: Stakeholder engagement and public outreach was an important component of the Master Planning process. The information gathered from the public scoping meetings was used in the creation of the Master Plan and in the selection of the preferred alternative. This EA, and its compliance with HRS Chapter 343, further provides an opportunity for public input.			

PUBLIC PARTICIPATION	C	N/C	N/A
Objective: A) Stimulate public awareness, education, and participation in coastal management.			
Policies:			
(A) Promote public involvement in coastal zone management processes;	X		
(B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and	X		
(C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.			X
Discussion: Stakeholder engagement and public outreach was an important component of the Master Planning process. The information gathered from the public scoping meetings was used in the creation of the Master Plan and in the selection of the preferred alternative. Implementation of low-impact development design principles, with feature call-outs and signage around elements such as bioswales would raise public awareness regarding the importance of low-impact development design in the coastal zone.			

BEACH PROTECTION	C	N/C	N/A
Objective: (A) Protect beaches for public use and recreation.			
Policies:			
(A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;			X
(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and			X
(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.			X
Discussion: The Blaisdell Center is not located on the shoreline and would not affect any beaches used by the public for recreation.			

MARINE RESOURCES	C	N/C	N/A
Objective: (A) Promote the protection, use, and development of marine and coastal resources to assure their sustainability.			
Policies:			
(A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;			X
(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;			X
(C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;			X
(D) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and			X
(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.			X
Discussion: The Blaisdell Center is not located along the coastline; however, to protect marine resources, construction activities and completed renovations would be completed in accordance with applicable federal, state, and county regulations pertaining to stormwater management. Furthermore, the preferred alternative design implements low-impact development techniques, which would reduce storm-water runoff from the site. These measures are discussed further in Section 5.1.			

C = Consistent, N/C = Not Consistent, N/A = Not Applicable

9.2.8 County Plans, Policies, and Controls

As discussed in Section 4.6 of this EA, pursuant to Act 153, SLH 1976, authority was granted by the State Legislature to the HCDA to supersede county land use ordinances in special “Community Development” districts. Under the act, HCDA, a state agency, has the authority to regulate development, zoning, and land use within these districts. The project area is located in the Mauka Area of HCDA’s Kaka’ako Community Development District and thus is subject to HCDA’s Mauka Area Plan and Rules. However, HCDA works to comply with all County land use regulations to the degree possible.

9.2.9 O’ahu General Plan

The O’ahu General Plan, also known as the General Plan for the CCH, as amended in 2002 is “a comprehensive statement of objectives and policies which sets forth long-range aspirations of O’ahu’s residents and the strategies of actions to achieve them” (CCH DPP 2002). The O’ahu General Plan is a guide for all levels of government and private enterprise focused on general topic areas such as population, economic activity, natural environment, housing, culture and recreation, transportation and utilities, and physical development and urban design, among others.

Applicable General Plan objectives and policies include:

- To foster the visual and performing arts.
- To maintain the viability of O’ahu’s visitor industry.
- To bring about orderly economic growth on O’ahu.

- To provide the people of O‘ahu with a choice of living environments which are reasonably close to employment, recreation, and commercial centers and which are adequately served by public utilities.
- To coordinate changes in the physical environment of O‘ahu to ensure that all new developments are timely, well-designed, and appropriate for the areas in which they would be located.
- To create and maintain attractive, meaningful, and stimulating environments throughout O‘ahu.
- To ensure fiscal integrity, responsibility, and efficiency by the CCH government in carrying out its responsibilities.

Plan Conformance: Implementation of the Blaisdell Center Master Plan conforms to all the objectives outlined in the General Plan. The redeveloped Blaisdell Center would provide the community with a place to not only view performing arts, but also provides the community much-needed practice space for artists, including hālau hula and local dance studios. The redevelopment would also provide attractive, meaningful, and stimulating space for residents and visitors alike to attend events such as festivals and markets.

9.2.10 Primary Urban Center Development Plan

While the overall General Plan is the first tier of the County general planning process, the second tier consists of eight regional Development Plans and Sustainable Communities Plan related to specific areas of the island. The proposed project is located in the PUC; applicable land use policies and guidelines from the PUCDP are discussed further below.

Applicable policies include:

Preserve Historic and Cultural Sites

Preserve the architectural character, landscape setting and visual context of historic landmarks through appropriate zoning standards and development controls, as necessary, and public outreach programs such as design guidelines for the maintenance, renovation or expansion of older dwellings.

Plan Conformance: Since its initial construction in 1964, the Blaisdell Center has become an iconic feature of the urban Honolulu landscape. Implementation of the Blaisdell Center Master Plan ensures that the property and its existing facilities are in good condition for future use. Preservation of historic and cultural resources is discussed in detail in Sections 4.1, 4.2, and 4.3.

Provide parks and active recreation areas

Develop and maintain parks and other outdoor public spaces in a manner that expands opportunities for both active and passive recreation. Increase and enhance recreational open space in the most densely settled parts of the PUC.

Plan Conformance: Implementation of the Blaisdell Master Plan increases the total available amount of outdoor space available to the public. The provision of significant landscaping, plazas, decorative water features, and the placement of vehicle service traffic below the pedestrian open space would provide significant public space for recreating and gathering. This space would tie in visually with other green spaces around the Blaisdell Center, such as Thomas Square Park, and the landscaping along surrounding roadways.

Applicable Guidelines include:

- Promote mixed land uses
- Make streets “pedestrian friendly”
- Cultivate existing and new “neighborhood centers”

Plan Conformance: Redevelopment of the Blaisdell Center promotes mixed land use by providing facilities for a wide range of activities including restaurant and beverage facilities, outdoor gathering space, and venues for concerts, performances, and events satisfying diverse community interests. The addition of an Arts Ensemble, Satellite City Hall, and Sports Pavilion would further increase the range of community events that can be held there. The Master Plan would improve the cycling paths along the property’s adjacent streets. The activities at the Blaisdell Center do, and would continue to, draw local residents, local businesses and visitors to O’ahu. Redevelopment would also reinforce its designation as a civic and cultural district for Honolulu, and provide a central gathering place for the Kaka’ako Mauka neighborhood.

9.3 Required Permits and Approvals

The following permits are anticipated to be required for this project. Additional permits and approvals may also be required.

State of Hawai‘i

Department of Health

- National Pollutant Discharge Elimination System (NPDES)
- Variance from Pollution Controls (Noise Permit)

Department of Land and Natural Resources

- Well Construction/Pump Installation Permit
- Groundwater Use Permit
- SHPD 6E Historic Preservation Review

During a meeting with the CCH, HCDA, and State Attorney General Douglas Chin, it was determined that the CCH does not require a development permit from the HCDA for the proposed action.

City and County of Honolulu

Department of Planning and Permitting

- Building Permit(s)
- Special District Permit-minor
- Grading/Stockpiling Permit
- Grubbing Permit

Board of Water Supply

- Water Use Permit

Department of Transportation Services

- Street Usage Permit

10 Determinations and Findings

10.1 Anticipated Determination Pursuant to Chapter 343, Hawai'i Revised Statutes

Based on the information and analysis disclosed in this document, the project would not result in a significant impact on the environment. As such, it is anticipated that a Finding of No Significant Impact will be issued with a recommendation that an environmental impact statement is not required.

10.2 Chapter 343, HRS, Significance Criteria

In determining whether an action may have a significant impact on the environment, the applicant must consider all phases of the project, its direct and indirect consequences, the cumulative impacts with other projects, and its short and long-term effects. Section 11-200-12, HAR (revised 1996) established 13 significance criteria to be used as a basis for identifying whether significant environmental impacts will result.

An applicant or agency will determine an action may have a significant impact on the environment if it meets any of the following criteria:

1. **Involves an irrevocable commitment to loss or destruction of any natural or cultural resources;**
The proposed redevelopment of the Blaisdell Center does not involve any irrevocable commitment to loss or destruction of any natural or cultural resources. Areas where earth-disturbing activities are proposed have previously been disturbed by past development and construction activities.
2. **Curtail the range of beneficial uses of the environment;**
The proposed redevelopment of the Blaisdell Center does not curtail the range of beneficial uses of the environment. The project design further enhances the space through of the creation of outdoor venues for public gathering and ensures beneficial use of the public space into the foreseeable future.
3. **Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS; and any revisions thereof and amendments thereto, court decisions, or executive orders;**
The proposed redevelopment of the Blaisdell Center does not conflict with the States long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS:
 - The proposed project would encourage the productive and enjoyable harmony between the people and their environment, promote efforts which would prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity (§344-1).
 - The proposed project enhances the public's quality of life by creating opportunities for the residents of Hawai'i to improve their quality of life through diverse economic activities which are stable and in balance with the physical and social environments (§344-3(2)(B)).
 - The proposed project provide[s] a sense of identity, wise use of land, efficient transportation, and aesthetic and social satisfaction in harmony with the natural environment which is uniquely Hawaiian (§344-3(2)(C)).

Furthermore, the proposed redevelopment of the Blaisdell Center does not conflict with the guidelines set forth by the State in HRS §344-4.

- The Blaisdell Center Master Plan supports the guidelines relating to the protection of watersheds through the utilization of low-impact design principles such as bioswales, impervious surfaces, and terracing which promotes stormwater infiltration on-site (§344-4(2)(B)).
- The proposed project maintains through conformance to state and county general land-use plans (§344-4(2)(F)).
- The Master Plan encourages transportation systems in harmony with the lifestyle of the people and environment of the State (§344-4(6)(A)).
- The master planning process provided an outlet for public and stakeholder feedback by hosting public workshops in the planning phase of the project supporting the guideline to expand citizen participation in the decision making process §344-4(10)(B)).

4. Substantially affects the economic or social welfare of the community or state;

The proposed redevelopment of the Blaisdell Center is not likely to affect the economic or social welfare of the community or the State. The Blaisdell Center is located on land that is intended for use as a public venue and falls within a cultural district. The implementation of the Master Plan enhances this intended use as the design allows for more frequent use by the public as a gathering place, and improves the social welfare in the area by providing a premier entertainment venue for residents to enjoy.

5. Substantially affects public health;

The proposed project for the redevelopment of the Blaisdell Center would not negatively impact public health beyond the construction period. BMPs would be in place to prevent any impact to public health associated with construction. The property would be closed to the public for the duration of construction for health and safety reasons, and standard Occupational Safety and Health Administration protocols would be followed to ensure the health and safety of contractors working on the project area. There would be no impact on public health after the completion of construction.

6. Involves secondary impacts such as population changes or effects on public facilities;

The proposed redevelopment would not involve secondary impacts such as population changes or effects on public facilities. The final outcome of the proposed project would not likely place a significant burden on public facilities. The project as proposed is an enhancement to a public facility.

7. Involves a substantial degradation of environmental quality;

The final outcome of the proposed project would not lead to any substantial degradation of environmental quality. Any degradation of environmental quality is anticipated to be temporary in nature and related to construction activities during the renovation. Standard construction BMPs would be put in place to mitigate potential direct impact from construction activities. Any secondary impacts from construction activities would be avoided with implementation of BMPs. Open space, vegetation, water treatment features, and landscaping play an important role in improving environmental quality in the urban area, these features would be enhanced by the implementation of the Blaisdell Center Master Plan.

8. Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;

The proposed Master Plan for the Blaisdell Center renovation does not have considerable effect upon the environment, nor does the plan involve a commitment for larger actions. The redevelopment would substantially enhance the intended use of land as a public gathering place.

9. Substantially affects a rare, threatened, or endangered species or its habitat;

There is no designated critical habitat for listed endangered and threatened species, and no federally listed endangered or threatened species exist in the project area.

The indigenous Manu-o-Kū, or white fairy tern (*Gygis alba*) are known to be present in the area. The fairy tern is considered a species of “least concern” by the USFWS; however, the bird is protected by the Migratory Bird Treaty Act. To prevent any impact to the species, trees would be surveyed following standard protocol prior to removal for nesting birds. Substantial impact to the bird is not expected from this project, as nesting birds in Honolulu are particularly adapted to the urban environment.

The Hawaiian hoary bat is not likely to be present in the project area, but would be monitored for during tree trimming or removal.

10. Detrimentially affects air or water quality or ambient noise levels;

The proposed action would not detrimentally affect air or water quality or ambient noise levels when complete. Any effect on air or water quality would be temporary in nature and related to construction activities. A community noise permit and a National Pollution Discharge Elimination System (NPDES) permit would be obtained prior to the start of construction; applicable BMPs outlined in the completed permits would be followed to control temporary impacts to noise and water quality. Water quality from the project area is expected to improve following project completion given low-impact development design measures.

11. Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal waters;

The Blaisdell Center is not located in an environmentally sensitive area. The surrounding area is highly urbanized. Any potential impacts from the above natural hazards would likely be lessened as the buildings would be brought up to current building codes. Currently the buildings are out of compliance with many structural, electrical, and mechanical building codes.

12. Substantially affects scenic vista and view plane identified in county or state plans or studies;

There is one designated view corridor identified within the project area—located on Ward Avenue for views in the mauka and makai directions. The proposed project would not significantly impact this view corridor, as work would take place on the Diamond Head side of the corridor and not in the mauka or makai sides of the corridor. There is no protected makai view of the Pacific Ocean on the property. The limited mauka views of the Ko’olau Ridge on the property are highly obstructed under current conditions. Furthermore, redevelopment does not add any structures of significant height, as defined by HCDA that would exceed building height limits set forth in the 2009 Mauka Area Plan.

13. Requires substantial energy consumption.

While energy consumption is expected to increase with increased facility usage, energy saving measures such as energy saving light fixtures, updated air conditioning systems, and other green building design measures would be an important part of retrofits and renovations. With these upgrades in place, it is anticipated that there would not be a significant net increase in utility consumption.

10.3 Cumulative Impacts

Cumulative impacts are defined as any impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over time (HAR § 220-2).

The Blaisdell Center lies within the boundary of a “Community Development District”, known as the Kaka’ako Mauka Area. Therefore, foreseeable future actions in the project area would likely include new development and redevelopment. The project area is located within the city’s PUC, which is designated to accommodate a substantial portion of O’ahu’s population growth over the next 25 to 30 years. All developments and redevelopments within the Mauka Area boundary must conform to plans set forth by the HCDA Mauka Area Master Plan to prevent adverse cumulative impacts in the area. Current and future projects planned for the Mauka Area include the Honolulu Rail Transit Project with the planned route makai of the Blaisdell Center; the Ward Center developments; and Kaka’ako developments by Kamehameha Schools, including the Six Eighty condominium development.

However, the proposed redevelopment of the Blaisdell Center is not a commitment to a larger action and would not promote substantial population growth. The proposed action fulfills the current and anticipated increase in demand for public spaces and a primary entertainment venue and gathering facilities, as identified during the public scoping process for the Neal S. Blaisdell Center Master Plan.

The redeveloped Blaisdell Center may attract more people to Kaka’ako because of the Blaisdell Center’s mixed uses, improved landscape features, and diverse transportation options. The proposed Kaka’ako rail station would be within walking distance from the Blaisdell Center (less than 0.25 miles). The TOD Overlay Plan, along with the Ward Neighborhood Master Plan (General Growth Properties Inc. 2008) and the Kaiāulu’o Kaka’ako Master Plan (Kamehameha Schools 2008), propose to improve the connectivity and walkability within the local area, making the area more accessible for both residents and visitors.

In addition, the Ward Neighborhood Master Plan and the Kaiāulu’o Kaka’ako Master Plan propose to provide more job opportunities, add housing units, and offer more entertainment, shopping and community venues. For instance, the Innovation Center proposed by the Kaiāulu’o Kaka’ako Master Plan is expected to provide more than 1,200 job opportunities. The Ward Neighborhood Master Plan and the Kaiāulu’o Kaka’ako Master Plan add more than 7,000 housing units in the Kaka’ako area. The Master Plans above also call for a variety of new commercial and retail opportunities within the neighborhood. Therefore, the aforementioned development projects would have positive cumulative impacts to the local, social, and economic environment.

The State of Hawai’i Department of Education proposed the McKinley High School Athletic Complex Master Plan to improve the athletic facilities at McKinley High School (Group 70 International, Inc. 2011). This Master Plan proposed to renovate the existing school gymnasium around the year of 2020 and relocate the baseball field around 2025. The renovation of the existing gymnasium building may occur

concurrently with the proposed construction at the Blaisdell Center. The noise from the gym renovation would not be as loud as construction noise and would be attenuated by the walls of the gym. Additionally, the nearest classroom building is approximately 500 ft. away from the existing gym building, further reducing the potential impacts from the already attenuated renovation noise. The relocation of the baseball field is anticipated to initiate after the construction at the Blaisdell Center is completed. A noise permit would be required if the noise generated from the relocation exceeds the permissible daytime noise level. Construction activities that are likely to generate loud noises would be scheduled after school hours. Therefore, the renovation of the existing gym and the replacement of the baseball field are anticipated to have negligible, short-term impacts on noise.

The construction time frame of the rail transit system within the project Area of Concern is likely to overlap with the construction phase at the Blaisdell Center (2020-2023). Construction noise from each of these two projects would be similar and intermittent. Since noise attenuates approximately 6 dBA per doubling of distance for a point source, such as construction equipment, and the distances between the two construction sites vary from 1,000 – 2,000 ft., the receptors in the project neighborhood would experience cumulative construction noise from both sites. However, the primary noise contributors at sensitive receptors would be from the equipment at the site in close proximity. Therefore, while there would be cumulative impacts on the noise environment, the cumulative impacts would be short-term and negligible.

Under the operational condition, the cumulative noise effects from past, present, and future projects that are fundamentally similar to the anticipated noise effects of the proposed action, in terms of the timing of the effects, and the geographical area affected, are considered negligible since the effects resulting from the proposed action are event-driven and occur within a specific time period.

The construction emissions resulting from implementation of the proposed action are considered temporary. Given the distances between the two project sites, cumulative emissions of the proposed action and the rail transit system project would not pose significant cumulative impacts in the project area under the construction or operational conditions.

The future development of the Ward Neighborhood could contribute to cumulative impacts to parks and open space within the project area. The Ward Neighborhood Master Plan was approved by HCDA in 2008. This Master Plan proposes to build a 3.25 ac. central plaza that creates an ocean-to-city corridor from the Kewalo Harbor to 'Ekahi Street, a proposed street running parallel to Queen Street between Queen Street and Auahi Street. As a result of the Central Plaza and the improved landscape area at the Blaisdell Center, the total acreage of open space in the Area of Concern would increase by 7 ac.

The proposed rail guideway runs along Queen Street and cuts right between the mauka and makai segments of the Kolowalu Park. Because of the anticipated noise, visual, traffic and access impacts from the rail construction, the Kolowalu Park is expected to be closed temporarily when the construction takes place in the park's close vicinity. However, because the construction at the Blaisdell Center would not have direct impacts to the Kolowalu Park, the rail construction is not considered to contribute to cumulative impacts to the park.

10.4 Irretrievable and Irrevocable Commitments

A commitment of natural resources is irrevocable when the primary or secondary impacts limit the future options for a resource; an irretrievable commitment refers to the use, or consumption of resources that are neither renewable nor recoverable for future use. “Resources” includes human, fiscal, material, natural, recreational, cultural, and historic resources.

Project construction would require the commitment of fiscal and material resources; however, the impacts to these resources are negligible and outweighed by the beneficial long-term benefits gained from the completion of the proposed action. To prevent the irretrievable or irrevocable commitment of any historic or cultural resource, HRS Chapter 6E consultation and review would be completed. All work would be in conformance with current State policies and long-term environmental goals as defined in HRS §343-2.

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Appendix A. Pre-Assessment Consultation/
Draft EA Comments and Responses

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DEPARTMENT OF PARKS & RECREATION
CITY AND COUNTY OF HONOLULU

1000 Ulukouia Street, Suite 309, Kapolei, Hawaii 96707
Phone: (808) 768-3003 • Fax: (808) 768-3053
Website: www.honolulu.gov

KIRK CALDWELL
MAYOR



MICHELE K. NEKOTA
DIRECTOR

JEANNE C. ISHIKAWA
DEPUTY DIRECTOR

February 15, 2018

Ms. Erin Dunable, Senior Environmental Planner
AECOM Technical Services, Inc.
1001 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Dear Ms. Dunable:

SUBJECT: Pre-Assessment Consultation Draft Environmental Assessment
Blaisdell Center Master Plan, TMK (1)2-3-008:001-3

Thank you for the opportunity to review and comment at the Pre-Assessment Consultation stage of the Draft Environmental Assessment for the Blaisdell Center Master Plan.

The Department of Parks and Recreation has no comment at this time.

Should you have any questions, please contact John Reid, Planner at 768-3017.

Sincerely,

A handwritten signature in black ink, appearing to read "MKNekota", is written over a faint, larger version of the same signature.

Michele K. Nekota
Director

MKN:jr
(714066)



AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

October 26, 2018

Michele K. Nekota
Director
City and County of Honolulu
Department of Parks and Recreation
1000 Uluohia Street, Suite 309
Kapolei, HI 96707

Dear Michele Nekota:

Subject: Pre-assessment Consultation Draft Environmental Assessment Blaisdell Center Master Plan, TMK (1)2-3-008:001-3.

Thank you for your organization's letter dated February 15, 2018, regarding the Neal S. Blaisdell Center Master Plan Environmental Assessment (EA).

As the planning consultant for the City and County of Honolulu, we acknowledge that the Department of Parks and Recreation has no comments at this time.

We value your participation in the environmental review process. Your organization's letter and our response will be included in the Draft EA, scheduled for publication next month.

Sincerely,

Erin Dunable
Senior Environmental Planner

DAVID Y. IGE
GOVERNOR OF HAWAII



SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 26, 2018

AECOM Technical Services, Inc.
Attention: Ms. Erin Dunable
1001 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

via email: erin.dunable@aecom.com

Dear Ms. Dunable:

SUBJECT: Pre-assessment Consultation for **Blaisdell Center Master Plan**

Thank you for the opportunity to review and comment on the subject matter. In addition to the comments previously sent you dated January 24, 2018, enclosed are comments from the Commission on Water Resources Management on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kevin E. Moore".

Kevin E. Moore
Acting Land Administrator

Enclosure(s)
cc: Central Files

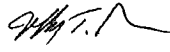


STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

January 25, 2018

REF: RFD.4757.3

TO: Mr. Russell Tsuji, Administrator
Land Division

FROM: Jeffrey T. Pearson, P.E., Deputy Director 
Commission on Water Resource Management

SUBJECT: Pre-assessment Consultation for Blaisdell Center Master Plan

FILE NO.: RFD.4757.3
TMK NO.: (1) 2-3-008:001, 002 & 003

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at <http://dlnr.hawaii.gov/cwrn>.

Our comments related to water resources are checked off below.

1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at <http://www.usgbc.org/leed>. A listing of fixtures certified by the EAP as having high water efficiency can be found at <http://www.epa.gov/watersense>.
5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at <http://planning.hawaii.gov/czm/initiatives/low-impact-development/>
6. We recommend the use of alternative water sources, wherever practicable.
7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at <http://energy.hawaii.gov/green-business-program>.
8. We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf.

9. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.
11. A Well Construction Permit(s) is (are) are required before the commencement of any well construction work.
12. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
13. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
14. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
15. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a steam channel.
16. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.
17. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
18. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.
- OTHER: There are actually two well sources on the property under the jurisdiction of the Commission. 3-1851-062 is estimated to currently provide near 1 million gallons per day of caprock water, but does not have a water use permit and should apply to continue this existing use. Well 3-1851-063 could not be found during a recent field verification by our office and is categorized as an abandoned lost source. If found during construction, the well would need to be properly sealed by a licensed contractor with a C-57 license who must apply for a well abandonment permit.

If you have any questions, please contact W. Roy Hardy of the Commission staff at 587-0225.



AECOM
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808 521 3051 tel
808 524 0246 fax

October 26, 2018

Kevin Moore
Acting Land Administrator
Department of Land and Natural Resources, Land Division
Post Office Box 621
Honolulu, HI 96809

Dear Kevin Moore,

Subject: Response to Comments, Pre-assessment Consultation for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your organization's letter dated January 26, 2018, regarding the Neal S. Blaisdell Center Master Plan Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge DLNR's Commission on Water Resource Management pre-assessment comments and our responses are provided below.

We acknowledge that the proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to the use of water. Additionally we acknowledge that a well-construction permit is required before the commencement of any well construction work.

In response to specific comments on the two well sources on the property under jurisdiction of the Commission, we have the following responses:

- Well 3-1851-062 provides nearly 1 million gallons of brackish cap-rock water to supply the fishponds on the Blaisdell property, under the proposed plans the fishponds would be moved to a new location and the water would continue to feed the ponds. We acknowledge that future use of this water would require a ground water use permit from the State Department of Land and Natural Resources and would obtain this permit prior to the start of project construction.
- In regards to well 3-1851-063, during the groundwater conditions survey, conducted by Tom Nance Water Resource Engineering, this well was found. The report notes that the well was originally a part of the fishpond circulation system; however, based on operating experience, the Blaisdell Center staff found that one well was sufficient for circulation, and as a result the well was backfilled, sealed and abandoned. Based on this information, we request further guidance as to whether or not a well-abandonment permit is needed. The Groundwater Conditions Assessment is attached for your reference, page 4 of the report shows the location of the well, and page 21 contains the summary of the well's status.



AECOM
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808 524 0246 fax

We value your participation in the environmental review process. Your organization's letter and our response will be included in the Draft EA, scheduled for publication next month.

Sincerely,

A handwritten signature in blue ink that reads 'Erin Dunable'.

Erin Dunable
Senior Environmental Planner

DAVID Y. IGE
GOVERNOR OF HAWAII



SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 24, 2018

AECOM Technical Services, Inc.
Attention: Ms. Erin Dunable
1001 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

via email: erin.dunable@aecom.com

Dear Ms. Dunable:

SUBJECT: Pre-assessment Consultation for **Blaisdell Center Master Plan**

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comments.

At this time, enclosed are comments from the (a) Engineering Division and (b) Land Division – Oahu District on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files

**DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION**

LD/Russell Y. Tsuji

**Ref: Pre-assessment Consultation for Blaisdell Center Master Plan, Honolulu,
Island of Oahu; TMK: (1) 2-3-008:001, 002 & 003**

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high risk areas). Be advised that 44CFR reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zones are designated on FEMA's Flood Insurance Rate Maps (FIRM), which can be viewed on our Flood Hazard Assessment Tool (FHAT) (<http://gis.hawaiiinfip.org/FHAT>).

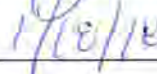
If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below:

- o Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- o Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- o Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7253.
- o Kauai: County of Kauai, Department of Public Works (808) 241-4846.

Signed: _____


CARTY S. CHANG, CHIEF ENGINEER

Date: _____


1/18/12



AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

October 26, 2018

Carty Chang
Chief Engineer
Department of Land and Natural Resources
Engineering Division
1151 Punchbowl Street, Room 221
Honolulu, HI 96813

Dear Carty Chang:

Subject: Response to Comments, Pre-assessment Consultation for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your organization's letter dated January 24, 2018, regarding the Neal S. Blaisdell Center Master Plan Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge the Engineering Division's pre-assessment comments and provide the following response.

The Blaisdell Center is located within Flood Hazard Zone X, which includes areas determined to be outside of the 0.2% annual chance floodplain. Additionally, the Blaisdell Center is located outside of the Special Flood Hazard Area. Potential impacts from flooding are evaluated in the Natural Hazards section of the EA. Additionally an evaluation of hydrological and storm water runoff conditions at the site is also included in the EA.

We value your participation in the environmental review process. Your organization's letter and our response will be included in the Draft EA, scheduled for publication next month.

Sincerely,

Erin Dunable
Senior Environmental Planner

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813

Phone: (808) 768-8305 • Fax: (808) 768-4730 • Internet: www.honolulu.gov

KIRK CALDWELL
MAYOR



WES FRYSZTACKI
DIRECTOR

JON Y. NOUCHI
DEPUTY DIRECTOR

TP12/17-713959R

January 31, 2018

Ms. Erin Dunable
Senior Environmental Planner
AECOM
1001 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Dear Ms. Dunable:

SUBJECT: Blaisdell Center Master Plan Pre-Assessment Consultation

Thank you for the opportunity to provide pre-assessment comments on the Blaisdell Center Master Plan. In response to your letter dated December 27, 2017 we have the following comments:

1. **Traffic Impact Analysis Report (TIAR).** We have the following comments on the TIAR:
 - a. The TIAR in the Draft Environmental Assessment (DEA) should be replaced with a Transportation Impact Assessment (TIA) that analyzes the multi-modal nature of all alternatives adjacent to City streets, the improvements needed, and recognizes the need for traffic control devices that encourage walking, bicycling, and transit use as the primary access modes for the proposed project. The TIA should identify parking management strategies both on- and off-street that will support sustainable mobility. The TIA should identify the locations of all nearby bus stops that employees and visitors are likely to use.
 - b. Include an accurate map depicting the various road ownership for all alternatives (State, City, private, various).
 - c. Provide a map illustrating any nearby Transit Oriented Development (TOD) station area relative to the proposed project,

including ¼ mile and ½ mile walkable radii. Include a map of proposed TOD station access improvements if relevant.

- d. Use person trips instead of vehicle trip rates from the Institute of Traffic Engineer's Trip Generation Manual and assign these trips to the transportation system. This will require analysis of crossing treatments using National Cooperative Highway Research Program 562 methodology for pedestrian measures.
- e. In addition to the calculated Level of Service (LOS), the observational LOS should be provided.
- f. Define performance measures for use in the study:
 - a. V/C ratio targets that are >1 for 1st and/or 2nd highest peak hours;
 - b. Identify where vehicle LOS will not be used;
 - c. Pedestrian LOS;
 - d. Bicycle Level of Traffic Stress (LTS);
 - e. Transit Capacity and Quality of Service.
- g. Define the specific transit, pedestrian and bicycle improvements necessary where assessment reveals deficient conditions.

2. **Parking.** We have the following comments related to parking:

- a. **Structured Parking.** The environmental impacts of providing at-grade surface parking are significantly greater than providing structured parking. Impacts of surface parking lots include increased urban heat island effects, increased rainwater and pollution runoff, and reduced groundwater recharge, increased energy use, air pollution, higher greenhouse gas emissions and reduced multi-modal connectivity. The Department of Transportation Services (DTS) requires that the proposed project offer reduced parking footprints and encourage sustainable mobility. The final preferred alternative shall not have any surface parking lots, with the exception of loading zones. All parking should be structured, which offers significantly reduced environmental and land use impacts. Any increase in the number of parking spaces shall be justified through trip generation methods identified in Section 1d above.
- b.

- c. **Shared Parking.** The DTS requires a Shared Parking Analysis, based on the Urban Land Institute Shared Parking model, and a shared parking strategy. The analysis should include a qualitative description of how the Department of Enterprise Services will monitor and manage opportunities for shared parking between the various users (visitors and employees) of any parking structure or underground parking facility.
- d. **Electric Vehicle Parking.** Places of public accommodation with at least 100 parking spaces available for use by the general public shall have at least one parking space exclusively for electric vehicles and equipped with an electric vehicle charging system located anywhere in the parking structure, as per HRS §291-71.
- e. **Transportation Network Company (TNC)/Rideshare Zone.** The DEA shall discuss the impact of TNCs and rideshare and illustrate in the site plan a TNC/rideshare zone for pick-up and drop-off.
- f. **Bicycle Parking.** Short- and long-term bicycle parking shall be provided whenever new floor area or when a new parking structure is proposed and is also available for public and/or visitor access and shall be located as close as possible to the entrances to the principal uses. The DEA shall illustrate publicly accessible, ground-level, short-term high-capacity bicycle parking facilities appropriate commercial use, as outlined in the Complete Streets Design Manual (page 161-162). Bicycle parking in the development shall include bicycle corrals that accommodate higher bicycle demand than sidewalk racks. Provide a site plan with bicycle corrals.

Alternatively, the project could provide monitored bicycle valet parking for 20% of guests in lieu of bicycle corrals. Provide a site plan of the bicycle valet area and a description of the valet monitoring strategy.

- g. **Street Parking.** Any street parking for visitors should be metered to promote frequent turnover.
3. **Complete Streets.** The following comments are related to Complete Streets:

- a. The DEA shall contain a discussion of compliance with County and State Complete Streets policies, pursuant to Act 54, Session Laws of Hawaii 2009, HRS §264-20.5 and ROH 12-15. The proposed alternatives and final preferred alternative should describe how they will comply with Complete Streets policies, including specific adherence to the following key Complete Streets principles: 1) safety; 2) Context Sensitive Solutions; 3) accessibility and mobility for all; 4) use and comfort of all users; 5) consistency of design guidelines and standards; 6) energy efficiency; 7) health; and 8) green infrastructure.
 - b. The Oahu Bike Plan requires the implementation of protected bike lanes on Ward Avenue, and multimodal improvements on the future Victoria Street extension. Please illustrate and describe in the DEA the design for and implementation of a protected bike lane on Ward Avenue between Kapiolani Boulevard and King Street, and bicycle lanes on the proposed extension on Victoria Street. Contact Chris Sayers, DTS Bicycle Coordinator at (808) 768-8335 for further coordination.
4. **Traffic Management Plan (TMP).** Prepare a TMP which:
- a. Is jointly reviewed and accepted by the DTS and the Department of Planning and Permitting.
 - b. Provides a discussion of the traffic impacts that the project may have on any surrounding City roadways, including short-term impacts during construction and long-term impacts after construction with corresponding measures to mitigate these impacts by applying Complete Streets principles.
 - c. Includes a description of how the project will: promote, encourage, and monitor transit use by its residents, and inform employees, residents and visitors of shuttle programs.
 - d. Construction materials and equipment should be transferred to and from the project site during off-peak traffic hours (8:30 a.m. to 3:30 p.m.) to minimize any possible disruption to pedestrians and traffic on the local streets and project driveways.

- e. Best practice TMPs provide the City with information by which to monitor construction areas. The City will require cameras where sidewalks are closed to help assess effectiveness of management.
 - f. Construction schedules should be coordinated with other nearby properties that have planned developments to ensure minimal impacts on City streets.
5. **Public Transit Service.** Existing transit service should be adequately depicted in the DEA. Please contact the Public Transit Division to ensure that transit routes are accurately depicted on maps in the DEA, and that the project development does not adversely affect public transit services (bus operations, bus routes, bus stops and para-transit operations); submit project plans to DTS - Public Transit Division (PTD) for review and approval. Contact DTS-PTD at 768-8396, 768-8370, 768-8374 or TheBusStop@honolulu.gov.
6. **Priority Guidelines on Sustainability.** In addressing priority guidelines on sustainability through HRS § 226-108, the Project should consider certification by a sustainable building rating system, including but not limited to nationally recognized rating systems such as Leadership in Energy and Environmental Design (LEED) for Building Design and Construction Version 4.0 or another comparable State-approved, nationally recognized, and consensus-based guideline, standard, or system.
- The DTS supports certification such as LEED for Building Design and Construction Version 4.0 as it reduces impacts including but not limited to: a) minimizing the environmental harms associated with parking facilities, including automobile dependence, land consumption, and rainwater runoff; b) reducing pollution by promoting alternatives to conventionally fueled automobiles; c) increasing access to quality transit; d) reducing Vehicle Miles Traveled (VMT) through the integration of bicycle facilities; and e) compact, walkable development that encourages a density and diversity of surrounding uses.
7. **Sea Level Rise and Resilience.** Infrastructure improvements located within areas potentially exposed to chronic flooding with sea level rise shall be subject to an in-depth analysis of the potential impacts of sea level rise on elevation, tolerance for risk, and the lifetime of the proposed structure or infrastructure. Any significant improvements within existing

footprints should be dependent on established, resilient design guidelines, or otherwise be subject to relocation to a more suitable area.

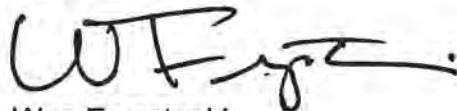
The potential for chronic flooding with 3.2 feet of sea level rise (SLR-XA) shall be used as the vulnerability zone for planning purposes. Maps of the project area shall be provided for both the SLR-XA and flooded highways. The applicant shall recommend strategies and designs that increase the flood resiliency for new development or improvements within the SLR-XA that cannot be relocated, or seek opportunities to plan new development or projects well landward of the SLR-XA. See the following to determine vulnerability: <http://www.pacioos.hawaii.edu/shoreline/slr-hawaii/>

8. **Driveway Design.** All alternatives should have driveways that are designed with the highest pedestrian and bicycle safety measures, have adequate sight distances and supplementary safety measures such as electronic devices at the driveways to warn pedestrians of vehicles moving in and out of driveways, and constructed to current City standards.
9. **Vehicle Ramps.** Vehicle parking ramps should be designed to accommodate demands so that vehicles will not queue onto public streets and block the roadways.
10. **Loading and Unloading.** All loading and unloading needs, including refuse and service delivery vehicles should be handled on-site, rather than on City roadways. In addition, the project should be designed to accommodate TheHandi-Van para-transit vehicles on-site, which require a minimum 31-foot turning radius, a 10-foot, 6-inch height clearance, and the ability to exit the site without reversing onto public roadways.
11. **Neighborhood Impacts.** The area Neighborhood Board, as well as the area residents, businesses, emergency personnel (fire, ambulance and police), Oahu Transit Services, Inc. (TheBus and TheHandi-Van), etc., should be kept apprised of the details of the proposed project and the impacts that the project may have on the adjoining local street area network.
12. **Street Usage Permit.** A street usage permit from the DTS should be obtained for any construction-related work that may require the temporary closure of any traffic lane on a City street.

13. **Americans with Disabilities Act (ADA) Requirements.** In accordance with the requirements of Ordinance No. 2412, as amended, the proposed sidewalk areas on and adjacent to the property shall meet City and County of Honolulu standards and ADA requirements. Pavement materials shall be chosen to withstand the uplifting and fracturing that may occur from any large trees. Any damage to the existing roadway and sidewalk area caused by the project should be repaired to current City standards as well as meet ADA requirements.
14. **Best Management Practice Controls.** Best Management Practice controls should be included at construction site to prevent trailing of dirt and debris on City roadways.
15. **Disability and Communication Access Board (DCAB).** Project plans (interior and exterior layouts, vehicular and pedestrian circulation, sidewalks, parking and pedestrian pathways, vehicular ingress/egress, etc.) should be reviewed and approved by the DCAB to ensure full compliance with the ADA.

Thank you for the opportunity to review this matter. Should you have any questions, please contact Nicola Szibbo of my staff at 768-8359.

Very truly yours,



Wes Frysztacki
Director



AECOM
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808 521 3051 tel
808 524 0246 fax

October 26, 2018

Wes Frysztacki
Director
Department of Transportation Services
650 South King Street, 3rd Floor
Honolulu, Hawaii, 96813

Dear Wes Frysztacki:

Subject: Response to Comments, Pre-assessment Consultation for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your letter dated January 31, 2018, regarding the Neal S. Blaisdell Center Master Plan Draft Environmental Assessment (DEA). As the planning consultant for the City and County of Honolulu, we acknowledge the pre-assessment comments provided by the City and County of Honolulu's Department of Transportation Services (DTS).

In response to the DTS comments, we reached out to the Transportation Planning Division (TPD), Traffic Engineering Division (TED), Traffic Signal and Technology Division (TST), and the Public Transit Division (PTD) of DTS and the Traffic Review Branch (TRB) of the Department of Planning and Permitting (DPP).

Through collaboration with these groups the following issues were addressed and incorporated into the transportation impact assessment report (TIAR):

- 1) Pedestrian circulation plan;
- 2) Bicycle circulation plan including incorporation of bicycle facility improvements on Ward Avenue into Blaisdell Center Master Plan;
- 3) Consolidation and signalization of mid-block pedestrian crossing on Ward Avenue;
- 4) Evaluation of right-turn lane storage lengths on Ward Avenue and South King Street;
- 5) Evaluation of passenger loading/unloading on Ward Avenue and South King Street;
- 6) Lane transitions across South King Street/Victoria Street intersection;
- 7) Jurisdiction of Victoria Street extension between South King Street and Kapi'olani Boulevard;
- 8) Signalization of Victoria Street extension/Kapi'olani Boulevard intersection.

The following are our responses to your specific comments:

- 1) **Traffic Impact Analysis Report (TIAR)**
 - a. "TIAR should be replaced with Traffic Impact Assessment (TIA) that analyzes multi-modal nature of all alternatives adjacent to City streets; the improvements needed, and recognizes the need for traffic control devices that encourage walking, bicycling, and transit use as the primary access modes for the proposed project". The submitted Transportation Impact Assessment Report (TIAR) is multimodal in nature as evidenced by its title. The TIAR submitted with the DEA acknowledges multimodal transportation and documents their existing and proposed conditions. The final version of the TIAR reflects extensive consultation with DTS Traffic Engineering Division, Public Transit Division, Traffic Signal and Technology Division, and Transportation Planning Division as

well as the DPP Traffic Review Branch. The TIAR focused on addressing traffic impacts in the immediate vicinity of Blaisdell Center and identifying refinements to pedestrian, bicycle, and transit access to the site.

- b. An accurate map depicting the various road ownership for all alternatives (State, city, private, various). All roadways surrounding Blaisdell Center are under the jurisdiction of the City and County of Honolulu.
- c. A map illustrating near-by Transit Oriented Development (TOD) stations relative to the proposed project including ¼ mile and ½ mile walkable radii is included in the DEA.
- d-f. Items d through f are part of the proposed elements being considered by DTS for TIA's. Blaisdell is being proposed for modernization as opposed to being a completely new and different type of development. As such, the level of analysis in the TIAR focuses on incremental differences from the current situation. In such cases, the level of analyses reflected in items d through f is typically not applicable.
- g. Transit, pedestrian, and bicycle improvements necessary are all described in the TIAR and DEA.

2) **Parking**

- a. **Structured Parking:** All new parking will be structured and at-grade parking will be eliminated under the proposed action of the DEA, with the exception of loading zones. The proposed increase in the number of parking spaces are accounted for in the trip generation analysis conducted as part of the TIAR.
- c. **Shared Parking:** Shared parking is not applicable. Non-Blaisdell parking is allowed during weekdays during the daytime hours. Only Blaisdell visitors are allowed to park at any other time. If there is a major event during weekday daylight hours, non-Blaisdell parking is required to find alternative parking or travel modes.
- d. **Electric Vehicle Parking:** Per HRS §291-71 electric vehicle charging systems would be incorporated in the Master Plan design.
- e. **Transportation Network Company (TNC)/Rideshare Zone:** Pick up and drop off locations for TNC and rideshare companies are included in the Master Plan design.
- f. **Bicycle parking:** Space dedicated to bicycle parking is included in the Master Plan designs
- g. **Street parking:** Street parking is addressed in the TIAR and the DEA.

3) **Complete streets**

- a. The DEA addresses compliance with County and State Complete Streets policies and principles.
- b. The protected lane on Ward Avenue is considered and incorporated into the design of the preferred alternative.

4) **Traffic Management Plan:** A traffic management plan will be completed as part of the design effort and made available to the CCH's DTS and Department of Planning and Permitting (DPP) for review. It will contain all requirements outlined in number 4, items b-f of your letter.

5) **Public Transit Service:** Public transit services are described in the transportation section of the DEA and evaluation and configuration of future City bus stops on Ward Avenue are discussed in the TIAR;

- 6) **Priority Guidelines on Sustainability:** The Master Plan has considered nationally recognized certifications, will implement green building and low impact development design principles to the extent feasible.

- 7) **Sea level Rise and Resilience:** The Blaisdell Center is located outside of the 100-year flood plain, and sea level rise (SLR) data suggests that the property itself will be minimally impacted by chronic flooding under the 3.2 foot SLR scenario, although the Pacific Islands Ocean Observing System's (PaclOOS) predictive dataset suggests adjacent storm drain systems along Ward Avenue and Victoria Street may experience chronic flooding under the 3.2ft SLR scenario. The property itself is not adjacent to any flooded highways under 3.2 ft. SLR scenario. A groundwater conditions assessment and geotechnical study was completed for the property, guidelines and recommendations of these reports would be followed during implementation of the Master Plan. Additionally, it is within the Kakaako Community Development District boundary for the Mauka Area, the HCDA Mauka Area Plan sets forward rules and updates regarding infrastructure in this area.

Items 8-13 are all addressed in the TIAR and DEA and are included in the Master Plan design. More specifically, neighborhood impacts have been and continue to be addressed in the Master Planning and Design efforts. As currently proposed in the Master Plan, vehicles entering the Blaisdell Center will be directed into the parking garage, and parking will be pre-paid at kiosks prior to departing. Also proposed in the Master Plan is to have truck loading and unloading internal to Blaisdell. Passenger drop off and pick up locations are maintained along Ward Avenue and South King Street. The Master Plan effort has conducted several major community meetings and countless individual and small group meetings. The community and stakeholders will continue to be involved as the project progresses.

- 13) **Best Management Practice Controls:** will be implemented in the construction phase of the project and are addressed in the DEA.
- 14) **Disability and Communication Access Board (DCAB):** We understand that DTS recommends that we consult with the DCAB to ensure full compliance with the ADA.

Thank you for your participation in the environmental review process. Your organization's letter and our response will be included in the DEA, scheduled for publication next month.

Sincerely,



Erin Dunable
Senior Environmental Planner



HAWAII COMMUNITY
DEVELOPMENT AUTHORITY



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Ref. No.: PL GEN 1.19.3

January 23, 2018

Ms. Erin Dunable
AECOM
1001 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Dear Ms. Dunable:

Re: Pre-assessment Consultation for the Blaisdell Center Master
Plan, Tax Map Key ("TMK") (1)2-3-001: 003

The Hawaii Community Development Authority (HCDA) received a letter from AECOM, dated December 27, 2017, requesting pre-assessment comments for a Draft Environmental Assessment, which will be prepared for the proposed Blaisdell Center Master Plan (Project) located at Tax Map Key: (1)2-3-001:003. As explained in the letter, since the Project entails the use of City and County funds and property, an environmental review is required per Hawaii Revised Statutes (HRS), Chapter 343.

As stated in the letter, the Project plans to redevelop the 22.4 acre Neil S. Blaisdell Center complex. The Project would entail demolishing the existing Exhibition Hall and meeting rooms, the Department of Enterprise Services offices, ticket booth, parking garage, all shops and associated storage areas, entry kiosks, and most driveways, sidewalks, and landscaping. Similarly, new facilities, driveways, sidewalks, and landscaping will be built to replace all the demolished site features. The Concert Hall and Arena will be preserved, but will undergo major renovations. A new Performance Hall and Sports Pavilion will be added.

The Project site, which is bound by Kapiolani Boulevard, Ward Avenue, and King Street, is within the Kakaako Community Development District (KCDD), Thomas Square Neighborhood Zone. As such, the proposed Project should take into consideration the development and urban design standards for the Thomas Square Neighborhood Zone, as well as all other requirement of the Mauka Area Plan and Rules. Section 15-217-23(3) of the Mauka Area Rules describe the Thomas Square Neighborhood Zone to be a civic focal point for the mauka area through its civic buildings and uses facilitating educational, performance, and entertainment endeavors. The buildings shall provide large setbacks with complementary mature landscaping.

Another principal planning consideration for the KCDD is embodied in the draft Transit Oriented Development (TOD) Overlay Plan, which outlines the following opportunities for the Project site:

- Consolidated land uses to extend historic Thomas Square Park across King Street.
- A complete street grid with improved vehicular connections through Blaisdell, and site design based on pedestrian access.
- A performance center and arena.
- Sustainable site design, and green building techniques.

The proposed Project can enhance the design of the site by improving the vehicular, pedestrian, and bicycle connections through the site. It is important that urban development projects within the Mauka Area incorporate appropriately scaled, well designed street level public areas and intra-block access lanes to activate the street level spaces as well as increase the walkability of the neighborhood and invite social interactions. As proposed, the Project is not fully taking advantage of the extension of Victoria Street as it is faced with two parking structures and mostly serves as an access road to these parking structures. It does not seem to be an inviting place for people to walk or bicycle. The Victoria Street extension could be treated as a promenade and therefore should include wide pedestrian sidewalks and bicycle lanes.

The Project can also help to advance several key planning concepts envisioned for the KCDD, such as high quality public spaces by bringing the proposed active spaces to the street level rather than the terrace level. The proposed garden coconut grove, and garden areas can indeed serve as great gathering spaces; however, these spaces would become even more attractive if active uses were programmed around these spaces.

In general, the 2011 Mauka Area Plan and Rules should be included and referenced as part of the section on Land Use Conformance in the Draft Environmental Assessment (DEA) as it generally supports the improvements anticipated in the Project. Moreover, please note that any deviation from the 2011 Mauka Area Plan and Rules should be clearly disclosed in the DEA since it may require approval from the HCDA.

Please contact Ms. Sery Berhanu at 594-0314 or email sergut.berhanu@hawaii.gov, if you have any questions.

Sincerely,



Garrett Kamemoto
Interim Executive Director



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October 26, 2018

To: Mr. Garret Kamamoto
Interim Executive Director
Hawaii Community Development Authority
547 Queen Street
Honolulu, HI 96813

Subject: Response to Comments, Pre-assessment Consultation for Blaisdell Center Master Plan, Tax Map Keys (1) 2-3-008:001-3

Dear Mr. Kamamoto,

Thank you for your organization's letter dated January 23, 2018, regarding the Neal S. Blaisdell Center Master Plan Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge HCDA's pre-assessment comments and have provided our responses below.

- The development and urban design standards for the Thomas Square Neighborhood Zone, as well as other requirements of the Mauka Area Plan and Rules are acknowledged within the Master Plan and Draft EA. The Master Plan acknowledges the facility as a civic focal point; the Blaisdell Center facilities will continue to facilitate performance and entertainment endeavors and will provide additional civic uses such as a satellite city hall for community use. Additional spaces for regular activities will include a new sports pavilion, Hālau/Arts Ensemble, an expanded parking structure (for continued public use), meeting rooms, and indoor and outdoor public spaces.
- The proposed Land Use Plan features large setbacks and complementary mature landscaping. Project design team landscape architects are strategically placing and designing green space.
- Consideration of the KCDD draft TOD Overlay Plan is addressed in the "Relationship to Land Use, Policies, and Controls" Section of the DEA. The plan is also referenced throughout the document.
- The Project strives to balance providing pedestrian and bicycle circulation through the site while maintaining the functionality of the site as an event venue. Pedestrians are encouraged to flow through the site using pathways that begin and end a street level but transition through the terrace level. The project has coordinated closely with the City and County of Honolulu Department of Transportation Services (DTS) regarding the Pedestrian Circulation Plan that they are currently developing. Through this interaction, a continuous pedestrian path is included along the Diamond Head side of the Victoria Street extension, providing an uninterrupted path between South King Street and Kapi'olani Boulevard. DTS was also consulted regarding bicycle facilities in the vicinity of the Blaisdell Center. DTS is currently working with their Complete Streets consultant to develop buffered bicycle lanes on Ward Avenue. Additionally, they are also planning to remove the two unsignalized mid-block pedestrian crossings of Ward Avenue and replacing them with a signalized crosswalk. The Blaisdell Master Plan has been modified to incorporate these most recent Complete Streets plans for Ward Avenue between South King Street and Kapi'olani Boulevard. Bike parking and Biki bike share stations will be incorporated into the redeveloped Blaisdell site. Currently, the Victoria Street extension will be maintained as an internal site roadway, but is being considered to be left open for general traffic when events are not in progress. The current access configuration of the parking garages are anticipated to



require active management of the Victoria Street extension when events are in progress and may require limiting access to event traffic only during those times.

- Advancing key concepts for the KCDD is an important part of the Blaisdell Center redevelopment project, and the Master Plan highlights the importance of open and active public space. The terrace design is utilized to increase the total amount of open space available to the public at any given time. Active use around the coconut grove and garden areas is considered in the proposed Master Plan. Additionally, with the new frontage along the Victoria Street extension, there is the potential for ground floor program space below the parking garage to further activate the streetscape, at the street level.
- The 2011 Mauka Area Plan and Rules are included in the “Land Use” and “Relationship to Land Use, Policies, and Controls” Sections of the DEA, and the plan and associated Final Supplemental Environmental Impact Statement is referenced throughout the document. Deviation from the Mauka Area Plan and Rules is not anticipated.

We value your participation in the environmental review process. Your organization’s letter and our response will be included in the Draft EA, scheduled for publication next month.

Sincerely,

A handwritten signature in blue ink that reads 'Erin Dunable'. The signature is written in a cursive, flowing style.

Erin Dunable
Senior Environmental Planner, AECOM

HISTORIC HAWAII FOUNDATION

January 23, 2018

Erin Dunable
AECOM Technical Services, Inc
1001 Bishop Street, Suite 1600
Honolulu, HI 96813

Email: erin.dunable@aecom.com

**Re: Pre-Assessment Consultation for Neal S. Blaisdell Center (NBC) Master Plan
Honolulu, Island of O'ahu
TMK: (1)2-3-008:001-3**

Dear Ms. Dunable,

Thank you for referring the above mentioned project to Historic Hawai'i Foundation (HHF) under Chapter 343 of the Hawai'i Revised statutes. HHF received your notice of December 27, 2017 opening consultation, with a brief description of the scope of work.

HHF has participated in several early discussions of feasibility studies and concepts for the redevelopment of the Blaisdell Center Site, Buildings and Grounds. This pre-assessment consultation is a continuation of the project and not a new undertaking.

Historic Hawai'i Foundation is a statewide organization established in 1974 to encourage the preservation of sites, buildings, structures, objects and districts that are significant to the history of Hawai'i. HHF is an organization with a demonstrated interest in the undertaking and a concern for the effects on historic properties.

HHF accepts the invitation to participate in the pre-assessment consultation for the Blaisdell Center Master Plan and efforts to avoid, minimize and mitigate adverse effects on historic properties.

Project Scope

Undertaking: The project proposes to retain and rehabilitate the historic Concert Hall and Arena buildings. The project proposes to demolish the existing Exhibition Hall and meeting rooms, Department of Enterprise Services (DES) offices, ticket booth, parking garage, all shops and associated storage areas, entry kiosks and most driveways, sidewalks, and landscaping. New facilities, driveways, sidewalks, and landscaping will be built to replace all the demolished site features. Additionally, a new Performance Hall and Sports Pavilion would be added to the Blaisdell Center campus.

Planning Area: The planning area includes the site bounded by King Street, Ward Avenue and Kapi'olani Boulevard and the property line of the adjacent McKinley High School.

Context

The Concert Hall and the Ward Avenue Streetscape are within the Thomas Square/Honolulu Academy of Arts Special District (identified in the City and County of Honolulu Land Use Ordinance). Both Thomas Square and the Honolulu Art Museum (formerly known as the Honolulu Academy of Arts) are listed on the Hawai'i State and National Registers of Historic Places. The adjacent McKinley High School is also a designated historic property.

HHF Comments and Recommendations on Key Elements of the Master Plan

The Master Plan is evolving and has already gone through several iterations. Rather than comment on individual features of the concept plans, Historic Hawai'i Foundation's comments focus on the principles at stake in redeveloping this significant historic and cultural resource in the heart of Honolulu. HHF strongly recommends that the following elements be contained in the Master Plan and addressed in the Environmental Assessment:

HISTORIC PRESERVATION

1. There needs to be an explicit and specific statement of intent, objectives and recommendations to preserve and appropriately use historic properties. This includes complying with the Secretary of the Interior's (SOI) Standards for the Treatment of Historic Properties. This includes but is not limited to the Concert Hall and the Arena, as well as any other historic or cultural properties that are identified.
2. The State Historic Preservation Division (SHPD) previously stated that the NBC is eligible for listing on the Hawai'i and National Registers of Historic Places. This preliminary assessment needs to be further defined by having a qualified preservation professional evaluate the existing buildings and overall site plan/design to describe the elements and contributing features that are eligible to be listed on the registers of historic places (for example, the parking structure and exhibit do not appear to contribute to the historic character, while the Concert Hall and Arena do).

Historic Hawai'i Foundation commissioned a context study on Hawaii's mid-20th century historic resources (available at <http://historichawaii.org/resource-center-2/library/>) which should be used as a reference when conducting this analysis. HHF believes that the complex is an eligible historic property under Criteria A (events—performing arts and community gathering); B (persons—Blaisdell, and others); and C (design—for mid-century modern design and engineering/construction of the arena).

3. The historic structure evaluations need to identify and prioritize character-defining features as well as the aspects of historic integrity including Location, Design, Setting, Materials, Workmanship, Feeling and Association. Character-defining features need to include an inventory and assessment of both large-scale features (monumental scale, geometric massing, symmetry, formal and classical elements such as evenly spaced columns, repetitive patterns, arches and use of decoration) and smaller-scale features (materials, finishes, artwork, detailing). The formal landscape elements, use of water features and ceremonial entrances and civic spaces are also character-defining.
4. Any development, infrastructure or permanent change that affects the character-defining features of historic properties needs to be compatible with and sensitive to the historic character, especially avoidance of any demolition, incompatible additions or exterior changes that affect the form, mass, scale, materials, architectural detailing, setting, feeling, association, workmanship or other aspects of integrity. For example, the formal relationship of the entry plaza of the Concert Hall needs to relate to the symmetry of the architecture as well as to the formal landscape design of Thomas Square directly across King Street.
5. On January 18, 2017 HHF had a very productive meeting with representatives from AECOM, WCIT and DPP. We commend the intent of the design team to design additions to the historic structures (e.g. lobby enclosure of the Concert Hall) with materials that are transparent, in a different plane (behind the arches) and in contrast to the historic materials in order to preserve the original massing of the distinctive Concert Hall and Arena buildings. The design intent and parameters should be included in the Master Plan and its implementing actions.

URBAN DESIGN

6. We recommend that design standards and guidelines be established for the project site, with a statement of design intent for both treatments of historic properties and new construction. The existing special review district guidelines would be a starting point (note the height limits, bulk plane requirements and setbacks), as well as the SOI Standards for both treatment of historic properties and for new construction or additions in a district or campus setting. In addition, there should be special attention to street frontages and public ways.
7. Green space or open space should be strategically placed and designed. Thomas Square should remain preeminent as the premier historic park. The setback between King Street and the Blaisdell Concert Hall is also very important for the setting and feeling. The landscape plan needs a strong organizing principle that limits the heavy use of hardscape and informal plantings and water features on the King Street and Ward Avenue perimeter.

8. The recently rediscovered and installed War Memorial should have a significant role in the planning of the campus site.
9. Establish preservation professional standards and qualifications for key members of the design team. Include these in any Request for Proposal (RFP) or selection criteria, and ensure that the preservation professional has a meaningful role in the design and planning process.
10. Establish design review milestones for the design(s) (e.g. at 30%, 60% & 90%) and include SHPD, HHF and any other appropriate preservation partners [e.g. Outdoor Circle, Docomomo]

Inclusion of the principles and guidelines above in the Master Plan is essential to avoiding a determination of either an Adverse Effect on historic properties or a Significant Environmental Effect.

Thank you for the opportunity to comment. Historic Hawai'i Foundation looks forward to continuing consultation.

Very truly yours,



Kiersten Faulkner, AICP
Executive Director

Copies via email:

DPP:	Renee Espiau
WCIT:	Sean Baumes, Rob Iopa
DES:	Guy Kaulukukui
AECOM:	Adriane Truluck



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October 26, 2018

Ms. Kiersten Faulkner, AICP
Executive Director
Historic Hawai'i Foundation (HHF)
680 Iwilei Road #690
Honolulu, HI 96817

Subject: Response to Comments, Pre-assessment Consultation for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Dear Ms. Faulkner,

Thank you for your organization's letter dated January 23, 2018, regarding the Neal S. Blaisdell Center Master Plan Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge HHF's pre-assessment comments about the Master Plan and provide the following response.

HHF recommended that several elements be considered in the Master Plan and addressed in the EA. The numbered responses below reference the same comment numbers in your January 23 letter.

1. The historic status of the Arena and Concert Hall is acknowledged and assumed within the Master Plan and EA. However, although the Master Plan report states historic character will be respected, it does not specifically cite the Secretary of the Interior's (SOI) *Standards for the Treatment of Historic Properties* in an explicit and specific statement. This language will be added to the Master Plan. **Recommended sentence: "The design intent includes being respectful of the character of the historic Concert Hall and Arena; to this end, the design team will consult accepted national standards for best practices for historic properties, such as the Secretary of the Interior's (SOI) *Standards for the Treatment of Historic Properties*."**
2. A formal determination of eligibility for the National and Hawai'i Registers of Historic Places was not undertaken as part of this EA. However, based on a review of past SHPD files concerning the Blaisdell Center, eligibility of the Concert Hall and Arena has been assumed as the Master Plan and subsequently EA were developed, and is stated within the Master Plan Concept report and in the EA. Additionally, Historic American Buildings Survey (HABS) documentation was completed as a supporting study for the Master Plan and is referenced in the Master Plan and the EA. The HABS relied upon, incorporated, and referenced the historic context study mentioned in the comment. A Historic Structure Report (HSR) and advisory role for a Historic Architect is incorporated into the design process to address the historic character and significance, in coordination with information collected in the HABS, and to support the incorporation of SOI standards into the project design.
3. The HABS addressed the inventory of character-defining features and provided base information regarding condition and historic integrity. The character-defining features and impacts to the historic integrity of the property's design are enumerated in the EA, based on the HABS. The historical architect's involvement with design development and the associated HSR address character-defining features and their disposition during project design development at a finer level of detail not possible in the Master Plan phase, including the prioritization of features to retain in the new design and the retention of historic integrity.

4. Thank you for your additional elaboration related to character-defining features. The HSR and historical architect's involvement will provide guidance in the design phase regarding compliance with SOI standards to guide the design team regarding sensitivity to historic character and provide compatibility recommendations for design options that are compatible with and sensitive to the historic character. The design team acknowledged in the January 18 meeting with HHF (see comment response 5 below) the need to retain the relationship of the entry plaza to the symmetry of the Concert Hall and to the formal Thomas Square landscape, and will be mindful of this goal as the landscape design continues to be refined and developed in this area of the landscape.
5. Thank you for your participation in the meeting and your positive comments. The design intent and parameters with regards to additions and materials on the historic buildings are acknowledged in general terms in the Master Plan; a more specific discussion of design intent and parameters is expanded upon in the design phase, including the HSR, and integrated into design phase documents.
6. The design intent for historic properties and new construction is acknowledged in the Master Plan concept document and includes respecting the historic properties' character-defining features. The Master Plan recognizes the existing special district guidelines; more specific recommendations for applying SOI standards in the new design are established in the design phase documents and the HSR, including design standards and guidelines.
7. Landscape architects, as part of the design team, are strategically placing and designing green space. The character of the Blaisdell Center is conceived as different from that of historic Thomas Square, and is defined in the HABS as reflective of a mid-century Modern design aesthetic. The Master Plan document provides a strong organizing principle for the design. The specifics of hardscape and water features along King Street and Ward Avenue are still being determined in the design process, as discussed in the January 18 meeting, and continue to evolve. Your comments will be taken into consideration as part of design development discussions.
8. The War Memorial function of the Blaisdell property will be reflected in the plan. The Master Plan document identifies the War Memorial as an important function and feature that will be included. As the design is developed, your comment will be taken into consideration on how that integration is realized on site.
9. A Secretary of Interior qualified preservation professional is required to be the technical lead for the HSR and design team advisory efforts. The historical architect leading this task will advise the design team. The existing project team also includes qualified archaeologists and a historical landscape architect who have been involved in the design and planning process to date, and will continue to be involved as appropriate going forward.
10. Review milestones will be established for the SHPD as part of the design process and coordinated with the overarching design phases and planned client review milestones. Should the SHPD request participation of other preservation partners in the reviews, the City and County will work with the SHPD to determine how best to include those reviewers.



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We value your participation in the environmental review process. Your organization's letter and our response will be included in the Draft EA, scheduled for publication next month.

Sincerely,

A handwritten signature in blue ink that reads 'Erin Dunable'. The signature is written in a cursive, flowing style.

Erin Dunable
Senior Environmental Planner

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

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KIRK CALDWELL
MAYOR



MANUEL P. NEVES
FIRE CHIEF

LIONEL CAMARA JR.
DEPUTY FIRE CHIEF

January 23, 2018

Ms. Erin Dunable
Senior Environmental Planner
AECOM Technical Services, Inc.
1001 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Dear Ms. Dunable

Subject: Preassessment Consultation for Blaisdell Center Master Plan
777 Ward Avenue
Honolulu, Hawaii 96814
Tax Map Key: 2-3-008: 001-3

In response to your letter dated December 27, 2017, regarding the abovementioned subject, the Honolulu Fire Department (HFD) requires that the following be complied with:

1. Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet from fire department access roads as measured by an approved route around the exterior of the building or facility. (National Fire Protection Association [NFPA] 1; Uniform Fire Code [UFC]TM, 2012 Edition, Sections 18.2.3.2.2 and 18.2.3.2.2.1.)

A fire department access road shall extend to within 50 feet of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1; UFCTM, 2012 Edition, Section 18.2.3.2.1.)

2. A water supply approved by the county, capable of supplying the required fire flow for fire protection, shall be provided to all premises upon which facilities or buildings, or portions thereof, are hereafter

Ms. Erin Dunable
Page 2
January 23, 2018

constructed, or moved into or within the county. When any portion of the facility or building is in excess of 150 feet from a water supply on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the AHJ [Authority Having Jurisdiction]. (NFPA 1; UFC™, 2012 Edition, Section 18.3.1, as amended.)

3. The unobstructed width and unobstructed vertical clearance of a fire apparatus access road shall meet county requirements. (NFPA 1; UFC™, 2012 Edition, Sections 18.2.3.4.1.1 and 18.2.3.4.1.2, as amended.)
4. Submit civil drawings to the HFD for review and approval.

Should you have questions, please contact Battalion Chief Wayne Masuda of our Fire Prevention Bureau at 723-7151 or wmasuda@honolulu.gov.

Sincerely,



SOCRATES D. BRATAKOS
Assistant Chief

SDB/TC:bh



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Suite 1600
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

October 26, 2018

Socrates Bratakos
Assistant Chief
Honolulu Fire Department
636 South Street
Honolulu, Hawaii 96813

Dear Socrates Bratakos,

Subject: Response to Comments, Pre-assessment Consultation for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your organization's letter dated January 23, 2018, regarding the Neal S. Blaisdell Center Master Plan Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge the HFD's pre-assessment comments and provide the following response.

1. Fire department access roads will be provided in accordance with National Fire Protection Association (NFPA) Uniform Fire Code (UFC)TM, 2012 Edition, Sections 18.2.3.2.2 and 18.2.3.2.2.1.
2. For buildings in excess of 150 feet from the water supply on a fire apparatus road, on-site fire hydrants and water mains capable of supplying the required fire flow shall be provided.
3. Fire access roads would meet county requirements.
4. Civil drawings will be submitted to the HFD for review prior to the construction phase.

We value your participation in the environmental review process. Your organization's letter and our response will be included in the Draft EA, scheduled for publication next month.

Sincerely,

Erin Dunable
Senior Environmental Planner



OFFICE OF PLANNING STATE OF HAWAII

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
DIRECTOR
OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: <http://planning.hawaii.gov/>

DTS201801251022BE

January 25, 2018

Erin Dunable
Senior Environmental Planner
AECOM Technical Services, Inc.
1001 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Dear Ms. Dunable:

Subject: Pre-Assessment Consultation
Neil Blaisdell Center Master Plan
Tax Map Key: (1) 2-3-008: 001, 002, and 003
Honolulu, Hawaii

Thank you for the opportunity to provide comments for consideration in the preparation of the Draft Environmental Assessment (DEA) for the Blaisdell Center Master Plan. The City and County of Honolulu (City), Department of Enterprise Services (DES) proposes to redevelop the Blaisdell Center complex to ensure that it will continue to serve as Honolulu's premier cultural and performing arts venue and gathering place well into the future. The proposed project would include major renovations and updates of facility systems of the Concert Hall and Arena, replacement of the existing Exhibition Hall and meeting rooms, ticket booth, parking garage, and ancillary facilities, and open space improvements. According to the *Blaisdell Center Master Plan, Phase 1: Feasibility Study and Conceptual Land Use Plan*, the Preferred Land Use Plan is intended to improve site utilization and result in a multipurpose facility that could support a diversity of space offerings for a broader range of events, activities, and audiences, encourage daily activity onsite, and enhance the overall patron and user experience.

The Office of Planning (OP) has the following general comments to offer regarding the preparation of the DEA.

- a. Pursuant to Hawaii Administrative Rules (HAR) § 11-200-10(4) – general description of the action's technical, economic, social, and environmental characteristics, the DEA must describe how the project is consistent with the goals, objectives, and policies of Hawaii Revised Statutes (HRS) Chapter 226, the Hawaii State Planning Act. The Hawaii State Plan sets out goals, objectives, policies, and priority guidelines for the growth, development, and allocation of resources throughout the State.

The DEA must include a discussion or analysis of the project's consistency with goals, objectives, policies, and priority guidelines of HRS Chapter 266, including a discussion of those provisions that are not applicable to the project and those provisions that are in conflict with the project.

- b. The coastal zone management (CZM) area is defined as "all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the U.S. territorial sea" (HRS § 205A-1).

The DEA must include an assessment as to how the proposed action conforms to each of the goals and objectives in HRS § 205A-2. Compliance with HRS § 205A-2 is an important component for satisfying the requirements of HRS Chapter 343.

Particular coastal zone management concerns include the proposed project's impact on stormwater runoff and consideration of facility and design issues related to climate change and sea level rise. The DEA should discuss proposed adaptation and mitigation measures related to use of green infrastructure onsite that could minimize any adverse impacts resulting from the project.

OP notes that the redevelopment of the Blaisdell Master Plan is one of several City catalytic projects associated with City efforts to support the creation of vibrant, mixed-use communities—through transit-oriented development (TOD)—around the planned Honolulu Rapid Transit rail stations. OP offers the following comments for consideration in the analysis and discussion of potential project impacts in the TOD context.

- a. Anticipated TOD development—with its higher densities and mix of users and activities—in proximity of the project should be considered in evaluating cumulative and secondary project impacts. Furthermore, the DEA should identify measures—both physical and programmatic—that could be implemented to ensure that anticipated impacts in terms of pedestrian and vehicular traffic, infrastructure adequacy, energy use, and environmental quality within the immediate TOD-influenced area are addressed.
- b. The *Phase 1 Feasibility Study and Conceptual Land Use Plan*, and its preferred land use plan, reference the complex's value in contributing to successful transit-oriented development surrounding the three rail stations that could serve the Blaisdell Center. The DEA should discuss the potential for increased parking demand at the Center and measures that could be taken to support TOD and Complete Streets objectives for mode shifts to other transportation modes, including transit, bicycle use, and walking.

Ms. Erin Dunable
January 25, 2018
Page 3

- c. One of the elements in the preferred land use plan in the Phase 1 study is improved connectivity to other assets in the neighboring area, including McKinley High School. The preferred plan includes reconfigured parking structures that would enable an extension of Victoria Street through to Kapiolani Boulevard, as well as better pedestrian connections to McKinley High School. While there are potential synergies to both a physical and programmatic relationship between the Center facilities and programs and that of the high school, OP recommends consultation with the school administration regarding the potential safety and security concerns that might be raised by the proposed Victoria Street extension and pedestrian connection to the school campus, and measures that might be taken to address school concerns in achieving the desired streetscape and traffic flow of the preferred land use plan.

If you have any questions regarding this comment letter, please contact Ruby Edwards of our office at (808) 587-2817.

Sincerely,



Leo R. Asuncion
Director



AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

October 26, 2018

Mr. Leo Asuncion
Director
State of Hawaii, Office of Planning
Honolulu, Hawaii 96813

Dear Leo Asuncion,

Subject: Response to Comments, Pre-assessment Consultation for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your organization's letter dated January 25, 2018, regarding the Neal S. Blaisdell Center Master Plan Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge the Office of Planning's pre-assessment comments and have provided our responses below.

- 1) The EA includes a discussion of the project's consistency with the goal, objectives, and priority guidelines of HRS Chapter 226, including a discussion of the provisions of that do not apply to the project. This discussion is located in the Relationship to Land Use Plans, Policies, and Controls section of the EA.
- 2) Compliance with the Federal Coastal Zone Management Act, as well as the objectives set forth by the State Coastal Zone Management Plan pursuant of HRS §205A, are discussed in the Relationship to Land Use Plans, Policies, and Controls section of the EA. Additionally, coastal management concerns such as those related to climate change and sea level rise and storm water runoff are addressed in the EA. Facility and green infrastructure design addresses these concerns to the extent practical.

In response to comments regarding Transit Oriented Development (TOD), we provide the following responses.

- 3) Anticipated TOD is evaluated throughout the EA, and is further evaluated in detail within the socioeconomic, transportation, the cumulative impacts sections of the EA. These evaluations include documentation of proposed pedestrian and bicycle facility improvements adjacent to Blaisdell Center. The Master Plan illustrates concepts to increase the integration of the Blaisdell Center into the pedestrian environment.
- 4) The EA addresses the multimodal transportation components that balance the need for increased parking supply at Blaisdell Center with transit service and improved bicycle and pedestrian facilities that support TOD and complete streets initiatives.
- 5) McKinley High School has been consulted with during community engagement meetings and throughout the Master Planning Process. The Blaisdell Center Master Plan concepts maintain a physical separation between Blaisdell Center and the McKinley High School campus. McKinley High School was sent a letter and has currently provided no comments regarding the plans.



We value your participation in the environmental review process. Your organization's letter and our response will be included in the Draft EA, which is scheduled for publication next month.

Sincerely,

A handwritten signature in blue ink that reads "Erin Dunable". The signature is written in a cursive, flowing style.

Erin Dunable
Senior Environmental Planner

DAVID Y. IGE
GOVERNOR



RODERICK K. BECKER
Comptroller

AUDREY HIDANO
Deputy Comptroller

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)1009.8

JAN 16 2018

Ms. Erin Dunable, Senior Environmental Planner
AECOM Technical Services, Inc.
1001 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Dear Ms. Dunable:

Subject: Pre-assessment Consultation for Blaisdell Center Master Plan
Honolulu, Oahu, Hawaii
TMK: (1) 2-3-008:001-3

Thank you for the opportunity to comment on the subject project. The proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities. We have no comments to offer at this time but request that we be kept informed of any progress and that we be included in the review of future developments.

If you have any questions, you may call Ms. Dora Choy of the Planning Branch at 586-0488.

Sincerely,

A handwritten signature in blue ink, appearing to read "Keith S. Kogachi".

KEITH S. KOGACHI
Acting Public Works Administrator

DC:mo

c: Mr. Cory Shibata, DAGS CSD



AECOM
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808 524 0246 fax

October 26, 2018

Keith Kogachi
Acting Public Works Administrator
State of Hawaii
Department of Accounting and General Services
P.O. Box 119
Honolulu, HI 96810-0119

Dear Keith Kogachi:

**Subject: Pre-assessment Consultation Draft for Blaisdell Center Master Plan, Honolulu, Oahu, Hawaii
TMK (1)2-3-008:001-3.**

Thank you for your organization's letter dated January 16, 2018, regarding the Neal S. Blaisdell Center Master Plan Environmental Assessment (EA).

As the planning consultant for the City and County of Honolulu, we acknowledge that the proposed project does not have impact any of the Department of Accounting and General Services' projects or existing facilities and that you have no comment at this time.

We value your participation in the environmental review process. Your organization's letter and our response will be included in the Draft EA, scheduled for publication next month.

Sincerely,

Erin Dunable
Senior Environmental Planner



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

February 15, 2018

Ms. Erin Dunable
AECOM Technical Services, Inc.
1001 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Dear Ms. Dunable:

Subject: Blaisdell Center Master Plan
Pre Consultation for Draft Environmental Assessment
Honolulu, Oahu, Hawaii
TMK: (2) 3-8-008:001, 008, 020, 034 to 038

The City and County of Honolulu, Department of Enterprise Services (DES) proposes to redevelop the 22.4-acre Neal S. Blaisdell Center (Blaisdell Center). The DES proposes demolishing the existing exhibition Hall and meeting rooms, DES offices, ticket booth, parking garage, shops and associated storage areas, entry kiosks, and most driveways, sidewalks, and landscaping; constructing new facilities, driveways, sidewalks, and landscaping to replace all the demolished site features; retain and renovate the existing Concert Hall and Arena. Additionally, a new Performance Hall and Sports Pavilion would be added to the Blaisdell Center campus.

Our Department of Transportation (DOT) comments on the subject project are as follows:

Airports Division

The Blaisdell Center is located approximately 3.88 miles from the end of Runway 26L of the Daniel K. Inouye International Airport. The applicants need to be aware of the duties of the state and county agencies to implement the State of Hawaii, Office of Planning, Technical Assistance Memorandum related to this project and all projects within five-miles of an airport:
<http://files.hawaii.gov/dbedt/op/docs/TAM-FAA-DOT-Airports-08-01-2016.pdf>

Additionally, Federal Aviation Administration (FAA) regulations require the submittal of FAA Form 7460-1, Notice of Proposed Construction or Alteration, in accordance with Code of Federal Regulations, Title 14, Part 77.9. Planned building heights and any additional height of any cranes needed during construction need to be included in the submittal of a FAA Form 7460-1. This form and criteria for submittal can be found at the following website:
<https://oeaaa.faa.gov/oeaaa/external/portal.jsp>.

Ms. Erin Dunable
February 15, 2018
Page 2

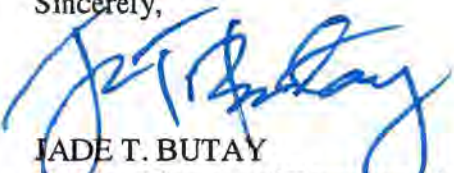
DIR 1647
STP 8.2316

Highways Division

Although the proposal involves access to roads under the jurisdiction of the City and County, this project can result in traffic impacts to State highway facilities, such as the Kinau Street off-ramp from H-1, the Lunalilo Street on-ramp to H-1, and Ala Moana Boulevard; therefore, a traffic assessment (TA) should be prepared including, at least, those State highway facilities. Improvements recommended in the TA to mitigate project impacts shall be provided at no cost to the State.

If there are any questions, please contact Mr. Norren Kato of the DOT Statewide Transportation Planning Office at telephone number (808) 831-7976.

Sincerely,



JADE T. BUTAY
Interim Director of Transportation



AECOM
1001 Bishop Street
Suite 1600
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808 521 3051 tel
808 524 0246 fax

October 26, 2018

Jade Butay
Interim Director of Transportation
State of Hawaii Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

Dear Jade Butay:

Subject: Response to Comments, Pre-assessment Consultation for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your organization's letter dated February 15, 2018, regarding the Neal S. Blaisdell Center Master Plan Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge the State Department of Transportation's pre-assessment comments and have provided our responses below.

Airport Division

The State of Hawai'i Office of Planning Technical Assistance Memorandum discusses the Federal Aviation Administration (FAA) Order 5190.6B, which expresses several concerns that can affect normal airport operations. Our responses to these concerns are as follows:

- a. Hazardous Wildlife Attractants on or Near Airports - The project includes water features on-site, but their relatively small size and their distance from the Daniel K. Inouye International (DKI) Airport would likely minimize impacts to airport operations.
- b. Construction of Establishment of Landfills near Public Airports - The project does not involve the construction or establishment of a landfill.
- c. Federal and State Coordination of Environmental Reviews for Airport Improvement Projects - The project is not an airport improvement project and joint environmental review by the FAA and the National Association of State Aviation Officials (NASAO) is not anticipated.
- d. Land Use Compatibility and Airports and
- e. Compatible Land Use Planning Initiative - the redevelopment of the Neal S. Blaisdell Center (Blaisdell Center) does not significantly change the existing land use on the site. The existing land use is appropriate and compatible with existing airport operations at the DKI airport
- f. A Model Zoning Ordinance to Limit Height of Objects Around Airports - The redeveloped Blaisdell Center does not include structures of heights that would interfere with air operations at the DKI airport.
- g. Glint/Glare Hazards - The Blaisdell redevelopment will be designed so that it will not contain glint/glare hazards that affect the airport operations at the DKI airport.
- h. Obstruction Evaluation/Airport Airspace Analysis - The FAA Form 7460-1, Notice of Proposed Construction or Alteration, will address the Obstruction Evaluation/Airport Airspace Analysis, which includes the planned building heights and any cranes needed during construction.
- i. Avigation and Noise Easements - The location of the project is likely not to fall within the avigation and noise easements of the Daniel K. Inouye Airport.

The FAA Form 7460-1, Notice of Proposed Construction or Alteration, in accordance with Code of Federal Regulations will be completed and submitted.

Highways Division

A Transportation Impact Analysis Report (TIAR) was completed. The analysis performed in the TIAR focused on the existing and future conditions at key intersections surrounding Blaisdell Center. All surrounding roadways are under City and County of Honolulu jurisdiction.

Under existing conditions, the majority of the inbound Blaisdell traffic utilizes the driveway located at the South King Street/Victoria Street intersection. This concentration of traffic results in traffic backups when multiple major events are held concurrently at the Blaisdell Center. These traffic backups sometime affect traffic flow on Kinau Street, in severe cases causing congestion to traffic exiting H1 Freeway at the Kinau Street off-ramp.

The future configuration of the parking garages at Blaisdell Center will alter the traffic patterns for access. There will be two parking garages, and although they will be connected at certain levels, the garage ramping will direct traffic accessing the garages to use the roadway closest to the access. The makai garage is the larger of the two garages and will have its access oriented to Kapi'olani Boulevard. This will help to balance traffic accessing Blaisdell Center between South King Street and Kapi'olani Boulevard, thereby reducing the heavy congestion that tends to back up traffic into Kinau Street and, in extreme cases, onto H-1.

Additionally, the Blaisdell Center Master Plan proposes actions to expedite entry into the property, reducing the potential of traffic backups at either the South King Street access or the Kapi'olani Boulevard access. These include:

- Revising parking operations to eliminate payment for parking upon entry. This is the source of the greatest delay and, in turn, the traffic queues that extend along approaches to the Blaisdell Center driveway.
- Active Wayfinding to direct traffic to the Kapi'olani Boulevard Blaisdell Driveway. This action would help orient traffic desiring to access the Blaisdell Center from Kapi'olani Boulevard and reduce the demand along Kinau Street and the potential for impacts to the H1 exit at Kinau Street.

These recommendations are included in the TIAR.

We value your participation in the environmental review process. Your organization's letter and our response will be included in the Draft EA, scheduled for publication next month.

Sincerely,



Erin Dunable
Senior Environmental Planner

From: Nelson Lee
To: [Dunable, Erin](#)
Subject: Pre-assessment Consultation for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3
Date: Monday, January 22, 2018 1:53:33 PM

Erin,

The University is concerned with available parking in the area since the University is already constrained with lack of parking for the John A Burns School of Medicine as well as the UH Cancer Center in Kakaako. The loss of parking during and after construction will put a greater demand on available parking in the area of which our workers and visitors use.

Thanks,

Nelson A Lee, PMP

Interim Director, Office of Project Delivery

University of Hawai'i at Manoa

2002 East-West Road

Honolulu, Hawai'i 96822

Fax: [\(808\) 956-5385](tel:8089565385)

Office: (808)956-4801

Cell: 808-291-4156



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808 521 3051 tel
808 524 0246 fax

October 26, 2018

Nelson Lee
Interim Director
Office of Project Delivery
2002 East-West Road
Honolulu, HI 96822

Dear Nelson Lee,

Subject: Response to Comments, Pre-assessment Consultation for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for the comments your organization submitted via email on January 22, 2018 regarding the Neal S. Blaisdell Center Master Plan Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge UH Mānoa's pre-assessment comments and provide our responses below.

The preferred alternative in the Master Plan EA adds 634 additional parking stalls, increasing the total parking from 1,508 stalls to 2,142 stalls. Additionally, the proposed design for the Neal S. Blaisdell Center (Blaisdell Center), adds features that provide incentives for multimodal transportation by adding bike racks and designating drop-off/pick-up locations for use by transportation network companies (TNC) or rideshare programs. The Blaisdell Center is located in a transit-rich area which will become even more so when the rail system goes into service. The King Street Cycle Track also provides convenient bicycle access to the Blaisdell Center area. These elements will work together to help accommodate future attendee demand at Blaisdell Center events.

The Blaisdell Center currently offers weekday daytime parking for employees of the City and County of Honolulu, Queen's Medical Center, Straub Clinic, and other employers in the area. When there is a major daytime event at Blaisdell, this employee parking is not available and organizations utilizing Blaisdell Center parking need to find alternative arrangements. We are aware that some organizations arrange for parking in the vicinity of the John A. Burns School of Medicine and the UH Cancer Center. These closures are infrequent and sporadic and occur in the existing condition. Under the preferred alternative, there would be more parking available for weekday daytime parking for employees, subject to the same closure events as currently experienced.

There will be an unavoidable, but temporary loss of parking during the construction phase of the Blaisdell improvement project. During the most likely construction scenario, there would be a temporary loss of all parking at the Blaisdell Center. In this scenario, weekday daytime parking for employees would not be available and organizations would need to make alternative transportation arrangements for the duration of the construction phase. There will be no demand for attendee parking during the construction phase as the Blaisdell Center would be shut down completely during this period.



We value your participation in the environmental review process. Your organization's comment and our response will be included in the Draft EA, scheduled for publication next month.

Sincerely,

A handwritten signature in blue ink, reading "Erin Dunable". The signature is written in a cursive, flowing style.

Erin Dunable
Senior Environmental Planner



ALA MOANA-KAKA'AKO NEIGHBORHOOD BOARD NO. 11

NEIGHBORHOOD COMMISSION • 925 DILLINGHAM BOULEVARD, SUITE 160 • HONOLULU, HAWAII, 96817
PHONE (808) 768-3710 • FAX (808) 768-3711 • INTERNET <http://www.honolulu.gov/nco>

City and County of Honolulu, Department of Design and Construction
Attention: Mr. John Condrey, AIA, IIDA
650 South King Street, 11th Floor, Honolulu, Hawaii 96813
BlaisdelIDEA@aecom.com

Dear Mr. Condrey:

Re: Neal S. Blaisdell Center Master Plan Comment

The Ala Moana-Kaka'ako Neighborhood Board No. 11 urges the City and County of Honolulu to consider integrating the Hawaiian Electric Company (HECO) parcel (Tax Map Key 2-1-044-003) and McKinley High School (Tax Map Key 2-3-009-001) into the Neal S. Blaisdell Center Master Plan.

The Board passed a resolution to provide these comments at its regular meeting on November 27, 2018 by a unanimous vote of 6-0-0. Additional notes regarding the context of the discussion will be available when the meeting minutes are expected to be approved at the next regular meeting January 22, 2018. Alternatively, the board discussion can be viewed on the board meeting video archive at:

<http://www.honolulu.gov/cms-nco-menu/site-nco-sitearticles/1657-board-meeting-video-archive.html>.

Note that at previous meetings in 2018, board members and residents have generally discussed the potential opportunities associated with planning and redevelopment of these three sites. By integrating uses across some or all of these three parcels, it may be possible to accommodate parks, recreational/athletic facilities, cultural facilities, or even enabling-commercial development into the master plan. The master planning effort may also want to consider the cumulative effects of redevelopment of these three sites.

If you have any further questions regarding this matter, please contact our Neighborhood Board Assistant, Mr. K. Russell Ho at kho4@honolulu.gov or 768-3715.

Sincerely Yours,

Ryan Tam
Chair, Ala Moana-Kaka'ako Neighborhood Board No. 11



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1001 Bishop Street
Suite 1600
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

May 29, 2019

Ryan Tam
Chair, Ala Moana-Kaka'ako Neighborhood Board No. 11
Ala Moana-Kaka'ako Neighborhood Board No. 11
Neighborhood Commission
925 Dillingham Boulevard, Suite 160
Honolulu, HI 96817

Dear Mr. Tam,

Subject: Response to Comments, Draft Environmental Assessment for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your organization's letter dated January 11, 2019, regarding the Neal S. Blaisdell Center Master Plan Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge the Ala Moana-Kaka'ako Neighborhood Board comments on the Draft EA and provide the following response.

- While integration of Blaisdell, HECO, and McKinley High master planning efforts would be desirable, coordinating the different jurisdictions, funding schedules and agency decision-making in a timely manner is logistically problematic due to the separate City, private, and State agencies involved. Nevertheless, opportunities for coordination with contiguous and nearby properties would continue to be explored throughout the design process and implementation of the Blaisdell project, as appropriate.
- The Draft EA includes a discussion of the recently approved master plan for McKinley High, but we have added a discussion of the McKinley High School Master Plan in the Cumulative Impacts Section, at your suggestion. While HECO has started its process to redevelop their property, it is in the early planning phase and there have been no definitive plans submitted or approved for the site. Therefore, no cumulative impacts can be analyzed at this time.

We value your participation in the environmental review process. Your organization's letter and our response will be included in the Final EA, scheduled for publication next month.

Sincerely,

Erin Dunable
Senior Environmental Planner

754054

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com



December 7, 2018

DEPT OF DESIGN AND CONSTRUCTION
KIRK CALDWELL, MAYOR
BRYAN P. ANDAYA, CHAIR
KAPUA SPROAT, Vice Chair
KAY C. MATSUI
RAY C. SOYAKI
MAX J. SWORD
2018 DEC 17 10:47

ROSS S. SASAMURA, Ex-Officio
JADE T. BUTAY, Ex-Officio

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

ELLEN E. KITAMURA, P.E.
Deputy Manager and Chief Engineer

TO: JOHN CONDREY, AIA, IIDA
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: ERNEST Y. W. LAU, P.E., MANAGER AND CHIEF ENGINEER *eyw*

SUBJECT: YOUR LETTER DATED NOVEMBER 6, 2018 REQUESTING
COMMENTS ON THE DRAFT ENVIRONMENTAL ASSESSMENT
FOR THE NEAL S. BLAISDELL CENTER MASTER PLAN
TAX MAP KEY: 2-3-008: 001, 002, 003

Thank you for your letter regarding the proposed Neal S. Blaisdell Center redevelopment.

The existing water system is adequate to accommodate the proposed Neal S. Blaisdell Center redevelopment. However, please be advised that this information is based upon current data, and therefore, the Board of Water Supply (BWS) reserves the right to change any position or information stated herein up until the final approval of the building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

Water conservation measures are recommended for all proposed developments. These measures include utilization of nonpotable water for irrigation using rain catchment, drought tolerant plants, xeriscape landscaping, efficient irrigation systems, such as drip system and moisture sensors, and the use of Water Sense labeled ultra-low flow water fixtures and toilets. To the maximum extent, this project should provide extensive reuse of water on site, including rainwater, air conditioning condensate, wastewater (blackwater and graywater), and stormwater.

The proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

If you have any questions, please contact Robert Chun, Project Review Branch of our Water Resources Division at 748-5443.

cc: Erin Dunable, AECOM



AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

May 29, 2019

Ernest Y.W. Lau
P.E., Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, HI 96843

Dear Mr. Lau,

Subject: Response to Comments, Draft Environmental Assessment for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your organization's letter dated December 7, 2018, regarding the Neal S. Blaisdell Center Master Plan Draft Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge the Board of Water Supply's comments and our responses are provided below.

We appreciate and acknowledge your comment that the existing water system is adequate, but understand that the final decision on availability of water will be confirmed during the building permit application phase. We also acknowledge the applicant will be required to pay Water System Facilities Charges.

Modern water conservation measures will be incorporated into the design and operation of the Blaisdell facilities, as appropriate. As discussed in Section 5.2. of the EA, low flow water conservation features, water reuse, use of catchment, condensate, and the use of native and/or drought-tolerant landscaping will all be considered throughout the design phase.

We further acknowledge that the proposed project is subject to Board of Water Supply Cross-Connection Control and Backflow Prevention requirements prior to the issuance of a building permit. The on-site fire protection requirements will be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

We value your participation in the environmental review process. Your organization's letter and our response will be included in the Final EA, scheduled for publication next month.

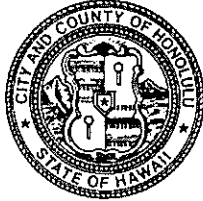
Sincerely,

Erin Dunable
Senior Environmental Planner

DEPARTMENT OF FACILITY MAINTENANCE
CITY AND COUNTY OF HONOLULU

1000 Ulu'ohia Street, Suite 215, Kapolei, Hawaii 96707
Phone: (808) 768-3343 • Fax: (808) 768-3381
Website: www.honolulu.gov

KIRK CALDWELL
MAYOR



ROSS S. SASAMURA, P.E.
DIRECTOR AND CHIEF ENGINEER

EDUARDO P. MANGLALLAN
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 18-696

December 3, 2018

Ms. Erin Dunable
AECOM Technical Services, Inc.
1001 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Dear Ms. Dunable:

Subject: Review and Public Comment Period for the Neal S. Blaisdell Center
Master Plan Draft, EA
Tax Map Keys: (1) 2-3-008:001-3

Thank you for the opportunity to review and comment on the subject project.

Our comments are as follows:

- Once construction phase commence, install approved Best Management Practices (BMP) fronting all drainage facilities on Ward Avenue, Kapiolani Boulevard, and S. King Street.
- During construction and upon completion of project; any damages/deficiencies along the sidewalks and/or roadways on Ward Avenue, Kapiolani Boulevard, and S. King Street shall be corrected to City Standards and accepted by the City and at no cost to the City and County of Honolulu.

If you have any questions, please call Mr. Kyle Oyasato of the Division of Road Maintenance at 768-3697.

Sincerely,

A handwritten signature in black ink, appearing to read "Ross S. Sasamura".

Ross S. Sasamura, P.E.
Director and Chief Engineer

cc: Department of Design and Construction, John Condrey



AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

May 29, 2019

Ross S. Sasamura, P.E.
Director and Chief Engineer
Department of Facility Maintenance
City and County of Honolulu
1000 Ulu'ohia Street, Suite 215
Kapolei, HI 96707

Dear Mr. Sasamura,

Subject: Response to Comments, Draft Environmental Assessment for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your organization's letter dated December 3, 2018, regarding the Draft Environmental Assessment (EA) for the Neal S. Blaisdell Center Master Plan Environmental Assessment (EA).

- We appreciate and acknowledge that once the construction phase commences, approved Best Management Practices (BMPs) will be installed fronting all drainage facilities on Ward Avenue, Kapiolani Boulevard, and South King Street.
- We also acknowledge that during construction and upon completion of the project; any damages/deficiencies along the sidewalks and/or roadways on Ward Avenue, Kapiolani Boulevard, and S. King Street shall be corrected to City Standards and accepted by the city and at no cost to the City and County of Honolulu.

We value your participation in the environmental review process. Your organization's letter and our response will be included in the Final EA, scheduled for publication next month.

Sincerely,

Erin Dunable
Senior Environmental Planner



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF SCHOOL FACILITIES AND SUPPORT SERVICES

RECEIVED
DEPT OF DESIGN & CONSTRUCTION
C & C OF HONOLULU
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November 28, 2018

John Condrey
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Re: Draft Environmental Assessment for the Neal S. Blaisdell Center Master Plan

Dear Mr. Condrey:

The Department of Education (DOE) has reviewed the Draft Environmental Assessment (DEA) for improvements to the Neal S. Blaisdell (NBC) complex of facilities. The Office of School Facilities and Support Services, Facilities Development Branch (FDB) would like to be consulted on the plans since the NBC and McKinley High School (MHS) share a 1,700 foot common boundary. While the MHS may have been sent a request for comments, FDB has no record of such a request.

There is very little discussion of the shared boundary between NBC and MHS. We think the discussion of Hydrology and Stormwater Drainage (page 125) should have included more details on the eight-foot wide and three-foot deep open ditch. The DOE thinks that some portions of the ditch are within the NBC property line. There should have also been a description of the head of the ditch and where the ditch drains. Figure 43 (page 126) indicates that on the NBC site a box culvert may feed the ditch as does with two different "Reinforced Concrete" pipes.

The DEA Introduction includes Figure 20. Streetscape – Victoria Street (page 25) which illustrates a four-foot wide culvert running along the entire length of the common boundary. Is this culvert to take the place of the existing ditch or is it in addition to the ditch?

Figure 40. Pedestrian Circulation Plan (page 105) seems to illustrate two proposed raised crosswalks across the intermittently used Victoria Street and into the MHS campus. The DOE needs clarification on plans for the crosswalk if they include crossing the ditches into MHS.

Finally, in acknowledging the impact of pile driving and other construction noise and vibration on classrooms at MHS, the DOE requests an assurance that there will be consultation with the school on the school calendar and the construction schedule. We would like consideration of temporary air conditioning units in highly impacted classrooms when closing doors and windows does not sufficiently alleviate noise.

John Condrey
November 28, 2018
Page 2

If you have any questions, please call Heidi Meeker, Land Use Planner of the Facilities Development Branch, Planning Section, at 784-5095.

Respectfully,



Kenneth G. Masden II
Public Works Manager
Planning Section

KGM:hm

c: Linell Dilwith, Complex Area Superintendent, Kaimuki/McKinley/Roosevelt Complex Area



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1001 Bishop Street
Suite 1600
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808 521 3051 tel
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May 29, 2019

Kenneth G. Masden II
Public Works Manager, Planning Section
State of Hawai'i
Department of Education
P.O. Box 2360
Honolulu, HI 96804

Dear Mr. Masden,

Response to Comments, Draft Environmental Assessment for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your letter dated November 28, 2018, regarding the Neal S. Blaisdell Center Master Plan Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge your organization's comments and provide the following response.

The City has consulted with McKinley High School (MHS) and the principal on numerous occasions during the Master Planning process. The Department of Education (DOE) and specifically, Facility Support Services and MHS administrators will continue to be consulted. The high school assigned a representative and discussions with the representative and others will continue to occur, as needed, through the design and construction phases.

Discussion of the MHS and Blaisdell Center property boundary and ditch conditions were expanded in the FEA for further clarity. Based on a review of the transit-run site survey, we have identified the following information and have incorporated it into the description:

The property boundary lies directly on the Ewa ditch wall, with the ditch itself and its Diamond Head wall falling on DOE property in the MHS parcel. The depth and width of the ditch varies along its length. At the Kapi'olani end it is 3 feet deep and 8 feet wide with concrete at the bottom. Moving mauka, the ditch becomes shallower, and is less than 2 feet deep about halfway up the property line, where it enters a culvert for about 20 feet. Mauka of the culvert it is 2 feet deep, with paving giving way to grass surfacing at the bottom and the walls reduced to curb height. The ditch diminishes to ground level towards the King Street (mauka) end, with no stone wall or other ditch features at the King Street (mauka) end. Water flows mauka to makai along the ditch. The head of the ditch is fed by multiple outlets from drop inlet drains that collect stormwater runoff from the paved parking areas on the NBC property and from the athletic field area of the MHS property. At its makai end, the ditch drains into a box culvert/street drain on the mauka side of Kapi'olani Boulevard and is conveyed from there into the City street stormwater drain system. This ditch is the only storm drainage facility along the NBC-MHS property boundary and is the culvert referenced in the streetscape plan.

The Pedestrian Circulation Plan for the Blaisdell Center illustrates two proposed raised crosswalks across the Victoria Street extension. These crosswalks allow pedestrians to cross from Blaisdell facilities to a sidewalk located within the Blaisdell Center property, along the 'Ewa side of the Blaisdell/MHS property



boundary. The proposed raised crosswalks do not connect into the MHS property and the Pedestrian Circulation Plan was updated to note this.

The proposed mitigation measures for noise would include scheduling noise-intensive construction activities around McKinley High School in-session hours, when possible. As part of the construction management plan, consultation will occur with all facility operators on contiguous/nearby properties. This will include consultation with the Department of Education. Both the construction phase and the operation phase will be in compliance with the DOH Noise Regulations including construction hours of operation.

We value your participation in the environmental review process. Your organization's letter and our response will be included in the Final EA, scheduled for publication next month.

Sincerely,

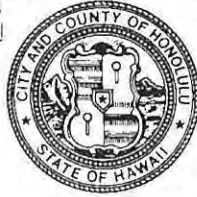
A handwritten signature in blue ink that reads 'Erin Dunable'. The signature is written in a cursive, flowing style.

Erin Dunable
Senior Environmental Planner

754046

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

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KATHY K. SOKUGAWA
ACTING DIRECTOR

TIMOTHY F. T. HIU
DEPUTY DIRECTOR

EUGENE H. TAKAHASHI
DEPUTY DIRECTOR

KIRK CALDWELL
MAYOR

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DEPT OF DESIGN & CONSTRUCTION
C.A.C. OF HONOLULU

December 10, 2018

Mr. John Condrey
City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Condrey:

We have reviewed the Neil S. Blaisdell Center Master Plan Draft Environmental Assessment (DEA), received on November 9, 2018, and have the following comments:

Policy

1. Conformance with the County General Plan (GP) and the Primary Urban Center Development Plan (PUC DP).
 - a. Page 159 presents a list of supported GP objectives and policies. "To bring about ordinary economic growth on Oahu" should be corrected to "To bring about orderly economic growth on Oahu" (II. Economic Activity, Objective G). Similarly, "To maintain Oahu's viable visitor industry" should be corrected to "To maintain the viability of Oahu's visitor industry" (II. Economic Activity, Objective B).
 - b. The PUC DP policy "Support attractions that are of interest to both residents and visitors..." is listed twice.
2. Thomas Square Special Design District. DEA Figure 29 ("City and County Zoning designations") should include the Thomas Square/Honolulu Academy of Arts Special District boundary for reference.

Permitting

3. Sewage capacity reservation is contingent on submittal and approval of a Site Development Division Master Application Form for Sewer Connection. This project may be liable for payment of the Wastewater System Facility Charge.
4. The project shall comply with the prevailing Rules Relating to Water Quality and Storm Drainage Standards.

5. The project must submit a Storm Water Strategic Plan. Due to the potential for high ground water level, infiltration may not be feasible for storm water treatment. Instead of biofiltration and manufactured treatment device (MTD) BMPs, the applicant is required to consider harvesting and reuse of the storm water runoff generated on the site, including the spring/pond water, to irrigate the onsite landscaping and the off-site Thomas Square and McKinley field. Also, if planning to develop a condominium in the future, consider reusing the water resource for building plumbing use.
6. If using a nonstandard sidewalk finish in the city sidewalk, apply for a sidewalk variance.
7. Section 5.2 of the DEA notes that the water supply source for the project is in a designated water management area per the State Commission on Water Resource Management. The DEA also notes that there is no water use permit for the well which supplies an estimated one million gallons per day of cap rock water to the existing fish ponds. A water use permit is needed to continue using this water. Estimated use calculations should also be included for the proposed fish pond design and proposed lo'i pond features for comparison.

Sea Level Rise

8. The subject site is adjacent to affected areas of the 3.2-foot Sea Level Rise Exposure Area (SLR-XA), as defined by the State of Hawaii Sea Level Rise Vulnerability and Adaptation Report, and is within the projected 6-foot sea level rise inundation area, as depicted by the National Oceanic and Atmospheric Administration (NOAA) Sea Level Rise Viewer.

The DEA should include an analysis of the possible chronic and acute impacts of climate change and sea level rise (SLR) on the project during the life of the proposed structure(s) and operation. The DEA should discuss how the design and proposed operations of the project and/or other site adaptation measures will mitigate impacts from SLR exposure and the risk of flooding during the life of the project.

Project assessments should review and address the City and County of Honolulu Climate Change Commission's Sea Level Rise Guidance (June 5, 2018) and Climate Change Brief (June 5, 2018), the Hawai'i Sea Level Rise Vulnerability and Adaptation Report (December 2017), and the Hawai'i Sea Level Rise Viewer for a combined hazard area up to 3.2-feet of SLR. (See the NOAA Sea Level Rise Viewer for 6-foot SLR projections).

These resources are screening and reference tools and do not replace more detailed modeling and analysis at the site level. (Resource documents can be found at: www.resilientoahu.org/pressconference071618; and at the Hawaii Climate Adaptation Portal: <http://climateadaptation.hawaii.gov>.)

Access and Circulation

9. A time line or phasing plan of the anticipated dates to obtain major building permit(s) for demolition/construction work, including the projected date of occupancy, shall be prepared by the applicant in a format acceptable to the DPP. The time line should identify when the construction management plan (CMP), the traffic management plan (TMP) and updates and/or validation to the findings of the traffic impact analysis report (TIAR), dated September 2018, will be submitted for review and approval. Typically, the CMP should be submitted for review and approval prior to the issuance of demolition/building permits for major construction work. The TMP or subsequent updates should be submitted and approved prior to the issuance of the (temporary) certificate of occupancy. The TIAR, including supplemental studies or subsequent updates, should be submitted and approved prior to the commencement of each major phase of work, as required. A new TIAR may be required if there is a significant change to the scope or timing of the major work items contained in the initial report.
10. The CMP shall identify the type, frequency, and routing of heavy trucks and construction-related vehicles. Every effort shall be made to minimize impacts from these vehicles and related construction activities. The CMP should identify and limit vehicular activity related to construction to periods outside of the peak periods of traffic, utilizing alternate routes for heavy trucks, provisions for either on-site or off-site staging areas for construction-related workers and vehicles to limit the use of on-street parking around the project site and other mitigation measures related to traffic and potential neighborhood impacts. Preliminary or conceptual traffic control plans should also be included in the CMP. The applicant shall document the condition of roadways prior to the start of construction activities and provide remedial measures, as necessary, such as restriping, road resurfacing and/or reconstruction if the condition of the roadways has deteriorated as a result of the related construction activities.
11. A TMP shall include traffic demand management (TDM) strategies to minimize the amount of vehicular trips for daily activities and for possible large/multiple events being held on the property. TDM strategies could include carpooling and ride sharing programs, transit, bicycle and pedestrian incentives, and other similar TDM measures. An internal bike and pedestrian circulation plan should also be included to provide accessibility and connectivity to and along the surrounding public sidewalks and at street intersections. A determination of the effective sidewalk widths, taking into account Complete Streets initiatives, should be provided. The TMP should also assess the management of loading and trash pick-up activities and areas. This includes how the drop-off area along Ward Avenue will be controlled and managed by staff to avoid queuing into the adjacent lanes of through traffic. A post-TMP will be required approximately one year after the issuance of the CO to validate the relative effectiveness of the various TDM strategies identified in the initial report.
12. A post-TIAR will be required approximately one year after the issuance of the certificate of occupancy to validate or augment the projections of the initial TIAR related to traffic, distribution, and assignment of vehicles, bicycles, and pedestrians.

If the post-TIAR identifies unanticipated impacts to the health and safety of residents, customers, the general public, or traffic operations that are attributable to this development, additional mitigation measures will have to be identified and implemented.

13. Construction plans for all work within or affecting public streets should be submitted to our Traffic Review Branch for review and approval. Traffic control plans during construction should also be submitted for review and approval, as required.
14. All unsignalized vehicular access points shall be constructed as standard City dropped driveways. Adequate vehicular sight distance must be provided and maintained at all driveways. Driveway grades shall not exceed five percent for a minimum distance of 25 feet from the back of the designated pedestrian walkway. Street trees should shade public sidewalks to the maximum extent possible. Entry gates and ticket dispensers should be removed or recessed as far into the driveway as necessary to avoid queuing onto public streets. All loading and parking areas must be designed such that vehicles enter and exit in a forward-facing manner. Vehicular access from Kapiolani Boulevard will be limited to right in and out, and the driveway access will need be constructed with a channelized island to effectuate this design condition.
15. All loading and trash pick-up areas shall be designed such that vehicles enter and exit front first. Provide adequate on-site turn-around areas and ensure that the layout of parking spaces in the loading/delivery area does not interfere with turning maneuvers for large vehicles.
16. The TIAR should be updated to include the potential regional impacts of opening Victoria Street to through traffic during non-event hours. The following intersections should be analyzed for both project-generated traffic and the proposed through traffic on Victoria Street:
 - a. Ward Avenue/Beretania Street
 - b. Victoria Street/Young Street
 - c. Victoria Street/Beretania Street
 - d. Victoria Street/Kinau Street
 - e. Kinau Street/Ward Avenue
17. Additionally, please revise the following in the document:
 - a. On page 22, consolidate the two crosswalks across Ward Avenue to one signalized crosswalk. The expectation is that most drop-offs are done on Victoria Street. Ward Avenue should be a pull out for Uber/Lyft/Taxis only.
 - b. On page 25, leave out "to CCH standards," as this is not the case
 - c. On page 26, remove the drop-off along Kapiolani Boulevard.
 - d. On page 83, clarify "Passenger drop-off areas are located on South King Street and on Ward Avenue." There should be no drop-off on King Street, and Ward Avenue should be designated for Uber/Lyft/Taxis only.

Mr. John Condrey
December 10, 2018
Page 5

Other Considerations

18. Proposed mitigation for noise impacts from the “likely two months” of pile-driving and other noise-intensive activity occurring during normal construction hours should include consideration of the McKinley High School in-session schedule, and avoiding it whenever feasible.

Thank you for the opportunity to comment. Should you have any questions, please contact Renee Espiau of our staff at (808) 768-8050.

Very truly yours,



Kathy K. Sokugawa
Acting Director

cc: Erin Dunable, AECOM



AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

May 29, 2019

Kathy K. Sokugawa
Acting Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, HI 96813

Dear Ms. Sokugawa,

Subject: Response to Comments, Draft Environmental Assessment for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your organization's letter dated December 10, 2018, regarding the Neal S. Blaisdell Center Master Plan Draft Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge the Department of Planning and Permitting (DPP) comments and have provided our responses below.

Policy:

Regarding your comments related to the County General Plan, we have replaced the word "ordinary" with "orderly" and we have replaced "To maintain Oahu's viable visitor industry" with "To maintain the viability of Oahu's visitor industry". We have also deleted the duplicate entry: "Support attractions that are of interest to both residents and visitors ...".

Regarding your comment related to the City and County of Honolulu Zoning Designations, Figure 29, it was revised to include the boundaries for the Thomas Square/Honolulu Academy of Arts Special District and is now numbered as Figure 32.

Permitting:

We appreciate your comment and acknowledge that sewage capacity reservation is contingent on submittal and approval of a Site Development Division Master Application Form for Sewer Connection, and that this project may be liable for payment of the Wastewater System Facility Charge. We concur that the project would comply with the Rules Relating to Water Quality and Storm Drainage Standards.

We acknowledge your comment and confirm that A Storm Water Strategic Plan would be prepared for this project during the design phase. Water conservation features, water reuse, use of catchment, condensate, and use of appropriate landscaping would all be considered throughout the design phase, as noted in the EA. A new fishpond is planned and would incorporate dynamic storage volume. Lo'i would also be constructed to harvest stormwater. Other low impact development (LID) design features would be incorporated on the site to reduce quantity and improve quality of stormwater drainage.

We acknowledge that a sidewalk variance application would be sought if using a nonstandard sidewalk finish for a city sidewalk. We confirm that a water use permit application shall be submitted during the



building permit phase and that use calculations for fish pond and lo'i features would be included as part of the water use permit application.

Sea Level Rise:

The City and County of Honolulu Climate Change Commission's Sea Level Rise Guidance (June 5, 2018) and Climate Change Brief (June 5, 2018) were reviewed and incorporated into the Final EA. The chronic and acute impacts of climate on the project as well as the adaptation measures of the project are discussed in the Climate Section.

The Final EA discusses various sea level rise scenarios using both the Hawai'i Sea Level Rise Viewer and the National Oceanic and Atmospheric Administration Sea Level Rise Viewer. The short- and long-term impacts of certain sea level rise scenarios to the project are analyzed in the "Flooding and Tsunami Hazards" Section.

Access and Circulation:

A detailed phasing timeline plan would be prepared as part of the design phase. The timeline would identify when the construction management plan (CMP) the traffic management plan (TMP) and updates and/or validation to the findings of the traffic impact analysis report (TIAR) dated September 2018, would be submitted for review and approval.

It is acknowledged that significant changes to the scope of timing of major work items or major changes in the configuration or proposed operation of Neal S. Blaisdell Center would require a revised TIAR. A TMP would be prepared and submitted for review and approval at the appropriate time and would include the elements identified in DPP's December 10, 2018 letter. The requirement for a post-TMP is acknowledged in conjunction with the post-TIAR. A post-TIAR would be prepared one year after the issuance of the certificate of occupancy.

An appropriately detailed CMP would be prepared and submitted for review and approval prior to the start of construction. Construction plans for all work within or affecting public streets would be submitted to the Traffic Review Branch of DPP for review and approval. Traffic control plans would also be submitted for review and approval to the appropriate agencies.

Minor unsignalized vehicular access points would be constructed as standard city dropped driveways. The major Blaisdell access on Kapi'olani Boulevard would likely be unsignalized, but it may be desirable from a traffic operations perspective to construct this access as a standard roadway intersection with curb returns as opposed to a dropped driveway. Additional information would be submitted to the DPP-Traffic Review Branch when designs are being finalized.

Your comment is acknowledged and would be provided to the designer of the loading and trash pick-up areas.

The proposed extension of Victoria Street between South King Street and Kapi'olani Boulevard would be open to general traffic when events are not occurring at Blaisdell Center. This would enhance local circulation in the area immediately surrounding the Blaisdell Center, but would have negligible sub-regional and regional impacts. The intersection of the Victoria Street extension and Kapi'olani Boulevard is currently proposed to be unsignalized and restricted to right-in/right-out traffic movements. If this changes in the future, it would be advisable to conduct supplemental analyses.



In this unsignalized, right-in/right-out configuration, there is little advantage to using the Victoria Street extension to access Kapi'olani Boulevard, since all traffic movements are allowed from Ward Avenue to Kapi'olani Boulevard. Similarly, traffic on Kapi'olani Boulevard would have little advantage using the Victoria Street extension. Koko Head-bound left-turn movements from Kapi'olani Boulevard are prohibited at the Kapi'olani Boulevard/Ward Avenue intersection, but the Victoria Street extension would provide no advantage, since Koko Head-bound left turns would be prohibited there as well. Likewise, traffic travelling to and from South King Street would have little impact on regional or sub-regional traffic patterns, since the existing Victoria Street already provides this accessibility. Therefore, the traffic impacts are local in nature and were evaluated for the intersection immediately adjacent to the Blaisdell Center.

Current plans by the Department of Transportation Services (DTS) to consolidate the two unsignalized crosswalks across Ward Avenue between South King Street and Kapi'olani Boulevard into one signalized crosswalk is the revised proposed configuration in the Blaisdell Center Master Plan.

The Ward Avenue passenger drop-off area on Ward Avenue is designated for Uber/Lyft/Taxis only. There would be no passenger drop-off on South King Street or Kapi'olani Boulevard. The reference to "CCH Standards" in the description of the Victoria Street extension was deleted.

Other Considerations:

The proposed mitigation measures for noise would include scheduling noise-intensive construction activities around McKinley High School in-session hours, when possible. As part of the construction management plan, consultation would occur with all facility operators on contiguous/nearby properties. This would include consultation with the Department of Education. Both the construction phase and the operation phase would be in compliance with the DOH Noise Regulations including construction hours of operation.

We value your participation in the environmental review process. Your organization's letter and our response will be included in the Final EA, scheduled for publication next month.

Sincerely,

A handwritten signature in blue ink that reads "Erin Dunable". The signature is written in a cursive, flowing style.

Erin Dunable
Senior Environmental Planner

Dunable, Erin

From: Liu, Rouen <rouen.liu@hawaiianelectric.com>
Sent: Friday, December 07, 2018 4:08 PM
To: jcondrey@honolulu.gov; john.condrey@honolulu.gov; Blaisdell DEA Comment Submission
Cc: Kuwaye, Kristen; Uehira, Terrene
Subject: FW: Neal S. Blaisdell Center Master Plan Draft Environmental Assessment - review and public comment

Mr. John Condrey, AIA, IIDA
City and County of Honolulu
Dept. of Design and Construction
650 South King Street, 11th floor
Honolulu, HI 96813

Dear Mr. Condrey,

Thank you for the opportunity to comment on the subject project. Hawaiian Electric Company has no objection to the project. Should Hawaiian Electric have existing easements and facilities on the subject property, we will need continued access for maintenance of our facilities.

Our Telecommunication Planning team would like to note the following:

1. Hawaiian Electric does have an existing Ward to Waahila microwave link crossing the vicinity of the project area, and could be affected if any tall construction equipment crosses its path.
2. There are existing Hawaiian Electric fiber facilities running adjacent to the project area:
 - a. Ward to Honolulu Club (runs underground along Ward Ave)
 - b. King to Ward (3 fiber cables, runs underground along Ward Ave)
 - c. Archer – Kewalo (runs underground along Kapiolani Ave)
 - d. Archer – Makaloa (runs underground along Kapiolani Ave)

We appreciate your efforts to keep us apprised of the subject project in the planning process. As the proposed Neal S. Blaisdell Center Master Plan project comes to fruition, please continue to keep us informed. Further along in the design, we will be better able to evaluate the effects on our system facilities.

If you have any questions, please call me at 1-808-543-7245.

Sincerely,
Rouen Q. W. Liu
Permits Engineer
Tel: (808) 543-7245
Email: Rouen.liu@hawaiianelectric.com

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AECOM
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Suite 1600
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

May 29, 2019

Rouen Q.W. Liu
Permits Engineer
Hawaiian Electric Company Inc.
Engineering Department
P.O. Box 730
Honolulu, HI 96808-0730

Dear Rouen Q.W. Liu:

Subject: Response to Comments, Draft Environmental Assessment for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your organization's letter dated December 7, 2018, regarding the Neal S. Blaisdell Center Master Plan Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge HECO's comments and provide the following response.

As part of the preparation of the Construction Management Plan, coordination will occur with HECO to ensure impacts to its operations do not occur.

All underground utilities and utility right of ways will be identified and flagged prior to any ground disturbance. All conditions for the grading and grubbing permit shall be met as part of the construction phase and the Construction Management Plan will outline how utilities and utility right of ways are to be preserved and impacts to utilities avoided.

We value your participation in the environmental review process. Your organization's letter and our response will be included in the Final EA, scheduled for publication next month.

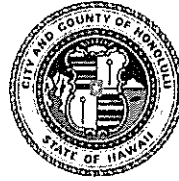
Sincerely,

Erin Dunable
Senior Environmental Planner

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

KIRK CALDWELL
MAYOR



MANUEL P. NEVES
FIRE CHIEF

LIONEL CAMARA JR.
DEPUTY FIRE CHIEF

December 14, 2018

TO: ROBERT KRONING, P.E. DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTN: JOHN CONDREY, ARCHITECT V
FACILITIES DIVISION

FROM: SOCRATES D. BRATAKOS, ASSISTANT CHIEF

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
NEAL S. BLAISDELL CENTER MASTER PLAN
777 WARD AVENUE
HONOLULU, HAWAII 96814
TAX MAP KEYS: 2-3-008: 001-003

In response to a letter from Ms. Erin Dunable of AECOM dated November 6, 2018, regarding the abovementioned subject, the Honolulu Fire Department (HFD) acknowledges the publishing of the draft environmental assessment and has no additional comments at this time.

Fire code compliance for the proposed project shall be determined upon review and approval of construction plans submitted to the HFD.

Should you have questions, please contact Battalion Chief Wayne Masuda of our Fire Prevention Bureau at 723-7151 or wmasuda@honolulu.gov.

Sincerely,

A handwritten signature in cursive script that reads "Socrates D. Bratakos".

SOCRATES D. BRATAKOS
Assistant Chief

SDB/TC:bh

cc: Erin Dunable



AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

May 29, 2019

Soctrates D. Bratakos
Assistant Chief
Honolulu Fire Department
City and County of Honolulu
636 South Street
Honolulu, HI 96813-5007

Dear Mr. Bratakos,

Subject: Response to Comments, Draft Environmental Assessment for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your organization's letter dated December 14, 2018, regarding the Neal S. Blaisdell Center Master Plan Draft Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge the Honolulu Fire Department comments and provide the following response.

We acknowledge that fire code compliance for the proposed project shall be determined upon review and approval of construction plans, submitted to the Honolulu Fire Department.

We value your participation in the environmental review process. Your organization's letter and our response will be included in the Final EA, scheduled for publication next month.

Sincerely,

Erin Dunable
Senior Environmental Planner

HISTORIC HAWAII FOUNDATION

754071

December 10, 2018

John Condrey, AIA, IIDA
City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, HI 96813

Via Email: BlaisdellIDEA@aecom.com

RECEIVED-10
DEPT OF DESIGN & CONSTRUCTION
C. & C. OF HONOLULU
2018 DEC 13 PM 12:56

**Re: Draft Environmental Assessment for Neal S. Blaisdell Center (NBC) Master Plan
Honolulu, Island of O'ahu
TMK: (1)2-3-008:001-3**

Dear Mr. Condrey

Historic Hawai'i Foundation (HHF) is providing comments under Chapter 343 of the Hawai'i Revised Statutes on the draft environmental assessment and anticipated finding of no significant impact for the Master Plan for the Neal S. Blaisdell Center.

HHF disagrees with the Anticipated Finding of "No Significant Impact" and believes that it is premature and not warranted at this time.

The draft EA states in Section 4.1.2.2 Long Term-Impacts that "the Master Plan does not yet address a level of detail that would allow fine-grained assessment of impacts to the building[s], but it does indicate alterations to the entire property that will be refined as part of the future design development."

Section 4.1 further states that, "**the changes characterized in the Master Plan would constitute major impacts to historic architecture, as they would be high in intensity, permanent in duration, and local in extent**" (emphasis added).

Because the Master Plan and Environmental Assessment fail to include adequate precautionary measures and parameters to avoid adverse effects to historic properties, it is not possible to be assured that the design development will respect the historic character and be consistent with standards and guidelines for the treatment of historic properties.

Vague references to seeking "professional advice" do not sufficiently guarantee that the design development will avoid adversely affecting the historic buildings, landscape and integrity of the site.

HHF Comments
Environmental Assessment for Blaisdell Center Master Plan
December 10, 2018
Page 1 of 2

We continue to believe that inclusion of stronger principles and guidelines, as enumerated in HHF's letter of January 23, 2018 during the Pre-Assessment consultation in the Master Plan, are essential to avoiding either an Adverse Effect on historic properties or a Significant Environmental Impact.

While we appreciate that some of these issues were addressed via the Historic American Building Survey (HABS) and some additional references within the Master Plan (as detailed in the AECOM response to HHF dated October 26, 2018), the overall level of detail is still to be developed.

Until and unless those details of design development and landscape plans reflect historic preservation standards for appropriate treatment of historic properties, the Finding is not able to be substantiated.

Thank you for the opportunity to comment. Historic Hawai'i Foundation looks forward to continuing consultation during the design development phase.

Very truly yours,



Kiersten Faulkner, AICP
Executive Director

Copy to:

Erin Dunable
AECOM Technical Services, Inc
1001 Bishop Street, Suite 1600
Honolulu, HI 96813
Email: erin.dunable@aecom.com



AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

May 29, 2019

Ms. Kiersten Faulkner, AICP
Executive Director
Historic Hawai'i Foundation (HHF)
680 Iwilei Road Suite 690
Honolulu, HI 96817

Subject: Response to Comments, Draft Environmental Assessment for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Dear Ms. Faulkner,

Thank you for your organization's letter dated December 10, 2018, regarding the Neal S. Blaisdell Center Master Plan Draft Environmental Assessment (DEA). As the planning consultant for the City and County of Honolulu (CCH), we acknowledge HHF's comments about the DEA and provide the following responses.

The Master Plan is conceptual in nature and should be considered a first step in the rehabilitation of the Blaisdell Center, to be followed by the Hawaii Revised Statutes (HRS) Chapter 6E process. Language was added in the Final EA to clarify this process and address this comment.

The Draft EA concluded that the impacts to historic architecture would be "major" in the context of the impact assessment criteria developed for this EA. The purpose of utilizing impact criteria is to assess the impacts of a proposed action on each resource in a consistent and transparent way, across all resources. However, impacts to Historic Architectural Resources do not reach the criteria for significance, as defined by HAR Section 11 200-12 and described in Section 10.2 of the Final EA.

Best management practices and mitigation measures will be utilized to minimize impacts. In accordance with Hawaii Administrative Rules (HAR) 13-275-8, the city would develop a detailed Mitigation Plan as part of the HRS Chapter 6E historic preservation review process. Additionally, as part of the 6E process, the city would be required to comply with SHPD requirements to qualify for the necessary building permits for any construction to occur.

We acknowledge your concern with the broad description of mitigation and involvement of Secretary of Interior (SOI) qualified professionals. The Master Plan stated the intention to comply with SOI standards for the treatment of historic properties; however, since the Master Plan is conceptual in nature, specific mitigation measures cannot be fully determined to address as-yet unknown impacts from conditions that may arise in future engineering and design phases. As stated above, mitigation will be further developed through future consultation as part of the design development process and as part of HRS 6E compliance (per HAR 13-275-8), which the City has initiated, but has not been completed yet.

A description of potential mitigation measures were expanded on in the Final EA. For example, the city would employ various measures to minimize alteration to the historic character of the buildings, such as undertaking building documentation and identification of significant historic character-defining features prior to design development. The city would also include a SOI-qualified historic architect on the project



team during the design and construction phases of the project to reduce impacts to the historical integrity of the Concert Hall and Arena.

Thank you for acknowledging the HABS, which was a voluntary, good-faith effort undertaken prior to the completion of the HRS Chapter 6E historic preservation review.

We value your participation in the environmental review process, your comments were valuable in identifying where additional clarity was needed and we have edited the Final EA accordingly. Your December 10, 2018 letter and our response will be included in the Final EA, scheduled for publication next month.

Sincerely,

A handwritten signature in blue ink that reads "Erin Dunable". The signature is written in a cursive, flowing style.

Erin Dunable
Senior Environmental Planner

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 · INTERNET: www.honolulu-pd.org



KIRK CALDWELL
MAYOR

SUSAN BALLARD
CHIEF

JOHN D. MCCARTHY
JONATHAN GREMS
DEPUTY CHIEFS

OUR REFERENCE EO-TS

December 7, 2018

MEMORANDUM

TO: Robert J. Kroning, P.E., Director
Department of Design and Construction

ATTENTION: John Condrey, Architect V, Facilities Division

FROM: Allan T. Nagata, Assistant Chief, Support Services Bureau

SUBJECT: Draft Environmental Assessment for the Neal S. Blaisdell Center (NBC) Master
Plan, Tax Map Keys: (1) 2-3-008: 001-3

DEPT OF DESIGN & CONSTRUCTION
CITY AND COUNTY OF HONOLULU
RECEIVED-PD
2018 DEC 12 AM 9:05

This is in response to a letter from AECOM Technical Services, Inc. (AECOM), requesting comments on the subject above. The Honolulu Police Department (HPD) has some concerns with the project.

In regards to pedestrian and vehicular traffic issues, the hiring of special duty officers during major events may provide a temporary solution. However, the recommendation to install traffic signals to ease the traffic flow during these times would provide a long-term solution.

In addition, many city personnel, including HPD employees, currently utilize NBC parking during regular business hours, along with other employees in the surrounding offices and businesses. It would be beneficial if the City or another agency could provide alternate parking solutions for the duration of the construction phase or until the facility reopens for business, rather than simply stating that parking structure users need to find alternate parking.

If there are any questions, please call Acting Major Glenn Hayashi of District 1 (Central Honolulu) at 723-3327.

Allan T. Nagata
Assistant Chief
Support Services Bureau

cc: Ms. Erin Dunable, AECOM

754050

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 · INTERNET: www.honolulu.gov

RECEIVED-ED
DEPT OF DESIGN & CONSTRUCTION
CITY OF HONOLULU
2018 DEC 13 AM 10:47

KIRK CALDWELL
MAYOR



SUSAN BALLARD
CHIEF

JOHN D. McCARTHY
JONATHON GREMS
DEPUTY CHIEFS

OUR REFERENCE EO-TS

December 7, 2018

MEMORANDUM

TO: Robert J. Kroning, P.E., Director
Department of Design and Construction

ATTENTION: John Condrey, Architect V, Facilities Division

FROM: Allan T. Nagata, Assistant Chief, Support Services Bureau

SUBJECT: Draft Environmental Assessment for the Neal S. Blaisdell Center (NBC) Master Plan, Tax Map Keys: (1) 2-3-008: 001-3

This is in response to a letter from AECOM Technical Services, Inc. (AECOM), requesting comments on the subject above. The Honolulu Police Department (HPD) has some concerns with the project.

In regards to pedestrian and vehicular traffic issues, the hiring of special duty officers during major events may provide a temporary solution. However, the recommendation to install traffic signals to ease the traffic flow during these times would provide a long-term solution.

In addition, many city personnel, including HPD employees, currently utilize NBC parking during regular business hours, along with other employees in the surrounding offices and businesses. It would be beneficial if the City or another agency could provide alternate parking solutions for the duration of the construction phase or until the facility reopens for business, rather than simply stating that parking structure users need to find alternate parking.

If there are any questions, please call Acting Major Glenn Hayashi of District 1 (Central Honolulu) at 723-3327.


Allan T. Nagata
Assistant Chief
Support Services Bureau

cc: Ms. Erin Dunable, AECOM



AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
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808 521 3051 tel
808 524 0246 fax

May 29, 2019

Allan T. Nagata
Assistant Chief, Support Services Bureau
Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, HI 96813

Dear Mr. Nagata,

Subject: Response to Comments, Draft Environmental Assessment for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your organization's memorandum dated December 7, 2018, regarding the Neal S. Blaisdell Center Master Plan Draft Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge the Support Services Bureau's comments and provide the following responses.

It is currently proposed to utilize special duty police officers during major events to augment traffic control at the Victoria Street extension/Kapi'olani Boulevard intersection. It is agreed that traffic signals would provide a long-term solution to event traffic control, the Victoria Street extension/ Kapi'olani Boulevard intersection currently does not warrant signalization, at this time. However, the intent is to monitor the intersection and to signalize it when conditions satisfy the need for a traffic signal, as documented in the Manual on Uniform Traffic Control Devices.

We are aware that Honolulu Police Department employees, as well as other city personnel and employees of private organizations, currently utilize the Blaisdell site for non-event parking during regular business hours. When major events are held during business hours, these non-event parkers are asked to find alternative parking arrangements. It is acknowledged, that during construction, there would be a period during which the non-event parkers would need to find alternative parking arrangements.

We value your participation in the environmental review process. Your organization's letter and our response will be included in the Final EA, scheduled for publication next month.

Sincerely,

Erin Dunable
Senior Environmental Planner

Dunable, Erin

From: John Delleria <jdelleria@hawaii.rr.com>
Sent: Friday, November 09, 2018 9:15 AM
To: Blaisdell DEA Comment Submission
Subject: Concert Hall

Categories: Blue Category

The Hawaii Symphony Orchestra should have an acceptable venue for its performances before the Blaisdell Concert Hall is closed. The expense of providing such venue should be included in the budget for the overall project.

John P. Delleria
619 Ahakea Street
Honolulu, HI 96816
Tel. (808) 739-9078



AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

May 29, 2019

John Deller
619 Ahakea Street
Honolulu, HI 96816

Dear Mr. Deller,

Subject: Response to Comments, Draft Environmental Assessment for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your letter dated January 24, 2018, regarding the Neal S. Blaisdell Center Master Plan Draft Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge your comments and provide the following response.

The timing of closures for construction has been carefully considered and is acknowledged as a concern. However, the City's budget does not include funds for providing an alternate venue for the Hawaii Symphony Orchestra.

We value your participation in the environmental review process and thank you for taking the time to submit a comment. Your letter and our response will be included in the Final EA, scheduled for publication next month.

Sincerely,

Erin Dunable
Senior Environmental Planner



December 10, 2018

John Condrey, AIA, IIDA
City and County of Honolulu Department of Design and Construction
650 S. King Street, 11th Floor
Honolulu, Hawaii 96813
Submitted via email to BlaisdellDEA@aecom.com

Re: Neal S. Blaisdell Center Master Plan Draft Environmental Assessment

Dear Mr. Condrey,

The Kalihi Palama Culture and Arts Society (KPCA) is a 501(c)(3) organization that developed out of the Model Cities Program initiated by Mayor Neil Blaisdell. We have served a range of critical stakeholders, including cultural practitioners, for over 40 years.

We thank you for the opportunity to comment on the above-mentioned EA, and we would like to share our deep concerns regarding the quality of the document, specifically in regard to the HRS Chapter 6E Compliance and Act 50 (2000) Compliance. We feel the document fails to meet well-established standards under these and common law authorities, and for this reason, we are asking that the City not accept the Environmental Assessment until the deficiencies outlined below are corrected.

Background

The Draft CIA in the Environmental Assessment contains erroneous information as to KPCA's engagement with the process. Contrary to the statement in the Draft CIA, KPCA received no notice from the project until March 8, 2018. I personally attended the final of three community meetings held at the Blaisdell on November 8, 2017. At that meeting, I personally spoke to staff from WCIT requesting engagement on the project and identifying that our organization had serious concerns about the potential impact the project would have on our activities. I was assured that our organization would be contacted shortly.

This contact never occurred. It was not until a chance encounter with project staff from AECOM the following year that representatives from DTL and 'Āina Archaeology finally reached out to our organization.

We received a form letter. It was a generic letter and contained no salutation. More critically, the letter failed to provide an adequate description, making it impossible for our organization, or any other for that matter, to sufficiently identify potential impacts to our activities. Neither the Proposed Action nor the Project Area and Region of Influence were described, and we note that both are provided in the Executive Summary of the Draft CIA. We also note that the Proposed Action in the summary is very similar to the one identified by the Historic Hawaii Foundation in



their comment letter (dated January 2018), clearly indicating such information was available in early 2018. We are unclear as to why the same information would not be provided to stakeholders to the CIA or cultural practitioners.

By the time DTL and 'Āina Archaeology reached out to our organization in 2018, we were moving into our annual competition season. This left us an insufficient amount of time to coordinate responses from the practitioners we work with – additionally, we repeatedly recommended that the project staff would be best served by attending our event itself. That offer was never accepted, and as such, the documents lack sufficient information regarding relating to the practices and beliefs of our group and its beneficiaries, who include a significant number of cultural practitioners who will be adversely impacted by the proposed action.

Additionally, I had no opportunity to review the comments attributed to me in the Draft CIA, nor did I give my consent to publish those comments. OEQC guidelines as clear on this matter: “Persons interviewed should be afforded an opportunity to review the record of the interview, and consent to publish the record should be obtained whenever possible.”

Insufficient HRS Chapter 6E and Act 50 (2000) (CIA).

Archaeological Assessments and Cultural Impact Assessments are required by the State of Hawaii to protect historic properties and cultural practices. CIAs should include “information relating to the practices and beliefs of a particular cultural or ethnic group or groups.” These cultural assessments address impacts not assessed in Environmental Assessments or Environmental Impact Statements, and should be completed through community engagement, ethnographic interviews, oral histories, and other culturally informed avenues. The current Neil S. Blaisdell Center Master Plan Draft Environmental Assessment does not include an adequate Cultural Impact Assessment nor do we believe it to be compliance HRS Chapter 6E for several reasons, including but not limited to:

1. The Draft CIA provides incorrect information regarding our receipt of notices in 2017. No notices were received.
2. The current Master Plan does not show adequate research of the history of the Kalihi-Palama Culture and Arts Society, as part of the Model Cities Program. Under Mayor Neil Blaisdell, the City and County of Honolulu sought and received a Model Cities designation from the federal government. The Honolulu program had two areas designated as model neighborhood areas- the Waianae Coast and Kalihi-Palama. Each model area developed and created strong associations, elaborate citizen committees, and representative governing bodies. The Kalihi-Palama area did work centered on three major components geared towards Model Neighborhood area residents: 1.) Educational courses in appropriate facilities to conform to residents’ interests; 2.) An information and guidance center which centralizes information relating to educational and vocational opportunities in the community; and, 3.) A learning laboratory for the community that is equipped and staffed



*Kalihi-Palama
Culture & Arts
Society, Inc.*

*357 North King Street
Honolulu, Hawaii 96817
PH. (808) 521-6905*



with Model Cities instructors. The Kalihi-Palama neighborhood area ran an English language and Cultural Orientation center for several years, designed to assist non-English speaking residents who needed instruction in English and provide classes on cultural topics. The citizen participation component was heavily funded and professionally staffed, particularly in the Kalihi-Palama area. The Hawaii Community Action Program and Honolulu Model Cities Program demonstrated that it was possible to increase citizen participation and make that participation widespread and impactful. Coincidental with the demise of federal experiments with citizen participation in local decision making, came the mandated review of the Honolulu City Charter. During review, it was found that Honolulu, unlike any urbanized cities in the continental U.S., had a number of stable communities with strong community associations. In 1972, as part of the Model Cities Program and neighborhood-based decision making, the Kalihi-Palama Culture & Arts Society was organized for the purposes of providing education, training, and services in the area of culture and arts, something the community felt was lacking at the time. KPCA's primary target is the underprivileged population residing in the Kalihi-Palama area, however, they also conduct special projects on a statewide basis. Today KPCA is a nonprofit community-based group with a 501(c)(3) tax exempt status. Year round, the society offers cultural and ethnic dance classes to the Kalihi-Palama area, reaching over 800 youth annually and offering free after-school activities. KPCA is also responsible for two annual cultural events: The Queen Lili'uokalani Keiki Hula Competition and the Malia Craver Hula Kahiko Competition. They also conducted a project documenting 135 hula resources that reveal unique stories of hula lineage and philosophies, compiled into a two-volume text entitled, "Nana I na Loea Hula." As of today, KPCA is the only program left under the Kalihi-Palama Model Cities Program. It continues to fill important community needs, and several of its programs have become state-wide, impactful, cultural events. The Draft CIA insufficiently describes this history, and most importantly completely erases our extended history as a partner to the City and County of Honolulu.

3. The documents fail to adequately assess cultural practices and beliefs by impacted practitioners. The outreach as requested never occurred, and no tangible attempts were made to meet with hula practitioners impacted by the project, engage them regarding their concerns, or work with them in any regard, despite having been offered access to them.
4. The documents failure to adequately assess cultural impacts, because it failed to properly engage with impacted cultural practitioners to conduct a thorough assessment.
5. Insufficient Outreach: The contact list provided in the Outreach Summary was clearly copied from another project. The list is not updated and includes inaccurate information. Retired persons are listed with jobs they have not been at for years, and one of the contacts listed passed away in 2012. Therefore, we feel the outreach and effort to consult with



individuals and organizations identified by the preparer as being familiar with cultural practices and features associated with the project area falls well below any good faith standard.

6. The analysis of potential effect is insufficient. The guidelines require an analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed act. Due to the insufficient consultation effort, we do not feel that our input regarding impacts or potential mitigation is reflected in the document. We have benefitted from a productive relationship with the City and County of Honolulu for decades. We deeply appreciate how this partnership has supported the protection and perpetuation of our cultural practices. We are simply requesting accurate information as to the project and opportunity to engage in meaningful consultation with the City. As acknowledged, the proposed action adversely impacts our cultural practices, and we would like to have the opportunity to work with the City to identify effective mitigation for these impacts. We have to date been denied that opportunity.
7. The Draft EA contains no Draft AIS for review or even preliminary Chapter 6E document for review. We strongly feel that due to the numerous historic properties in the area and the impact to historic property that this is a fatal flaw in the Draft EA. We also feel the Draft EA contains incorrect information. On page 67, it states: “No major archaeological sites have been identified in the project area or close enough to be directly or indirectly affected by the proposed action.” We are aware of numerous sites in the area, including historic fishponds. We are as unclear as to why no Chapter 6E documentation is available for review when the publication itself identifies “Compliance with HRS Chapter 6E for historic preservation” a trigger for its HRS Chapter 343 review and compliance. The proposed use within any historic site as designated in the National Register or Hawaii Register, as provided for in the Historic Preservation Act of 1966, Public Law 89-665, or Chapter 6E is a trigger for HRS 343 review and compliance, therefore, we believe SHPD Administrative Rules call for an analysis to be included with the Draft EA. It is clear and admitted that under the rules, significant historic sites are present. Our organization was not afforded the opportunity to consult regarding the identification and inventory of these historic properties. We would like to be afforded the opportunity to consult regarding the impact to historic properties as afforded under HRS Chapter 6E and the related administrative rules.

Conclusion

We are an annual event held at the Blaisdell that has served thousands of cultural practitioners for over 40 years. We are deeply disappointed by the level of effort in this Draft EA as related to



*Kalihi-Palama
Culture & Arts
Society, Inc.*

*357 North King Street
Honolulu, Hawaii 96817
PH. (808) 521-6905*



cultural practices and practitioners, especially when we feel we have consistently acted in good faith to work with the City.

Our gravest concerns are as follows:

- The factual errors and misrepresentations in the Draft CIA;
- The insufficient research conducted current cultural practices and activities with the project area;
- How even after all our efforts, WCIT, DTL and 'Āina Archaeology all appear to have made no efforts to reach out to BJ Allen, Executive Director of the King Kamehameha Hula Competition, who also held their competition at the Blaisdell for over 40 years;
- The insufficient analyses in the Draft CIA;
- Lack of sufficient Chapter HRS 6E documentation in the Draft Environmental Assessment.

We do not believe the Draft EA should be accepted nor a finding of no significant impact issued until HRS Chapter 6E and Act 50 (2000) are fully complied with. We believe the documentation provided in the Draft EA is insufficient as to fulfill these compliance obligations and additional work should be conducted by qualified individuals to satisfy these requirements.

We are requesting opportunity to meet with City officials and AECOM project staff to chart a course forward. We have always found the City an outstanding partner and we are confident we can work with the City now to effectively address our concerns as outlined herein. Please have a City official or project staff from AECOM contact us at info@kpcawahawaii.com.

We also strongly urge the City and AECOM to also meet with BJ Allen of the King Kamehameha Hula Competition. We find it tremendously troublesome that she has been excluded from this process as well.

Sincerely,

Trisha Kehaulani Watson-Sproat, JD, PhD
President, Kalihi Palama Culture & Arts Society

cc: Susan Lebo, PhD, Archaeology Branch Chief, State Historic Preservation Division



AECOM
1001 Bishop Street
Suite 1600
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

May 29, 2019

Trisha Kehaulani Watson-Sproat, JD, PhD
President
Kalihi Palama Culture & Arts Society, Inc.
357 North King Street
Honolulu, HI 96817

Dear Dr. Watson-Sproat,

Subject: Response to Comments, Draft Environmental Assessment for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Mahalo for your organization's letter dated December 10, 2018, regarding the Neal S. Blaisdell Center Master Plan Draft Environmental Assessment (EA) and appended Draft Cultural Impact Assessment (CIA). As the planning consultant for the City and County of Honolulu, we acknowledge the Kalihi-Palama Culture & Arts Society's comments and provide the following response.

The Final CIA will be revised to contain corrected information regarding KPCA's engagement. While the dates of correspondence listed in Table 4-1 for Dr. Trisha Kehaulani Watson-Sproat, JD, PhD – President, Kalihi-Palama Culture & Arts Society, accurately reflect our correspondence logs, the dates for correspondence with Ms. Nanea Abiva, Executive Director are in error. The incorrect dates will be lined-out and replaced with the corrected dates (E-mail: March 8, 2018; E-mail, Phone Call, and In-Person visit to Kalihi-Palama Culture & Arts Society on July 3, 2018).

We regret any lack of clarity in the initial outreach letter. The letter is broken down as follows: 1) The Proposed Action is described in the Project Overview section of the letter. 2) The Project Area is described in the final paragraph of the letter as the footprint of the overall campus of the Neal S. Blaisdell Center. 3) The Region of Influence, referred to as "study area" in the letter, is described in the final paragraph of the letter as the 'ili of Kalia and ahupua'a of Honolulu. 4) Both the Project Area and Region of Influence (study area) are graphically depicted on Page 2 of the outreach letter.

You are correct that any, and all, commenters should have the opportunity to review their comments and provide permission for release, and we apologize for this oversight. This oversight has been resolved through a request for permission to the Kalihi-Palama Culture & Arts Society, Inc., and the permission was subsequently granted.

The following responses are provided to address the numbered list of comments in your letter.

1. We apologize for the error regarding receipt of notices. The Final CIA is revised to contain corrected information regarding KPCA's engagement, as noted above.
2. The Final CIA is revised to contain corrected information regarding KPCA's engagement, as noted above. Please note that the omission of the detailed history of the Model Cities Program in relation to the Kalihi-Palama Area, and most importantly the Kalihi-Palama Culture & Arts Society, was not intentional. Mahalo for kindly providing the additional information and history which are credited to Kalihi-Palama Culture & Arts Society, Inc. and added to the CIA in Section 5.6.2, that highlights the Queen Lili'uokalani Hula Competition.

3. Thank you for your comment. The Final CIA was revised to contain additional information regarding cultural practitioner engagement. Please note that the team consulted with noted kumu hula and the Edith Kanakaole Foundation on the development of performance spaces during the feasibility and master plan processes. This consultation supported the design of raised terraces in outdoor spaces, and an understanding that while such terraces should not be dedicated as a traditional hula pā, as this would be inappropriate outside of the hālau, these areas could function as informal stages. With regard to outreach with Kalihi-Palama Culture & Arts Society, unfortunately, the organization was not included in our initial outreach listing and there is no formal documentation of a specific request for engagement in the CIA process or offer to put researchers in touch with kumu hula that take part in the hula festivals and competitions that are organized by the Society. Once notified, however, the team reached out immediately to Kalihi-Palama Culture & Arts Society. Our lead at the time was able to speak briefly with Dr. Watson-Sproat over the phone, as documented in Table 4-1 of the CIA. Additionally, our lead spoke with Ms. Abiva, the Executive Director, and was directed to address formal consultation to Dr. Watson-Sproat.

We recognize the importance of contemporary hula competitions and the role that the Blaisdell Center plays as a venue for them. As a result, we sought to address short-term direct impacts that the temporary closure of the Blaisdell Center would have on the ability for organizations carry-out these culturally important competitions. The recommendations of the CIA encourage the City and project team to engage with organizers of the competitions so that all are aware of closure and construction schedules. Please see the above responses; in addition, kindly note that the Master Plan, based on conversations with stakeholders, aims to significantly enhance the quantity and quality of hula venues and supporting facilities (such as dressing rooms, etc.) over the long term, as compared to the current conditions at the Blaisdell.

4. Please see response to above comment. Also, please note that the Master Plan, based on conversations with stakeholders, aimed to significantly enhance the quantity and quality of hula venues and supporting facilities (such as dressing rooms, etc.) over the long term, as compared to the current conditions at the Blaisdell.
5. Thank you for your comment. We apologize for this error. The Final CIA is revised to contain corrected information regarding cultural practitioner engagement. While we were able to correct the contact information for a few on the outreach list, regretfully, our error in updating and addressing our correspondence to Dr. VerlieAnn Malina-Wright as President of Hawai'i Maoli resulted in addressing the letter to the late Henry Halenani Gomes and inclusion of Mr. Gomes in our outreach table. Mahalo for pointing out the error, we have corrected the names and affiliations that were in error.
6. Mahalo for noting that City acknowledges the short-term adverse impact on the ability of the Kalihi-Palama Culture & Arts Society to carry out the annual Keiki Hula Competition at the Blaisdell Center and the hardships that may arise when seeking another venue that could accommodate an event of that size. This analysis is also presented in Section 6.1 of the CIA with recommendations in Section 6.3 to coordinate with organizers of the major hula events prior to anticipated closures and construction schedule. Please note that the Master Plan, based on conversation with stakeholders, aims to significantly enhance the quantity and quality of hula venues and supporting facilities (such as dressing rooms, etc.) over the long term, as compared

to the current conditions at the Blaisdell. Stakeholder contacts will be added to the master list for communications regarding project updates and schedules.

7. The City has initiated formal HRS Chapter 6E consultation with SHPD and intends to carry out the necessary studies and any HRS Chapter 6E related community consultation once a project review letter is issued by SHPD. HRS Chapter 343-5, with regard to 6E, states that an EA shall be required for actions that propose any use within any historic site as designated in the National Register or Hawaii Register as provided for in the NHPA 1966, Public Law 89-665, or Chapter 6E. Please note that, while neighboring Thomas Square is on the National Register, and Linekona School and McKinley High School are on both National and Hawai'i registers, the Blaisdell Concert Hall and Arena are not currently nominated to or listed on the registers (although they are acknowledged as eligible).

Please note that the EA does not state nor imply that there will be no additional archaeological study or 6E consultation within the Master Plan project area. Additionally, the CIA describes the probability of encountering historically significant and culturally sensitive sites in subsurface contexts due to the proximity of previously identified historic properties as a part of the analysis of previous archaeological studies (Section 3.4), traditional cultural practices (Sections 5.3 and 5.4), and Summary and Recommendations (Section 6.1 and 6.3).

There are no previously inventoried archaeological properties in the project area, although an AIS is anticipated (Chapter 6E historic preservation review is in progress, as noted above). The EA statement is accurate, as a literature review of all the previous archaeological surveys in the vicinity did not identify any known sites that would be affected by ground disturbance in the project area/area of potential effect for the Master Plan. Relevant information from the Draft CIA regarding the potential for encountering new sites through archaeological study is reflected in the EA.

The HRS Chapter 6E process relates specifically to the known historically significant (though as yet undesignated) buildings on the property, the Concert Hall and Arena (eligible for, but not listed in, the NRHP/HRHP). As the presence of eligible historic properties was identified in the feasibility study phase prior to the Master Plan, HRS Chapter 6E historic preservation review was anticipated to be needed. Please be advised that the HRS Chapter 6E historic preservation review concerning both architectural and archaeological sites formally began in November 2018, and is still in progress for the project. Cultural resources and historic architectural properties are addressed in the EA analysis together with other resource types as required under HRS 343.

The EA and CIA are prepared as required per HRS 343 and described in HAR 11-200-10 and 16-18. HRS Chapter 6E historic preservation review, while also addressing cultural and historic properties, is a separate process governed by a different statute and rules, and a different process of engagement. HRS Chapter 6E historic preservation review began in November 2018 is still in progress for the project. As provided for in HAR 13-275-3, interested parties should make known to SHPD their interest in the project and their comments.

The EA is prepared as required per HRS 343 for the Blaisdell Master Plan. The CIA is prepared to comply with Act 50. In addition, HRS Chapter 6E compliance is in process. The intent of Act 50 is to prevent projects from blocking access to locations of traditional cultural activities; we do not

believe that the short-term construction impacts at the Blaisdell, which would result in enhanced facilities for hula activities, would constitute such an impact.

Mahalo for your letter and your participation in the public review process. We have viewed your comments as an opportunity to expand upon the consultation performed in the CIA and subsequently the analysis in our EA. We regret that we missed an opportunity to consult with the Executive Director of the King Kamehameha Hula Competition. In an effort to resolve your comment, we did reach out to BJ Allen directly to try to engage her, but were not ultimately able to secure input for the CIA or EA.

However, as you know, a meeting was arranged with KPCA and City officials, per your request. The City was pleased to discuss the project in more detail and hope they have addressed your concerns. As stated during the meeting, it is the City's intention that the Blaisdell Center continue to serve the local community as a gathering place and venue for cultural practitioners, such as hālau hula, to share their traditions with the public. As discussed, the city is seeking an agreement with future operating partners, and to ensure the Blaisdell is available for local and cultural events historically held at the Blaisdell, the city will be including a community programming requirement as part of any future agreement. The city would like to increase the number of cultural events at the Blaisdell and truly hopes that Kalihi Palama Cultural and Arts Society can see their future in the Blaisdell's future renovations.

We value your participation in the environmental review process and consider it essential to facilitate informed decision-making. Your organization's letter and this response will be included in the Final EA, scheduled for publication next month.

Sincerely,

A handwritten signature in blue ink that reads 'Erin Dunable'. The signature is fluid and cursive, written in a professional style.

Erin Dunable
Senior Environmental Planner

Dunable, Erin

From: lynnehi@aol.com
Sent: Thursday, December 06, 2018 7:20 PM
To: Blaisdell DEA Comment Submission
Subject: comments on DEA

Please accept this as comments to the Draft Environmental Assessment for the Neal S. Blaisdell Center Master Plan. In March 2018 this project was expected to cost \$717 million.

Eight months later, November 2018, the projected cost had risen to \$773 million. This is a disgrace. If HART's offspring is built we can now assume the cost will be over \$1 billion.

The DEA should have delved into how this expenditure of our money, the taxpayer's money, will have an adverse affect on our lives. We still cannot pay for rail, with its never ending escalating cost. Last week it was reveled that there is a federal investigation of the rail project, though we do not know what that entails.

Until rail is finished Blaisdell should be on hold. We cannot afford both. Our economic well being is threatened. There is still a push for rail to end at Middle Street. If that happens, the high expectations for TOD in the Blaisdell area, Kapiolani, Downtown and other neighborhoods will not be realized.

The global economy is slowing — oil prices are falling, many nations are mired in stagnation or heading that way and companies are warning of disappointing profits. But the Mayor expects a pubic private partnership to help on both projects. More work needs to be done on these expectations. They need to be realistic. Until that happens, the project should be put on hold.

At this point in time Alternative 1 is the only choice. This is the "status quo" plan. It retains all three major buildings (with renovations) including the Concert Hall, Exhibition Hall, and Arena, as well as the parking structures in the current configuration. This is the only alternative that makes financial sense. The only alternative that will keep us from bankruptcy until rail is fully paid for. Concert Hall renovations should be made in the off season, allowing Symphony, Opera, ballet and other performances to take place in their normal seasons. The Arena and Exhibition Hall should be upgraded around the Made in Hawaii Show.

Alternative 2, which retains the existing Concert Hall and Arena with renovations, and proposes a new Exhibition Hall with meeting rooms and a new parking structure (designed with more efficiency and truck access to all the facilities) is a poor second choice.

Alternative 3 is unacceptable. It could well portend the death of key arts organizations in town, including but not limited to The Hawaii Symphony, Hawaii Opera Theatre, various ballet organizations, and the Made in Hawaii Show. The expected construction time is three years. Given our history of not finishing projects on time and within budget, that could well stretch to five years. How will these organizations survive? There is no other venue in town (with the possible exception of the outdoor Waikiki Shell) of similar size. The Hawaii Theatre's seating capacity is 2/3 that of the Concert Hall. Audiences will be lost, some permanently. That loss cannot be reversed? Yet on page 38 of 172 the EIS says, "Current tenants and users of the Blaisdell facilities will be required to find alternate spaces. No concerts or events will be held at the facilities for the duration of construction resulting in moderate impacts to these users. Moderate? Really? This is what the Parkland survivors would call BS.

Dining establishments in the immediate area will lose customers. Their patrons attend before and after performances and events at Blaisdell. Who is going to keep them afloat? Is the City going to make up the loss for them and the cultural arts organizations? That economic detriment was not considered in the EIS.

Do we really need a new garage? With the expanding use of Biki, Uber, Lyft, travel modes not yet invented or on the horizon, and the anticipated rail construction coming on line, perhaps before this project is finished, there will be less need for parking. New housing stock is being built with fewer parking spaces. Has that been considered, or is the plan, especially the too expensive Alternative 3, someone's dream list of practical and impractical things. We cannot afford it.

The water jet feature is interesting. Has anyone considered how the noise from these jets will affect persons with hearing aids? That is not addressed. When these people eat at the Art Museum Cafe they have to position themselves in a certain location so the water feature does not interfere with their hearing and lunch conversations.

What about noise in general during the construction. Straub Hospital is caddy corner from the Blaisdell. On page 79 of 172 it is incorrectly identified as Thomas Square. How will patients be affected by the noise.

Contrary to the EIS drafters, this project has a significant impact on our lives, our City budget, the viability of arts organizations. There must be a Final EIS which properly addresses these and other issues which may be brought up in comments.

Lynne Matusow
60 N. Beretania, #1804
Honolulu, HI 96817
808 531-4260
December 6, 2018



AECOM
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Suite 1600
Honolulu, HI 96813
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808 521 3051 tel
808 524 0246 fax

May 29, 2019

Lynne Matusow
60 N. Beretania, #1804
Honolulu, HI 96817

Dear Ms. Matusow,

Subject: Response to Comments, Draft Environmental Assessment for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your letter dated December 6, 2018, regarding the Neal S. Blaisdell Center Master Plan Draft Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge your comments and provide the following response.

Regarding your comments on the construction cost estimates, following the publication of the Master Plan, the planning process continued and the construction costs were updated. Although this EA is analyzing the impacts of the Master Plan, the City felt the Final EA would be improved by analyzing the impacts of the revised project costs and would provide the most transparency to the public. Funding for the project would be provided primarily through city bonds, but potential public private partners would also be sought.

We acknowledge your preference for Alternative 1, the No Action alternative, as well as the feedback you shared regarding the viability of Alternatives 2 and 3. As part of the EA process and in compliance with HRS 343 and HAR 11-200, a range of alternatives were brought forward and discussed in the EA including the "No Action" alternative. Research and market analyses concluded that it is more cost effective to renovate the Concert Hall and Arena, than to maintain the aging and outdated facilities. Alternative 3 was considered, but dismissed, since it failed to preserve significant portions of the historic structure; the FEA has been revised to make that more clear. Under the No Action Alternative, the Blaisdell Center's current maintenance issues would not be resolved, so the costs will continue to escalate over time. For these reasons, Alternative 2 was chosen as the preferred alternative.

The timing of the closure for construction was carefully considered and while impacts to Blaisdell Center vendors and customers are anticipated in the short term, they are expected to benefit positively in the long term. The market analysis suggested that event attendance could increase substantially and even with conservative assumptions, a positive economic impact on the local and regional economy is anticipated. Additionally, HCDA's Relocation Program is described in Section 2 and is referenced as a potential mitigation to negative impacts experienced by the temporary closure of the Blaisdell Center.

We agree with your assessment regarding the use of services such as Biki, Uber, and the rail reducing the need for parking. The renovated Blaisdell Center is planned for multi-modal access. It is assumed that a significant share of the trip demand will be served by transit (including the future rail transit) and ride-sharing options such as Uber and Lyft. Facilities have been planned to accommodate these modes of transportation, including Biki bike-share stations on site as will facilities to accommodate privately-owned bicycles. Much attention has been paid to providing excellent pedestrian facilities for access and for transition from other modes of travel.



We acknowledge your concern regarding impacts to hearing aid users as a result of water jet features. It is not anticipated that the sound of water jets would negatively impact ambient noise levels, nor affect human health. However, the analysis of potential construction noise impacts to patients at Straub Hospital was added to the EA, in response to your comment.

Lastly, the "Thomas Square" label on Figure 28 refers to the "Thomas Square Kakaako Neighborhood" rather than the actual Thomas Square. Therefore, no edits will be made to Figure 28.

We value your participation in the environmental review process. Your letter and our response will be included in the Final EA, scheduled for publication next month.

Sincerely,

A handwritten signature in blue ink that reads "Erin Dunable". The signature is written in a cursive, flowing style.

Erin Dunable
Senior Environmental Planner

157815



OFFICE OF PLANNING STATE OF HAWAII

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

DEPT. OF DESIGN & CONSTRUCTION
C & D DIVISION

2018 DEC 12 AM 7:30

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
DIRECTOR
OFFICE OF PLANNING

Telephone: (808) 587-2846
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Web: <http://planning.hawaii.gov/>

DTS201812100823NA

December 10, 2018

Mr. John Condrey, AIA, IIDA
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Condrey:

Subject: Neal S. Blaisdell Center Master Plan Draft Environmental Assessment,
Tax Map Key Nos. (1) 2-3-008: 001-003
Honolulu, Hawaii

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (Draft EA) for the Blaisdell Center Master Plan.

The City and County of Honolulu (City), Department of Enterprise Services (DES) proposes to redevelop the Blaisdell Center complex to ensure that it will continue to serve as Honolulu's premier cultural and performing arts venue and gathering place well into the future. The proposed project would include major renovations and updates of facility systems of the Concert Hall and Arena, replacement of the existing Exhibition Hall and meeting rooms, ticket booth, parking garage, and ancillary facilities, and open space improvements. The proposed improvements are intended to improve site utilization and result in a multipurpose facility that could support a diversity of space offerings for a broader range of events, activities, and audiences, encourage daily activity onsite, and enhance the overall patron and user experience.

The Office of Planning (OP) has reviewed the Draft EA and has the following comments to offer:

1. Previous Comments

Our pre-consultation response letter dated January 25, 2018 (DTS201801251022BE), requested the following items be provided in the Draft EA:

- a. An examination of the project's consistency with the objectives and policies of the Hawaii Coastal Zone Management (CZM) Program, Hawaii Revised Statutes (HRS) § 205A-2.

- b. An analysis of stormwater runoff, drainage, and mitigation strategies to safeguard the coastal/marine ecosystem from the renovated Blaisdell Center.

OP acknowledges that the comments cited above have been addressed in the Draft EA.

- 2. The following items merit further evaluation and discussion in the Final Environmental Assessment (Final EA).

- a. The Hawaii State Planning Act, HRS Chapter 226

We acknowledge that Section 9.2.3, pages 150-153 of the Draft EA provides an examination on the project's conformance with statutes related to Parts I and III of the Hawaii State Planning Act. Additionally, Section 9.2.4, pages 153-155 of the Draft EA provides analysis on the numerous State Functional Plans that align with the project.

The Final EA should include a discussion of all the objectives, policies, and priority guidelines contained in HRS Chapter 226. If the provisions are not applicable to the proposed action, the analysis should state so and briefly note why this is.

- b. Sustainability measures pursuant to HRS § 226-108

The Final EA should clearly identify the sustainable practices, conservation methods, and prudent resource management measures that will be incorporated into the design and functions of the Blaisdell Center, including for renewable energy use, energy efficiency, green infrastructure, and water conservation and re-use practices. In addition, HRS § 174C-31(g)(6) incorporates in the Hawaii Water Plan, the attainment of the use of reclaimed water for uses other than drinking and for potable water needs in all State and county facilities by December 31, 2045. The Final EA should identify how the proposed renovations and improvements to the Blaisdell Center will advance this objective.

- c. Socioeconomic environment, Demographics, Long-term Impacts

The Draft EA states that redevelopment of the Blaisdell Center would increase housing and property values—this, in an area that is already seeing significant high-end housing development. The Draft EA also states that median incomes are also likely to increase in the surrounding census area tracts with increased housing values. The Draft concludes that impacts to population and demographics will be negligible since the potential change in income associated with increased housing and property values are low in intensity.

The Final EA should acknowledge that there is the potential for economic displacement of residents and businesses as the Blaisdell Center attracts renewed investment and redevelopment interest in the area resulting from the Center's increased amenity value and anticipated transit-oriented development in the area.

d. Noise, Short-term impacts

The Draft EA discusses the likely disruptive effects of demolition and construction noise on classroom and other activities at neighboring McKinley High School. It also identifies some of the measures that could be taken to mitigate these impacts. OP strongly recommends consultation and coordination with school administrators on a noise mitigation strategy prior to the commencement of any project site work. The Final EA should discuss whether and how such a mitigation strategy will be pursued. Please note that in Table 7-1 on page 140, it appears that the Department of Education (DOE), Hawaii State Library, Hawaii Document Center was the only DOE recipient of the request letter for the pre-assessment consultation. OP recommends direct communication with McKinley High School administrators and DOE Office of School Facility and Support Services staff for all future project-related matters.

e. Infrastructure and Utilities, Potential Impacts, Long-term Impacts

The Draft EA describes in general terms the short- and long-term impacts of the redeveloped Blaisdell Center complex on hydrology and stormwater drainage and quality, water, wastewater, solid waste, and energy and telecommunications use and systems. It also describes the various measures that can be taken to mitigate impacts in the respective systems. Given the objective of increasing daily and concurrent use of the redeveloped and new facilities in the master plan, the complex will be a significant resource user and waste generator (solid, liquid, heat/greenhouse gas emissions, etc.). Once operational, the proposed Blaisdell Center complex will only have a greater demand or output for each of these resource/waste systems.

The Draft EA concludes that the project will have a negligible effect on infrastructure and utilities. The analysis would be strengthened if the Final EA provided data on current resource use and waste generation and data quantifying the anticipated demand and impact in these areas. Then, a discussion and quantification of how proposed mitigation measures would reduce or offset the long-term resource use and waste generation would assist in supporting this conclusion.

Mr. John Condrey
December 10, 2018
Page 4


The Final EA should also discuss how potential mitigation measures would be implemented and how long-term performance in terms of resource use, energy self-sufficiency and efficiency, and waste management will be ensured if the Blaisdell Center is redeveloped and/or operated under a public-private partnership.

f. Climate change and sea level rise

Since the State has a significant interest in efforts to mitigate and adapt to climate change and sea level rise, OP recommends that at a minimum, the Final EA should reference and discuss how the proposed improvements and specific designs and best practices to be incorporated into the project will align with and advance Executive Directive No. 18-2, July 16, 2018, City and County of Honolulu Action to Address Climate Change and Sea Level Rise.

Thank you for the opportunity to comment on the Draft EA. If you have any questions regarding the comment letter, please contact Josh Hekeka, (808) 587-2845, or Ruby Edwards, (808) 587-2817.

Sincerely,



Leo R. Asuncion
Director

c: Erin Dunable, AECOM Technical Services



AECOM
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www.aecom.com

808 521 3051 tel
808 524 0246 fax

May 29, 2019

Mr. Leo Asuncion
Director
State of Hawaii, Office of Planning
P.O. Box 2359
Honolulu, HI 96804

Dear Mr. Asuncion,

Subject: Response to Comments, Draft Environmental Assessment for Blaisdell Center Master Plan, Tax Map Keys (1)2-3-008:001-3.

Thank you for your organization's letter dated December 01, 2018, regarding the Neal S. Blaisdell Center Master Plan Draft Environmental Assessment (EA). As the planning consultant for the City and County of Honolulu, we acknowledge the Office of Planning's comments and have provided our responses below.

The State Plans, Policies and Controls chapter of the EA was expanded to outline all policies of HRS Chapter 226 and shall discuss applicability, or lack thereof. The section on policies related to the CZM and HRS 205A-2 were also revised to include a discussion of all policies' applicability to the project, or lack thereof.

Water conservation features, water reuse, use of catchment, condensate, and use of native landscaping would all be considered throughout the design phase, as noted in the EA. A new fishpond is planned and would incorporate dynamic storage volume. Lo'i would also be constructed to harvest stormwater. Other low impact development design principles would be incorporated on site to reduce the quantity of runoff and promote the infiltration of surface water on site. As the design phase progresses, sustainability features consistent with the Hawaii Water Plan, would be considered.

As part of the Construction Management Plan, consultation would occur with all facility operators on contiguous/nearby properties. This includes consultation with the Department of Education and McKinley High School administrators. The city has consulted with McKinley HS on numerous occasions during the Master Planning process and would continue to do so. Both the construction phase and the operation phase would comply with the DOH Noise Regulations, including construction hours of operation.

Your comment is acknowledged as to the discussion of impacts on infrastructure and utilities. The following Technical Studies were performed to support this EA and provide information with regards to infrastructure and utilities: Civil Engineering, Hydrology, Structural Assessment, Plumbing and Mechanical, Electrical, Fire Protection, Geotechnical Assessment, Topographic Survey, Historic American Buildings Survey, Climate Analysis and Sustainable Design Strategies, and a Campus Emergency Response Plan. These studies are attached as appendices to the Blaisdell Center Master Plan.

To the extent possible, the Final EA was elaborated with regard to the proposed action's compliance with State and County energy and waste efficiency, sustainability and resiliency goals and policies.

The Final EA discusses how the proposed improvements and best practices would be incorporated into the project with regard to Executive Directive No. 18-2, July 16, 2018, City and County of Honolulu Action



to Address Climate Change and Sea Level Rise, to the extent possible. The Master Plan is conceptual in nature and therefore the consideration of some elements are more appropriate during the design phase.

We value your participation in the environmental review process. Your organization's letter and our response will be included in the Final EA, which is scheduled for publication next month.

Sincerely,

A handwritten signature in blue ink that reads 'Erin Dunable'. The signature is written in a cursive, flowing style.

Erin Dunable
Senior Environmental Planner

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Appendix B. Cultural Impact Assessment

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FINAL

CULTURAL IMPACT ASSESSMENT FOR THE NEAL S. BLAISDELL CENTER MASTER PLAN

'Ili of Kewalo, Honolulu Ahupua'a, Kona Moku, Honolulu Modern Tax District, Island of O'ahu TMK: (1) 2-3-008:001



Ka wai huahua'i o Kewalo
The bubbling water of Kewalo
'Ōlelo No'ēau 1652 (Pukui 1983:178)

COVER MAP: HONOLULU AND VICINITY BY WALTER A. WALL (1887) ILLUSTRATING THE EARLY DEVELOPMENT OF KEWALO 'ILI, TRADITIONAL SHORELINE, AND ANCIENT NAMES OF PROMINENT LAND FORMS OF HONOLULU AHUPUA'A. Mana'o (meaning) behind 'Ōlelo No'eau 1652:

Kewalo once had a large spring where many went for cool, refreshing water. (Pukui 1983:178)

The ancient landscape of Kewalo consisted of marshy wetlands fed by the surface flow of Ko'olau watershed, freshwater springs, and tidal fluctuations. This landscape provided for the people through fishpond aquaculture, the manufacture of salt, and the precious resource of freshwater. The Hawaiian word for water is *wai* which figures prominently in the Hawaiian concept of wealth or *waiwai*. To this day, the cultural descendants of Kewalo continue to identify with the waters of Kewalo.

CULTURAL IMPACT ASSESSMENT FOR THE NEAL S. BLAISDELL CENTER MASTER PLAN

'Ili of Kewalo, Honolulu Ahupua'a, Kona Moku, Honolulu Modern Tax
District, Island of O'ahu TMK: (1) 2-3-008:001

5/9/2019

FINAL

Prepared For:

City and County of Honolulu
Department of Design and Construction

Prepared By:

Tanya Lee-Greig, M.A.
Kamoa Quitevis, B.A.
Napali Souza
and
Angela Peterson

Under Contract To:

AECOM
Honolulu, HI

'Āina Archaeology

O'ahu: 725 Kapi'olani Blvd, C400 Honolulu, HI 96813
Maui: 590 Līpoa Parkway, Suite 106 Kīhei, HI 96753

Executive Summary

Date	May 2019 – FINAL
Project	Neal S. Blaisdell Center Master Plan
Proposing Agency (s)	City and County of Honolulu, Department of Design and Construction (DDC)
Proposed Action	<p>The Neal S. Blaisdell Center Master Plan proposes to renovate the Arena and Concert Hall, demolish the existing Exhibition Hall and construct a new Exhibition Hall and parking structure, build a new Performance Hall and Sports Pavilion, and create new public and commercial spaces on the site. Eligible historic status of both the Arena and Concert Hall contributed to the desire to preserve significant portions of the original structures.</p> <p>The goal of the Neal S. Blaisdell Center Master Plan is to develop a master plan that upgrades the Blaisdell Center to a 21st century, state-of-the-art facility to enhance the experience for performers and visitors. The plan will include a refined conceptual site plan with open spaces, plazas, site amenities, water features, and new street connections; and conceptual architectural plans for the Concert Hall and Arena renovations, new Exhibition Hall, a new Performance Hall and Sports Pavilion, and a new box office and commercial space. See Section 1.1 for an overview description of the conceptual plans for various aspects of the project.</p>
Project Area and Region of Influence	<p>The potential area of direct effect, or project area, is considered the 22-acre development footprint of the proposed Neal S. Blaisdell Center Master Plan located in Honolulu Ahupua‘a, Kona Moku, Honolulu Modern Tax District, O‘ahu Island.</p> <p>When assessing the presence or absence of direct and indirect effects of the proposed project on the traditional cultural practices of a region, traditional use and access to resources from the mountains to ocean, or <i>mauka</i> (mountain region) to <i>makai</i> (coastal region), must be taken into consideration. As such, the region of influence, or study area for the proposed project is defined as the geographic area encompassed by the known traditional boundaries of the ‘<i>ili</i> (land section within an <i>ahupua‘a</i>) of Kewalo and traditional <i>ahupua‘a</i> of Honolulu.</p>
Results	<p>Traditional <i>mo‘olelo</i> (stories), <i>mele</i> (songs) and ‘<i>oli</i> (chants); as well as historic maps, early accounts of western explorers and Hawaiian historians all confirm the abundance of <i>lo‘i</i> (taro fields) and <i>loko i‘a</i> (fishponds) across the Kewalo plain. Additionally, numerous <i>heiau</i> (religious temples) such as Pu‘ukea and Pākākā were important features of the traditional landscape.</p> <p>Beginning with early 20th century reclamation projects and continuing into the modern era, the cultural landscape of Kewalo shifted, as traditional wetland agriculture and aquaculture systems were filled in and urbanization and commerce replaced the traditional economy. Despite the dramatic change, informants continue to value the <i>wai</i> (fresh water) and <i>kai</i> (ocean water) and the cultural resources of Kewalo. They also value the</p>

continued perpetuation of traditional place names, and the *mo'olelo*, *mele*, and *'oli* associated with them. Ongoing cultural practices revolve around the Kewalo basin and ocean resources. No direct impacts to cultural practices associated with marine resource gathering been identified through this study, although some concerns have been expressed about runoff from construction.

Given past land use and previous archaeological studies conducted in the area, there is a potential for impacting subsurface cultural deposits associated with wetland agricultural practices, fishponds and human burials.

Finally, the Neal S. Blaisdell Center has been the main performance venue for the King Kamehameha Chant and Hula Competition and the Queen Lili'uokalani Hula Competition. The center itself is now etched in the genealogy of these events and thus taken on an important role in honoring our *Mō'i* and the tradition of *hula*, from the formative years of a practitioner and on through their twilight years. While proposed additions and design concepts may enhance future performances in the long-term (see Section 6.3), as one of the main performance spaces on O'ahu, the potential closure of the entire Blaisdell Center campus may cause a disruption that could adversely affect the ability of competition organizers to stage their respective *hula* events.

Recommendations

Historic Properties and Culturally Sensitive Sites (see Section 6.3.2 for detailed explanation):

- Execution of a thorough AIS in order to minimize and impacts to historic properties and burials.
- In place preservation of burial sites along with close coordination with the OIBC and recognized cultural and lineal descendants.

Honoring the Traditional Landscape and Enhancing Traditional Cultural Practices in Urban Honolulu (see Section 6.3.1 and 6.3.2 for detailed explanation):

- Use traditional place names whenever possible in project design, interpretive signage and other educational materials.
- Identify water sources and pathways to ensure that the spring is protected, and access is provided to cultural practitioners.
- Replant native plants, but not just for aesthetics but as cultural resources that can be accessed by cultural practitioners.
- Continued outreach and communication with cultural practitioners for input on the types of plants that would have grown in the region and be appropriate to incorporate into a landscaping design.
- Increase connectivity and awareness between Neal S. Blaisdell Center with Thomas Square and the social and political history of that space.

Recommendations
(continued)

Hula Competition and Continuation of the Annual King Kamehameha Chant and Hula Competition and the Queen Lili'uokalani Hula Competition (see Section 6.3.3 for detailed explanation):

Short-Term

- Continued communication with the organizers of the King Kamehameha Chant and Hula Competition and Queen Lili'uokalani Hula Competition so that all parties are aware of anticipated Blaisdell Center closures and construction schedules.

Long-Term

- Development of an MOA between Kalihi-Palama Culture and Arts Society (KPCA) and the City and County of Honolulu to ensure that the Keiki Hula Competition could return to the Blaisdell once the facility reopens.
 - Include in the MOA a long-term commitment from the City to minimize costs to the organization when holding the event at the Blaisdell where feasible.
 - Include the MOA as an attachment to or condition of the P3 contract if the facility is potentially turned over to a private entity.
 - Continued outreach and contact with KPCA and other *hula* organizations with *kumu hula* who have been active in the facility through out the design process.
 - Integration of art installations depicting the “legacy” event of Keiki Hula
 - Increase opportunities for *hālau* to either participate in other events held at the Blaisdell, or train at the Blaisdell, which would then increase opportunities to practice their craft and perpetuate Hawaiian culture.
-

Acknowledgments

Āina Archaeology would like to extend our deep appreciation to everyone who took time to speak and share their *manaʻo* (input) and *ʻike* (knowledge). Many thanks go out to the various individuals who shared their personal life experiences and traditional knowledge for this study. Information shared helps tremendously in reconstructing the traditional way of life at different times in history and shows how lifestyles, particularly relating to Hawaiian traditions and cultural practices, have evolved and continued into the present day.

Most important it is with sincerest gratitude and fondest aloha that we thank *kupuna*, *kumu hula*, and *kamaʻāina* who have contributed greatly to our understanding of traditional cultural practices related to the lands and waters of Honolulu Ahupuaʻa and Kewalo ʻIli; as well as the important role of the Neal Blaisdell Arena as the home of the Annual Liliʻuokalani Keiki Hula Competition and the perpetuation of *hula* traditions. Mahalo a nui for taking precious time out of your days to share your *manaʻo* and concerns.

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1.0 INTRODUCTION

The City and County of Honolulu, Department of Design and Construction (DDC) proposes to redevelop the 22.4-acre Neal S. Blaisdell Center (the Blaisdell Center). The proposed project would entail demolishing the existing Exhibition Hall and meeting rooms, Department of Enterprise Services (DES) offices, ticket booth, parking garage, all shops and associated storage areas, entry kiosks, and most driveways, sidewalks and landscaping and replacing them with new facilities, driveways, sidewalks, and landscaping. The Concert Hall and Arena would be retained but would undergo major renovations. Additionally, a new Performance Hall and Sports Pavilion would be added to the Blaisdell Center.

The area covered by the Neal S. Blaisdell Center Master Plan (project) is situated within the *ahupua'a* of Honolulu, Kona Moku, Honolulu Modern Tax District, on the Island of O'ahu (Tax Map Key [TMK]: [1] 2-3-008:001) (Figure 1-1). As noted previously, the area covered by the proposed project includes approximately 22.4 acres that is currently bound by South King Street to the north, just *makai*—or seaward—of the famed Thomas Square, Ward Avenue to the west, Kapi'olani Boulevard to the south and President McKinley High School on the eastern boundary.

As a part of the Environmental Assessment (EA) process for the proposed project, at the request of DDC and under contract to AECOM, Āina Archaeology (Āina) conducted a study of traditional cultural practices within and adjacent to the proposed project. The Guidelines for Assessing Cultural Impacts, adopted on November 19, 1997 by the Environmental Council, State of Hawai'i states:

(For) the cultural portion of an environmental assessment, the geographical extent of the inquiry should, in most instances, be greater than the area over which the proposed action will take place (proposed project area). This is to ensure that cultural practices which may not occur within the boundaries of the project area, but which may nonetheless be affected, are included in the assessment.... An *ahupua'a* is usually the appropriate geographical unit to begin an assessment of cultural impacts of a proposed action, particularly if it includes all of the types of cultural practices associated with the project area. In some cases, cultural practices are likely to extend beyond the *ahupua'a* and the geographical extent of the study area should take into account those cultural practices. (State of Hawaii Office of Environmental Quality Control 2012:11)

For this Cultural Impact Assessment (CIA), the *ahupua'a* of Honolulu, with a specific focus on the *'ili* of Kewalo is considered the study area while the development footprint of the proposed project is identified as the area of potential direct effect (project area) (see also Figure 1-1). The purpose of this document is to gain an understanding of traditional cultural practices within the study area and identify any potential effects on these practices that may occur during, or as a result of, the implementation of the proposed project.

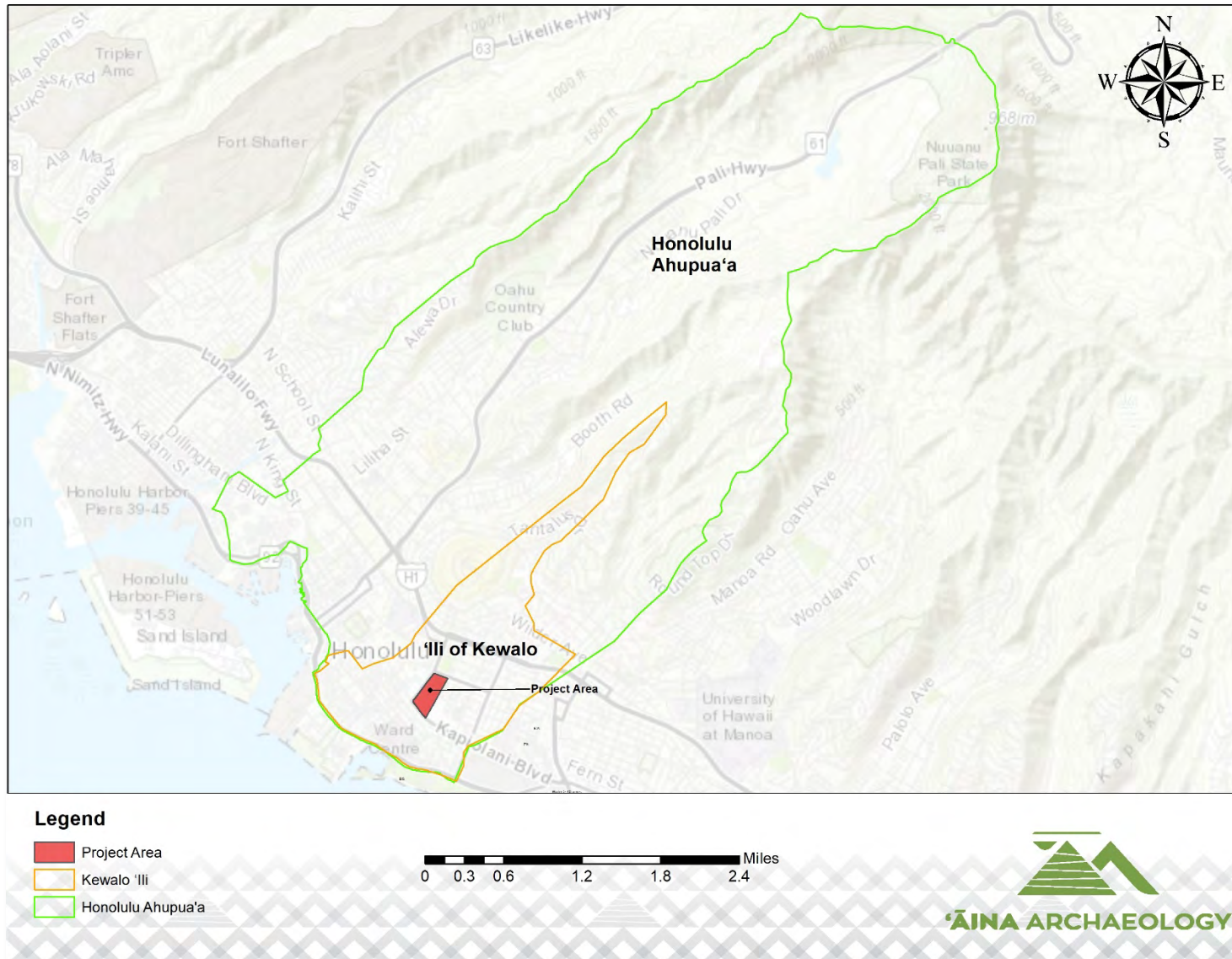


Figure 1-1. A portion of the ESRI USGS Base Map showing the current project area (shaded in red) in relation to the study area (Honolulu Ahupua'a outlined in green and Kewalo 'Ili outlined in yellow).

1.1 PROJECT DESCRIPTION

The proposed conceptual plan was built upon a community vision, guiding principles, cultural themes, and a conceptual framework, with the goal to better integrate the Blaisdell Center within the urban fabric of the larger district, improve connectivity, and increase usage by patrons and neighbors. The Neal S. Blaisdell Center Master Plan includes the following components (Figure 1-2 through Figure 1-6):

- Development of a Coconut Grove that pays homage to the Ward Family Estate, “Old Plantation”, that once stood on the grounds of the Blaisdell Center
- Renovation and expansion of the existing Concert Hall in a manner that retains its historic presence facing Thomas Square Park with minimal interventions
- Development of The Gardens as a central gathering point at the Blaisdell Center where the hardscaped plaza would be interspersed with shade trees, feature programmable water jets, and offer ample space for programming throughout the year
- Demolish the existing Exhibition Hall and replace with a proposed 95,000 square foot (sq. ft.) structure that features more efficient use of space and includes an expanded exhibition floor and new performance hall
- Creation of The Terrace as an elevated outdoor space that would allow for all site services and maintenance circulation to be managed efficiently below while simultaneously forming a large public space and circulation path above
- Construction of a new Arts Ensemble and Satellite City Hall that would attract more daily activity and diversify user groups. The proposed Arts Ensemble would consist of a 35,000 sq. ft. facility overlooking the Terrace and the Gardens
- Development of the Civic Plaza that would serve as the entry point for the majority of people come in to the site from the future rail station, the large Ward drop-off, or by foot. The scale of the plaza and formal features would accommodate large crowds and make it orderly and easily navigable
- Expansion and reconfiguration of the War Memorial at the Blaisdell Center
- Expansion of the Arena and construction of a Sports Pavilion that would be added *makai* of the arena to provide additional space for sports practices and games. A large fishpond would encircle the arena and reflect against its underside
- Development of Streetscapes that would create a connected, unified, vegetated, and welcoming face of the Blaisdell Center on Ward Avenue; reconfiguration of Victoria Street according to CCH standards with pedestrian paths on both sides of the street as well as a central drop-off; preservation of the existing Monkeypod trees on Kapi’olani Boulevard to provide a shaded walkway with a layby that would provide a drop off space for sports pavilion events.

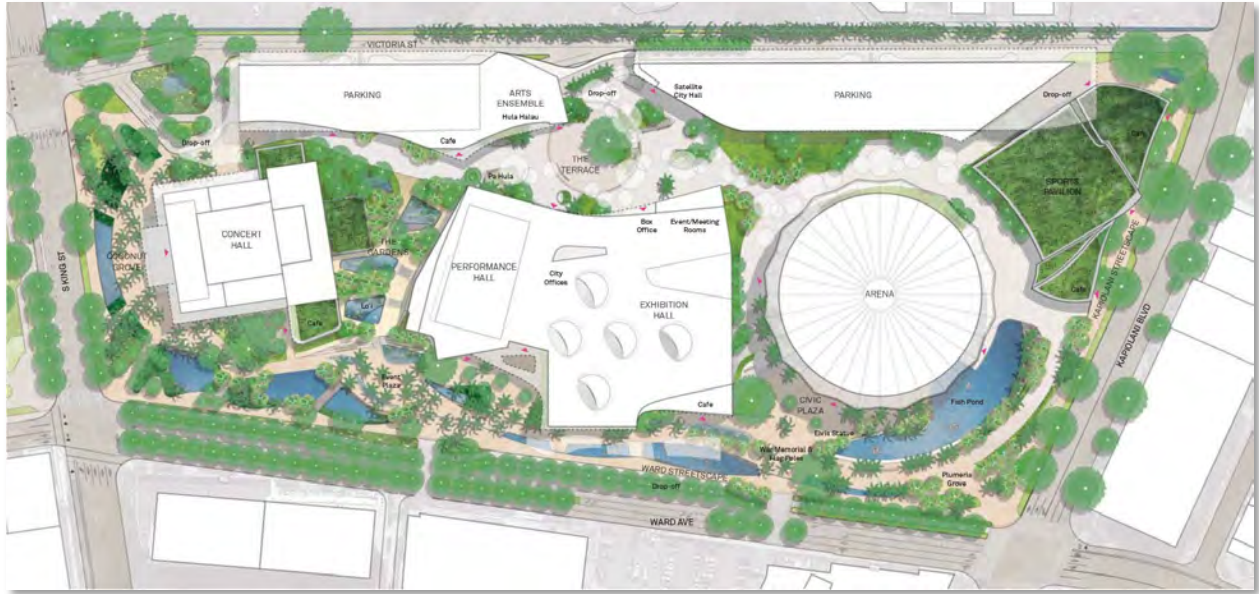


Figure 1-2. General overview of the Neal S. Blaisdell Center Conceptual Design (AECOM et al. 2018).

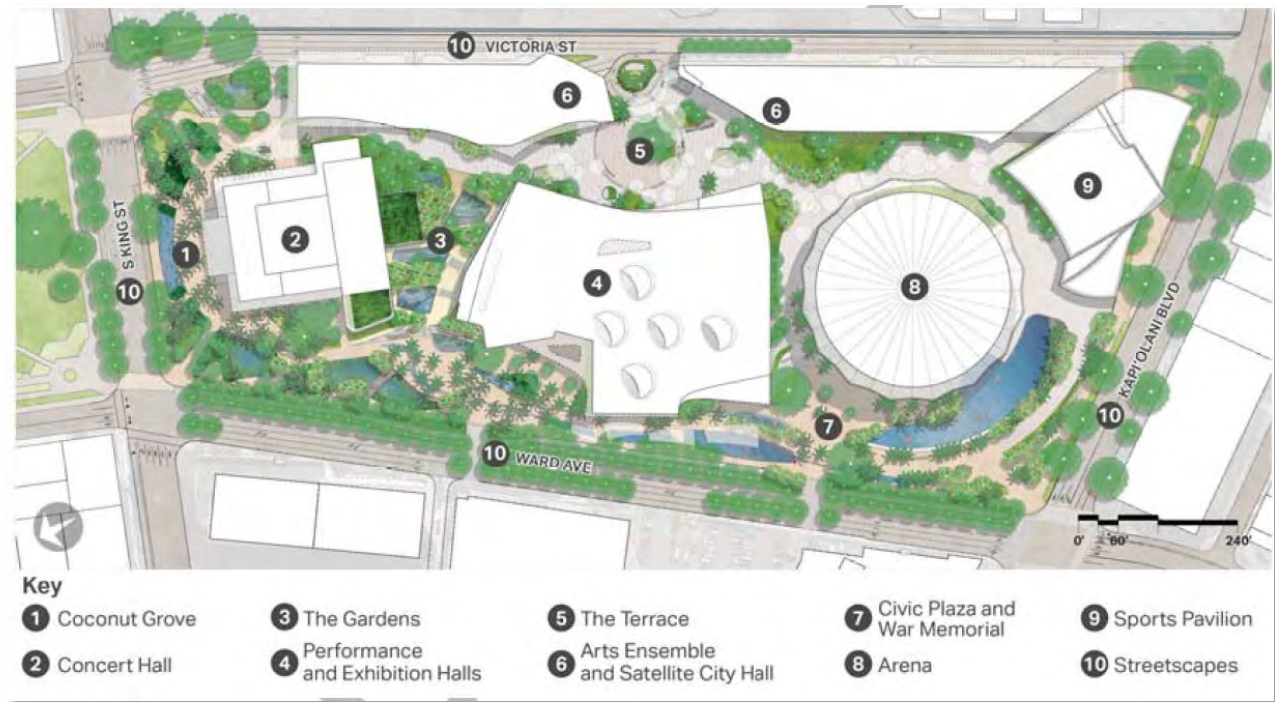


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Figure 1-5. Rendering showing the Arena from the Civic Plaza, Exhibition Hall in the background to the left of frame and Sports Pavilion in the background to the right of frame (AECOM et al. 2018).



Figure 1-6. Rendering showing new Exhibition Hall from the Civic Plaza (AECOM et al. 2018).

1.2 SCOPE OF WORK

The purpose of this CIA is to identify and evaluate potential impacts to traditional cultural practices as a result of the proposed project. The following outlines the scope of work that was carried out for this CIA:

- **Background Research** to include a review of Hawaiian language newspapers, documents of the Mahele'Āina, maps, historic survey notes, etc.
- **Review of Archaeological and Cultural Impact Assessments** in areas adjacent to the propose project area.
- **Community Consultation and Outreach** to include consultation with individuals and community groups with cultural and generational ties to the area as a means of identifying and understanding potential past and active present cultural practices within and adjacent to the proposed project area. This outreach would also gather individual and community concerns regarding any potential effects that the proposed project may have on cultural resources and traditional cultural practices.
- **Synthesis of the Results of Community Consultation and Outreach** to include:
 - a discussion on the cultural resources, practices and beliefs identified through consultation and background research;
 - for identified resources and practices, their location within the broad geographical area in which the proposed action is located when known or shared; and,
 - their direct or indirect significance or connection to the project area.

- **Analysis and Discussion** concerning the nature of identified cultural practices and beliefs, and the significance of the cultural resources within and adjacent to the current project area that may be affected directly or indirectly by the proposed project. Analyses will include:
 - potential effect of the proposed project on cultural resources, practices or beliefs;
 - the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and
 - the potential of the proposed action to introduce elements which may alter the setting in which cultural practice is taking place.

2.0 ENVIRONMENTAL SETTING

2.1 NATURAL ENVIRONMENT

As previously noted, the current project area is located within the *ahupua'a* of Honolulu and *'ili* of Kewalo on the island of O'ahu. Formed by the lava flows of the Wai'anae and Ko'olau volcanic ranges during the late Tertiary period and early Pleistocene Epoch (2.6 to less than 1 million years ago), the island of O'ahu would undergo sweeping geologic changes as the initial volcanic activity ended. Streams carved deep canyons into the surface of the newly formed land mass while shifting sea levels related to glacial advance and retreat during the mid to late Pleistocene (600,000 to 11,500 yrs. before present) shaped O'ahu's coastline (U.S. Army Corps of Engineers 1983:C-1). The current project area is located within a section of the physiographic region known as the Honolulu Plain, an area that is essentially composed of a fringing coral reef that formed during the high seas of the Pleistocene Epoch and left high as sea levels receded (U.S. Army Corps of Engineers 1983:C-1). The extent of this reef stretches from the shoreline to the foot of the mountains for approximately 10 miles parallel to the sea (Morgan 1894:22) and rises in elevation from sea level to roughly 50 feet (ft.) (Wentworth 1951:6). In general, the geology of the Honolulu Plain is reflective of active volcanism and fluctuating sea levels, as well as subsidence and uplift (McMurtry et al. 2010; Stearns 1978). Generally speaking, the geology is characterized by a late-Pleistocene coral reef substrate overlaid by calcareous marine sand or terrigenous sediments, stream-fed alluvial deposits, and sheets of cinder-like volcanic ash that is colloquially referred to as "black sand" (Armstrong 1983:36; MacCaughy 1916). Coring performed in the coastal extent of the Honolulu Plain shows the lava-basalt basement occurring between 400 to 1,000 ft below the Honolulu Plain capped with a thick layer of nearly impermeable clay and gravel (U.S. Army Corps of Engineers 1983:C-1).

In the vicinity of the project area, rising sea levels associated with the close of the Pleistocene glacial period and melt of glacial ice effectively flooded previously dry reef deposits. As sea levels reached heights comparable to modern levels, the now coastal regions would become depositional environments, where for tens of thousands of years previously, during the lower sea levels, they had been erosional environments (Enanoria and Hammatt 2016:7). Several periods of high stands of the sea, ranging in elevation from 12 to 1200 ft. above mean sea level (amsl), have been documented for the Hawaiian Islands (Stearns 1978). During high stands of the sea, there appears to have been increases in coral reef production and detrital reef sediments where littoral environments may have been augmented substantially by the deposition of marine sediments (Dye and Athens 2000). As a result, the Honolulu coastline has been greatly affected by both a natural increase in the accumulation of marine sediments during elevated sea levels and human modification that dates back to the arrival of Polynesian Voyagers to the Hawaiian Archipelago around A.D. 800 at the earliest and around the 13th century at the latest (Kirch 2011; Lee-Greig and Hammatt 2017; Rieth et al. 2011).

In 1911, it was estimated that about one-third of the Honolulu Plain consisted of coastal marshlands (Figure 2-1 and Figure 2-2), an environment that Hawaiians had modified with the construction of fishponds, the walls of which served as sediment anchors for the accumulation of detrital reef sediments (Ishihara et al. 2012:7).

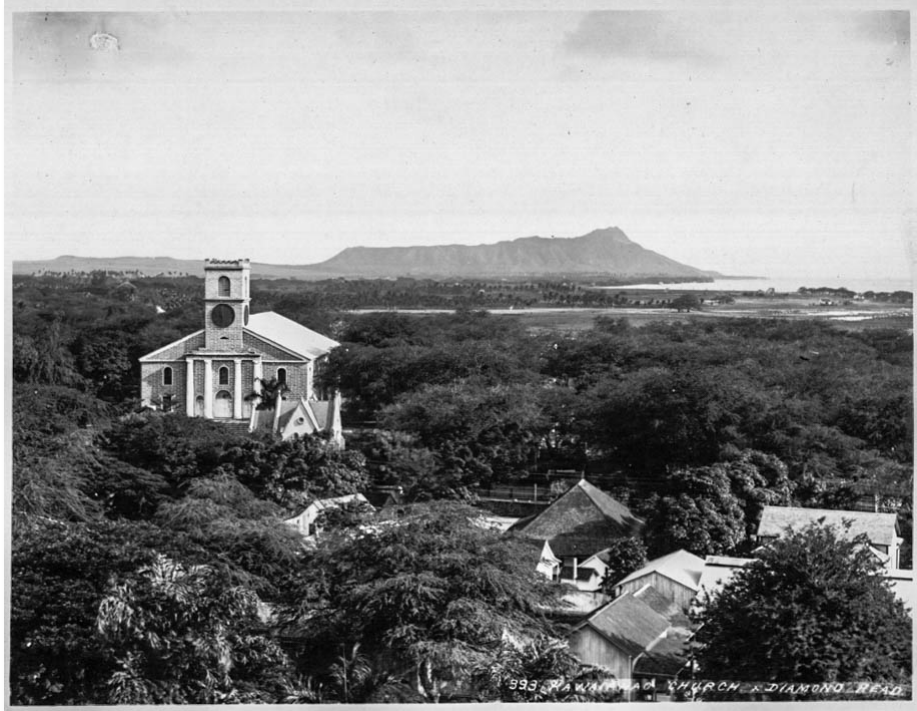


Figure 2-1. Kawaiahao Church and King Lunalilo's tomb showing the marshland environment of the Honolulu Plain (frame right) in the background (1885, Hawai'i State Archive [HSA] Call number: PP-38-4-012).

Government wetland reclamation projects in the 1930s, including the Kewalo Reclamation Project and the Waikīkī Projects, drastically altered the landscape with the movement of millions of tons of sediment, primarily composed of crushed coral, into the marshy areas of the southern portions of O'ahu (Nakamura 1979:113) and effectively changed the geological characteristics of the coastal region. Present-day elevations in the vicinity of current project area range between sea level and approximately 10 ft. amsl with the project parcel lying at a distance of approximately 876 m from the modern shoreline.

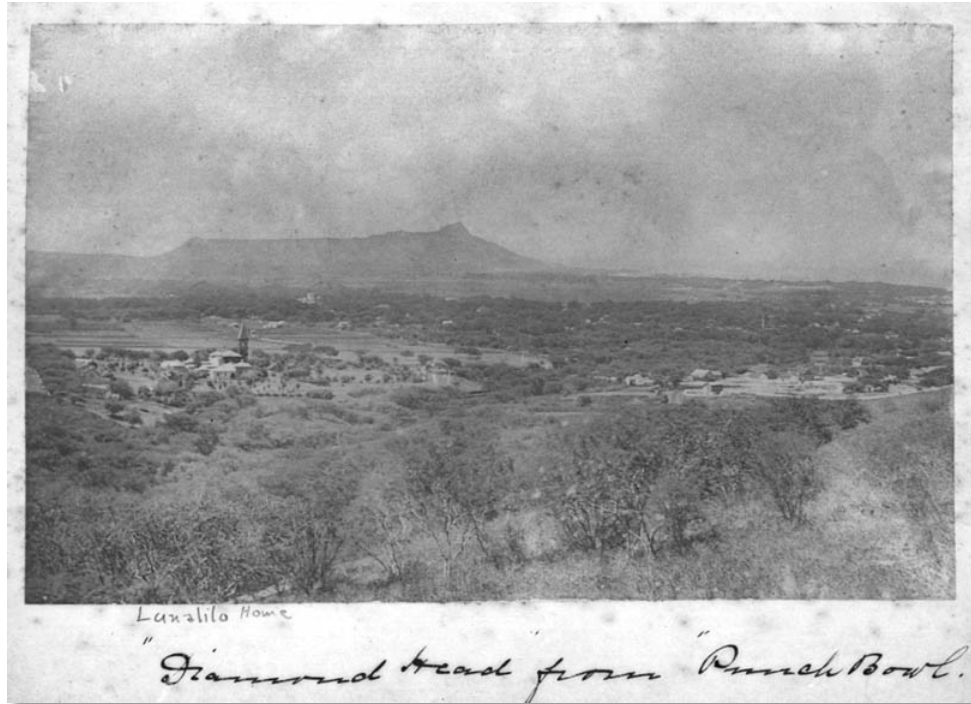


Figure 2-2. View toward Lē‘ahi (Diamond Head) from Pūowaina (Punchbowl) showing the low shrubland and grasslands in the middle ground and marshlands in the background (frame right) that was once typical of the Honolulu Plain, Lunalilo Home on left. (Date Unknown, HSA Call number: PPWD-8-7-002).

According to the U.S. Department of Agriculture Soil Survey Geographic (SSURGO) Database (2001) and soil survey data gathered by Foote and others (1972), modern sediments underlying the current project area consist primarily of Makiki clay loam (MkA), 0 to 2 percent slopes with a small portion in fill (FL), as shown in (Figure 2-3). The USDA soil survey describes Makiki soils as:

... well-drained soils on alluvial fans and terraces in the city of Honolulu on the island of O‘ahu. These soils formed in alluvium mixed with volcanic ash and cinders. They are nearly level. Elevations range from 20 to 200 feet ... with mean annual soil temperature is 73° F. Makiki soils are geographically associated with Kaena and Tantalus soils. These soils are used almost entirely for urban purposes [Foote et al. 1972:91-92].

In contrast to MkA sediments, Foote and others (1972:31) note that fill land consists of “...areas filled with material dredged from the ocean or hauled from nearby areas, garbage, and general material from other sources... This land type is used for urban development including airports, housing areas, and industrial facilities.”

While fill materials and previously disturbed clay loam sediments will likely be found throughout the project area, the coastal location of Blaisdell Center in the context of the shifting shorelines discussed above presents the possibility that natural Jaucas sand (JaC) may be encountered underneath portions of the Blaisdell Center project area as well. In a representative profile, Jaucas sands are single grain in structure, pale brown to very pale brown, sandy, and more than 60 inches deep. In many places the surface layer is dark brown as a result of accumulation of organic matter and alluvium (Foote et al. 1972:48).

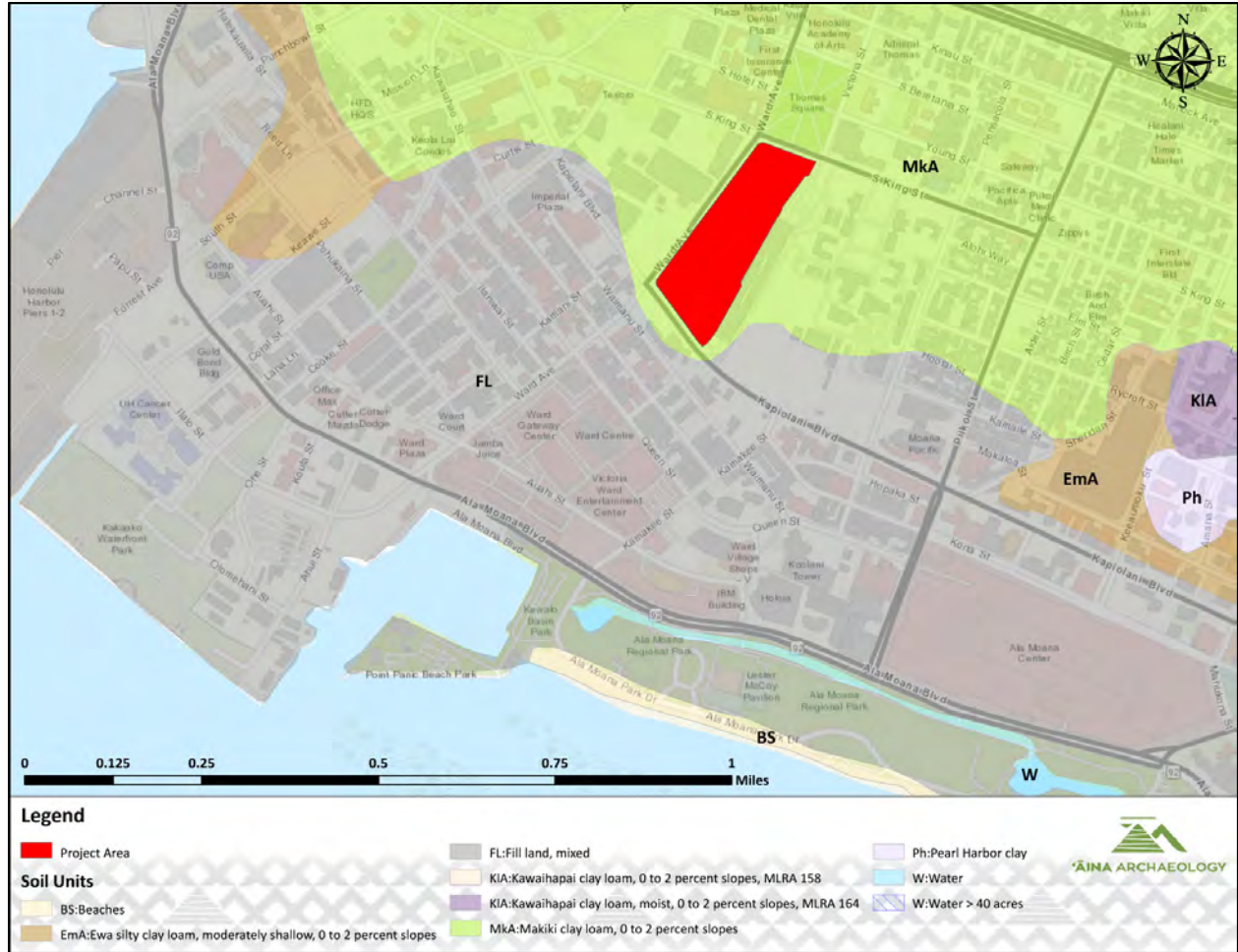


Figure 2-3. A portion of the ESRI World Topographic Map (2013) focus on a portion of the Honolulu USGS 7.5 minute Topographic Quadrangle showing the current project area (shaded in red) in relation to the underlying soil map units (USDA-NRCS-NCGC 2001).

While there have been fluctuations in precipitation over time, in general, it may be possible to look at mean annual rainfall over the last 100 years to model historic environmental and cultural ecology for the area. Giambelluca and others (2013) document the average annual rainfall in the region between 24 to 31 inches (in.), a range that may have sustained seasonal dry-land crops but would have been marginal at best for *lo'i kalo* (pond field taro) cultivation without the development of traditional Hawaiian irrigation systems that were engineered and constructed throughout the region.

Though native vegetation in this area is not well documented, it is possible that prior to urbanization in the early part of the twentieth century, and in addition to the irrigated pond-field systems, vegetation may have included *naupaka* (*Scaevola taccada*), *kiawe* (*Prosopis pallida*), and *niu* (*Cocos nucifera*). The 1930s land reclamation projects and resulting urbanization would not only have changed the underlying land base but also the hydrographic character of the region. These changes in the landscape would ultimately result in the end of *lo'i* agriculture. Today,

virtually all plant communities are a result of landscaping efforts that favor ornamental introduced trees, shrubs, and ground cover.

2.2 BUILT ENVIRONMENT

The project area is located within central Honolulu, surrounded by modern urban development including commercial buildings, paved streets, sidewalks, utility infrastructure, and landscaped margins. The Neal S. Blaisdell Center's 22.4-acre site is located in the heart of Honolulu. The facilities of the Blaisdell Center include the Arena, Exhibition Hall, Concert Hall, box office, trades/warehouse, building, parking structures, and parking lots. A prominent feature at Blaisdell Center are the water features that surround the Arena.

The Blaisdell Center is located in urban Honolulu within the modern land designation of Kaka'ako Mauka. As previously noted, the project area is surrounded by major arterial roads that include King Street, Ward Avenue, and Kapi'olani Boulevard; in addition to important cultural and educational venues, including McKinley High School, Honolulu Museum of Art, and Thomas Square.

Major landowners in the area include Howard Hughes and Kamehameha Schools—who own 60 and 40 acres, respectively. They are engaged in redevelopment efforts with a series of new high-rise, mixed-use residential-commercial developments. The Office of Hawaiian Affairs also became a major landowner in Kaka'ako Makai in 2012 with the acquisition of 25 acres adjacent to Kewalo basin.

3.0 CULTURAL HISTORICAL BACKGROUND

The first major delineation of land boundaries on the island of O‘ahu occurred during the time of Ma‘ilikūkahi. A *mō‘ī* (highest ranking chief and representative of Akua Kū) (Kame‘eleihiwa 1992) of the Moikeha line who was born at the *wahi kapu* (sacred place) of Kūkaniloko, Ma‘ilikūkahi was well known for his wise leadership and judicious temperament while carrying the *kapu* and privilege of those who were born at Kūkaniloko (Fornander 1880:20-22, 89). It was under his direction that the island of O‘ahu was divided and clearly demarcated into six *moku* (districts) – Kona, ‘Ewa, Wai‘anae, Waialua, Ko‘olaupoko, and Ko‘olaupoko – so as to prevent any disputes between chiefs and landholders (Beckwith 1970:383; Fornander 1880:89; 1919b:245). The *moku o loko*, or *moku* as it is most commonly called, literally means “to cut across, divide, separate” (Lucas 1995:77). When used as a term of traditional land tenure, a *moku* is similar to a modern political district. Within these *moku* are smaller units of land termed the *ahupua‘a*, the name of which is derived from the Hawaiian term *ahu* (altar), which was erected at the point where the boundary of land was intersected by the *alaloa* (main road encircling the island), upon which a carved *pua‘a* (hog) image, made of kukui wood and stained with red ochre was placed along with the tax of food items from that particular land unit as payment to the *ali‘i* (chief) during the annual progression of the *akua makahiki*, (Alexander 1882:4).

The typical configuration of the *ahupua‘a* extends from the sea to the mountain so that the *ali‘i* (chiefs), as well as the *maka‘āinana* (native tenant) could have access to resources of the *wao lā‘au* or *wao nahele* (forested region), the *wao ‘ama‘u* and *wao kanaka* (cultivated land), and the *kula uka* and *kula kai* (the lower grasslands and shoreline) (Alexander 1882:4; Mueller-Dombois 2007). While the boundaries of an *ahupua‘a* generally followed prominent landforms (i.e. ridge lines, the bottom of a ravine, or defined by a depression) there were times where a stone or rock that was notable from a tradition or sacred use would mark a corner or determine a line (Alexander 1890:105-106). Along similar lines, the growth of a certain kind of tree, herb or grass, or the habitat of a certain kind of bird would sometimes define a division (Alexander 1890:105-106).

The general area of study is Honolulu Ahupua‘a, which is located in the *moku* of Kona and extends from Waikīkī to Kapālama, converging on the Ko‘olau Mountains to include Makiki, Pauoa, and Nu‘uanu Valleys. The *ahupua‘a* of Honolulu includes multiple smaller land divisions, termed *‘ili*, that once functioned much like *ahupua‘a* themselves. Within Honolulu Ahupua‘a are the *‘ili* of Kewalo, Kukuluāe‘o, Ka‘ākaukukui and Kaka‘ako (Kame‘eleihiwa 1992:330). The Blaisdell Center project area is specifically situated within the traditional *‘ili* of Kewalo (Figure 3-1). The Mahele Book and other Mahele documents refer to Kewalo as an *‘ili kū* (a standing *‘ili*) which were *‘ili* that permanently belonged to *ali‘i*. *‘ili kū pono*, or strips (*‘ili*) standing (*kū*) in their own right (*pono*), were unlike the *‘ili ka ahupua‘a* (*‘ili*-belonging-to-the-*ahupua‘a*) in that lands under this designation were never subjected to the *kālai‘āina* or reallocation of lands that occurred under a newly ascended *mō‘ī* (Kame‘eleihiwa 1992; Lyons 1903:28).

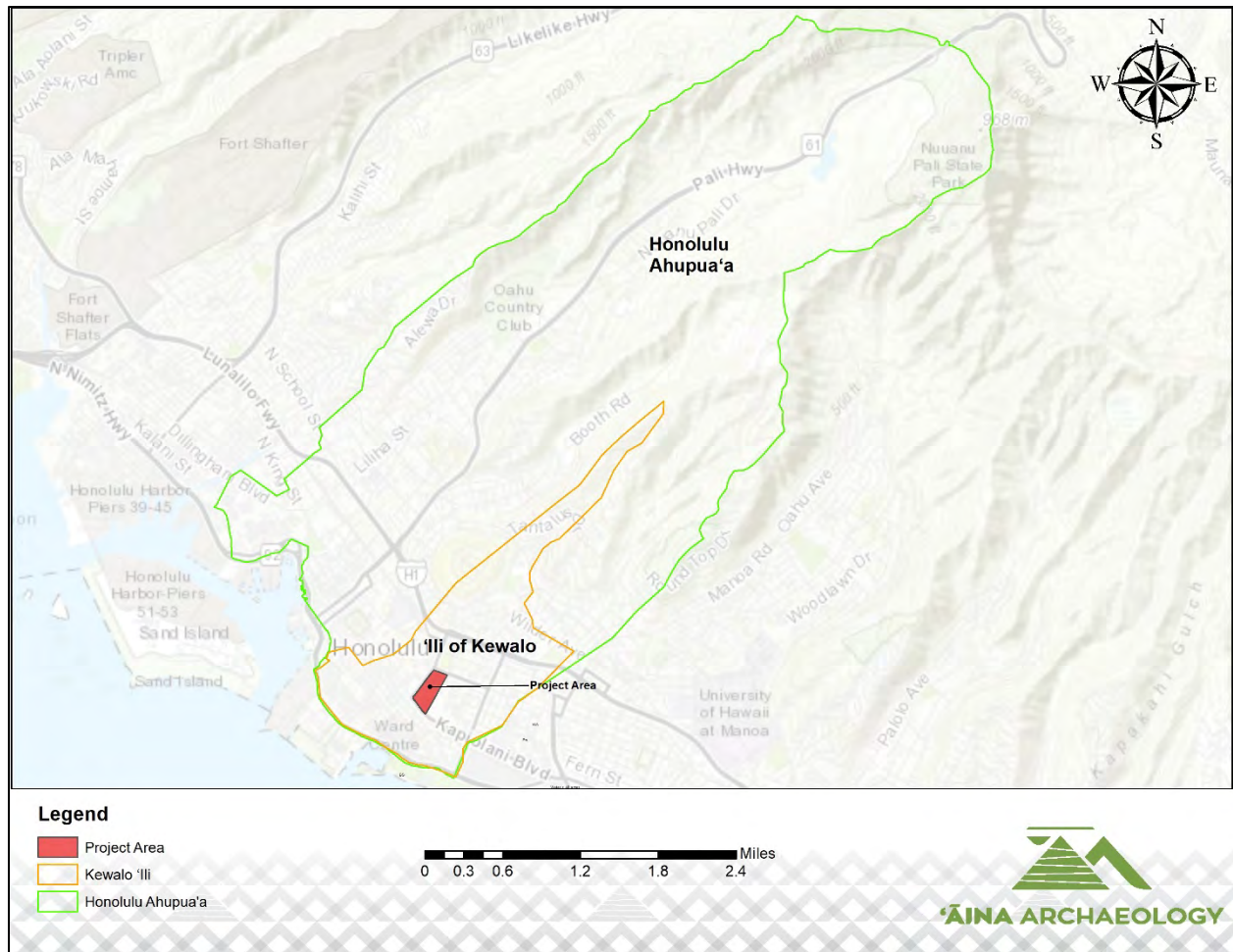


Figure 3-1. ESRI USGS Base Map of a portion of Kona Moku showing the ahupua'a of Honolulu (outlined in green) and 'ili of Kewalo as defined in Reg. Map 1071 and 1090 (outlined in orange) in relation to the surrounding topography and landmarks.

With regard to the boundaries of Kewalo 'ili, this land division has been characterized by early surveyors as an *'ili lele*, or an *'ili* that is comprised of several discontinuous sections of land:

...ili often consisted of several distinct sections of land, one, for instance, on the seashore, another on dry, open land or *kula*, another in the regularly terraced and water kalo patch or *aina loi* district, and another still in the forest ... these separate pieces were called *lele*, i.e., "jumps" and were most common on Oahu....

Kewalo...had its sea-coast adjoining Waikiki, its continuous *kula* on the plain and one half of Punchbowl hill, and its *kalo* land in Pauoa Valley (Lyons 1903:27)

The *lele* of Kewalo are further described in a boundary dispute presented to the Supreme Court of the Hawaiian Islands presented by Kamake'e who was formally awarded Kewalo 'ili by Kamehameha III in 1848:

... a piece of land situated in Nuuanu, but belonging to Kewalo containing 8 acres and 9 39-100 square chains ... the portion of Kewalo, situated in Pauoa, comprising 50 1-10 acres ... a disputed piece, also situated in Pauoa, measuring 1 acre and 4 2-100 square chains ... the

survey of Kewalo, an Ili of Honolulu, containing an area of 270 84-100 acres. This last, which is the principal survey, is marked on the plan, “Ili of Kewalo,” the others appearing to be surveys of leles belonging to the ili. (C. J. Allen et al. 1866)

In contrast to the description of Kewalo as an *‘ili lele*, two Registered Maps 1071 and 1090 appears to draw Kewalo as a continuous land division that extends from the coast at the current location of Kewalo Basin (Figure 3-2) to the upper part of Pauoa Valley and across Pūowaina (Punchbowl) (Figure 3-3) thus encompassing the *lele* as described above.

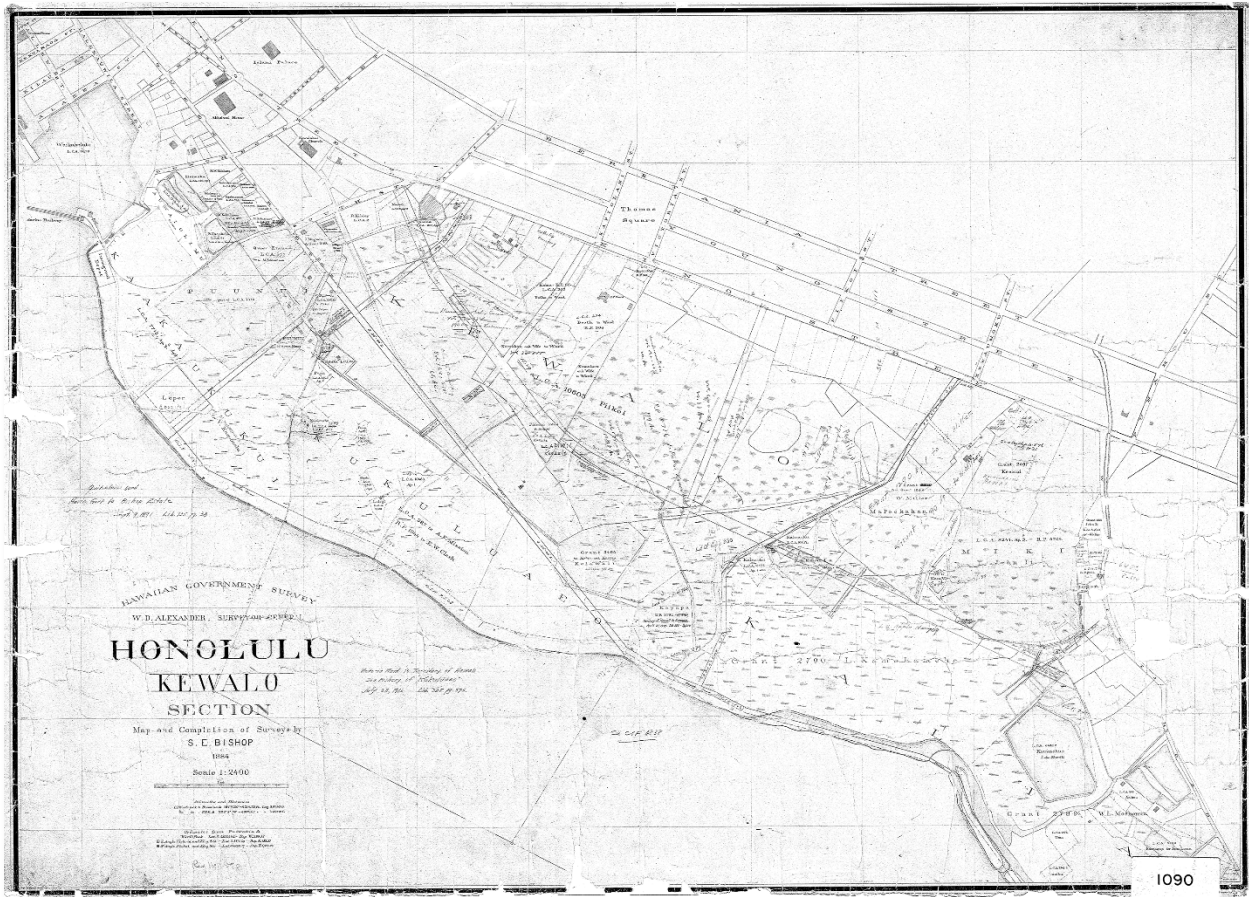


Figure 3-2. Coastal expanse of Kewalo ‘Ili (Bishop 1884), note street grid location and overlap with Figure 3-2 below.

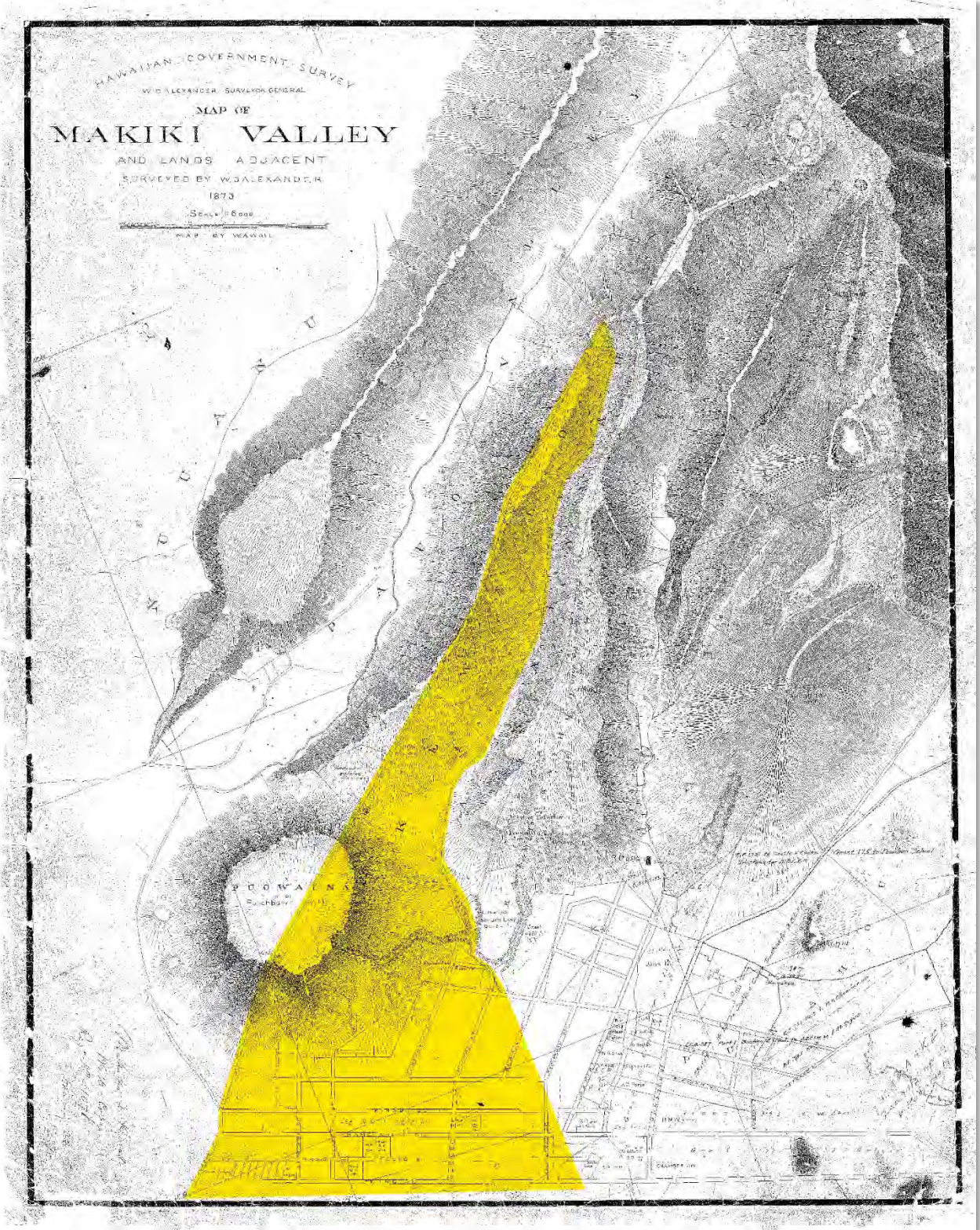


Figure 3-3. Map of Makiki (Wall 1873) showing Kewalo 'Ili (highlighted in yellow) extending from the Pauoa Valley ridgeline to the plain below Pūowaina, note the placement of a Kewalo notation across the street grid.

3.1 HE MO‘OLELO NO KEWALO MA HONOLULU AHUPUA‘A O KA WA KAHIKO – TRADITIONS OF THE KEWALO REGION AT HONOLULU AHUPUA‘A PRIOR TO WESTERN ARRIVAL

Prior to the arrival of European and American vessels to the waters of the Hawaiian Archipelago, the Kewalo area remained outside of Waikīkī and Honolulu (or Kou, an early name for Honolulu), the two most intensely populated and cultivated areas on southeastern O‘ahu. Hawaiians used the marshes and wetlands for salt-making and aquaculture (see also Figure 2-1 and Figure 2-2) , as well as, limited pond field agriculture for the cultivation of *kalo* (Griffin et al. 1987:36; Kekahuna 1958:4).

In the preface of *Place Names of Hawaii* (Pukui et al. 1974:x), Samuel Elbert states that:

Hawaiians named taro patches, rocks and trees that represented deities and ancestors, sites of houses and heiau, canoe landings, fishing stations in the sea, resting places in the forests, and the tiniest spots where miraculous or interesting events are believed to have taken place.

Place names are far from static ... names are constantly being given to new houses and buildings, land holdings, airstrips, streets, and towns and old names are replaced by new ones ... it is all the more essential, then to record the names and the lore associated with them (the ancient names) now.

Lyons also notes that as a consequence of the long tenancy of the people on land, “every piece of land had its name, as individual and characteristic as that of its cultivation” (Lyons 1903:23) Intrinsic in these statements is the knowledge that the oldest place names held meaning and could tell the story of an area, or recorded the resources of a particular place, prior to European contact. A study of the place name meanings for the study area may yield some insight into the stories, patterns of life and land use within Honolulu Ahupua‘a and the ‘ili of Kewalo. The place names listed below are for land areas, fisheries, land divisions, markers, and other resource areas within the study area that were identified through research of the Mahele‘Āina documents, Hawaiian language newspapers, and other available historic literary resources, as well as, consultation with *kama‘āina* and *kūpuna* of the area. Unless indicated otherwise, the spelling and orthography presented below are taken from Pukui and others (1974).

‘Auwaiolimu (‘ili)	Canal where <i>limu</i> is found; once a larger land area that included <i>mauka</i> sections see. (Ka Hae Hawai‘i July 7, 1858:56)
‘Ōhi‘aokū	The ‘ <i>ōhi‘a</i> tree of the god, Kū; located next to Hauhauko‘i (Ka Hae Hawai‘i, July 28, 1858:68)
‘Ulakua (surf break)	Redness of the back (Ka Hae Hawai‘i, July 28, 1858:68); beach and surfing spot on the coast at the ocean end of where Richards St. ends next to Kūlōloia Beach
Honolulu (ahupua‘a, harbor)	Protected bay, old names for the harbor were Kou and Māmala (Pukui et al. 1974:49-50)
Honuakaha (‘ili)	Flat land (Lorrin Andrews 1922:633); the State Dept of Transportation building (Ali‘i Aimoku Hale) occupies much of this land.

Ka'ahaimauli (<i>heiau</i>)	"Kaahaimauli is the name of one these <i>heiaus</i> (sic) which is said to have been located near the palace." (McAllister 1933:81).
Ka'ākaukukui (<i>'ili kūpono, pond</i>)	The right (north) light; radiating (Lorrin Andrews 1922:635; Pukui et al. 1974:59); listed among lands claimed by Lot Kamehameha, the <i>makai</i> portion of the <i>'ili</i> is in the vicinity of Fort Armstrong and the Immigration Station.
Ka'akopua (<i>'ili</i>)	The picking/gathering of flowers (Ka Hae Hawai'i July 7, 1858:56); Princess Ruth's home, Ke-ō-ua Hale, was here.
Ka'ala'a (<i>'ili</i>)	Sacred radiance (Thrum 1922:635); rare var. of <i>kā'ala'ala</i> vigorous, sturdy, healthy, as of an infant or young animal (Pukui and Elbert 1986:104).
Ka'ōa'opa (<i>'ili</i>)	The spear/digging stick of "Opa" (Ka Hae Hawai'i July 7, 1858:56).
Ka'uluwela (<i>'ili kūpono</i>)	<i>Ka 'ulu wela</i> the hot breadfruit, the hot stick for spreading oven (Ka Hae Hawai'i, July 28, 1858:68).
Kaehuna (<i>'ili kūpono</i>)	To flow secretly (Ka Hae Hawai'i, July 28, 1858:68).
Kaheiki	To flow a little (Ka Hae Hawai'i, July 28, 1858:68); a stream near Kaho'okāne alternatively Kahoakāne.
Kaimukanaka Umukanaka (<i>'ili, pond</i>)	The oven of human sacrifice (Griffin et al. 1987:39)
Kaka'ako (<i>'ili lele</i>)	Dull, slow; prepare the thatching place of gathering/picking, flowers, <i>limu</i> (seaweed), or fruits (Pukui and Elbert 1986:639; Thrum 1922); the area is described as a waterfront spot, possibly a beach, adjacent to 'Āina-Hou ('Āinahou) but also inland of Kukuluāe'o and Kewalo, making this an <i>'ili lele</i> . (Ka Hae Hawai'i, July 28, 1858:68)
Kakapua	To rinse flowers (Ka Hae Hawai'i, July 28, 1858:68); located next to Kaehuna.
Kapa'eli	Tapa that is dug up/blanket that is dug up (Ka Hae Hawai'i, July 28, 1858:68); possibly situated near Pū'iwa, Pu'unui, 'Ālewa, and 'Olokū.
Kāpīwai (<i>'ili</i>)	To sprinkle water (Ka Hae Hawai'i, July 28, 1858:68); Pauoa Valley.
Kapu'ukolo	The hill that crawls (Ka Hae Hawai'i, July 28, 1858:68); described in several newspaper articles of the 1800s as being situated in Honolulu.
Kawai'ōlena (<i>'ili</i>)	Water mixed with <i>'ōlena</i> /the sap of the <i>'ōlena</i> (Ka Hae Hawai'i, July 28, 1858:68); an <i>'ili</i> described as situated in Honolulu near Kunawai.

Kawaiaha’o (‘ili, spring)	The water [used] by Ha’o (Pukui et al. 1974:97), a spring was located here, as told in the story of Ha’o, present location of the Kawaiaha’o Church (Westervelt 1911:25).
Kawailumalumai (pond)	Drowning waters (Sterling and Summers 1978:292); pond in Kewalo where prisoners were prepared for sacrifice.
Ke’opū (‘āina pali, cliff)	Completely white; sometimes spelled Keo (Ka Hae Hawai’i, July 28, 1858:68)
Keau’awa’awa (‘ili)	The bitter current (Ka Hae Hawai’i, July 28, 1858:68); a spot located near or in Kukuluāe’o reportedly in the <i>ahupua’a</i> of Honolulu.
Kewalo (‘ili, spring)	The calling as an echo (Pukui et al. 1974:109); a place where the kauwā were drowned and also the nesting ground of the owl who cause the battle between the owls and Kakuhihewa (Westervelt 1911:25).
Kō’ula (‘ili)	Red sugarcane (Pukui et al. 1974:118); area around Thomas Square and the <i>mauka</i> portion of the Ward Estate, Kō’ula once had multiple fishponds
Koholaloa (fishery)	Long reef (Pukui et al. 1974:115); a stream flowed through here originating in Nu’uanu and a cemetery was located here.
Kolowalu (‘ili, pond)	Eight creeping; beneficent law (Pukui et al. 1974:117); name of a law, <i>o ke Kanawai Niaupio Kolowalu</i> , in the time of Kūali’i that safeguarded the rights of commoners (Fornander 1917a:432, 433).
Kū’aimeki (‘ili, pond)	Purchase metal; land section associated with salt works (Maly et al. 2013:41)
Kuāuna	Bank of a <i>lo’i kalo</i> /stream (Ka Hae Hawai’i, July 28, 1858:68); located south of Hauhauko’i and near ‘Ōhi’aokū and Hāla’i.
Kukuluāe’o (‘ili)	A native water bird stilt (Pukui et al. 1974:123); a <i>heiau</i> was situated here called Pu’ukea.
Kulaokahua	Plain of foundation (Nūpepa Kū’oko’a, June 7, 1879: 2); the area of Thomas Square, located near Pāwa’a, at the corner of King and Pi’ikoi Streets in Makiki.
Kūlōloia (beach)	Likely, to wait a long time/to be changed over time (Ka Hae Hawai’i, July 28, 1858:68); a number of chiefly houses and <i>heiau</i> were once spread across the shoreline (Maly et al. 2013:42).
Ma’ema’e	Clean; next to Kahaiki where Kahahana’s warriors descended from to defend O’ahu against Kahekili (Fornander 1919a:460).
Māmala (bay)	The name of a surf-rider and <i>ali’i</i> who was also a <i>mo’o</i> , <i>ke kai o Mamala</i> was the name of the surf which came in the outer entrance of the harbor of Kou (Honolulu Harbor) (Maly et al. 2013:11; Westervelt 1911:24).
Mānā (heiau)	Dry and arid (Ka Hae Hawai’i, July 28, 1858:68); <i>heiau</i> said to have been located near the palace grounds.

Manini	A type of reef fish (<i>Acanthurus triostegus</i>) (Ka Hae Hawai'i, July 28, 1858:68); also a type of <i>kalo</i> so named because the striping of its leafstalk resembles the fish (MacCaughey and Emerson 1914); land section located south of Kahehuna in the <i>ahupua'a</i> of Pauoa.
Nini	To pour/to be spilled out (Ka Hae Hawai'i, July 28, 1858:68); described as being located in the middle of Pauoa Valley near Ke'opū and Kāpīwai at the base of a cliff or perhaps the cliff itself.
Pākākā (heiau)	To skim; Ku-ho'o-ne'e-nu'u was the god of the Pākākā <i>heiau</i> at Kou (Honolulu) and the principal god of O'ahu ruling chiefs (Beckwith 1970:29).
Pu'uukea (heiau)	White hill (Pukui et al. 1974:199); this <i>heiau</i> is mentioned in a <i>mele</i> (song) composed for the chief Huanuikalala'ila'i, who was born in Kewalo, the land section north and adjacent to Kukuluāe'o.
Pualoalo ('ili)	A white wood of the Hibiscus family (<i>Hibiscus kokio</i>), a medicinal plant (Alexander 1903:421; L. Andrews 1865:487; Baldwin and Auld 1890:90; Thrum 1891:97).
Pūehuehu (stream, pool)	Spray scattered, to scatter widely (Ka Hae Hawai'i, July 28, 1858:68); a place noted for <i>lele kawa</i> (cliff jumping) (Kamakau 1993:12).
Pūowaina/Pu'uowaina/Puu hoana	The hill of offering or sacrifice (Puu o waiho ana), to revere in the highest degree or to lay up as a sacred deposit, to hallow (Puuhoano) (Alexander 1903:422; W.D. Westervelt in "Sacrificial Stone on Punchbowl" 1919); traditional name(s) for Punchbowl
Uauo'a	A type of fish (<i>uauoa</i>) that lived near the shore (Titcomb and Pukui 1977:52)
Waikahalulu	Water [of] the roaring (Pukui et al. 1974:222), located in Pauoa Valley near Ke'opū, Manini, and Kāpīwai.

The above place names of the areas within and adjacent to Kewalo 'Ili and Honolulu Ahupua'a include names that are related to agricultural cultivation and working the land (Ka'ōa'opa, Kuāuna, Kō'ula and Manini), as well as a number of names that relate to *la'au* with references to medicinal plants (i.e. 'Ōhi'aokū, Kawai'ōlena and Pualoalo) and the treatment of flowering plants (Kakapua, Ka'akopua, and Kaka'ako). In addition to the names of terrestrial, or land-based resources and practices within the area, there are also references to marine resources or features (Manini, Koholaloa, and Uauo'a) along with related aquatic resources ('Auwaiolimu and Kukuluāe'o) for coastal land sections in the region. Finally, throughout the region there are names that either allude to or make direct reference to water or the characterization of the movement of water (Kahehuna, Kaheiki, Kāpīwai, Kawaiaha'o, Keau'awa'awa, Nini, and Waikahalulu).

An article by S.M. Kamakau (1865a) published in the Hawaiian language newspaper, Ka Nūpepa Kū'oko'a (June 22, 1865) also lists the various place names and features of the general study area, in addition to a *heiau* and the ritual practice of human sacrifice. References of special note are

the 'ili of Kewalo, the *imu* (underground oven) named Hekili, a reference to Honolulu as an *ahupua'a*, the Kūalahale rain of Honolulu, and a rain name inland of Honolulu known as Ki'owao:

Ua lohe ia ma o Makuakaumana la na wahi kaulana a ua hele mai au e ike maka. O Kou ke awa, o Mamala ka nuku, o Pakaka ka heiau, o Puowaina kahi puhi kanaka. O Hekili ka imu pikao o na alii pio i ke kaua. O Kewalo kahi lumalumai ona kaua i ke kanawai, o Kekaihehee. O Honolulu ke ahupuaa. He aina oluolu a maikai e huli ana i ka aoao hema. He momona ka nui o ka aina. He wai kahe a he wai puna, ka wai e hoomau ai i na loi kalo a e hoopuni ai i ke kulanakauhale. O ka ua Kukalahale ka ua mau, ka ua Kiowao noho mai i uka, kilihehe no i ka pua ka makahala.

NO PAKAKA.

He Heiau kahiko o Pakaka, he waihau pookanaka. O Kamaunuihalakaipo ke alii nana i kukulu, o Kuhooneenuu ke akua.

It has been heard through Makuakaumana about the famous places and I have come to have a look for myself. Kou is the bay, Māmala is the mouth, Pākākā is the heiau. Hekili is the imu for drying the bodies of chiefs defeated in war. Kewalo is where slaves were drowned, according to the law called Kekaihehe'e. Honolulu is the ahupua'a. It is a comfortable and good land facing the south. Most of the land is bountiful. There are flowing water bodies and freshwater springs, water to sustain the taro patches surrounding the city. The Kūalahale rain is a constant rain and the Ki'owao rain is inland drenching the flower of the Mākāhala.

PĀKĀKĀ.

Pākākā is an ancient heiau, a heiau for human sacrifice. Kamaunuihalakaipo is the chief who built it and Kūho'one'enu'u is the god.

Handy et al. (1991) summarize the relationship between Hawaiians and the natural environment best in the following passage:

The sky, sea, and earth, and all in and on them are alive with meaning indelibly impressed upon every fiber of the unconscious as well as the conscious psyche. Hawaiian poetry and folklore reveal this intimate rapport with the elements, (Handy et al. 1991:23-24)

(T)he relationship which existed from very early times between the Hawaiian people ... is abundantly exemplified in traditional mele (songs), in pule (prayer chants), and in genealogical records which associate the ancestors, primordial and more recent, with their individual homelands, celebrating always the outstanding qualities and features of those lands. (Handy et al. 1991:42)

This relationship of Hawaiians to the natural environment is prevalent in the *mo'olelo* (traditional knowledge) of the region of Honolulu Ahupua'a that includes Kewalo 'Ili, a large part of which revolves around the lyrical descriptions of the elemental characteristics of the 'āina (land) where the names of the *ahupua'a* are noted in name chants and the winds and rains of the region are recounted in legends and poems. One of the most valuable repositories of Hawaiian wind names is a book called *The Wind Gourd of La'amaomao*, which is a translation of a traditional legend, compiled by Moses Kuaea Nakuina and published in 1902. The titular wind gourd was believed

to contain all the winds of Hawai‘i, which could be summoned by chanting their names. In the chant that names the winds of O‘ahu are the following lines for the winds between Lē‘ahi (Diamond Head) and Kalihi, close to the project area and broader area of study (Nakuina 1990:43):

The winds of Lē‘ahi turns here and there
‘Ōlauniu is of Kahaloa
Wai‘ōma‘o is of Pālolo
Kuehulepo is of Kahua
Kūkalahale is of Honolulu
‘Ao‘aoa is of Mamala
‘Ōlauniu is of Kewalo
Haupe‘epe‘e is of Kalihi

The various rains of Hawai‘i were also given names. Some were named after people, others after their particular traits or the way they interacted with the area and local vegetation. Different rains from different parts of the islands often share the same name. The book *Hānau Ka Ua Hawaiian Rain Names* (Akana and Gonzalez 2015) contains many of the rain names that were recorded in newspapers from the 1800s and other primary source materials. There are numerous rains associated with the *ahupua‘a* of Honolulu. One of the more prominent rains is called Kūkalahale, which extends from Nu‘uanu valley to Māmala at the entrance of Honolulu Harbor:

Rain and wind associated with Honolulu and the larger Kona District of O‘ahu. “Kū kala hale” means “standing under the eaves of the house” or “striking the house gables.” “Kūkala hale” means “announcing to the homes” (Akana and Gonzalez 2015:127).

Other rains associated with the *ahupua‘a* of Waikīkī and Honolulu include: ‘Awa‘awa (Akana 172), Kīpehipehipuahala of Pohukaina (Akana 131), Kuahine of Mānoa (Akana 113), and ‘Ūkiuki of Māmala (Akana and Gonzalez 2015:260).

The weather phenomenon of the Kona district called Kūkalahale is also incorporated into an early Hawaiian *mele* (song), “*He Aloha Nō ‘O Honolulu*” (Goodbye to Honolulu), written by the Hawaiian composer Lot Kauwe, after a trip on the inter-island steamer, Maunaloa references the rain and other place names of Honolulu as the steamer leaves Honolulu in route to Lāhainā. The words and translations of a portion of the *mele* are as follows:

He aloha nō ‘o Honolulu
I ka ua Kūkalahale
Ka nuku a‘o Māmala
‘Au a‘e nei mahope
Kau mai ana mamua
Ka malu ‘ulu a‘o Lele
Kukui ‘a‘ā mau
Pio ‘ole i ke Koa‘ula

Goodbye Honolulu
 In the Kūkalahale rain
 Mamala, the entrance of Honolulu Harbor
 Lies behind
 Ahead
 The shady groves of Lele
 Lighthouse is always burning
 And not extinguished by the Koa‘ula rain
 (Kauwe 2011)

The two rains that have the closest relationship to the area of study and the project area, would be the Pa’ūpili (rain that moistens pili grass) of Kewalo and the Kāeleloi (roll, ruffle, as of a drum) of Makiki. Following are the details of the rain of Wa’ahila and Makiki:

Ku keiki mai ka wai o Kewalo

Auē ku’u keiki

*Ku’u keiki mai ka ua Pa’ūpili o
Wa’ahila*

My darling child from the waters of Kewalo

Alas, my beloved child

My dear child from the Pa’ūpili rain of
Wa’ahila

(Akana and Gonzalez 2015:225)

Kā’eleloli, as Akana and Gonzalez (2015:46) explain, is the name for the rain and wind of Makiki:

Also known as Kā’ekeloi and Kā’eke’ekeloi. Also the name of a wind. Kā’eleloli, Kā’ekeloi, and Kā’eke’ekeloi sound similar to the words “kā’elelo!” and “kā’eke’eke,” which refer to the rolling or ruffling sound of a drum or of ka’eke’eke bamboo pipes.

Hawaiian proverbs, or *‘ōlelo no’eau*, have been passed down through oral traditions. Many *‘ōlelo no’eau* have been collected and published in Hawaiian language newspapers and other primary and secondary sources. They often have both a literal and metaphorical meaning (called *kaona*), which is given where applicable. *‘ōlelo no’eau* about geography can help us to understand natural phenomenon, land use, and the history of a place. A search for any *‘ōlelo no’eau* connected to this area turned up one for Kewalo and Kukuluāe’o.

The *‘ōlelo no’eau* for Kewalo is inspired by a freshwater spring for which the area was well-known (Pukui 1983:178):

Ka wai huahua’i o Kewalo.

The bubbling water of Kewalo.

The *‘ōlelo no’eau* about Kukuluāe’o references the bird from which the place name is derived. This short phrase was used to describe a thin, long-legged person (Pukui 1983:79):

He Kukuluāe’o.

A stilt.

In contrast to the dearth of *‘ōlelo no’eau* connected to the terrestrial place names in the area of study, there are many for Māmala, which is the traditional name for the entrance to Honolulu Harbor (Figure 3-4 and Figure 3-5). The Kewalo shoreline is adjacent to a once-narrow channel leading to Māmala, the entrance, and to the harbor, called Kūlōloia:

He kai hele kohana ko Māmala.

A sea for going naked is at Māmala.

The entrance to Honolulu Harbor was known as Māmala. In times of war, the people took off their clothes and traveled along the reef to avoid meeting the enemy on land (Pukui 1983:74).

....

Ka nuku o Māmala.

The mouth of Māmala.

The entrance to Honolulu Harbor is named for a shark goddess who once lived in the vicinity (Pukui 1983:163).

....

Ke kai 'au umauma o Māmala.

The sea of Māmala, where one swims at the surface.

Māmala is the entrance to Honolulu Harbor (Pukui 1983:185).

....

Na 'ale kuehu o Māmala.

The billows of Māmala with wind-blown sprays.

Māmala is the entrance to Honolulu Harbor (Pukui 1983:241).

....

Ka i'a maunu lima o Kūlōloia.

The hand-baited fish of Kūlōloia.

Small eels (*pūhi ōilo*) were caught by placing bait on the open palm of one hand with the fingers held wide apart. When the eels came up to take the bait, the fingers were clenched into a tight fist, grabbing the eels tightly by the heads (Pukui 1983:149).

3.1.1 Kawaiaha'o Spring

Kawaiaha'o is a name that has long been associated with Kawaiaha'o Church. Pukui, in the book *Tales of the Menehune*, recounts the *mo'olelo* of Ha'o in relation to the spring that was once located on, or near, the grounds of the church (Pukui et al. 1985:84-89). Pukui's account of the origin of the spring tells the story of two young *ali'i* children, a brother and sister, who were the ancestors of the chiefess Ha'o. The boy was also called Ha'o. Their mother had died, and the woman who married their father was extremely cruel, so they ran away. At one point along their journey, they run out of water and grow very thirsty. The children's mother comes to the boy in a dream and tells him that he'll find a spring beneath a bush near his feet. When he wakes up, he uproots the bush as instructed, and out pours cool, clear springwater—ka wai a Ha'o (the water of Ha'o)—which flowed for many years. In time, the pool became a bathing place for a high *kapu ali'i* also named Ha'o who was descended from that first Ha'o. Because this was the bathing place of the *ali'i* Ha'o the spring came to be called "The Water of Ha'o" (Pukui et al. 1985:88). Pukui goes on to say:

That spring no longer flows for a city has grown all about it, and people pipe their water from deep wells and mountain reservoirs. Today a church stands near the place where the thirsty children drank and where the *kapu* (taboo) chiefess bathed. The church bears the name of the spring, The Water of Ha'o, Kawaiaha'o. (Pukui et al. 1985:89)



Figure 3-4. Port of Honolulu in 1857, photo of an engraving (Photographer: Burgess, C.H., HSA Call Number: PP-39-9-002).



Figure 3-5. Honolulu Harbor ca. 1890 from offshore with sailing ships at pier side, Wilder's Steamship Company structure on far right (HSA Call Number: PP-39-10-026).

3.1.2 Kapo'i and the Owl of Kewalo

A *mo'olelo* recounted by Westervelt (1915) tells of the story that begins in Kewalo with *pueo* (the Hawaiian owl) as *'aumakua* (family or personal gods) defending their followers. A man from Mānoa named Kapo'i is gathering *pili* grass in Kewalo one day when, on his way home, he

discovers a nest of *pueo* eggs. He takes the eggs home and prepares a fire over which to roast them. Before long, Kapo'i hears a voice call out, "O Kapo'i, give me my eggs!" (Westervelt 1915:134) It's coming from a *pueo* perched in front of Kapo'i's home. After several more pleas, Kapo'i allows the *pueo* to take her eggs, and in exchange, the *pueo* agrees to serve as Kapo'i's *'aumakua*.

The *pueo* then tells Kapo'i to build a *heiau* (temple or place of worship) and provides a set of protocols he must follow to secure it as *kapu* (sacred). Kapo'i does as he is told, and in the process, he violates a decree set forth by Kakuhihewa, the ruler of O'ahu. Kakuhihewa had said that anyone who establishes and consecrates a *heiau* before the completion of his own *heiau* would be put to death. Kakuhihewa sentences Kapo'i to death and sets the date of execution for Kāne, the 27th day in the Hawaiian lunar month. Meanwhile, Kapo'i's *'aumakua* recruits other *pueo* from across the islands, and they gather at Kalapueo (near Diamond Head), Kanoniakapueo (in Nu'uaniu), and Pueohulunui (in Moanalua). On the appointed date of the execution, the *pueo* fill the sky and swarm the site of the execution. A battle between the *pueo* and Kakuhihewa's army ensues at *Kukaeunahio ka pueo* or "The confused noise of owls rising in masses" and the owls claim victory. Kakuhihewa releases Kapo'i and acknowledges the power of his *'aumakua* with the statement "Your god has 'mana'—that is, miraculous power; greater than my god. Your god is a true god." (Westervelt 1915:137) Since that point on, *pueo* were revered as *'aumakua* by many.

3.1.3 *Ka'ao No Pumaia* – The Legend of Pumaia

In his collection of Hawaiian lore, Abraham Fornander recounts the *Ka'ao No Pumaia*, or the Legend of Pumaia (Fornander 1917b). This *mo'olelo* occurs in the Kona *moku* in and around the project area and throughout the modern boundaries of Honolulu begins:

On the land of Pukoula which adjoins Waiahao in the district of Kona, O'ahu, was the home of Pumaia. His chief occupation with that of his wife, was hog raising. They at one time had as many as ten hog pens; but amongst his whole herd [of hogs] there was one he thought a good deal more of than all the others; one that measured over a fathom in length which he had vowed he would never part from. This hog was to be kept until the death of Pumaia when it was to be killed. (Fornander 1917b:470)

Pukoula refers to the *'ili* of Kō'ula and Waiahao is Kawaiaha'o. In this *mo'olelo*, O'ahu's king Kualii is building a *heiau* at Leahi (Diamond Head). He sends his men to acquire a sacrificial pig to consecrate the *heiau*. Pumaia is asked, and he agrees to give up one of his pigs. The king's men return again and again until just one pig remains, Pumaia's favorite pig. When he refuses to hand the hog over, a struggle ensues, and all but one of king's men are killed, who returns to tell Kualii of the events that just occurred.

Outraged, Kualii gathers his forces sends them to attack Pumaia. His men confront Pumaia twice more, in Kewalo and Pawa'a, and again Pumaia defeats them all until finally, Kualii calls upon his god Kanemuka. Aided by the power of his god, Pumaia is finally caught and killed. Kualii throws his mutilated body into the pit of Kapua, however, the troubles for Kualii are only just beginning.

Pumaia's spirit arises and returns to his wife and child, urging them to retrieve his bones, bring the back to Pukoula, and place them beneath the floor of their *hale* (house). They do as they're

told. When the king's men come looking for the missing body of Pumaia, his wife is able to avert their detection. Eventually, Pumaia's spirit leads his family to safety highlighting place names of the area as they make their way:

After the body had been dug up, they left Pukoula and walked toward the mountains along the road leading to the junction of Pauoa and the road that leads to the Alekoki Pool. They then continued on up toward Maemae, and by dawn of [the next day] they reached Nuuanu. On the top of the left hand peak of the Nuuanu Pali where you come down toward Hoowahapohaku and look towards the eastern peaks of the *pali* and right at the top of this left hand peak is a cave. (Fornander 1917b:474)

Pumaia gathers food and other necessities for his wife and child from the surrounding area. He even loots the private lands of Kualii and acquires a servant to help care for his family. Confused by the attacks, Kualii consults his *kahuna* regarding his enemy. The *kahuna* tells him:

"This thief is no other person than your enemy Pumaia; his body is dead, but his spirit is at large and is much stronger than when the body was alive. You will soon be killed; if you act rightly you will then be saved." "What must I do to be saved?" asked Kualii. The priest replied: "You must build three houses; one house for the wife and daughter; one house for the property and servants; and one house for the bones of Pumaia. After the houses are completed go and bring your enemy back and take good care of his bones; he may then take compassion on you and you will then be saved." (Fornander 1917b:476)

Being a pious chief, Kualii follows the instructions of his priest. He builds the three *hale* and sends for Pumaia's family. It was said that Pumaia's wife and child lived there with the king from that time on, and no further harm was caused by Pumaia.

3.1.4 Ka Po'e Kahiko no Honolulu Ahupua'a ma Kewalo 'Ili – Traditional Hawaiian Settlement of Honolulu Ahupua'a at Kewalo

The pre-contact shaping of Waikiki, Honolulu, and the Kewalo region is suggested by an 1817 map of the area that was drawn by Otto von Kotzebue, commander of the Russian ship Rurick, during a visit to Oahu as a part of a voyage through the Pacific (Kotzebue 1821). Kotzebue's map indicates that the land between Pūowaina and the coast, which included the 'ili of Kewalo, was not as heavily populated and cultivated as Honolulu and Waikiki. The area surrounding the current project area is characterized by *loko i'a*, or fishponds (ovals), salt ponds (square clusters), trails connecting Honolulu and Waikiki, and occasional *lo'i kalo*, or pond field taro patches (rectangles), and habitation sites (trapezoids) along the main trail (later Queen Street) (Figure 3-6). It is important to note that by the time that Kotzebue had arrived in the archipelago, the influence and draw of trade with increasing numbers of foreign vessels had likely stimulated a migration of people towards Honolulu that sought to benefit from the economic surge that would have surrounded the sheltered bay of Māmala. This migration may account for the concentration of habitation sites along the bay that is depicted in the Kotzebue map of the region.



Figure 3-6. The 1817 map of Honolulu and Waikīkī by Otto von Kotzebue showing taro lo'i, fishponds, and salt pans in relation to the approximate location of the project area (map reprinted in Fitzpatrick 1986:48-49).

While there is very little written information about the occupation of Kewalo in the area of the proposed project prior to the reign of Kamehameha I, it is known that up until the late-1800s, the area was mostly unsettled. Hawaiians used its lowland marshes, wetlands, salt pans and coral reef flats primarily for fishing, making salt, and raising fish in *loko i'a* (fishponds), and these activities supported habitation sites clustered around the *mauka* boundary to the west of the subject property, near Queen and King Streets. The closest detailed day-to-day narratives of Hawaiian settlement of the region that may reflect traditional land use prior to Western arrival in the islands come from the initial impressions of those aboard European and American vessels bound for O'ahu.

The first American missionaries arrived in 1820, and Reverend Hiram Bingham was among them. His initial visits provide some of the earliest impressions of the region as he describes the settlement of Honolulu and refers to the "fishponds and salt making pools" of what was likely the Kaka'ako/Kewalo region:

We can anchor in the roadstead abreast of Honolulu village, on the south side of the island, about 17 miles from the eastern extremity.....Passing through the irregular village of some

thousands of inhabitants, whose grass thatched habitations were mostly small and mean, while some were more spacious, we walked about a mile northward to the opening of the valley of Pauoa, then turning southeasterly, ascending to the top of Punchbowl Hill, an extinguished crater, whose base bounds the northeast part of the village or town.....Below us, on the south and west, spread the plain of Honolulu, having its fishponds and salt making pools along the seashore, the village and fort between us and the harbor, and the valley stretching a few miles north into the interior, which presented its scattered habitations and numerous beds of *kalo* (*Colocasia esculenta*) in its various stages of growth, with its large green leaves, beautifully embossed on the silvery water, in which it flourishes. (Bingham 1847:92-93)

Testimony presented to the Board of Land Commissioners for *kuleana* lands in the region during the Mahele'Āina indicates that in addition to *pahale* (houseslots or residential area), those who made claims to lands in Kewalo and Kaka'ako also utilized the land for its salt pans and fishponds with some *lo'i* agriculture occurring where access to freshwater could be found (see Section 3.2.1).

3.1.4.1 Ka 'Oihana Mahi 'Ai no Honolulu Ahupua'a ma Kewalo 'Ili – Traditional Agriculture within Honolulu Ahupua'a at Kewalo

The salt-saturated coastal terrain of Kewalo was not well-suited for agriculture. It's believed that early residents probably got most of their food from the mauka region. As noted previously, *'ili lele* where there would be at least one plot near the ocean and another up *mauka* were a common feature of land divisions on O'ahu. The *'ili* of Kewalo is an example of this where the cultivation area consisted of *kalo* lands in Pauoa Valley and *kula pili* grasslands on the slope of Punchbowl (Lyons 1903:27).

Historically, at least one-third of the coastal plain that encompasses Kewalo was a wetland, and much of the area was underwater. The original shoreline began near the intersection of Punchbowl and Halekauwila Streets and stretched northeast through the intersection of Queen and South Streets to its northern-most point near the Ward Avenue and King Street intersection. The entire shoreline was coral rubble bordered by fringing reefs and mudflats. The Dutch captain Jacobus Boelen visited Honolulu in 1828, and he describes the area surrounding Honolulu as "less fertile, or at least not greatly cultivated":

It would be difficult to say much about Honoruru. On its southern side is the harbor or the basin of that name (which as a result of variations in pronunciation [sic] is also written as Honolulu, and on some maps, Honoonoono). The landlocked side in the northwest consists mostly of taro fields. More to the north there are some sugar plantations and a sugar mill, worked by a team of mules. From the north toward the east, where the beach forms the bight of Whytete, the soil around the village is less fertile, or at least not greatly cultivated. (Boelen 1988:62)

3.1.4.2 Ka 'Oihana Lawai'a no Honolulu Ahupua'a ma Kewalo 'Ili – Aquaculture and the Fishing Traditions of Honolulu at Kewalo

At Kewalo, a minimum of thirteen (13) *loko i'a* (fishponds) were claimed during the Mahele'Āina (Maly and Maly 2003:283, see also Section 3.6) thus transforming the shallow marshes of Kewalo into what appears to have been a thriving industry of traditional aquaculture. Though the

following account of the care and use of a *loko i'a* was recorded as a part of an early 1900s land dispute, it nonetheless gives insight into the use, maintenance, and value that these ponds held prior to the arrival of Western ships:

A piece of land situated at Honuakaha, Honolulu, and containing an area of 1.6 acres. The property consisted formerly of a fishpond and its banks and, perhaps, a small piece, additional, of dry land, and was a *lele* of the Ili of Ka'ala'a. . . . From 1852 or, perhaps, 1850, (Kapiolani and Namakeha married in 1850) Kapiolani at various times had the pond cleaned out, that her servants by her direction fished therein and delivered the fish to her for her use, that she sometimes gave them some of the fish, that she erected a small building on the bank of the pond or on the kula adjoining, that a man employed and directed by her to care for and the care of the pond occasionally lived in that building, and that she at times objected to horses being pastured on the kula of the pond because the animals might enter the pond and cause injury to it. (Perry 1902:321, 324)

A nautical chart of the Honolulu Plain and shoreline drawn by Joseph M.H. de Lapasse, a lieutenant aboard the French corvette *L'Eurydice*, illustrates the intensive level of aquaculture with the presence of several *loko i'a* (*pêcheries*) in both marshy (*marais*) and non-marshy areas within and adjacent to the Blaisdell Center project area (Figure 3-7).

In addition to aquaculture, early photographs depicting Honolulu Harbor at low-tide (Figure 3-8) and highlighting the practice of *ka lawai'a o he'e* (octopus spearing, Figure 3-9) are likely typical of Kewalo as well. Thus, in addition to a thriving fish husbandry practice, distinctive coastal characteristics such as the sheltered waters of the leeward shoreline and the resources available along an exposed coral shelf at low-tide would have also fed thriving *lawai'a* and other marine resource gathering practices focused on the legendary fishing grounds of this region.

Finally, *pa'akai* (salt) was a necessity of the Hawaiian diet in that the condiment was used to season and cure fish and meat, as well as a relish with fresh food (Malo 1898:162). In his discussion of Hawaiian History and the necessities of Hawaiian lifeways, noted scholar David Malo provides the following description of the traditional salt making process:

The women brouth sea-water in calabashes or conducted it in ditches to natural holes, hollows, and shallow ponds (*kaheka*) on the sea-coast, where it soon became strong brine from evaporation. Thence it was transferred to another hollow, or shallow vat, where crystallization into salt was completed. (Malo 1898:162)

Kaka'ako and the coastal extent of the study area is well known as a salt production area due to the proximity of the lands of Kewalo to the shoreline, elevation, and hydrology of the surrounding region. *Kuleana* land awards and testimony presented before the Land Commission during the Mahele'Āina also speaks to the presence of salt beds in the area (Figure 3-10 and Figure 3-11, see also Section 3.2.1 1840-1851 – The Great Māhele). In testimony for *kuleana* claim 1903 where Lolohi describes and enumerates the features of *hana pa'akai* (salt works) that are associated with the two *hāhā pa'akai*, or salt beds, of the claim (Figure 3-12). *Ālia* were ponds that filled up at high tide. This water was then transferred to *ho'oliu*, which were clay or leaf-lined channels from which the seawater would drain. *Poho kai* were depressions in the rock where salt would also form. The lands surrounding these features were the salt *kula*.



Figure 3-7. Nautical chart of the southern shoreline of O’ahu showing the approximate location of the current project area in relation to loko i’a (fishponds [Pêcherie, Marais et Pêcherie]) established along the coastal plain in 1855 (de Lapasse 1858).



Figure 3-8. Honolulu waterfront and harbor at low tide, circa 1880 (HSA Call Number: PP-39-10-009).



Figure 3-9. Spear fisherman at Honolulu Harbor circa 1890 (HSA Call Number: PPWD-9-3-024)

C. 1903. Lolohi

Peke W. Sw. I know this place - it is on the salt plains Honolulu - used for making salt:

- 1 Mauka is a stream of salt water. Waititi are several salt ponds - Napela - Niini are and others own them - Maikai Foo' road, Honolulu, Peke Maui, Lilea, Polabola, Poe.

Claimant rec^d this land from his father who died last year - and held it a long time back in Niinaus time

- 2 Honolulu aina - Kala

Eseta Sw. deferred. Witness being Clth wife.

Paulina Sw. Confirmed the testimony in Cl 1

Presumed P-233

Figure 3-10. Testimony presented by Peke on behalf of Lolohi noting the lands of Lolohi as being on the plains of Honolulu, a place used for making salt [Foreign Testimony, Reel 2, Volume 3, Image 00400, (Office of Hawaiian Affairs 2011)].

With the arrival of European vessels in Hawaiian waters, salt became an important trade commodity with the earliest visitors to the Hawaiian archipelago. The process of traditional salt manufacture is also described in the journals of Captain Cook:

Amongst their arts, we must not forget that of making salt, with which we were amply supplied, during our stay at these islands, and which was perfectly good of its kind. Their salt-pans are made of earth, lined with clay; being generally six or eight feet square, and about eight inches deep. They are raised upon a bank of stones near the high-water mark, from whence the salt water is conducted to the foot of them, in small trenches, out of which they are filled, and the sun quickly performs the necessary process of evaporation.... Besides the quantity we used in salting pork, we filled all our empty casks, amounting to sixteen puncheons (180 cu. Ft.), in the Resolution only. (Thrum 1923)

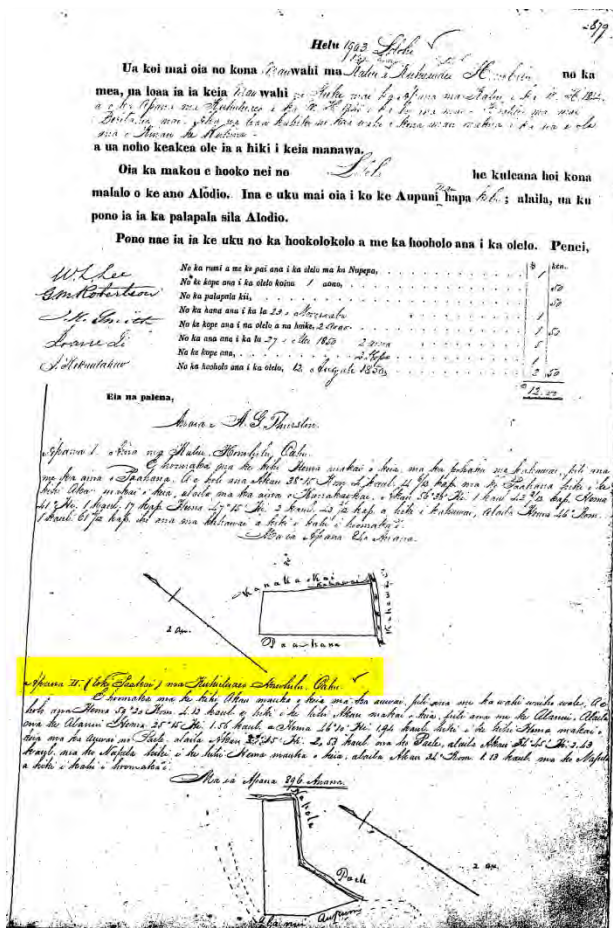


Figure 3-11. Land Commission Award 1903 to Lolohi highlight Apana (section) 2 (in yellow) showing the award of a loko Paʻakai (salt pond). [Mahele Awards, Reel 3, Volume 2, Image 00390 (Office of Hawaiian Affairs 2011)]

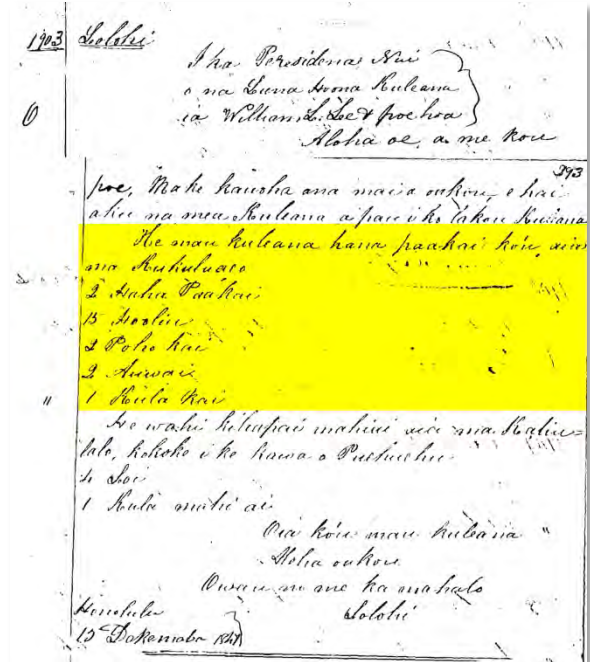


Figure 3-12. Recorded testimony of Lolohi before Land Commission stating the claim for hāhā paʻakai (salt beds) and associated salt production features. [Native Register, Reel 2, Volume 3, Images 00882-883 (Office of Hawaiian Affairs 2011)]

Specific to the region encompassed by the study area, U.S. Navy Commander Charles Wilkes provides the following description of salt production and traditional uses of salt as well as *limu* (seaweed) gathering practices associated with the salt ponds:

Between Wikiki and Honolulu there is a vast collection of saltponds, and I was greatly surprised to find the manufacture of it so extensive. It is piled up in large heaps, in which there was, when I saw them, from one to two hundred tons.... The natives use it for salting fish and pork, an art which it is said they have long practiced.

The women are also frequently seen collecting in the salt-ponds, Confervae and Fuci (seaweed) for food. (Wilkes 1845:86)

Along with the early written records of settlement and traditional life based on abundant ocean resources, this region of Kewalo is also found in the *mo'olelo* of 'Ai'ai – the son of the fish god Kū'ula – and Hi'iaka – the youngest sister of Pele.

3.1.4.2.1 He Mo'olelo no Kū'ula ma Kaka'ako a me Kewalo – Kū'ula Comes to Kaka'ako/Kewalo
Place names in and around Kewalo are highlighted in Moke Manu's version of the legend of Kū'ula, the god who presides over the fish, and his son 'Ai'ai (Manu 1912). 'Ai'ai was the first to teach the Hawaiians how to make fishing lines and nets. He was the first to set up a *ko'a kū'ula* (rock shrines) on which the fishermen would place their first catch as an offering to Kū'ula. And he was also the first to establish *ko'a i'a* (fishing stations) where certain fish were known to gather. Leaving his birthplace in Maui, 'Ai'ai traveled around the islands, establishing *ko'a kū'ula* and *ko'a i'a*. On O'ahu, he landed first at Makapu'u in Ko'olaupoko, and then traveled clockwise around the island:

Aiai came to Kalia [in Waikīkī] and so on to Kaka'ako. Here he was befriended by a man named Apua, with whom he remained several days, observing and listening to the murmurs of the chief named Kou. This chief was a skillful hiaku [bonito] fisherman, his grounds being outside of Mamala until you came to Moanalua. There was none so skilled as he, and generous with all, giving aku to the people throughout the district. (Manu 1912:242)

The *mo'olelo* of 'Ai'ai also mentions many important places within the current area of study. It states, "As Aiai was dwelling with his friend Apua at Kaka'ako, he meandered off one day along the shore of Kulolia, and so on to Pakaka and Kapapoko" (Manu 1912:242). The *mo'olelo* of 'Ai'ai's presence in the area highlights the importance of ocean resource acquisition and the abundance of the area.

3.1.4.2.2 Hi'iaka Travels through Ka'ākaukukui

In the *mo'olelo* of Pele and her younger sister Hi'iaka, the abundance of the region that includes Kā'ākaukukui is alluded to in the *oli* (chant) that recounts the travels of Hi'iaka as she made her way through O'ahu. Hi'iaka decided to go by canoe from Pu'uloa (Pearl Harbor) to Waikīkī; however, before she departs from Pu'uloa, she meets a group of people who are also making their way to Waikīkī. In the *oli*, Hi'iaka tells them that they will soon meet again. One line from that *oli*, reproduced below, mentions the "*loko*" of Ka'ākaukukui, likely in reference to a former fishpond:

A pehea lā au, e Honoka'upu, ku'u
aloha
I ka welelau nalu kai o Uhi, o 'Oā
'O nā makai ke ao (pō) o pōina
Ma hea lā wau, e ke aloha lā
'O Kou ka papa
'O Ka'ākaukukui ka loko'O ka
'alamihi a'e nō
'O ka lā a pō iho
Hui aku i Kou nā maka.

And what of me, O Honoka'upu, my love
 Upon the crest of the surf at Uhi and 'Oā
 Eyes in the living realm (night) of oblivion
 Where am I, O my love
 Kou is the coral flat
 Ka'ākaukukui is the pool
 Some 'alamihi indeed
 Wait all day until night
 Friends shall meet in Kou.
 (Ho'oulumāhiehie 2006:297)

The above *oli* refers to the 'alamihi, a small black crab that were once abundant in the area. The word "'alamihi" also translates to mean "path of regret" and so, in certain contexts, it has a double meaning (Pukui et al. 1974:9). For example, in the following *'ōlelo no'eau*, the literal meaning refers to eating the 'alamihi crabs of Kālia, but it was used metaphorically to describe someone in a repentant or regretful mood:

Ho'i i Kālia i ka 'ai 'alamihi.

Gone to Kālia to eat 'alamihi crabs.

... a play on 'ala-mihi (path of repentance). Kālia, O'ahu, is a place where 'alamihi crabs were once plentiful (Pukui 1983:110).

3.1.4.3 Traditional Ceremony and Religion

Several *heiau*, or temples of the Hawaiian religion, are connected to Kewalo and documented in *mo'olelo*. One such *heiau* was called Pu'ukea, located at Kukuluāe'o. Pu'ukea was closely affiliated with a well-liked chief named Hua, who cultivated the lands of Keawlo and Kō'ula. The following comes from an old *mele* (song) written for this chief as recorded by Kamakau (1993:24):

'O Hua-a-Kamapau ke li'i
O Honolulu o Waikīkī
I hanau no la i kahua la i Kewalo,
'O Kālia la kahua
O Makiki la ke ēwe,
I Kānelā'au i Kahehuna ke piko,
I Kalo i Pauoa ka 'a'a;
I uka i Kaho'iwai i
Kanaloaho'okau . . .

Hua-a-Kamapau the chief
 Of Honolulu, of Waikīkī
 Was born at Kewalo,
 Kālia was the place [the site]
 At Makiki the placenta,
 At Kānelā'au at Kahehuna the navel
 cord,
 At Kalo at Pauoa the caul;
 Upland at Kaho'iwai, at
 Kanaloaho'okau

The chief Hua was famous for his love of cultivation and his care for the people. The *heiau* Pu'ukea is mentioned in a traditional *wānana* (prophecy) that was also recorded by Kamakau (1993:24-25):

[Ka makaua ua kahi o 'Ewa]
Ua puni ka i'a o Mokumoa,
Ua kau i'a ka nene;

[The increasing "first rain" of 'Ewa]
 Overcomes the fish of Mokumoa,
 Washes up fish to the *nene* plants;

Ua ha'a kalo ha'a nu;
Ha'a ka i'a o kewalo,
Ha'a na 'ualu o Pahua,
Ha'a ka mahiki i Pu'ukea,
Ha'a ka unuunu i Pele'ula,
Ha'a Makaaho i ke ala.

E Kū e, ma ke kaha ka ua, e Kū,
O Kū [I 'ai 'na ka i'a o Maunalua]. . .

.

Lays low the taro as it patters down;
 Lays low the fish of Kewalo,
 Lays low the sweet potatoes of Pahua,
 Lays low the *mahiki* grass at Pu'ukea,
 Lays low the growing things at Pele'ula
 Lays low Makaaho [Makāho] in its path

O Kū, the rain goes along the edge [of
 the island],
 [Eating the fish of Maunalua]

The above *wānana* also appeared in the July 22, 1865 edition of *Ka Nūpepa Kū'oko'a* with somewhat different wording and was printed as follows:

Aia kona kupapau i Niuula ma
Honokohau i Maui. O Puukea kana
Heiau, aia ma Kukuluaeo. He wahi
kaulana no ia i ka wa kahiko.

PENEI KA WANANA KAHIKO:

"Ua puni ka ia — e Mokumoa,
Ua kau ia i ka nene,
Ua haa ka-lo-hanu,
Haa ka ia o Kewalo, Haa na uala o
Paua,
Haa ka mahiki i Puukea.
Haa ka unuunu i Peleula,
Haa Makaho i ke ala,
E Ku — e,
Ma ke kaha kuaa — e Ku."

Ma ka mookuauhau o
Huanuikalalalai ; malaila e loa'a i ka
moolelo o Kana a me Nihau, no ka
mea, oia kona kupuna.

O na'lii mahope mai o Hua i noho
ma Honolulu. O Pueonuiokona ; o
Kapaemahu ; o Oiouli ; o Olomea ; o
na keiki a Paikua ; o
Kahonuimaeleha ; o
Kahonumaeleka ; o na keiki a
Lonoawohi ; o Kapuaahiwa ma.

His body is buried in Niu'ula in
 Honokōhau on Maui. Pu'ukea is his
 heiau in Kūkuluae'o. It was a famous
 place in the old days.

HERE IS THE OLD PROPHECY:

"The fish are surrounded by Mokumoa
 It is settled by the nēnē birds
 The line of O'ahu chiefs danced
 The fish of Kewalo dance
 The sweet potatoes of Paua dance
 The grass of Pu'ukea dance
 The kapu stick dances in Pele'ula
 Makaho dances on the path
 O Kū
 In the slashing of war, o Kū."

In the genealogy of Huanuikalālā'ila'i,
 that is where the story of Kana and Nīheu
 is found because they are his ancestors.

The chiefs after Hua who lived in
 Honolulu are Pueonuiokona,
 Kapaemāhū, 'Ō'iouli, 'Olomea, the
 children of Paikua, Kahonuimaeleha,
 Kahonumaeleka, the children of
 Lonoāwohi, and Kapua'ahiwa and the
 others.

(Kamakau 1865b) (Translation: Richard
 Keao Nesmith, Ph.D)

Pu'ukea means "white hill" (Pukui et al. 1974:199) and is also the name for a land division within the 'ili of Kukuluae'o. It's mentioned in at least two Land Commission Awards, LCA 1502 and 1504. In LCA 1504, a claim made by Pahiha, the land is described as containing a "house lot and pond and salt bed." LCA 1504 is located near the intersection of Halekauwila and Cooke Streets.

The *oli* refers to the *mahiki* grass of Pu‘ukea. Mahiki goes by the name ‘*aki‘aki*, a type of sedge plant that grows in coastal areas. “Mahiki” also means to “peel off” or “cast out spirits” (Lorrin Andrews 2003:369), and it was used medicinally, along with a type of shrimp by the same name, if a person were believed to be suffering from a spiritual affliction. Mary Kawena Pukui remembers that as a girl, parents put “ti leaves, or *hala*, or ‘*aki‘aki* grass, in a little sea-salt water and [would] have the child drink it” (Pukui et al. 1972:163) to rid them of misbehaving spirits.

3.1.4.3.1 Kānāwai Kaihehe‘e at Kawailumaluma‘i

Kawailumaluma‘i was the name of a pond in Kewalo. Kauwā, outcasts and violators of *kapu*, were used as human sacrifices and drowned in a ritual known as Kānāwai Kaihehe‘e (Westervelt 1911:25). The following excerpt from *Sites of Oahu* provides a little more detail:

A fishpond and surrounding land on the plains below King Street, and beyond Koula. It contains a spring rather famous in the times previous to the conversion to Christianity, as the place where victims designed for the Heiau of Kanelaaui on Punchbowl slopes, was first drowned. The priest holding the victim’s head under water would say to her or him on any signs of struggling, “Moe malie i ke kai o ko haku.” “Lie still in the waters of your superiors.” From this it was called Kawailumaluma, “Drowning waters.” (Sterling and Summers 1978:292)

Kō‘ula is the name for the area that includes Thomas Square and the Blaisdell Center. The description above suggests that Kawailumaluma‘i was located nearby, and it may perhaps have been part of a complex of five ponds awarded to Koalele in LCA 3169.

3.2 ARRIVAL OF WESTERN VESSELS AND 19TH CENTURY CULTURE CHANGE

The population centers have historically been on either side of Kewalo, in Waikīkī to the east and Kou (the traditional name for the area that is associate with contemporary downtown Honolulu) to the west. Unlike today, where references to Waikīkī is centered on the hotel and resort area, traditional references to Waikīkī included the entire ahupua‘a, or the area between the neighboring ahupua‘a of Honolulu to the west and Kuli‘ou‘ou Iki to the east. This vast expanse of land includes the valleys Makiki, Mānoa, Pālolo, Wai‘alae Nui, Wai‘alae Iki, Wailupe, Niu, and Kuli‘ou‘ou. According to Martha Beckwith (1970:383), by the end of the fourteenth century, Waikīkī had become “the ruling seat of the chiefs of O‘ahu”.

By most early accounts, the agricultural landscape of Waikīkī was remarkable for its beauty and productivity. This account comes from the Russian naval officer Otto von Kotzebue, who first visited Hawai‘i in 1816:

[B]ut you have scarcely sailed round the Yellow Diamond Hill, when you are surprised by the most beautiful landscape. Close to the shore you see verdant vallies adorned with palm and banana-trees, under which the habitations of the savages lie scattered; behind this, the land gradually rises, all the hills are covered with a smiling verdure, and bear the stamp of industry. (Kotzebue 1821:321)

Waikīkī’s appeal as a traditional population center was obvious, whereas the village of Honolulu developed only after contact with the West. In contrast to Hawaiian sailing vessels, the design and engineering American and European ship hulls were considerably larger. As a result, the

deeper bottom topography of Māmala Bay became a favored landing area of these Western sailing vessels as good anchorage could be found closer to the shoreline and lands could be easily accessed. In 1809, Kamehameha I relocated his court from Waikīkī to Honolulu (Figure 3-13), which likely reflected the area’s growing importance and focus of the monarchy on a burgeoning foreign trade economy (Thompson and Van Zyle 1981:4).

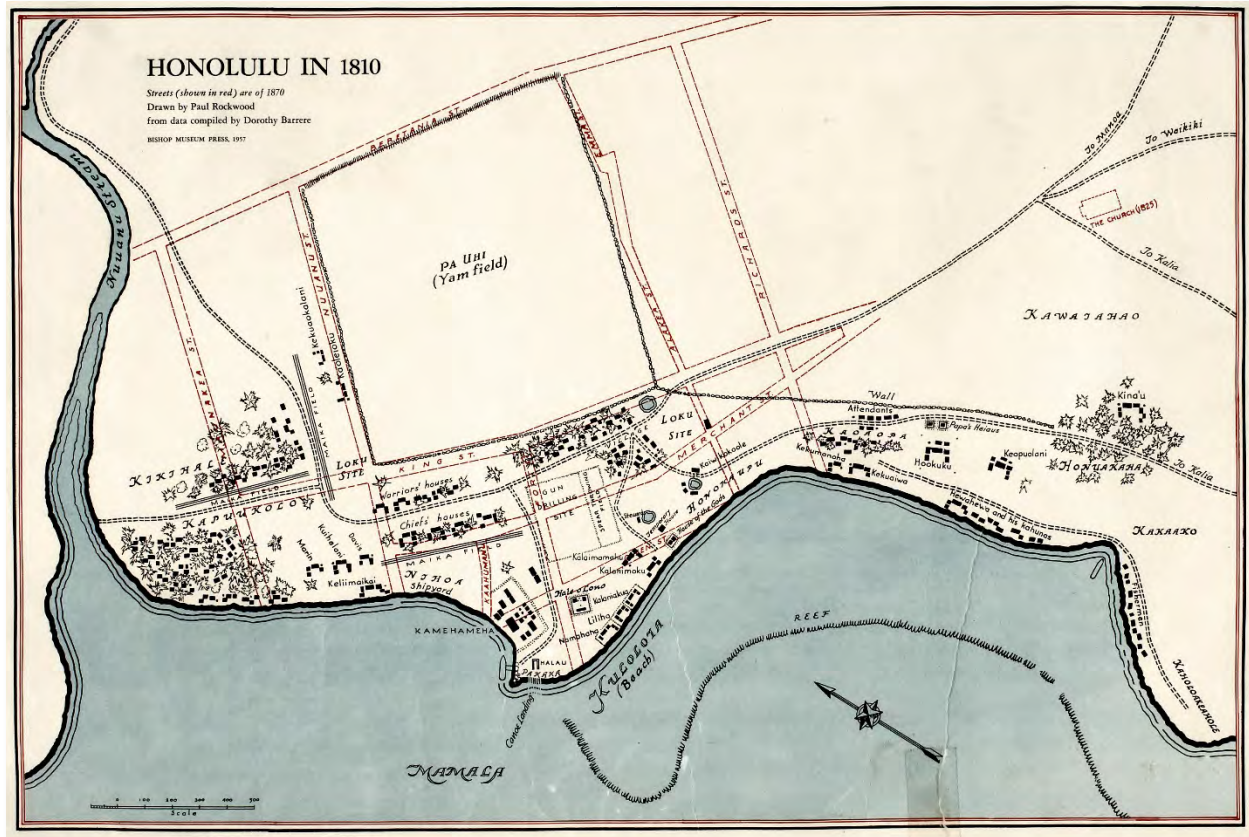


Figure 3-13. Reconstruction of Honolulu, circa 1810, drawn by Paul Rockwood based on maps and literary resources compiled by Dorothy Barrère (1957), illustrating the growing importance of foreign maritime trade at Māmala.

Gorman D. Gilman arrived in Honolulu in 1841 and provided a detailed street-by-street account of the city, as it was then, in Thrum’s Hawaiian Annual for the Year 1904. At that time, Punchbowl Street marked the eastern edge of Honolulu. Beyond that was just “a barren and dusty plain”:

The boundaries of the old town may be said to have been, on the makai side, the waters of the harbor; on the mauka side, Beretania street; on the Waikiki side [the area just beyond Punchbowl Street], the barren and dusty plain, and on the Ewa [west] side, the Nuuanu Stream. There were few, if any straw houses of the natives mauka of Beretania Street. (Gilman 1903:97)

Here, Gilman is struck by the contrast between Kawaiaha’o in the 1840s and the 1900s:

There was on the entire length of this street, from the makai side to the slopes of Punchbowl, but one residence, the two-story house of Mr. Henry Diamond, mauka of King Street. Beyond the street was the old Kawaiaha’o church and burying ground. A more forsaken, desolate

looking place than the latter can scarcely be imagined. One, to see it in its present attractiveness of fences, trees and shrubbery, can hardly believe its former desolation, when without enclosure, horses and cattle had free access to the whole place. (Gilman 1903:89)

This account of the development and rapidly changing landscape of the Kaka’ako and Kewalo regions is illustrated in two timely sketches depicting Honolulu around this time. The first (Figure 3-14) is from 1834. Kawaiaha’o Church is depicted as a long grass hut near the center of the drawing. There is little evidence of life just east of the town’s cluster of Hawaiian and Western-style structures. The 1850 sketch by Paul Emmert (Figure 3-15) gives us a better perspective, with Diamond Head clearly visible in the background. Kawaiaha’o Church nicknamed “the Stone Church” upon its rededication in 1842, is now clearly visible. In the background is Kaka’ako and Kewalo.

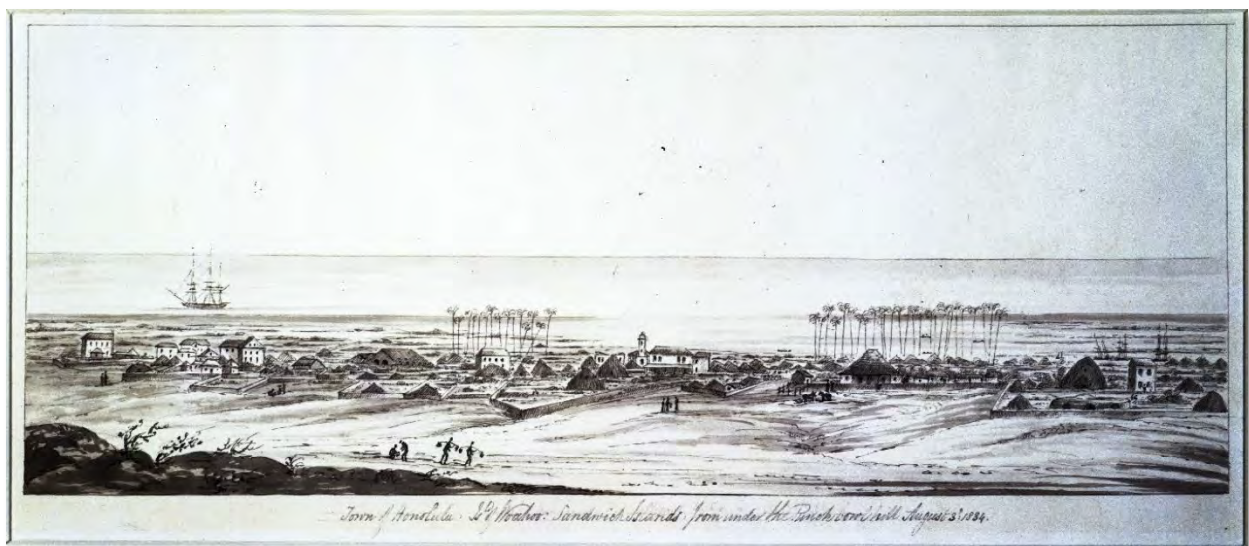


Figure 3-14. “Town of Honolulu: Island of Woahoo: Sandwich Islands,” 1834 sketch of Honolulu from below Pūowaina by an anonymous illustrator, the project area in the middle ground to the left of frame and Kawaiaha’o Church (long, thatched structure) is situated in the center of the sketch (Bernice Pauahi Bishop Museum photo ID SXC103925, catalog no. 1962.0216).

3.2.1 1840-1851 – The Great Māhele

In 1848, King Kamehameha III and 245 *ali’i* (royalty) and *konohiki* (landlord) came together to divide the lands of the kingdom into three classifications. The Crown and the *ali’i* received their land titles and awards for both whole *ahupua’a* and individual parcels within an *ahupua’a* which were then subsequently formally granted in 1850 (Alexander 1890:114). The lands given to the *ali’i* and *konohiki* were referred to as Konohiki Lands while lands that were retained by the King were referred to as Crown Lands. The distinction of Crown land is important and defined as:

... private lands of His Majesty Kamehameha III., to have and to hold for himself, his heirs and successors forever; and said lands shall be regulated and disposed of according to his royal will and pleasure subject only to the rights of tenants. (Kingdom of Hawaii 1848)



Figure 3-15. “No. 2, View of Honolulu. From the Catholic Church” (Library of Congress Call Number: PGA - Britton & Rey--No. 2. View of Honolulu ... (D size) [P&P], digital ID pqa.00316), central panel of sketch by Paul Emmert ca. 1854 ; the project area is to the left and back of Kawaiaha ‘o Church (coral block structure with steeple completed in 1842).

The ‘ili of Kewalo was awarded to Kamake‘e Pi‘ikoi (Figure 3-16), the wife of high chief Jonah Pi‘ikoi, under Land Commission Award (LCA) 10605. Her parcel measured 270.84 acres and extended west-to-east from Kawaiaha‘o Church to Sheridan Street on the east. It was bounded by King Street to the north, and neighboring its southern boundary line was the ‘ili of Kukuluae‘o. The ‘ili of Ka‘ākaukukui is to the west of Kewalo, comprising much of area that many often refer to as Kaka‘ako today. In the Māhele, this ‘ili was claimed by Victoria Kamāmalu, the sister of Kamehameha IV and Kamehameha V, and managed by her father and guardian Mataio Kekūanāoa (Figure 3-17). Ka‘ākaukukui was a *lele*, so it was made up of three non-contiguous parcels of land. The *makai* lands of Ka‘ākaukukui were also notable for their salt ponds, the span for which encompassed the shoreline and fishery west of Kewalo Harbor and included a portion of Honolulu Harbor. Ka‘ākaukukui’s *kalo* lands were located near present-day Kukui Street in downtown Honolulu along with forest lands at the head of Pauoa Valley.

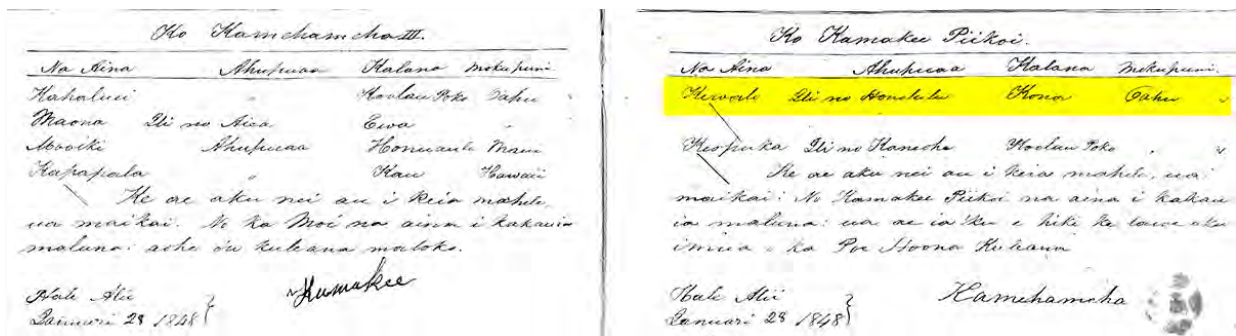


Figure 3-16. Mahele record highlighting Kewalo (in yellow), an ‘ili of Honolulu as belonging to Kamake‘e free and clear before the Land Commission by Kamehameha III (Buke Mahele 1848)

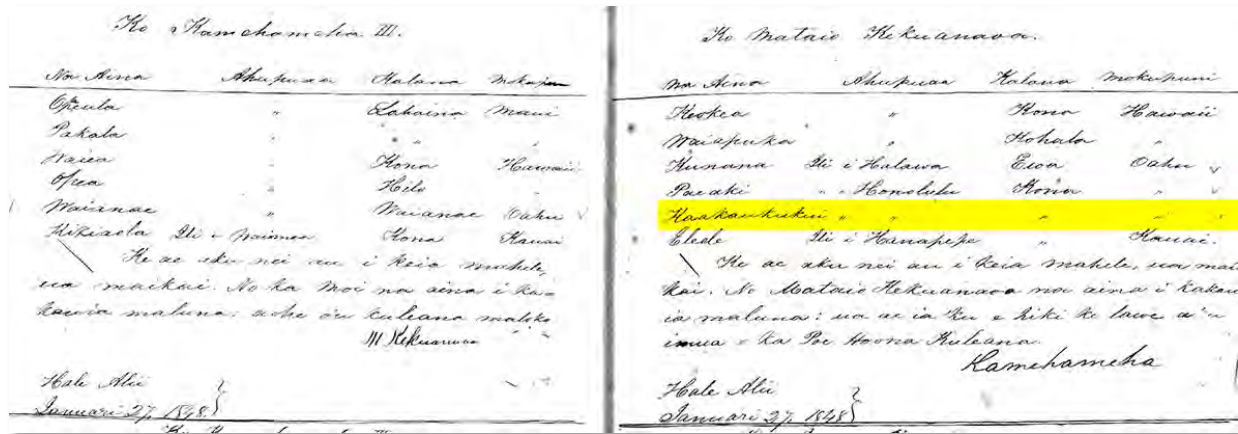


Figure 3-17. Mahele record highlighting Kaakaukukui (in yellow), an 'ili of Honolulu as belonging to Kekūanāoa free and clear before the Land Commission by Kamehameha III (Buke Mahele 1848)

At the death of Kamehameha IV and with lack of a clear heir some confusion as to the inheritance of Crown lands and whether or not it followed the family line or the throne. It was decided by the Supreme Court that under the confirmatory Act of June 7th, 1848, “the inheritance is limited to the successors to the throne,” “the wearers of the crown which the conqueror had won,” and that at the same time “each successive possessor may regulate and dispose of the same according to his will and pleasure as private property, in the manner as was done by Kamehameha III” (Alexander 1890:121).

The third classification of lands partitioned out was termed Government lands that were defined and set aside for management in the following manner:

... those lands to be set apart as the lands of the Hawaiian Government, subject always to the rights of tenants. And we do hereby appoint the Minister of the Interior and his successors in office, to direct, superintend, and dispose of said lands, as provided in the Act ... (p)rovided, however, that the Minister ... shall have the power, upon the approval of the King in Privy Council, to dispose of the government lands to Hawaiian subject, upon such other terms and conditions as to him and the King in Privy Council, may seem best for the promotion of agriculture, and the best interests for the Hawaiian Kingdom ... (Kingdom of Hawaii 1848)

In 1850, most of the chiefs ceded a third of their lands to Kamehameha III in order to obtain an allodia title for the remainder. The majority of these lands were then placed into the Government land base (Alexander 1890:114). This practice of ceding lands back to Kamahameha III could be seen with the transfer of 'Auwaiolimu 'Ili. The lands of this 'ili were located on the western slope of Punchbowl and at the entrance to Pauoa Valley. During the Māhele, the 'ili of 'Auwaiolimu were originally claimed by Kalaeokekoi under LCA 6245 and subsequently relinquished to the government (Figure 3-18). The designation of such lands to be set aside as Government lands paved the way for land sales to foreigners and in 1850 the legislature granted resident aliens the right to acquire fee simple land rights (Moffat and Fitzpatrick 1995:41-51).

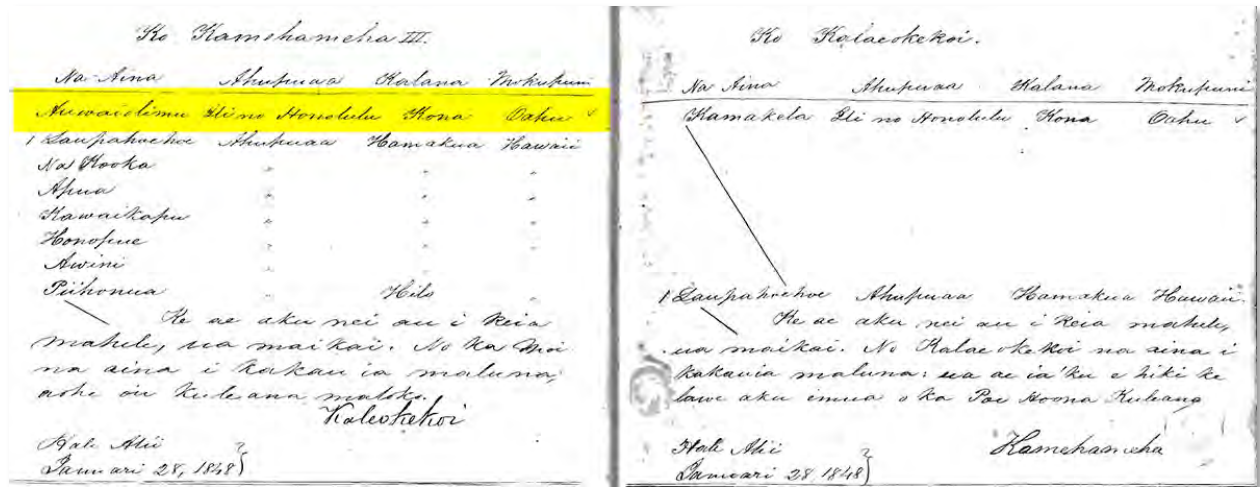


Figure 3-18. Mahele record highlighting ‘Auwaiolimu (in yellow), an ‘ili of Honolulu being transferred from Kalaeokekoi to Kamehameha III (Buke Mahele 1848).

In designations of lands as either Crown or Government, and through all awards of whole *ahupuaʻa*, ‘*ili*, and later land sales to foreigners classified as Land Grants, the rights of the native tenants were expressly reserved, “*Koe na Kuleana o Kanaka*” (Reserving the Rights of Native Tenants) (Alexander 1890:114). In an Act ratified on August 6th, 1850, the gathering rights of the common people for personal use, which included the gathering of both terrestrial and marine resources, in addition to the right to water and the right of way on the lands of the Konohiki, were guaranteed and embodied in Section 10477 of the Civil Code (Alexander 1890:114-115). By this same Act, resolutions passed by the Privy Council granted fee simple titles, free of all commutation, with the exception of awards granted within the towns of Honolulu, Lāhainā, and Hilo, to all native tenants for their cultivated lands and house lots (hereafter referred to as *kuleana* land) (Alexander 1890:115). Claims of the native tenants, or *kuleana* land claims, were presented to and heard by the Land Commission whose duty was to:

...ascertain the nature and extent to each claimant’s rights in land, and to issue an Award for the same which is prima facie evidence of title “and shall furnish as good and sufficient a ground upon which to maintain an action for trespass, ejection or other real action against any other person or persons whatsoever, as if the claimant, his heirs or assigns had received a Royal Patent for the same.” (Alexander 1890:110)

Testimony for *kuleana* lands often included claims for multiple ‘*ili*, or *apana*, located both *mauka* and *makai*. These claims were recorded under a single *helu*, or case number, and brought before the Land Commission for consideration. *Kuleana* land awards, or *kuleana* claims that were approved by the Land Commission, were granted to tenants of the land, native Hawaiians, naturalized foreigners, non-Hawaiians born in the islands, or long-term resident foreigners, who could prove occupancy on the parcels prior to. A handful of *kuleana* awards, hereafter referred to as LCAs, were made within Kewalo. Most of these types of awards in Kewalo were between half-an-acre and three acres. Table 3-1 below provides a summary of awarded LCA claims within the vicinity of the current project area (Figure 3-19 and Figure 3-20) based on the 1884 Bishop

map with information derived from the Kīpuka (Office of Hawaiian Affairs 2014) and Papakilo (Office of Hawaiian Affairs 2011) online databases

Table 3-1. Summary of Land Commission Awards in Kewalo and the Surrounding Region (Office of Hawaiian Affairs 2011, 2014)

LCA	Awardee	‘Ili and/or Location	Land Claim	Notes
2	Robert Kilday	<i>Kula</i> , Pualoalo	Two fishponds in Kukuluāe‘o	--
61 - MA	Namakeha	Kaala (Halekauwila Street)	One houselot	--
63	Namauu, Nueku	Honuakaha	--	--
129	Kinimaka	Queen and Punchbowl Streets.	Houselot, bordered by a pond	--
195	Kamahiai	Kawaiaha‘o	Houselot	--
200	Kaina, M.	Kawaiaha‘o; Kō‘ula	Houselot	--
247	Lunalilo, W.C. by C. Kanaina	Punchbowl St. in Kaka‘ako	Houselot	Land from Lunalilo’s mother Kekāululohi who received it from her own mother
255	Hakau, wahine	Honuakaha	--	--
274	Joseph Booth	Kō‘ula	Royal Patent 306 to Joseph Booth	--
387	American Board of Commissioners for Foreign Missions (ABCFM)	Beretania St., Punahou, Kawaiaha‘o, Kukuluāe‘o, Kaumakapili	Salt lands attached to Punahou	Both parcels were gifted to Reverend Hiram Bingham of the ABCFM by chief Boki in 1829 , a portion of which was given over to the pastor of Kawaiaha‘o Church (Punahou School and Oahu College 1866:35)
569	Puniwai	King St.	Houselot with salt beds at <i>makai</i> end	--

Table 3-1 (continued). Summary of Land Commission Awards in the Kaka'ako (Office of Hawaiian Affairs 2011, 2014)

LCA	Awardee	'Ili and/or Location	Land Claim	Notes
603	Hoonaulu	Kawaiaha'o; King St.	Houselot	--
635	ABCFM	Kawaiaha'o	Lot for Kawaiaha'o Church and cemetery	--
673	Naiwi	Kawaiaha'o	Houselot	--
677	Kekuanaoa for Kamāmalu	Honuakaha	Three lots on Queen St. bordered by saltpans on the <i>makai</i> side; parcel 2 included Honuakaha pest house and cemetery	--
685	Pehu	Kawaiaha'o	--	--
704	Honaunau	Punchbowl St.	Ponds, ditches	--
728	Holualoa	Kawaiaha'o	Houselot	--
729	Kekuhaupio	Queen St.	Three houses bounded on <i>makai</i> side by fishpond of H. Kalama	--
735	Kaahumanu	Honuakaha	Two houses	--
805	Kaahuea	Honuakaha	One house on fenced lot	--
824 - B	Naiu	Kawaiaha'o, King St.	--	--
982	Kukao	Kō'ula, Kukuluāe'o	One houselot (4 houses)	--
1082	Kekuanui	Honuakaha, Pu'unui	One house	--
1366	Wahiena	Kukuluāe'o, Pu'unui°	--	--

Table 3-1 (continued). Summary of Land Commission Awards in the Kaka'ako (Office of Hawaiian Affairs 2011, 2014)

LCA	Awardee	'Ili and/or Location	Land Claim	Notes
1497	Kahue	Kolowalu, Kukuluāe'ō	Seven <i>lo'i</i> , two <i>pahale</i> (house lots), and two fishponds at Kolowalu; Some salt beds at Kukuluāe'ō	Not awarded
1499	Kapalu	Kewalo, Kukuluāe'ō	--	--
1503	Puaa	Kukuluāe'ō, Kewalo	Houselot and three fishponds	--
1504	Pahika	Kukuluāe'ō, Kewalo	Houselot, fishpond, salt bed	--
1592	Kauo	Ka'akopua, Kukuluāe'ō	--	--
1903	Lolohi	Kukuluāe'ō	Two salt beds, 15 drains, two <i>poho kai</i> , one salt <i>kula</i>	--
2019	Pupule	King St., Kaka'ako	--	--
2045	Kauwahi	Pu'unui	Houselot	--
3169	Koalele	Kewalo	<i>Makai</i> ponds	--
3455	Kaule	Kaka'ako	--	--
3848	Puhalahua	Honuakaha	--	--
3951	Niau	Puohalulu, Kaka'ako	--	--
4457	Kaloa, Ana, wahine	Kaka'ako	Four fishponds, <i>kahuahale</i> (cluster of homes)	Family had resided on the lands since the reign of Kamehameha the Great
6489	Kaihiwa	Honuakaha	--	--
7712	Kekuanaoa for Kamāmalu	Ka'ākaukukui, Pu'unui	--	--
7260	Beneli Nāmākehā	Ka'ala'a	<i>Kula lele</i> , fishpond	Inherited by Queen Kapi'olani
7713	Kamāmalu, Victoria	Honolulu	Retained	--

Table 3-1 (continued). Summary of Land Commission Awards in the Kaka'ako (Office of Hawaiian Affairs 2011, 2014)

LCA	Awardee	'Ili and/or Location	Land Claim	Notes
8515	Keoni, Ana	Pu'unui; Queen St.	--	--
9549	Kaholomoku	Kukuluāe'o	Fishpond and four salt pans on Waikīkī side of pond	--
10463	Napela	Kukuluāe'e	House site, two ponds, one ditch, and salt lands	--
10605 A	Piikoi, Iona (Jonah)	Kewalo, Pua'aloalo, Kōula, Punchbowl St.	Ponds; four structures	<i>Ali'i</i> award, small sliver of land along the western edge of Kewalo, also a <i>lele</i> consisting of three other parcels (two in Nu'uaniu and one in the northeast corner of Ka'ākaukukui)
10811	Hana Puhikakaino	Kawaiaha'o	--	--

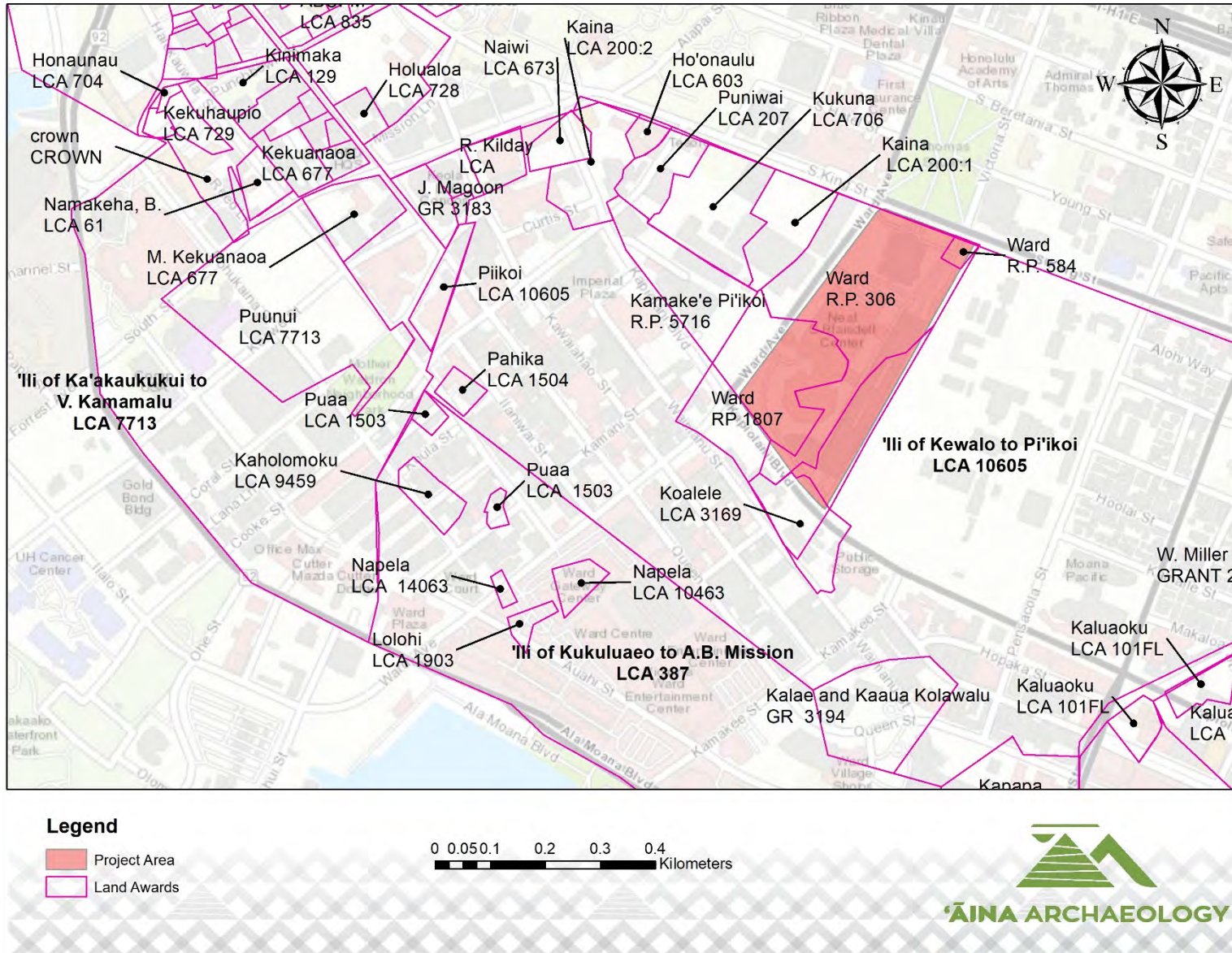


Figure 3-19. Land Commission Awards and Land Grants to Ward (R.P. 306, 584, 1807) (outlined in magenta) in relation to project area (shaded in red), (Land Awards georeferenced from Req. Map 1090 overlaid on ESRI's USGS Topographic Base Map)

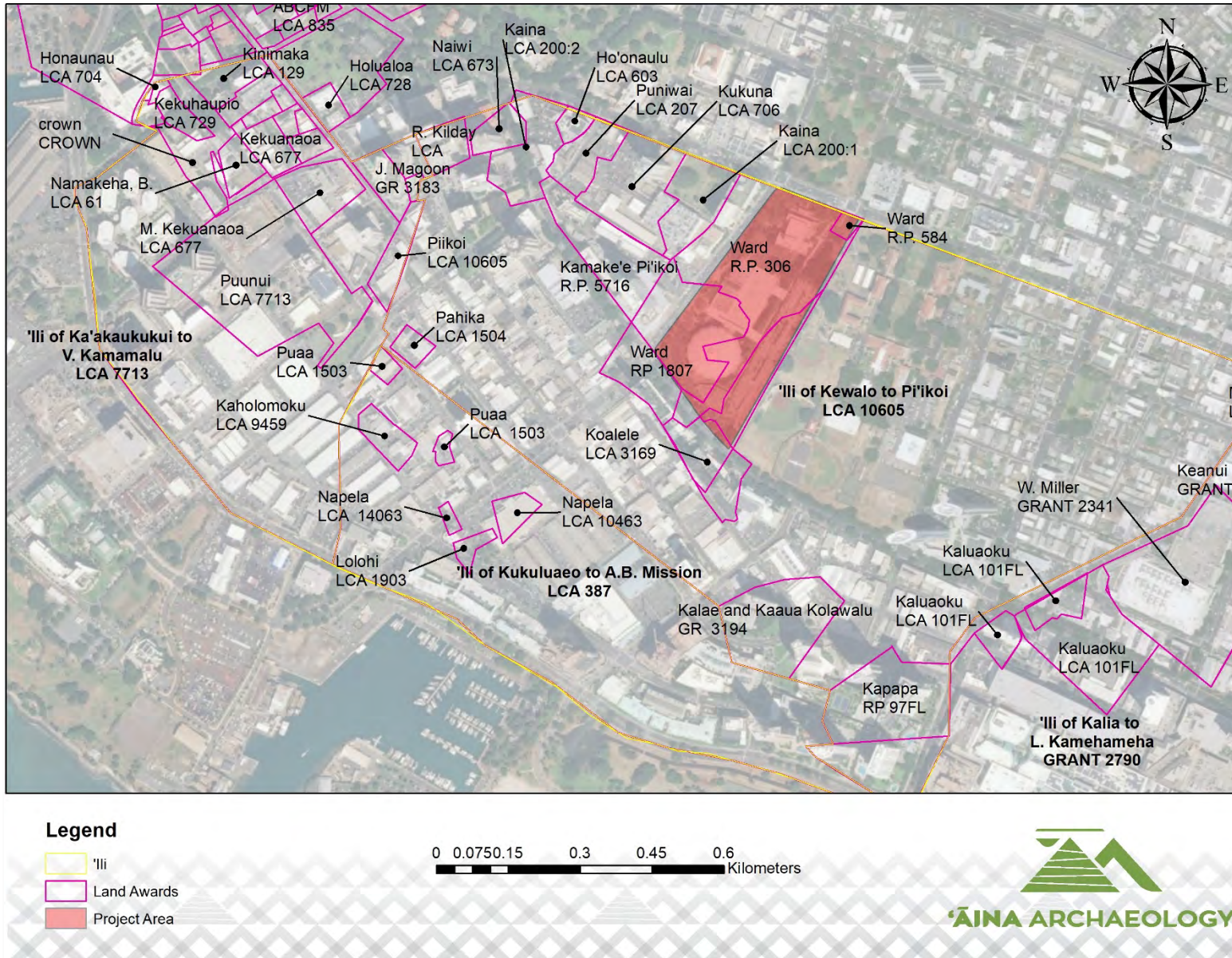


Figure 3-20. Land Commission Awards and Land Grants to Ward (R.P. 306, 584, 1807) (outlined in magenta) in relation to the current project area (shaded in red), Kewalo 'Ili boundary (based on Reg. Map 1090 and outlined in yellow), and the modern landscape.

3.2.1.1 *Seat of Government Moves from Waikīkī to Honolulu: High Ranking Ali'i and Chiefly Lines at Kewalo and the Surrounding Region*

Throughout the testimony and award of lands within and adjacent to the current study area, it is clear that this region was widely desired by those within the familial lines of high ranking *ali'i* by the time of the Mahele 'Āina. A contributing factor to the considerable amount of *ali'i* in one place is attributed to the formation of the Hawaiian Government to the palace grounds, "Pohukaina" and "Hali'imaile" (Iolani Palace); as well as Kawaiaha'o Church. "Waikiki had been the old place of residence for rulers. Honolulu was seldom used in Kalanikūpule's day. In Kamehameha's time the chief lived half his time at Waikiki and half in Honolulu. Liholiho made Honolulu his usual place of residence." (Kamakau 1992:271)

The 'ili of Kewalo, consisting of 270.84 acres, was awarded to Kamake'e Pi'ikoi, the wife of high chief Jonah Pi'ikoi (LCA 10605). LCA 10605 extended from Kawaiaha'o Church on the western boundary to Sheridan Street on the east and was bound by King Street to the north and the 'ili of Kukuluae'o to the south.

The 'ili of Ka'ākaukukui is situated to the west of Kewalo and comprised much of the area that many refer to today as Kaka'ako. These lands were claimed by Ali'i Victoria Kamāmalu, the sister of Kamehameha IV and Kamehameha V, and managed by her father and guardian Mataio Kekūanā'o'a. As noted previously, Ka'ākaukukui was a *lele* made up of three non-contiguous parcels of land. These parcels included the *makai* lands of Ka'ākaukukui, which were famous for their salt ponds and encompassed the shoreline and fishery west of Kewalo Harbor, including a portion of Honolulu Harbor, *kalo* lands located near present-day Kukui Street in downtown Honolulu, and forest lands at the head of Pauoa Valley.

The 'ili of Pu'unui extended *mauka* from the middle of the northern boundary line of Ka'ākaukukui. Pu'unui 'ili also included geographically separate *lele* lands. The upper half of Pu'unui was awarded to high ranking chief Matiao Kekūanā'o'a through LCA 677. A prominent political figure in the government of the Kingdom of Hawai'i, Kekūanā'o'a was married Kina'u, daughter of Kamehameha I and Kaheiheimalie, and fathered Moses Kekuaina, Lot Kamehameha (Kamehameha V), Alexander Liholiho (Kamehameha IV), and Victoria Kamāmalu. As a part of his political career, Kekūanā'o'a served in the House of Nobles and the Privy Council, as the Governor of O'ahu and president of the Board of Public Instruction, and *Kuhina Nui* (Prime Minister) during the reign of Kamehameha V. The lower portion of Pu'unui was awarded to Victoria Kamāmalu as part of LCA 7713. The 1876 Lyons map suggests that this *makai* half of Pu'unui, approximately 17 acres, consisted of salt pans.

On the northwestern border of Ka'ākaukukui, LCA 3455 was issued to Kaule for High Chiefess Liliha for just under one-quarter of an acre while LCA 247 was issued to Charles Kana'ina for then Prince Lunalilo, the *ali'i* who would succeed Kamehameha V through a democratic election and become known as "The People's King." The award to Lunalilo notes that the land came from Lunalilo's mother Kekāululohi, who had received it from her own mother.

The 'ili of Pualoalo (or Puaaloalo) is a small sliver of land along the western edge of Kewalo. It was awarded to Iona (Jonah) Pi'ikoi (10605-A).

LCA 7260 awarded the small *'ili* of Ka'ala'a, just *'ewa* of Pu'unui, to Beneli (Bennett) Nāmākehā, a high chief who was Queen Kapi'olani's first husband. His brother was George Na'ea, the father of Queen Emma, who served as a member of the House of Nobles and Privy Council; as well as, governor of Maui. After the death of Nāmākehā in 1860, Queen Kap'iolani inherited his lands at Ka'ala'a at the age of 26 (Perry 1902).

Honuakaha is a small *'ili* located *makai* of Queen Street, in the vicinity of South and Keawe Streets. It was noted by John Papa 'Ī'ī in his recollections of Honolulu between 1810 and 1812 as being the site of a coconut grove and home of Kahō'anokū Kīna'u, the eldest legitimate son of Kamehameha I, from his wife Peleuli. To the west of the grove was the home of Keōpūolani, the sacred and highest-ranking wife of Kamehameha I. ('Ī'ī 1959:92)

Finally, the title to the *'ili* of 'Āpua was transferred to Honaunau and Lunalilo through Royal Patents 5635 and 5731.

3.2.1.2 *Claims of the American Board of Commissioners for Foreign Missions (ABCFM)*

At the time of the Mahele 'Āina, those who spoke on behalf of the American Board of Commissioners for Foreign Missions (ABCFM) were also solidifying their claims to lands that were given to the ABCFM by the *ali'i* for the advancement of Christianity and education across the Hawaiian Archipelago. The *'ili* of Kukuluāe'o is the shoreline region fronting Kewalo Basin which historically consisted of marshes, salt pans, and fishponds. Testimony for six LCAs were made within the *'ili* on behalf of the ABCFM, with the rest of the *'ili* being claimed by the Sandwich Islands Mission. Kukuluāe'o was considered to be attached to the *'āina* of Punahou in Mānoa. Both parcels were gifted to Reverend Hiram Bingham of the ABCFM by chief Boki in 1829. Kaaui provided the following testimony, verifying the claim:

I know this land. I heard Boki say to Hoapili Kane concerning the gift of this land to [Sandwich Islands] Mission that he had given it to Bingham. Boki's wife made some objections to giving it to Bingham claiming it as hers as received from her father Hoapili Kane, but Hoapili Kane confirmed the gift, and it was adjudged to be right and proper. (Foreign Testimony, Vol. 3:116)

Kukuluāe'o was subsequently removed from the Punahou lands and become the property of Kawaiaha'o Church's pastor, as recounted by Albert F. Judd at the 25th anniversary of Punahou School in 1866:

There belonged in former times, as an appurtenance to the land known as Kapunahou, a valuable tract of salt-ponds, on the sea-side to the east-ward of Honolulu harbor, called Kukuluāe'o, and including an area of seventy-seven acres. At the time of the settlement of land claims before the Land Commission, application was made for it by the successor of Mr. Bingham in the pastorate of Kawaiaha'o Church—he believing it to be a glebe land for the support of that church. His claim was resisted by the then Principal of Punahou School, but without success, and a Royal Patent was issued, severing it from the Punahou estate, and awarding it to the applicant as his private property. (Punahou School and Oahu College 1866:35)

3.2.2 The Industrialization of Salt-Production and Shift from Subsistence Use to Commercial Trade
As previously noted, the coastal regions of Kukulūāeʻo and Kaʻākaukukui had long been used for salt production (see also Section 3.1.4.2) with testimony presented before the Land Commission during the Mahele ʻĀina providing a glimpse as to what traditional salt-making entailed (LCA 1903 to Lolohi, see also Section 3.2.1).

Though salt production was a subsistence practice prior to Western contact, once Hawaiʻi became established along the maritime fur trade routes of the late-1700s, a demand for Hawaiian salt for curing animal hides, furs, and skins making their way to China resulted in the commercialization of salt production. Thomas Thrum, in an article on the sandalwood trade, noted that:

The journals of none [of these early traders] mention the object of call other than for refreshments, though one, some years later, records the scarcity and high price of salt at the several points touched at, with which to serve them in the curing of furs obtained on the coast. In all probability salt was the first article of export trade of the islands and an object, if not the object, of these pioneer fur-traders' call. (Thrum 1904:45)

When the Russian officer Otto von Kotzebue visited in 1825, he confirmed that, "Salt and sandalwood were the chief articles of exportation" (Thrum 1904:50). For a time, the traditional salt lands of Kakaʻako were used in commercial production, along with the other salt-producing regions of Kalia in Waikīkī, Puʻuloa at Pearl Harbor, and Salt Lake in Moanalua. Thomas Thrum, in a 1924 article on subject, notes the following:

Honolulu had another salt-making section in early days, known as the Kakaʻako salt works, the property of Kamehameha IV, but leased to and conducted by E.O. Hall, and subsequently E.O. Hall & Son, until comparatively recent years. This enterprise was carried on very much after the ancient method of earth salt pans as described by Cook and Ellis. (Thrum 1923:116)

An article in the October 1892 edition of Hawaiian Planters' Monthly noted that the salt produced at Kakaʻako was more in demand than any other Hawaiʻi made salt with the Company easily selling all the salt that they produce. The write up of Kakaʻako Salt Works offers the following description of the operation and quality of the salt pond engineering at Kakaʻako:

These salt works are laid out systematically and beautifully and one is surprised with the regularity and evident perfection of every arrangement and of every process in connection with it.... The soil here is of clay or loamy substance, and can be worked into any shape or form, and seems to be formed by nature for this very purpose. These works are quite extensive covering about eight acres, and comprising at present fifty-six sets of ponds, seven ponds to a set.

On each side of the works there are canals which extend to the ocean. These canals supply the storage ponds, which latter again supply the evaporating ponds, from which the water runs into the strike ponds, where the crystals are formed. The salt water passes along gradually from pond to pond, and takes usually a week to reach the strike pond. In this way the water gets denser and denser until it is saturated with a very dense of solution of salt, when it crystalized rapidly. The water in the strike ponds is not more than 1½ inches deep, the two adjoining ponds, a little deeper the next a little deeper and so on.

These ponds are connected with each other by troughs and wooden pipes. These troughs are well made, and twice tarred before being put in place. The strike ponds are also protected from the wind with good substantial fences, the object of this is to keep the water as still as possible.

In the process of cristalization the sun does all the work, the water however has to be agitated at intervals to settle the crystals which have formed on the top of the water, like a thin crust of ice.

There are nearly sixty strike ponds and they each take off a strike every seven to fourteen days ... the amount of salt per strike is on average 850 pounds for each pond. The strike ponds are arranged parallel with each other with their tributary or auxiliary ponds between. There are convenient roads, paths, etc., for the transportation of the salt, and good substantial store-houses for storing the same....

The salt is handled with care, and thoroughly dried before being put on the market. The only piece of machinery noticed here is a genuine Chinese pump, made by hand, and is very simple in construction, but at the same time will throw more water than any other pump devised by white men.

The labor on the Salt Farm is all done by Chinese, as no other class of labor has ever given satisfaction, though Hawaiians and Portuguese [sic] have been employed. The evaporating season commences about April of each year, and lasts six or seven months....

About five men are employed during the season, and two during the winter season, merely to keep the pond in order and make necessary improvements. (G.O. 1892:447-448)

Salt had figured significantly among the domestic exports up until 1881 with the height of the trade occurring in 1870 with 2,513 tons. After 1881, Pu'uloa salt took over as the primary export for commercial uses and salt production in other regions was completed more for local uses than market trade (Thrum 1923:116-117).

3.2.3 The Transit of Venus Observatory at 'Āpua

In 1874, one of the rarest predictable astronomical phenomena occurred: the transit of the planet Venus across the sun. This event generally happens every 243 years. In the past, Venus transits were of great scientific importance because they enabled astronomers to better determine the distance between Earth and the sun and therefore estimate the size of our solar system. The 1874 transit provided scientists the opportunity to refine such measurements.

Hawai'i was selected by Great Britain as one of five observation sites and seven astronomers made the five-week journey from England to Hawai'i, arriving in September of 1874. Their expedition was enthusiastically received by King Kalākaua, who gave them permission to establish their observation station on a piece of open land called 'Āpua which was located on the *makai* side of Queen Street and east of Punchbowl Street, in the present vicinity of the Department of Transportation building, just outside the city (Chauvin 1993, 2004).

Within a month, the team of astronomers completed construction on what was a well-equipped observatory for its time. A wooden fence surrounded the property, water was piped in, and the various instruments the team brought over from England were assembled. They included: a transit instrument, a photoheliograph, an altazimuth, two equatorial telescopes, and a platform for observing a mechanical model intended to simulate the appearance of the upcoming transit.”

(Chauvin 1993:197). Several buildings also were constructed on-site, including a barracks and workshop, a cookhouse, and a photo hut thatched with grass.

Transit Day arrived on December 8, 1874. It was a clear and cloudless day. There was some confusion as to whether the observatory would be open to the public, and hundreds actually showed up that afternoon expecting a party but were turned away. Queen Kapi'olani ordered silence in the area surrounding the observatory, and it was obeyed (King Kalākaua was on a diplomatic trip to the U.S.) (Chauvin 1993:213). The goal was to observe, record, and photograph the precise moment when Venus begins to pass over the sun. The Honolulu team's two observers recorded that event as occurring at the exact same time: 3 hours, 35 minutes, and 54 seconds (Chauvin 1993:216). The observation was judged a success.

Following Transit Day, observation and data collection continued for several months until March 10, when the site was dismantled and everything sold at public auction three days later. One of the scientists wrote that, "Our household goods sold well, many friends desiring to obtain a memento of our visit" (Chauvin 1993:219). The impact of the 6-month visit was lasting and for some time, the plot of land in 'Āpua retained its connection to the 1874 event as the area continued to be known as the "Transit of Venus Yard" and "observatory" (Liborio et al. 2014:19; T. Tulchin et al. 2009:39)

3.2.4 The Ward Estate – "Old Plantation"

Situated in the 'ili of Kewalo, the portion of lands above Queen Street that would become the Ward estate was first awarded to Joseph Booth through LCA 274 (see also Table 3-1). Booth was an Englishman who operated a tavern, a hotel called the National House, and a hospital in Pauoa Valley, called the "little Greenwich Hospital Place" on the lands awarded through the LCA (Greer 1994). This particular parcel encompassed 11.70 acres of land known as Kō'ula and was located on the *makai* side of King Street, facing Thomas Square. Natural features of the parcel included approximately 7 ½ acres of dry, level land (plains) on the *mauka* side and a little over 4 acres of marshland containing three fish ponds on the *makai* side (Figure 3-21).

The ponds described in the LCA would later become the famed lagoon of the Ward estate (Figure 3-22). Purchased at public auction in 1870 by Curtis P. Ward from the heirs of the Joseph Booth Estate, Ward paid \$2,450 for the lands that comprised LCA 270 and built it into the home that he and his wife Victoria would raise their family.

Curtis Perry Ward was born in Kentucky and arrived in Hawai'i in 1853 aboard the ship *Ocean* (Hustace 2000:21). He lived for a time with the Dominis family at their boardinghouse, which is how he came to know the future Queen Lili'uokalani, who married John Dominis. It is probable that he came to meet his wife Victoria Ward, who was the daughter of James Robinson and Kaikilani Rebecca Previer, a descendant of the Hawai'i Island chiefly line who allied with Kamehameha I during the wars of unification, through these social circles.

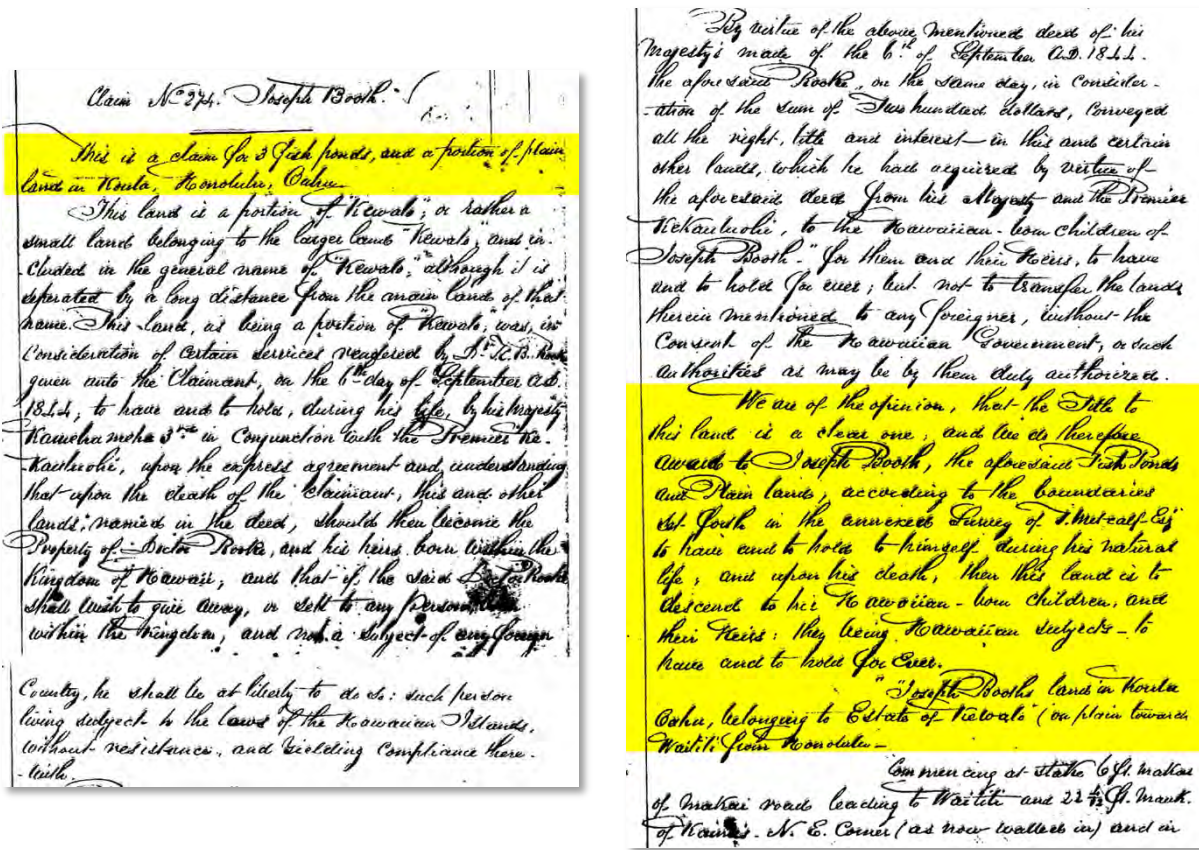


Figure 3-21. Land Commission Award 270 to Joseph Booth, descriptions of the ponds and plain within the conveyed parcel highlighted in yellow, Mahele 'Āina Index - Mahele Awards - Reel 2 Volume 1 Image 00216 (Office of Hawaiian Affairs 2011).



Figure 3-22. Photograph of the Ward Estate lagoon (Peelstwo 2014).

Curtis and Victoria married on June 1, 1865, and between 1867 and 1881, seven daughters were born. Their first home was near the harbor, close to town, but as their family grew, the couple longed for more space to raise their daughters. The Kō'ula property would suit the Ward family's needs perfectly as it had deep soil for farming, a fresh water spring, pasturage, and an *'auwai* (ditch) that connected a fishpond to the sea. A few years later, the Wards purchased the *makai* lands of Kukuluāe'ō, which added 77 acres to their estate and extended it out to the shoreline and fishery. They immediately got to work, clearing the fishpond and *'auwai* of weeds, and planting *kiawe* for firewood and grasses for the animals. At Kukuluāe'ō, they grew *kalo* and turned the salt pans into a source of revenue. Coconut trees were planted for copra, and once a well was sunk, Ward built an irrigation system to feed his plants and trees (Hustace 2000:41). This 1875 description of the Ward property comes from the Pacific Commercial Advertiser:

In taking a drive out on the Kulaokahua continuation of King street, attention is attracted to the premises just beyond the Catholic cemetery, the property of Mr. C.P. Ward. The lot consists of some thirty acres, and is thickly planted with algaroba and, in rows, there are some seven thousand thrifty young coconut trees...The algarobas will certainly be valuable as firewood, and the coconuts alone will in a few years produce a handsome income. The property is well watered by means of pumps driven by windmills, there being an inexhaustible supply of water a few feet below the surface of the plains. (Pacific Commercial Advertiser, 4 September 1875:3)

Ten years after purchasing the property, in 1880, Curtis P. Ward was ready to build a home. Ward hired C. J. Wall to design it. Wall had helped to design 'Iolani Palace, which was then being built, and the two projects shared many of the same tradesmen. The home was completed in late-1881—a stately, two-story building with wide *lanais* on both floors. Green shutters accented large French windows. Inside, the rooms were spacious, and the sliding partition doors could be pushed aside to accommodate large parties and gatherings. Upstairs were the bedrooms, complete with running water, and outside were the detached cookhouse and washhouse (Figure 3-23).



Figure 3-23. Photograph of the front of the home of C.P. Ward and Victoria Ward (<https://www.wardvillage.com/jp/articles/ward-wednesday-the-close-of-a-chapter>).

The Wards named their new home “Old Plantation,” a homage to Mr. Ward’s childhood home in Kentucky. Some later years, it was also given the name “Ku’u Home” (Our Beloved Home). A close friend of the Ward family, the celebrated composer Mary Jane Montano, composed this famous *mele* about the home, which is titled with both names, *Ku’u Home (Old Plantation)*. The first verse and chorus:

Pua wale mai nō ke aloha

Ka paia puā i ke ‘ala

I ka wai hu‘ihu‘i aniani

Ko‘iawe ka huila wai

Aia i laila ka ‘i‘ini

Ka ‘ano‘i a ko‘u pu‘u wai

Hui: Old plantation nani ‘oe

Home pumehana i ke aloha

I ka ‘olu o ka niu

I ka poli o ke onaona

Love flowers

In the bower suffused with fragrance

And whose cool clear water

Is a water wheel’s shower

There desire

Is cherished in my heart

Chorus: Old Plantation, how beautiful
you are

Home warm with love

Cool coconut grove and in its

Heart only sweetness

(Elbert and Mahoe 1970:86)

Tragically, Mr. Ward died shortly after the completion of construction on the family home. In January of 1882, he became ill with a persistent infection after undergoing throat surgery. He died in March at the age of 53, survived by his 36-year-old wife Victoria Ward and their seven daughters.

Despite the blow to the family, Victoria Ward proved to be highly adept at managing her family's affairs. She leased out the salt-producing lands and some of the estate's other properties, which enabled her to focus on turning Old Plantation into a self-sufficient enterprise. Her carefully kept accounts reveal the day-to-day operations of Old Plantation, where everything from eggs, bananas, *'awa*, *kalo*, *makaloa* grass, chickens, hay, hides, coconuts, butter, and horses brought in income. She expanded the herd of cattle and horses and even dabbled in stocks and investments (Hustace 2000:47).

Victoria Ward died at her beloved home on April 11, 1935 at the age of 88, with her family at her bedside. Five years before her death, she formed Victoria Ward, Limited, and it eventually took over the assets and management of the Ward family's vast estate.

After Victoria's death, several of her daughters assumed the responsibilities of managing the family's properties and assets. Daughter Victoria Kathleen succeeded her mother as president of the company, with sister Lucy Kaiaka serving as secretary. They turned an old cottage on the property into an office. These two sisters, along with Hattie Kulamanu, remained single and continued to live at Old Plantation, which the three of them had inherited, into the late-1950s. (Hustace 2000:77)

3.3 HONOLULU AHUPUA'A AND KEWALO 'ILI IN THE 20TH CENTURY

During the second half of the nineteenth century, infrastructure improvements within the Kālia region made rapid modernization possible. The road connecting Waikīkī to Honolulu (present-day Kalākaua Avenue) was improved and a tram line was built between the two areas ("The Projected Railroad to Waikiki" 1888). Beginning around the turn of the twentieth century, the landscape within Honolulu Ahupua'a and surrounding Kewalo 'ili was transformed as the remaining ponds, irrigated fields, and marshland of Honolulu and Waikīkī were filled in. Reclamation projects in the 1930s (including the Kewalo Reclamation Project and the Waikīkī Projects) ultimately moved millions of tons of sediment. Nakamura (1979:113) notes that the land reclamation programs drastically diminished Waikīkī's potential as a viable and important agricultural and aquaculture center.

3.3.1 Urbanization, Waste Disposal, and the Use of Incinerators in Kewalo

As Honolulu grew, so did the volume of waste. Much of it was handled in one of two ways: by dumping it onto low-lying ground or by burning it, either out in the open (Figure 3-24) or in an incinerator. The Kewalo and Kaka'ako districts, already viewed as waste land by then, initially provided the government with ample space to address the city's growing trash problem. The owners of these low-lying marsh and tidal lands had every incentive to allow the government to use them for waste disposal. A rubbish dump was seen as a cost-free way for an owner to turn

his or her property into economically useful land (Young 2005). This was a common practice in Honolulu in the early-1900s, as indicated by this 1925 report, quoted by Young:

The present method of refuse disposal is by dumping same on waste land within the city. This method has been pursued in Honolulu for many years until now the available land for such purpose is nearly covered. At the very longest, from the present outlook, it is but a matter of a year or two until either a different method must be provided or additional lands allotted for the disposal of refuse. (Young 2005)



Figure 3-24. Open-air burning of trash in area between Kewalo Basin and Ala Moana Park, 1921 photograph (Photographer: Hill, reprinted in Scott 1968:578).

The Ala Moana dump of the early-1900s was located *makai* of Ala Moana Boulevard. It ran along the shoreline between the eastern edge of Honolulu harbor to Waikīkī (Shideler 2002). The dump was divided into two sections: one was for burning animals and fish, the other for combustible waste. Food waste went to the pig farmers. By the late-1920s, space was becoming an issue, which prompted the construction of an incinerator in 1930 and then another one in 1948 (Shideler 2002).

The very first incinerator in Kaka’ako was actually completed in 1905, as highlighted in the 1906 Thrum Annual Report:

Early in the year was completed the long-projected garbage crematory for the disposal, daily, of the city’s refuse by a patent and sanitary process. It is located on the shore of Kakaako, adjoining the sewer pumping station; is two stories in height and built of brick. On the ground

floor are six incinerators of the Thackery patent, enclosed with brick, of a capacity judged sufficient to serve the city’s needs for many years to come. (Thrum 1906:177)

The 1930 incinerator (“Incinerator Number One”), was built along the shoreline of Ka’ākaukukui, which the Territory of Hawai’i acquired in 1919 (Figure 3-25). This is at the present-day intersection of ‘Āhui and Olomehani Streets on the ‘ēwa side of the entrance to Kewalo Harbor. Burning the garbage before dumping it was intended to reduce the volume of waste and promote sanitation. The facility was capable of burning 80 tons of garbage per day and operated in two shifts. Even though it was a modern facility, it depended heavily on manual labor. Garbage was loaded onto a trap door from the second floor and dropped into a furnace. Workers then loaded the ash into wheelbarrows and disposed of it onsite. Nearby acreage was set aside by a series of executive orders to accommodate the ash disposal (Shideler 2002).

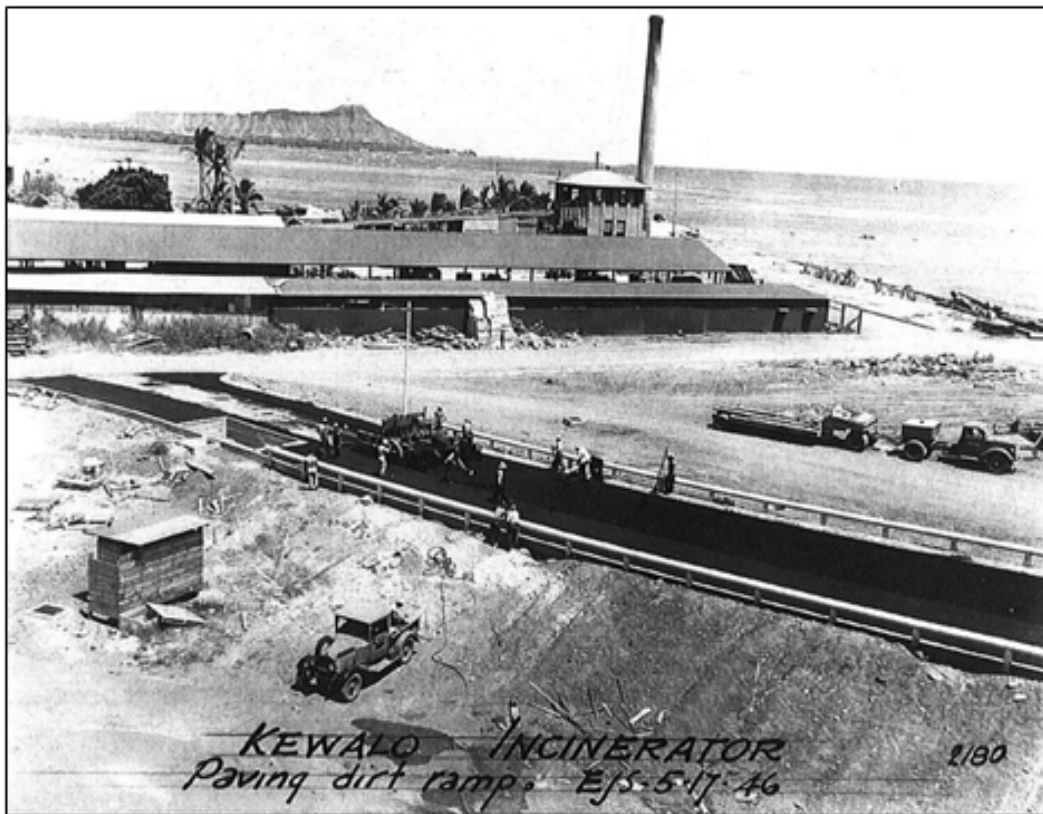


Figure 3-25. 1946 photograph of the Kewalo Incinerator No. 1, west side of Kewalo Harbor (Shideler 2002:Figure 4)

A second incinerator (“Incinerator Number Two”), located just a few hundred yards to the west of Incinerator Number One, was completed in 1948 (Shideler 2002). It had twice the burning capacity of Incinerator Number One, which was thereafter removed from service and leased out to fishing operators. In the mid-1950s, part of the property was converted into a fishcake factory by the Mitsuwa Kamaboko (Shideler 2002).

In 1848, seawalls were built along the perimeter of Ka’ākaukukui’s submerged reef to contain the growing expanse of ash and other non-combustible fill. The walls extended 500 feet out from the

original shoreline. They measured thirty feet wide at their base and ten feet high. The boulders used to build the wall came from Punchbowl Crater (Shideler 2002). By the mid-1950s, the reef bed was covered over with fill, and by 1971, the height of the landfill was well beyond capacity, forcing the City to transport its Kewalo refuse to other off-site facilities. Some of the ash heaps towered 25 feet over the seawall.

In 1977, changing environmental laws brought about the incinerator's closure. The building was later sold to the Hawai'i Community Development Authority. It underwent extensive renovations and reopened in 1998 as the Hawaii Children's Discovery Center, which continues to operate there today. The landfill was converted into the Kaka'ako Waterfront Park, which opened in 1992, and its piles of waste were transformed into rolling hills of grass.

3.3.2 Kaka'ako and Kewalo Land Reclamation

Much of modern-day Kaka'ako and Kewalo was once fringing reefs, sand, and mudflats with historic maps showing the Blaisdell property was much closer to the shoreline than it is today (see also Figure 3-6 and Figure 3-7). The lands *makai* of King Street are the product of extensive filling generated by various dredging and waste disposal projects that occurred from the late-1800s to the early-1900s.

One of the first formal establishments in Kaka'ako was the Branch Hospital, established by the Board of Health in 1881 as a receiving station for those suspected of being infected with leprosy (Hanley and Bushnell 1980:105). It was located between present-day Coral and Keawe Streets. Hundreds of patients languished here under harsh conditions, where the waves and tides would occasionally sweep through the hospital (Hanley and Bushnell 1980:107).

The filling of the ponds of Kewalo began with a health initiative following an outbreak of bubonic plague in 1910. In the early part of 1911, the Territorial Board of Health inspected the ponds on Kanoa and Hamauku estates which resulted in the condemnation of the properties and notification to the land agents to resolve the "nuisance" by filling in the ponds and surround lands to roughly four feet above sea level (Kirchhoff 1914:194). Thus began the process of pond reclamation and the placement of large amounts of fill within the Kewalo area. Much of the area bounded by King Street, Ala Moana Boulevard, South Street, and Ward Avenue (referred to at the time as the "Kewalo District") was filled between 1913 and 1915, pursuant to the sanitation laws then in place. Once a property was condemned, the Superintendent of Public Works was authorized to make improvements. Appropriations were made to establish a revolving fund that would pay for the improvement costs, as many landowners were reluctant to undertake the work themselves (Kirchhoff 1914:194). Some 140 individual parcels were condemned with notices to each of the landowners requiring them to fill their lands and raise the grading above sea level. The approach resulted in piecemeal improvements by the Road Department and individual property owners. As the Superintendent of Public Works reported around this time, little had been done "to raise the plane of streets and lots sufficiently above sea level to give proper drainage and provide covering for water mains, sewers and other underground public utilities" (Kirchhoff 1914:194).

The government thereafter took bids on the project, and the contract to dredge and fill 362,500 cubic yards was awarded to Lord-Young Engineering Company for \$152,250 (Kirchhoff 1914:196). An electric dredge, which would generate the sand and ground-up coral fill, was installed near the shoreline. In June of 1913, filling began on the Ward estate at Ward Avenue and Ilaniwai Street (Kirchhoff 1914:198). By August, the *makai* end of the Ward estate was brought up to grade, and over 50,000 cubic yards had been deposited. By February of 1914, work on the area south of Queen Street was completed (Figure 3-26) (Kirchhoff 1914:198). Lawsuits were filed by some property owners and tenants affected by the work, but eventually, the project was completed and paved the way for the development that proceeded.

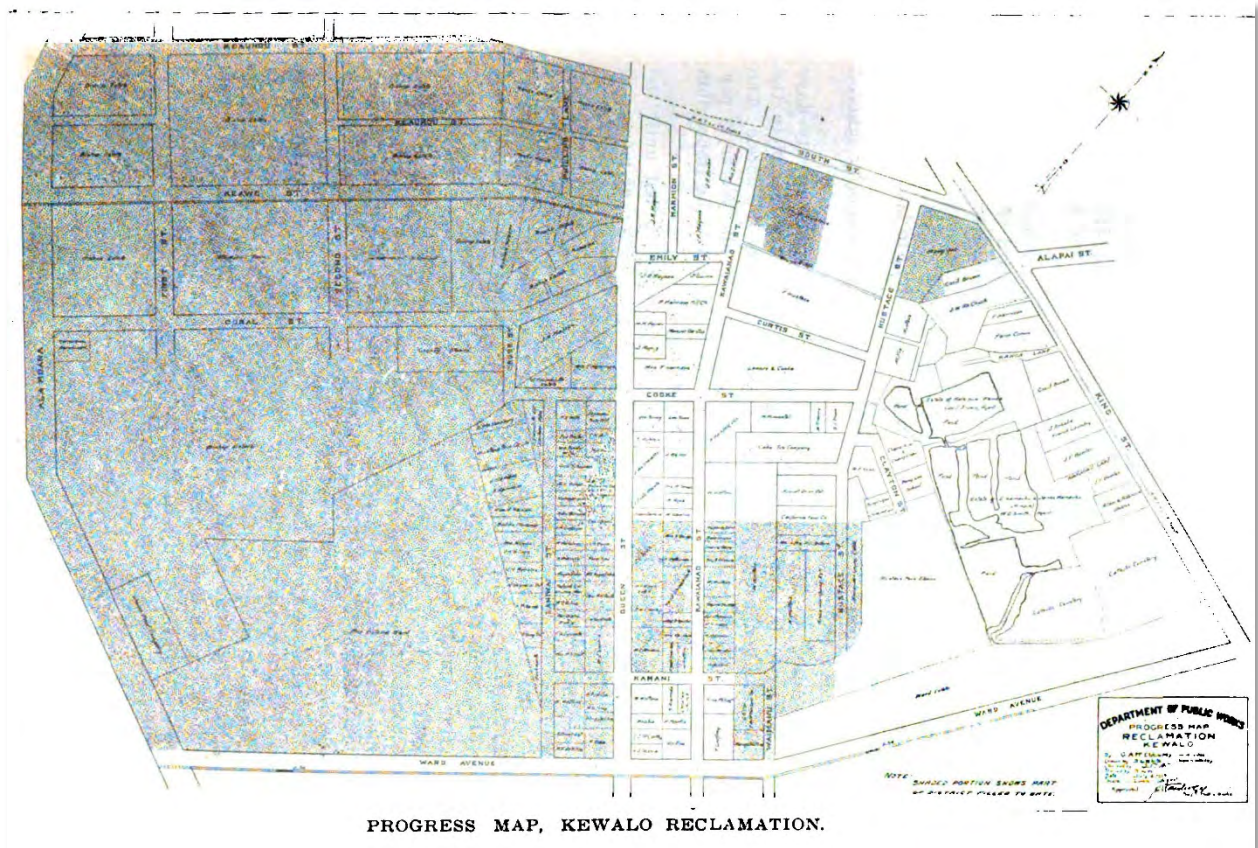


Figure 3-26. Progress map for the Kewalo Reclamation Project showing the extent of fill completion by June 30, 1914 shaded in gray (Kirchhoff 1914:195).

3.3.2.1 Dredging of Kewalo Basin and the Development of the Wharf at Kewalo

In 1915, the Harbor Commission began exploring the possibility of dredging an entrance to Kewalo Harbor, which already had a pocket of deep water in the reef. It was used throughout history as a canoe landing. It was anticipated that the fleet of smaller fishing sampans could be relocated there from Honolulu Harbor and help relieve some of the congestion, so in 1919, the government appropriated \$130,000 for improvements (Thrum 1920:147). Construction of the wharf was completed in 1926 at a final cost of \$128,985.45 and all fishing sampans were relocated to Kewalo Wharf from Honolulu Harbor (Farrington 1926:65). The material dredged from Kewalo was used to fill parts of the Bishop Estate’s lands on the *‘ewa* end of Waikīkī and the shoreline area of the

Ward property (McCarthy 1920:52). The harbor was dredged again in 1941, expanding it to its current size of 55 acres. The 8-acre park that sits on the Waikīkī side of the harbor mouth was added in 1955 (Kewalo Basin Harbor 2013).

3.3.2.2 *Modern Urbanization of the Kewalo Area*

As the land and water levels in Kaka'ako stabilized, the area attracted the development of homes, businesses, and industry. Between 1900 and the 1950s, Kaka'ako grew into a neighborhood of homes, schools, churches, and businesses with a thriving, working-class community of mostly Hawaiian, Portuguese, and Japanese families. At its peak in the 1940s, Kaka'ako was home to more than 5,000 residents (University of Hawaii Center for Oral History 1978:ix).

This excerpt from a 1908 Hawai'i Board of Health report gives us a glimpse of a neighborhood just taking shape:

I beg to call attention to the built-up section of Kewalo, 'Kaka'ako,' where extensive street improvements, filling and grading have been done. This, no doubt, is greatly appreciated and desirable to the property owners of that locality, but from a sanitary point of view is dangerous, inasmuch as no provision as been made to drain the improved section, on which have been erected neat cottages occupied for the greater part by Hawaiian and Portuguese families, now being from one to three feet below the street surface, and which will be entirely flooded during the rainy season. Unless this is remedied this locality will be susceptible to an outbreak [of cholera] such as we experienced in the past. (Hawaii Board of Health 1908:80)

Many of the homes and community gathering spaces were located *mauka* of Pohukaina Street, between Ward Avenue and Punchbowl Street. The center of the neighborhood was the old Pohukaina Elementary School (demolished in 1980), located on Pohukaina Street between Keawe and Coral Streets. Margaret Waldron, better known as Mother Waldron, was a fourth-grade teacher there from 1913 until her retirement in 1934 (University of Hawaii Center for Oral History 1978:467). Her after-school headquarters were at the nearby Atkinson Park, now Mother Waldron Park. Tough and respected, she kept the neighborhood gangs in line, and organized barefoot football teams, sewing classes, and cooking clubs.

Two of the neighborhoods residential hubs were known as Magoon Block and Kumalae Block. Many of the interviewees described them as the center of community life. Magoon Block consisted of a two-story building with a cluster of cottages in the back. The main building extended along Queen Street from the corner of Coral Street up to South Street. The street level units housed restaurants, a barber shop, and grocery, hardware, and furniture stores (University of Hawaii Center for Oral History 1978:134). Upstairs were apartments and a common *lanai* where the residents would gather and socialize. Magoon Block's most notorious residents were the coin-diving boys, a loose gang of a dozen or so boys that shared the second-floor apartments (University of Hawaii Center for Oral History 1978:1025). To make ends meet, they would dive for coins that visitors would toss into the water from the boats and piers along the harbor.

Across from Magoon Block was a smaller block called Kumalae. Mostly Hawaiian families lived there. The main building had a laundry store with a *poi* factory in the back and apartments on

the second floor. It was smaller than Magoon, but it was where all of the political rallies were held (University of Hawaii Center for Oral History 1978:449).

At the same time, Kaka'ako, with its abundance of open space in close proximity to Honolulu, was also attracting heavy industry. In 1900, Honolulu Iron Works relocated from Queen and Merchant Streets to Kaka'ako, and others soon followed. In 1902, Thrum reported on the trend:

The Union Feed Co. is another concern whose business has outgrown the limits of its old location, corner of Queen and Edinburgh streets. Like the Iron Works Co. they have secured spacious premises at Kaka'ako, erecting buildings specially adapted to the needs of their extensive business at the corner of Ala Moana (Ocean Road) and South Street. (Thrum 1902:168)

Kaka'ako was eventually rezoned for industrial use in the 1950s, and it soon transformed the character of the neighborhood (University of Hawaii Center for Oral History 1978:viii). Residents moved out as their leases expired. Apartments and cottages were torn down and replaced with warehouses and mechanic shops. In the 1970s, Kaka'ako was known for its small businesses and urban industrial establishments and was viewed as a rough, run-down, and underused neighborhood.

The City and County of Honolulu long had its sights on Old Plantation for a concert hall and sports arena. In 1957, with age making it increasingly difficult to manage the property, the sisters decided to sell Old Plantation to the government (Hustace 2000:77). The City paid \$2,095,050 for the home and its 23 acres. In 1958, the public had a chance to tour it through a series of open houses, prompting some to advocate for Old Plantation's preservation. In 1959, the home was razed, and three years later, the last of the Ward sisters, Mrs. Keakealani Perry Ward, died.

In 1976, state lawmakers created the Hawai'i Community Development Authority (HCDA). The HCDA was tasked with developing and implementing plans and programs for areas that the lawmakers designated as "Community Development Districts" (dbedt.hawaii.gov). In that same year, Kaka'ako was selected as the HCDA's first community development district (Hawaii Community Development Authority 1982:2). In 1982, after a five-year planning process, the HCDA released the very first plan for Kaka'ako, now known as the Mauka Area Plan (Hawaii Community Development Authority 2011). The original planning vision called for a mixed-use community, with a focus on large lot development through land consolidation. After a comprehensive review of the plan, revised versions were adopted by the HCDA in 2005 and then 2011.

3.4 PREVIOUS ARCHAEOLOGY

Numerous archaeological studies have been conducted from the mid-1980s to the present. All of the known archaeological studies conducted in the vicinity of the project and study area are briefly summarized and presented in Table 3-2 and graphically presented in Figure 3-27. Where archaeological finds were present in a given project area, a detailed and summary of the study and findings has been included herein and graphically shown in Figure 3-27.

Table 3-2. Summary of Previous Archaeological Studies in the Vicinity of the Current Project Area (Figure 3-27)

Reference	Location	Archaeological Study Results
Yent 1985	Ka'ākaukukui Cemetery: Punchbowl and Pohukaina	Burial Disinterment: Five burials (SIHP #50-80-14-2918) recorded
Smith 1989	Kapi'olani Boulevard, southeast of Pi'ikoi Street	Burial Call: Single human bone fragment <i>makai</i> of Kapi'olani Boulevard, southeast of Pi'ikoi Street (SIHP #50-80-14-4243)
Douglas 1991a, b	Mother Waldron Park: Coral and Queen Streets	Burial Call and Recovery: One burial of Hawaiian ancestry, with a pig burial possibly associated with the burial; these burials considered part of (SIHP #50-80-14-4380)
Pfeffer et al. 1993	Kaka'ako Improvement District 1: Punchbowl, South King Street and Ala Moana Blvd	Archaeological Monitoring and Data Recovery: 31 burials Honuakaha Smallpox Cemetery 1853-1854 (SIHP # 3712 and 4531); 1 historic burial from Punchbowl Street (SIHP # 4532); 1 burial from Halekauwila Street (SIHP # 4533); and 116 historic burials from Kawaiaha'o Cemetery (SIHP # 4534)
Athens et al. 1994	Pi'ikoi St and Kapi'olani Blvd intersection	Burial Call: One set of human remains documented within a wetland environment, believed to represent a pre-Contact unattended death (SIHP #50-80-14-4847)
Hammatt and Chiogioji 1995	Kaka'ako Improvement District	Field Inspection: Inspection of a 20-block urbanized area, no archaeological or historically significant features identified
Anderson 1995	One Archer Lane: TMKs: (1) 2-1-044:041-043	Archaeological Inventory Survey: One historic property identified consisting of a post-Contact trash pit containing bottles, ceramics, metal fragments, and a basalt adze fragment not ruled out as pre-Contact (SIHP # 50-80-14-5373),
Allen and Williams 1997	Symphony Park: of Kapi'olani Blvd And Ward Ave	Paleoenvironmental Study: No cultural material, archaeological or historic features identified

Table 3-2 (continued). Summary of Previous Archaeological Studies in the Vicinity of the Current Project Area (Figure 3-27)

Reference	Location	Archaeological Study Results
Anderson 1997	One Archer Lane: TMKs: (1) 2-1-044:041-043	Archaeological Monitoring: One historic property identified consisting of a post-Contact coffin burial associated with the Roman Catholic Cemetery (SIHP #50-80-14-5455)
Anderson and Aronson 1997	One Archer Lane: TMKs: (1) 2-1-044:041-043	Archaeological Monitoring and Data Recovery : Identified 29 additional post- Contact burials (SIHP #50-80-14-5455) associated with the Roman Catholic Cemetery
Hammatt and Chiogioji 1998	Mother Waldron Park	Archaeological Assessment: No newly identified historically significant surface structures noted during the field inspection; the park itself is a portion of SIHP #50-80-14-1388, an Art Deco park listed on the National Register of Historic Places
Winieski and Hammatt 2000	Kaka’ako Improvement District 4	Archaeological Monitoring: Two isolated historic coffin burials (SIHP # 50-80-14-5598) documented on Kamake’e Street, between the intersections of Kawaiaha’o and Waimanu Streets
Borthwick and Hammatt 2001	Kaka’ako Improvements District 6: Ward Avenue	Archaeological Monitoring: Observed and recorded layers of coral and marine dredge fill along with natural tidal flats material below concrete pavement. No historically significant or culturally sensitive deposits or layers were encountered.
Winieski and Hammatt 2001	Ward Theaters	Archaeological Monitoring: Observed fill material over wetland sediments, with a former A horizon and calcareous sand in the northwest and southwest areas of the project. No historically significant findings.
Souza et al. 2002	Kaka’ako Improvement District 7	Archaeological Monitoring: Identified and recorded three previously disturbed pre-Contact burials (SIHP # 50-80-14-6376, -6377, -6378 [indeterminate provenience]); a buried sand A horizon recorded in seven of ten profiles.
O’Hare et al. 2003	Pensacola St, Kamaile St, Pi’ikoi St, and Kapi’olani Blvd	Archaeological Inventory Survey: Two historic properties identified across a six-acre project area that consisted of a buried pre-Contact to early post-Contact land surface (SIHP #50-80-14-6636) and a post-Contact trash dump (#50-80-14--6637)
O’Hare et al. 2004	Ko’olani Condominium	Archaeological Inventory Survey: Three cultural resources documented: SIHP # 50-80-14-6639 and SIHP # 50-80-14-6641, historic trash pits dating from the early twentieth century and SIHP # 50-80- 14-6636, the original wetland sediments of Kewalo

Table 3-2 (continued). Summary of Previous Archaeological Studies in the Vicinity of the Current Project Area (Figure 3-27)

Reference	Location	Archaeological Study Results
O’Leary and Hammatt 2004	Kapi’olani Boulevard: Kalākaua Avenue to Kamake’e Street	Archaeological Monitoring: No historically significant or culturally sensitive deposits or layers were encountered.
T. Tulchin and Hammatt 2004	Kapiolani Sewer System	Field Inspection: No historically significant cultural material, archaeological, or architectural features observed
Perzinski et al. 2005	HECO Kewalo Dispatch Center	Archaeological Inventory Survey: Identified two coffin burials (SIHP #50-80-14-5455) associated with the Roman Catholic Cemetery
Clark and Gosser 2005	Kapi’olani Blvd. and Kamake’e St.	Archaeological Inventory Survey: Documented a component of the Kewalo wetland sediments (SIHP #50-80-14-6636)
T. Tulchin and Hammatt 2005	Ko’olani Condominium, Kewalo Area	Archaeological Inventory Survey Addendum: Eight backhoe test trenches excavated; identified and documented additional extent of SIHP # 50-80-14-6636, the original wetland sediments of the Kewalo area and SIHP #50-80-14-6641, a historic garbage layer
O’Leary and Hammatt 2006	Moana Vista Project	Archaeological Inventory Survey: No historic properties documented
Bell et al. 2006	Victoria Ward Village Shops	Archaeological Inventory Survey: 86 test excavations identified three historic properties: SIHP #50-80-14--6854, subsurface cultural layer/activity area remnant with five human burials; SIHP #50-80-14-6855, activity area remnant comprised of pronounced subsurface traditional Hawaiian cultural layer and six human burials; and SIHP #50-80-14-6856, Kolowalu Fishpond remnant.
Bush and Hammatt 2006	Hokua Tower, Auahi Street	Archaeological Monitoring: No cultural material, archaeological or other historic features identified, buried A horizon documented at the eastern end of Auahi Street
Esh and Hammatt 2006	Pi’ikoi Street: Ala Moana Boulevard - Matlock Street	Archaeological Monitoring: Monitoring for the Rehabilitation of Streets Unit 5B on Pi’ikoi Street between Ala Moana Boulevard and Matlock Street; no historic properties documented

Table 3-2 (continued). Summary of Previous Archaeological Studies in the Vicinity of the Current Project Area (Figure 3-27)

Reference	Location	Archaeological Study Results
Hammatt 2006	Ala Moana Shopping Center	Archaeological Inventory Survey: One historic property (SIHP #50- 80-14-6847) identified consisting of a wooden box containing a mix of historic artifacts including printed material, wooden chopsticks, pig bone, and a horse brush
O’Hare et al. 2006	Kaka’ako Improvement District 10: Queen Street Extension	Archaeological Monitoring: Cluster of 28 historic burials (SIHP #50-80-14-6658), two isolated disturbed burials (SIHP #50-80-14-6659), and a historic trash dump (SIHP #50-80-14-6660); weak A horizon; some fishpond sediments observed
Barnes and Shideler 2007	Kona and Waimanu Streets	Archaeological Field Inspection: No historically significant cultural material, archaeological or architectural features identified during inspection
Carney and Hammatt 2008	Hokua Tower	Archaeological Monitoring: Isolated human mandible fragment and a historic trash pit (SIHP #50- 80-14-6765) observed and documented
Hammatt 2008	Ko’olani Condominium	Archaeological Monitoring: Three historic properties identified: SIHP # 50-80-14-6910, a single pre-Contact burial; SIHP # 50-80-14-6911, a cluster of 16 historic coffin burials; and SIHP # 50-80-14-6912, a single burial
Hazlett and Hammatt 2008	Alakea and Merchant Streets; Alakea and Queen Streets.	Archaeological Monitoring: No historically significant or culturally sensitive deposits or layers were identified.
Hazlett, Carney, et al. 2008	Honolulu Design Center	Archaeological Monitoring: No historically significant or culturally sensitive deposits or layers were identified.
Hazlett, Loynaz, et al. 2008	Ala Moana Shopping Center	Archaeological Monitoring: No historically significant or culturally sensitive deposits or layers were identified.
Fong et al. 2009	Kapi’olani Boulevard Drainage	Archaeological Monitoring: No historically significant or culturally sensitive deposits or layers were identified.

Table 3-2 (continued). Summary of Previous Archaeological Studies in the Vicinity of the Current Project Area (Figure 3-27)

Reference	Location	Archaeological Study Results
McElroy 2008	Kaka’ako: TMKs: [1] 2-10-059:011 and 012	Archaeological Inventory Survey: Four mechanically assisted test pits excavated. Identified fill layers with modern refuse over saturated clay deposit. No historically significant or culturally sensitive deposits or layers were identified.
O’Hare et al. 2009	Kamehameha Schools Kaka’ako Mauka	Archaeological Excavation: Preliminary testing identified extensive fill layers overlying naturally deposited sandy clay and marsh/pond sediments; no cultural resources identified
Petrey et al. 2009	Nimitz Hwy and Ala Moana Blvd	Archaeological Monitoring: No historically significant or culturally sensitive deposits or layers were identified.
Thurman et al. 2009	Queen Street Parks	Archaeological Inventory Survey: Identified additional extent of a previously documented historic fishpond remnant (SIHP #50-80-14-6856)
Hammatt and Shideler 2010	HECO: Pi’ikoi Substation	Archaeological Field Inspection: No historically significant cultural material, archaeological or architectural features identified during inspection
O’Hare 2010	Safeway	Archaeological Field Inspection w/ Subsurface Testing: Lot once used by Schuman Carriages as a car display room and office, followed by a lodging house called “The Donna” and other housing units. Excavation of five backhoe documented stratigraphy that consisted of surface asphalt, and fill layers over volcanic cinders. A modern fire pit was noted. No historically significant or culturally sensitive deposits or layers were identified.
Altizer et al. 2011	Kapi’olani Sewer System	Archaeological Monitoring: Documented SIHP # 50-30-14-6636, a wetland deposit with signs of historic modification for rice cultivation, in Sewer Line G, near Kamaile Street.
Runyon et al. 2011	Ko’olani Towers	Inventory Survey: Documentation of five historic properties. SIHP # 50-80-14-6641, a burnt historic trash layer, SIHP # 50-80-14-6636, Kewalo wetland sediment, w; SIHP # 50-80-14-7115, a subsurface cultural layer containing intact pit features and artifacts; SIHP # 50-80-14-7116, a buried low-energy alluvial layer; SIHP # 50-80-14-7117, post- Contact human burials.

Table 3-2 (continued). Summary of Previous Archaeological Studies in the Vicinity of the Current Project Area (Figure 3-27)

Reference	Location	Archaeological Study Results
Tome and Spear 2011	Ala Moana Shopping Center	Archaeological Monitoring: No historically significant or culturally sensitive deposits or layers were identified.
Hunkin et al. 2012	Kalihi/Nu‘uanu Sewer Rehabilitation	Archaeological Monitoring: While no historically significant or culturally sensitive intact deposits or layers were identified, a single isolated human bone fragment was discovered in fill material during excavation of Area 6. The custody of this skeletal fragment was transferred to the SHPD/DLNR office
Medina and Hammatt 2012	Safeway: TMKs: (1) 2-4-011:008, 009, 010, 011	Archaeological Monitoring: One historic property observed (SHIP #50-80-14-7212) consisting of a post-Contact trash pit containing historic era refuse
Runyon et al. 2012	Pi‘ikoi Senior Residence	Archaeological Inventory Survey: Documented SIHP # 50-80-14-6636 which consists of buried Kewalo wetland sediments, found in all test trenches in the project area. The site has been previously documented in nearby areas in Kaka‘ako
Sroat and McDermott 2012	Ward Village	Supplemental Inventory Survey: Five test excavations within or adjacent to SIHP #-6855. Verified previous interpretations and extent of this traditional Hawaiian cultural layer comprised of numerous pit features and six previously identified human burials; no additional historic properties identified.
Hammatt 2013	Honolulu High-Capacity Transit Corridor (HHCTCP) –City Center (Section 4)	Archaeological Inventory Survey: Identification of the Kewalo wetland land sediment (SIHP #50-80-14-6636), Kolowalu Fishpond (SIHP #50-80-14-6856), a pre- to post- Contact cultural layer containing an isolated human bone fragment (SIHP #50-80-14-7429), and a subsurface privy remnant (SIHP #50-80-14-7430)
Medina et al. 2013	Kamake‘e and Queen Streets	Archaeological Monitoring: Identified multiple fill layers and a truncated sand A horizon
Morriss et al. 2013	Ala Moana Shopping Center	Archaeological Inventory Survey: Additional documentation of previously recorded wetland sediments (SIHP #50-80-14-6636); no addition historic properties identified.

Table 3-2 (continued). Summary of Previous Archaeological Studies in the Vicinity of the Current Project Area (Figure 3-27)

Reference	Location	Archaeological Study Results
J. Tulchin and Hammatt 2013	Kamehameha Schools Block F	Archaeological Inventory Survey: Twenty test units excavated, and two historic properties identified and included a layer of historic cultural material (SIHP #50-80-14-7412) and material related to the Hawaiian Sugar Plantation Immigration Station (SIHP #50-80-14-7413)
Pammer et al. 2014	Ward Block B, Ala Moana Blvd and Auahi Street	Archaeological Inventory Survey: Identified five historic properties in a subsurface context. Salt pan remnants (SIHP #50-80-14-7655), one human cranial fragment (SIHP #50-80-14-7656), twentieth century artifact and structural remains (SIHP #50-80-14-7658), a historic drainage ditch (SIHP #50-80-14-7659), and a historic trash fill layer (SIHP #50-80-14-7660)
Sroat, Pammer, et al. 2014	Ward Block C, Ala Moana Blvd and Auahi Street	Archaeological Inventory Survey: Two historic properties identified in a subsurface context consisting of salt pan remnant (SIHP #50-80-14-7655) and historic living surfaces (SIHP #50-80-14-7658)
Sroat, Inglis, et al. 2014	Ward Block K, Kamake'e and Auahi Streets	Archaeological Inventory Survey: During excavation of 35 trenches, identified components of two previously identified sites, (SIHP #s 50-80-14-6855), a pre to post-Contact cultural deposit, and (SIHP #50-80-14-7422), an historic trash deposit
J. Tulchin et al. 2014a	Kamehameha Schools Block B	Archaeological Inventory Survey: Excavated 39 test trenches; identified and recorded a series of buried concrete slabs (SIHP #50-80-14-7512) and a historic trash layer (SIHP #50-80-14-7513)
J. Tulchin et al. 2014b	Kamehameha Schools Block I	Archaeological Inventory Survey: 6 historic properties identified in a subsurface context and recorded: twentieth century cultural layer (SIHP #50-80-14-7578), a twentieth century fill deposit and building foundations (SIHP #50-80-14-7579), a historic burial cluster (SIHP #50-80-14-7580) and traditional Hawaiian bundle burial (SIHP #50-80-14-7581), as well as disarticulated human skeletal remains (SIHP #50-80-14-7582 and 7583)
Yucha et al. 2014	Ward Block C	Archaeological Inventory Survey: Forty-one test trenches excavated; one historic property consisting of a buried trash deposit with many bottles dating to the mid-1920s (SIHP # 50-80-14-7422)

Table 3-2 (continued). Summary of Previous Archaeological Studies in the Vicinity of the Current Project Area (Figure 3-27)

Reference	Location	Archaeological Study Results
Hawkins et al. 2015	Ward Neighborhood Block M	Archaeological Inventory Survey: 68 test excavations identified two historic properties: a previously identified subsurface cultural deposit (SIHP #50-80-14-7429) consisting of two discrete strata—a culturally enriched historic fill layer overlying a culturally enriched buried A horizon with 9 associated features and subsurface historic commercial infrastructure remnants (SIHP #50-80-14-7686)
Humphrey et al. 2015	Honolulu Rapid Transit Project—City Center (Section 4)	Supplemental Archaeological Inventory Survey: 14 test excavations were completed. Further documented (SIHP #50-80-14-7429), subsurface cultural layers, including additional features and a traditional Hawaiian burial.
Leger et al. 2015	Ward Neighborhood Block O	Archaeological Inventory Survey: Identified one historic property in 27 test excavations: (SIHP #50-80-147717), pre- to post-Contact subsurface residential and commercial surfaces; project area contained the modern developed land surface and fill layers overlying two sequences of natural layers: 1) loamy sand A horizon, Jaucas sand, and natural wetland or marine deposits; and 2) wetland A horizon over natural wetland or marine deposits, or a combination of both.
Sroat et al. 2015	Ward Neighborhood Block I	Archaeological Inventory Survey: 88 test excavations identified portions of 3 historic properties consisting of previously identified subsurface cultural deposits (SIHP #50-80-14-7429) comprised of culturally enriched historic fill layers and a buried sandy A horizon with 60 associated features, including human burials; subsurface historic salt pan remnants and associated cultural deposits, including a human burial (SIHP #50-80-14-7655); and the concrete Ward Estate water <i>‘auwai</i> (SIHP #50-80-14-7659).

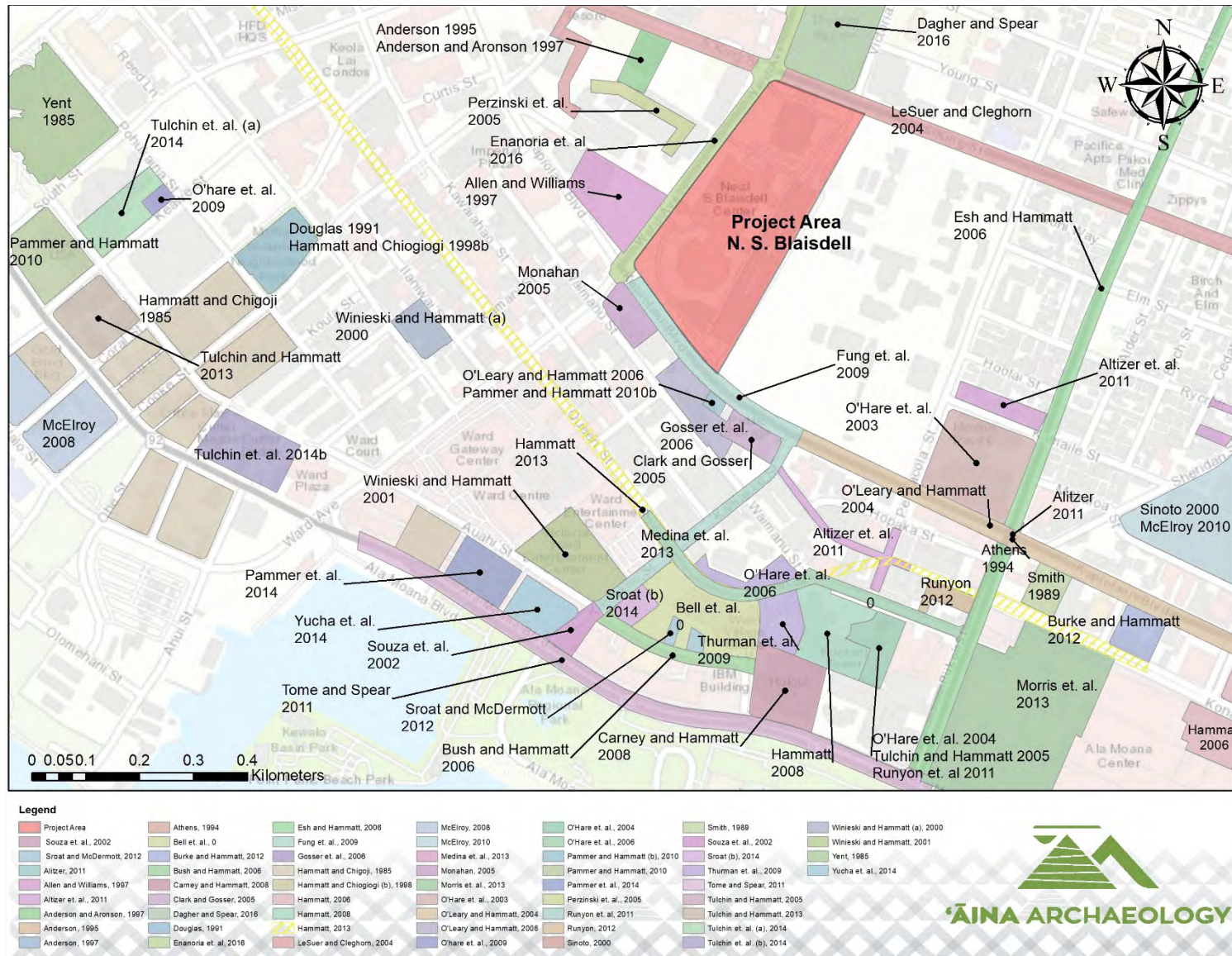


Figure 3-27. Previous Archaeological Studies conducted within .5 miles of the project area overlaid on the ESRI Topographic Base Map 2017

3.4.1 Honolulu Iron Works

In 1985, five burials were uncovered at the former Honolulu Ironworks lot (Yent 1985), which is the block at the corner of Punchbowl and Pohukaina Street. The burials were found in burial pits in the sand deposit that lies under at least a meter of the ironworks fill. Two of the individuals were in an extended position. A crew from the Division of State Parks disinterred the five burials, which were later designated (SIHP #50-80-14-2918). Yent's report does not contain a map, so the locations of the burials disinterred by the Division of State Parks are unknown.

3.4.2 Mother Waldron Park and Immediate Surrounding Area

The park itself, an Art Deco park (SIHP #50-80-14-1388) has been documented as significant for its association with the playground movement, as well as its associations with "Mother" Margaret Waldron and her work with troubled youth through playground work in the Kakaako district (Hibbard 1988). In March of 1991, during excavation of a waterline trench between Coral and Queen Streets across Mother Waldron Park, human skeletal remains were discovered and disinterred (Douglas 1991a). The remains were determined to be of Hawaiian ancestry, with a pig burial possibly associated with the burial. These burials were considered part of (SIHP #50-80-14-4380).

3.4.3 Beretania Street

In 2010, CSH completed an archaeological monitoring study for the construction of a Safeway supermarket on a lot once used by Schuman Carriages as a car display room and office (Medina and Hammatt 2012). Five test trenches were excavated on the property. The majority of subsurface deposits consisted of natural, undisturbed sediment. Four locations had historic trash deposits, with artifacts dating from the 1860s to the 1920s, a chronology which coincides with the use of the property for temporary residential lodging. These deposits were recorded as SIHP #50-80-14-7212.

3.4.4 Kapi'olani Boulevard and Pi'ikoi Street

3.4.4.1 Kapi'olani Boulevard

In 1997, Ogden Environmental and Energy Services Company, Inc. conducted geoarchaeological coring at the corner of Kapi'olani Boulevard and Ward Avenue (J. Allen and Williams 1997). Analysis of the soils and sediments indicated this area was a marine bay ca. 2500 BC and by AD 300-500 it had developed into a marsh. Marsh development occurred due to that fact that the area had "progressively filled with terrigenous soils and subordinate marine sediments....This portion of the Kewalo wetland remained a marsh throughout the later part of the sequence; no evidence suggests cultivation of taro or rice" at the location of the coring study (J. Allen and Williams 1997:i).

In 2004, Pacific Consulting Services conducted an archaeological inventory survey for a storage facility at the southwest corner of Kapi'olani Boulevard and Kamake'e Street (Clark and Gosser 2005). Wetland pond deposits were documented in the northern portions of the project area and considered to be a component of SIHP # 50-80-14-6636, the Kewalo wetlands. Radiocarbon

dating of a peat sample from the pond sediments indicated that the pond was active as late as the 1920s to 1930s.

Between 2008 and 2009, CSH completed archaeological monitoring of sewer line rehabilitation excavations throughout the Kapi'olani area (Altizer et al. 2011). Wetland marsh sediments considered components of the Kewalo wetlands (SIHP # 50-80-14-6636) were documented in the area of sewer line improvements. The location of (SIHP # -6636) was consistent with the 1884 Bishop Waikiki Survey Map (RM 1090) and the 1897 Monsarrat map (RM 1910), both of which show a pond present in the vicinity of the Kapi'olani Area Revised Sewer System project area. The pond is not named on either map but is present within former rice fields. The sediments encountered during project-related sewer line excavation are described as a black clay loam, potentially related to rice cultivation. Abundant quantities of freshwater snail shells may indicate the former wetland deposits were previously modified for *lo'i kalo* agriculture and modified for rice cultivation

Finally, CSH carried out an archaeological inventory survey for a 1391 Kapi'olani Boulevard parcel involving 22 test excavations. SIHP # 50-80-14-7193, a historic trash layer dating from the 1930s to the 1950s was documented (Burke and Hammatt 2012).

3.4.4.2 Pi'ikoi Street

In 2012, CSH (Runyon et al. 2012) completed an archaeological inventory survey for the Senior Residence at Pi'ikoi. SIHP # 50-80-14-6636, consisting of the buried Kewalo wetland sediments, was observed and documented within all test excavation completed within that project area. These findings further define the extent of the wetland deposit which had been previously documented within the nearby Kaka'ako area (O'Hare et al. 2003, 2004; Runyon et al. 2011; T. Tulchin and Hammatt 2005). A sediment sample collected from SIHP #50-80-14-6636 was submitted to the Bishop Museum for analysis by Dr. Carl Christensen, a professional malacologist. Christensen's analysis noted that the snail species represented in the samples were "little changed from those present there and in similar environments in pre-Contact times" (Christensen 2011:9). Of three snail species commonly found in these wetland environments (*T. porrecta*, *M. tuberculata*, and *T. granifera*), one species (*T. porrecta*) found within a sediment sample retrieved from SIHP # -6636 is now virtually extinct.

3.4.4.3 Kapi'olani Boulevard and Pi'ikoi Street Intersection

Earliest, currently known documentation of the presence of human remains at the intersection of Kapi'olani Boulevard and Pi'ikoi Street occurred in 1994. In 1994, an inadvertent discovery of human skeletal remains was made during utility excavations at the corner of Pi'ikoi Street and Kapi'olani Boulevard (Athens et al. 1994). The find was identified as the remains of a young female between 12 and 15 years of age. The remains were documented within a wetland environment and believed to represent an unattended death, or non-intentional burial. Radiocarbon analysis of bone collagen yielded a date of death of between AD 1295-1473. Osteological analysis identified a severe bone infection of the right pubis and the probable cause of death.

In 2003, CSH conducted an archaeological inventory survey at a property on the corner of Pi'ikoi Street and Kapi'olani Boulevard (O'Hare et al. 2003). Stratigraphy consisted of landscape, construction, and/or coral and sand fill sediments over natural wetland clay sediments. The fill deposits contained historic artifacts dating to the 1920s and 1930s. Four subsurface features were identified: Feature 1, a pit feature containing broken ceramic insulators; Feature 2, a trash pit containing 1920s and 1930s historic artifacts; Feature 3, a trash pit containing wood and concrete; and Feature 4, an artificially constructed sand berm with a concentration of coral boulders at the east side, possibly representing a retaining wall for the berm. A wooden fence post was also found on the other side of the coral rock pile, possibly representing a property boundary, rice field boundary, or a trail edge. Feature 4 is considered part of SIHP # 50-80-14-6636, the Kewalo wetlands.

Finally, and though not located at the intersection of Kapi'olani and Pi'ikoi, construction at the parcel that borders the current project area to the east resulted in the identification of fragmented human remains. In 1989, four bone fragments were uncovered by construction workers, the precise location and depth of which are unclear as the bone fragments had been disinterred prior to the field inspection of the State archaeologist (Smith 1989). Upon examination of the osteological material, only one was determined to be human while the others were identified as pig (*Sus scrofa*). The human bone (SIHP # 50-80-14-4243) was identified as a fragment of the right tibia shaft and temporarily taken to the Honolulu SHPD office. The reinternment status and/or location of the remains are unclear as the report notes that the project supervisor "expressed an interest in the later return of the bone to be reburied on site at the end of the project" (Smith 1989:1).

3.4.5 Kaka'ako Improvement District

Between 1986 and 1988, Cultural Surveys Hawai'i (CSH) (Pfeffer et al. 1993) conducted archaeological monitoring, data recovery, and burial disinterment in the Hawai'i Community Development Authority's Kaka'ako Improvement District 1 (ID-1), which was bounded by Punchbowl Street (west), South Street (east), King Street (north), and Ala Moana Boulevard (south), including extensions east for Kawaiaha'o Lane, Queen Street, and Auahi Street. Portions of Pohukaina Street, Quinn Lane, and Reed Lane are also within this district. The observed stratigraphy generally consisted of imported construction fill material overlying naturally deposited Jaucas sand or black cinder deposits. In many cases, these Jaucas sand or black cinder deposits were culturally enriched with pre- and post-Contact deposits including: human burials, building foundations, trash pits, midden concentrations, and various pre- and post-Contact artifacts. During the course of archaeological monitoring and data recovery activities, 149 human burials were identified and disinterred: 31 burials from the 1853-1854 Honuakaha Smallpox Cemetery (SIHP #50-80-14-3712 and -4531) at Quinn Lane, one historic burial from Punchbowl Street (SIHP #50-80-14-4532), one possibly pre-Contact burial from Halekauwila St. (SIHP #50-80-14-4533), and 116 historic burials from Kawaiaha'o Cemetery (SIHP #50-80-14-4534) at Queen Street (used from 1825-1920).

In 2000, CSH completed a monitoring program for the Kaka'ako ID-7 construction project, encountering three human burials that had been severely disturbed by excavation activities

(Souza et al. 2002). The ages and ancestries of the individuals could not be identified; however, the lack of grave goods may indicate they were pre-Contact or early post-Contact. Burial 1 (SIHP #50-80-14-6376), a single cranium, was inadvertently discovered by construction personnel in the back-dirt pile at the base yard. Burial 2 (SIHP #50-80-14-6377), an adult individual, was encountered by a CSH archaeologist during backhoe excavations for a box drain. The burial was within an undisturbed beach sand deposit. Burial 3 (SIHP #50-80-14-6378), consisting of a femur and several rib fragments, was also recovered in the base yard.

In 2000, archaeological monitoring for the Kaka'ako Improvement District 4 construction resulted in the documentation of two isolated historic coffin burials (SIHP # 50-80-14-5598) on Kamake'e Street, between the intersections of Kawaiaha'o and Waimanu Streets (Winieski and Hammatt 2000). The two adjacent burials were found in undisturbed beach sand with an associated A horizon that was capped by modern fill. Well-defined burial pits were present, as well as staining from the deteriorated coffin wood. No associated artifacts, other than the coffins, were discovered during disinterment.

3.4.5.1 Kamehameha Schools Development Blocks

In 2009, CSH prepared an archaeological inventory survey plan for three Kamehameha Schools Kaka'ako *mauka* parcels (O'Hare et al. 2009). One of the *mauka* parcels encompasses the *makai* half of the proposed Civic Center transit station. To formulate a strategy for testing, preliminary archaeological work, in the form of subsurface testing, was conducted. Preliminary testing identified the following stratigraphic sequence: 1) fill layers consisting of mixed marine/terrigenous soil strata; layers of incinerated and un-burnt garbage with metal, glass, and ceramic fragments; crushed coral layers; volcanic cinders; and pumped/dredged marine clay layers; 2) a naturally deposited sandy clay or sandy loam; and 3) a very dark gray sandy clay with organic material representing former marsh/pond sediments of the pre-Contact and pre-Hawaiian occupation of the islands.

In 2013, CSH completed an archaeological inventory survey of Kamehameha Schools Kaka'ako Block F (J. Tulchin and Hammatt 2013). Twenty test trenches were excavated, resulting in the identification of two historic properties. SIHP #50-80-14-7412 is a discontinuous subsurface cultural layer containing post-Contact Western-introduced cultural material, including crushed red brick, cut faunal bone, glass fragments, slag, and metal fragments. SIHP #50-80-14-7413 is present within both surface and subsurface contexts and is predominantly associated with the property's development and utilization as a Hawaiian Sugar Planters Immigration Station.

In 2014, CSH completed an inventory survey of Kamehameha Schools Block B, bounded by Pohukaina, Keawe, Auahi, and South Streets (J. Tulchin et al. 2014a). Thirty-nine test excavations (TE) were excavated, documented and sampled. Of note was the presence of a post-Contact trash layer (SIHP #50-80-14-7513) beneath the crushed coral fill. The layer contained late nineteenth to early twentieth century artifacts including glass and ceramic bottles, ceramics, and metal fragments. Also documented was the presence of buried concrete slabs and foundations (SIHP #50-80-14-7512 Features A to G) distributed throughout the project area as noncontiguous features.

Also in 2014, CSH completed an inventory survey of Kamehameha Schools Block I, Auahi Street, Ward Avenue, Ala Moana Boulevard, and Kōula Street (J. Tulchin et al. 2014b). The subsurface testing program initially consisted of 46 machine-assisted test excavations. Observed stratigraphy from open trenching indicates the underlying lands of the project area are a result of intensive land reclamation projects of the early to mid-20th Century. Naturally occurring sediments were capped beneath historic land reclamation fill. Six historic properties were identified during subsurface testing, including a twentieth century cultural layer (SIHP # 50-80-14-7578); a twentieth century fill layer and associated building foundations (SIHP #50-80-14-7579); a pre- to post-Contact cultural layer with a historic burial cluster (SIHP #50-80-14-7580); a pre-Contact traditional Hawaiian bundle burial (SIHP #50-80-14-7581); and two sets of disarticulated human skeletal remains in a previously disturbed context (SIHP #50-80-14-7582 and -7583).

3.4.5.2 Queen Street Extension and Improvements

In 2004, CSH completed archaeological monitoring for the Queen Street Extension Project. Three historic properties were documented: SIHP # 50-80-14-6658, SIHP # 50-80-14-6659, and SIHP # 50-80-14-6660 (O'Hare et al. 2006). SIHP # 50-80-14-6658 is a cluster of 28 burials within the Queen Street extension, seventeen of which were determined to be of Hawaiian ethnicity. This determination of ethnicity was based on the types of grave goods present, the presence of tooth ablation (Pietrusewsky and Douglas 1993), and flexed traditional burial position. The ethnicity of the remaining 11 could not be definitively determined but was assumed to be Hawaiian as the area of Kaka'ako was not populated by other ethnic groups prior to the twentieth century. In general, the burials were typically encountered at depths of 88-118 cms (2.9 to 3.9 ft.) (O'Hare et al. 2006:73, 76). All grave goods were historic; most were dated to the mid to late nineteenth century. It is possible that many of these individuals were victims of the 1853 smallpox epidemic or one of the other epidemics that decimated the Hawaiian population in the last half of the nineteenth century. SIHP # 50-80-14-6659 consists of two isolated burials in a previously disturbed stratigraphic context. The age or ethnicity of these burials could not be determined. SIHP # 50-80-14-6660 is a discrete historic dump area containing bottles dated to the early twentieth century (O'Hare et al. 2006).

In 2009, CSH completed an archaeological inventory survey for the Queen Street Parks project. Fieldwork involved the excavation of 29 backhoe trenches. One previously identified historic property was recorded, (SIHP #50-80-14-6856), remnants of a historic fishpond, originally identified by Bell et al. (2006). Documented stratigraphy consisted of varying layers of fill, overlying various naturally deposited sediments atop the coral shelf. The fill consisted of imported terrigenous sediment, incinerator material containing burnt historic refuse, crushed coral, and hydraulic pump dredge sediment. Natural sediments consisted primarily of backshore marsh or pond sediments associated with (SIHP #50-80-14-6856) (Kolowalu fishpond). Naturally deposited Jaucas sand deposits were also observed.

3.4.6 Ward Village

In 2000, CSH performed archaeological monitoring for Victoria Ward Ltd. at the site of the Ward Village Phase II (Ward Theaters) construction project in Kaka'ako (Winieski and Hammatt 2001)

(Winieski and Hammatt 2001). No pre-Contact materials, historic cultural materials, or human burials were encountered. Stratigraphic profiles within the project area revealed that fill materials were placed over a pre-existing marsh surface. In the northwest corner of the project area, an old A-horizon, naturally deposited pond sediments, and calcareous sand were observed. Similarly, an old A-horizon and naturally deposited calcareous sand were observed in the southwest corner of the project area.

In 2006, CSH completed an archaeological inventory survey for the Victoria Ward Village Shops project (Bell et al. 2006). A total of 86 trenches were excavated within the project area. Three historic properties were identified and documented. SIHP #50-80-14-6854 consists of a subsurface cultural layer/activity area that contained an immature pig skeleton, remnants of a historic privy, remnants of a culturally enriched A horizon (containing both historic and prehistoric cultural material), and five previously identified human burials. SIHP #50-80-14-6855 is also a subsurface cultural layer/activity area comprised of a traditional Hawaiian cultural layer that included numerous pit features and six previously identified human burials. Finally, SIHP #50-80-14-6856, sediments of a named fishpond, “Kolowalu,” that is noted in LCA 3194 and awarded to Kalae and Kaaua was also identified. Subsequent archaeological monitoring associated with the project documented approximately 50 additional pre-Contact or early post-Contact burials associated with SIHP #50-80-14-6854 and -6855, all of which were found in Jaucas sand deposits.

In 2012, CSH completed a supplemental archaeological inventory survey for the Ward Village Shops Phase 2 project (Sroat and McDermott 2012). While no new historic properties were identified, further documentation of the horizontal and vertical extent of SIHP #50-80-14-6855 was completed.

Also in 2012, CSH conducted an inventory survey in Ward Block C, a parking lot at the corner of Auahi and Kamake‘e Streets (Yucha et al. 2014). Forty-one test trenches were excavated, revealing a stratigraphic sequence that included the modern asphalt parking lot surface, numerous and variable layers of imported fill, hydraulic fill, a remnant buried A-Horizon, natural Jaucas beach sand, gleyed sandy clay, and the coral shelf. The buried former land surface (A-horizon) was observed in 28 of the 41 trenches within the project area. A buried trash deposit with many bottles dating to the mid-1920s, was recorded as SIHP #50-80-14-7422.

In 2014 CSH conducted an archaeological inventory survey for the Ward Block B on Ala Moana Boulevard and Auahi Street (Pammer et al. 2014). During the excavation of 35 test trenches, five historic properties were identified and documented. These historic properties included salt pan remnants (SIHP #50-80-14-7655), one human cranial fragment (SIHP #50-80-14-7656), twentieth century artifact and structural remains in a subsurface context (SIHP #50-80-14-7658), a historic drainage ditch (SIHP #50-80-14-7659), and a historic trash fill layer (SIHP #50-80-14-7660).

In 2014, CSH completed an inventory survey of Ward Block C project bounded by Auahi Street, to the southwest by Ala Moana Boulevard, to the southeast by a parking lot, and to the northwest by the Ward Warehouse complex (Sroat, Pammer, et al. 2014). A total of 36 backhoe-assisted test excavations were completed within both exterior (parking lot/courtyard) and interior (Ward

Warehouse commercial space) locations. Significant findings of the inventory survey include the identification of a large complex of buried historic salt pan structures and sediments within the central and *mauka* portions of the project area. The historic salt pan remnants, designated SIHP #50-80-14-7655, consist of a grid-like system of man-made berms enclosing low-lying, level salt pan beds. Also identified within the project area, buried beneath modern fill episodes, are extensive remnants of previous twentieth century development of the Block C West and adjacent Block B East project areas recorded as SIHP #50-80-14-7658 (Pammer et al. 2014).

In that same year, CSH completed an inventory survey of Ward Block K, located at the *mauka* (inland)/Diamond Head (south) corner of the intersection of Kamake'e and Auahi Streets (Sroat, Inglis, et al. 2014). The subsurface testing program consisted of the excavation of 35 backhoe test excavations. Findings of the inventory survey included identification of a culturally enriched loamy sand A horizon with associated features overlying Jaucas sand within the *makai* portion of the project area. In some cases, the underlying Jaucas sand in this area also contained cultural material, which may have been associated with the A horizon cultural layer. This cultural deposit was previously identified by Bell et al. (2006) and recorded as SIHP #50-80-14-6855. Within the Block K project area, the cultural layer (SIHP # -6855) contained 24 features, including possible midden deposits, post molds, and pit features of an indeterminate function. A burned trash fill layer containing a large number of historic artifacts was also identified. Artifact analysis of cultural material recovered from the back dirt of T-25 indicates a post-1935 age of deposition. The cultural material and mid-twentieth century date of the burned trash fill layer are similar to burned trash deposits documented as SIHP #50-80-14-7422 and located within the vicinity (of the Block K project area by Yucha et al. (2014). Based on the proximity and similarity of artifact type and time period, the burned trash deposit identified within the Block K project area was documented as a component in association with SIHP # -7422.

3.4.7 Ko'olani Condominium Development

In 2003, CSH conducted an archaeological inventory survey for the Ko'olani Condominium parcel in the Kewalo area, Honolulu (O'Hare et al. 2004). Two previously unrecorded historic properties were found. SIHP # 50-80-14-6639 and SIHP # 50-80-14-6641 are historic trash pits dating from the early twentieth century. In addition, one previously recorded historic property, the original wetland sediment of Kewalo (SIHP # 50-80-14-6636), was documented (O'Hare et al. 2004).

In 2005, an inventory survey was conducted by CSH (T. Tulchin and Hammatt 2005) for the Phase II portion of the Ko'olani Condominium parcel in the Kewalo area of Honolulu. Two historic properties were identified: SIHP # 50-80-14-6636, original wetland surface of Kewalo area, and SIHP # 50-80-14-6641, historic garbage layer. Both were previously identified by O'Hare et al. (2004).

In 2008, CSH (Hammatt 2008) completed archaeological monitoring associated with the development of the Ko'olani Towers Phase I, located in Kaka'ako, west of Waimanu Street and mid-block between Kamake'e Street and Pi'ikoi Street. Three historic properties were identified: SIHP # 50-80-14-6910, a single pre-Contact burial; SIHP # 50-80-14-6911, a cluster of 16 historic coffin burials believed to comprise a discrete cemetery; and SIHP # 50-80-14-6912, a single burial

for a total of 18 burials encountered. In addition, various historic trash deposits were observed throughout their project area but were not considered eligible for the Hawai'i Register of Historic Places. Burials were reported at depths of 60 cmbs, 78 cmbs, and 100 cm below surface, but no depths are reported for most burials (owing to removal of the former ground surface in the vicinity prior to burial discovery). Eight of the burials were left in their original place of interment, with most of the rest relocated closer to the burials left in place.

In 2011, CSH (Runyon et al. 2011) completed an archaeological inventory survey for the Ko'olani Phase II (Waihonua), located just *mauka* of Phase I. A total of five historic properties—two previously documented and three newly identified were documented within the Phase II area. The previously documented historic properties included a layer of incinerated trash, the analysis of portable remains of which places the date of the trash layer between 1880 and 1920 (SIHP # 50-80-14-6641), and a portion of the buried Kewalo wetland sediment (SIHP # 50-80-14-6636). The newly identified historic properties included a culturally enriched Ab horizon (cultural layer) containing multiple pit features and pre- and post-Contact artifacts (SIHP # 50-80-14-7115) and located throughout the western section of the Waihonua project area; a buried pond, or wetland, sediment that corresponds geographically to a documented historic pond (SIHP # 50-80-14-7116); and a concentration of 27 post-Contact human burials (SIHP # 50-80-14-7117), located in the western portion of the Waihonua project area.

3.4.8 Ala Moana Boulevard

3.4.8.1 *Hokua Tower*

Between 2003 and 2005, CSH conducted archaeological monitoring for the Hokua Tower Project on Auahi Street (Carney and Hammatt 2008). Two historically and culturally significant subsurface deposits were identified during monitoring. These findings included an isolated human mandible fragment that was identified on the ground surface, the original provenience of which was unknown; as well as a historic trash pit (SIHP # 50-80-14-6765).

3.4.8.2 *Ala Moana Center*

In late 2005 and early 2006, an archaeological inventory survey of the Ala Moana Expansion property (TMK: 1 2-3-38: 001 and 2-3-40: 005, 007, 009, 011, 014, 016, and 018) was completed by CSH (Hammatt 2006). A total of 30 backhoe trenches were excavated as a part of the study, the result of which revealed no Jaucas sand deposits within the project limits. The natural land surface, prior to historic/modern fill episodes, was either sandy clay or a highly organically enriched peaty layer. The natural land surface had been completely removed by prior construction-related disturbances within large portions of the parcel. One historic property (SIHP # 50-80-14-6847) was identified and consisted of a wooden box containing portable cultural material that had placed in a pit cut down into the sandy-clay former land surface. The items contained within the box consisted of a mix of historic era artifacts dating to the late nineteen to early twentieth century and included, printed material, wooden chopsticks, pig bone, and a horse brush.

In 2012, CSH conducted an archaeological inventory survey for the Ala Moana Center 'Ewa Mall Expansion Project (Morriss et al. 2013). The majority of the project area documented an additional area of previously documented wetland sediments (SIHP # 50-80-14-6336) situated beneath extensive layers of historic reclamation fill (O'Hare et al. 2003, 2004; Runyon et al. 2012; Runyon et al. 2011; T. Tulchin and Hammatt 2005). Pollen and phytolith analysis indicated a sedge marshland environment. Possible salt pan sediments were also documented within nine test excavations; however, further investigations were recommended in order to definitively identify these sediments as salt pan remnants rather than land reclamation fill.

Hammatt (2013) completed subsurface testing as a part of an archaeological inventory survey of numerous locations between Middle Street and Ala Moana Center. Testing revealed multiple sites, three of which were identified near the current project area—SIHP #50-80-14-6636, sediments of the former wetland environment; SIHP #50-80-14-6856, Kolowalu Fishpond; and SIHP #50-80-14-7430, a subsurface privy remnant. The wetland sediments represent the natural wetland and marshy environment of the original and natural Kewalo landscape. These sediments were identified within 25 AIS test excavations in the East Kaka'ako and Kālia Geographic Zones for the Honolulu High Capacity Transit Corridor project (T-186 through T-193, T-195, T-196, T-198 through T-200, T-202, T-202A, T-203, T-205, T-207, T-208, T-210 through T-212, T-214, T-219, and T-220). In general, the wetland sediments were documented as variations of brown and gray silty clays, sandy clays, clay loams, and, black silt loam peat layers.

3.4.9 Walmart/Sam's Club

Aki Sinoto Consulting completed an archaeological study for Makaloa-Sheridan Sam's Club/Wal-Mart Project (Sinoto 2000). While the study did not result in any finding of significant historic properties, archaeological monitoring during construction resulted in the identification and documentation of human burials (Windy Keala McElroy 2010). Archaeological monitoring of project construction was conducted from 2002 to 2004, and by the end of ground disturbing activities a minimum of 64 individual had been observed across six areas within the project parcel (SIHP # 50-80-14-6516, -6661, and -6662). Based on burial form and associated cultural materials, these burial areas were determined to contain both traditional Hawaiian pre-Contact burials and post-Contact interment.

3.4.10 One Archer Lane

In 1995, Ogden Environmental and Energy Services Company, Inc. conducted an archaeological inventory survey of One Archer Lane, an area adjacent to the western boundary of the historic Roman Catholic Cemetery (Anderson 1995). One historic property was identified: (SIHP #50-80-14-5373), a post-Contact trash pit containing bottles, ceramics, and metal fragments. Of note was the presence of a basalt adze fragment which was determined to be dated with the historic trash pit, however pre-Contact land use within the study area could not be ruled out. During the course of archaeological monitoring of a tank installation at One Archer Lane, a human burial (SIHP #50-80-14-5455) was inadvertently encountered (Anderson 1997). Following the discovery of the human burial, it was believed that any further work would not intrude into the cemetery boundary. As a result, in consultation with the SHPD, monitoring was halted for the remainder of the project.

In August 1997, two months after monitoring was halted, a concentration of burials (SIHP # - 5455) was inadvertently encountered during construction activities at One Archer Lane. In all, a minimum of 30 individuals were encountered. Analysis and interment observations showed that “the burials dated from the mid-1800s to the 1920s” (Anderson and Aronson 1997), thus suggesting an association with the historic Roman Catholic Cemetery. In consultation with SHPD, all intact burials were documented under SIHP #50-80-14-5455 Burial # 0001 through Burial # 0029 (Anderson and Aronson 1997:73). Various disarticulated skeletal elements recovered from a disturbed context appears to account for the thirtieth individual in the MNI estimate. Due to the disturbed nature of the find appears that it was not documented under a formal burial number.

In 2005 CSH completed an archaeological inventory survey with subsurface testing for an approximately 1-acre parcel of land for a new HECO controlling station located adjacent to the historic Roman Catholic Cemetery (Perzinski et al. 2006). The study area was located just west of the current project area. One previously identified historic property (SIHP #50-80-14-5455) was documented within the study area. The identified features of (SIHP -5455) consisted of two historic coffin burials believed to be associated with the Roman Catholic Cemetery. The burials were located outside the presently delineated cemetery property and thus suggests that the limits of the cemetery once extended beyond the current delineated area (Perzinski et al. 2006).

3.5 HISTORIC PROPERTIES

Of the 59 previous archaeological studies conducted within an approximate .05 miles around the project area numerous historic properties have been identified and assigned SIHP numbers. There have been in excess of 250 burials identified in the area, from the mid-1980s to the present. Historic properties tend to be clustered around early land awards, fish ponds and habitations and known cemeteries. Clusters of burials have been found associated with the Honuakaha Smallpox Cemetery (SIHP #50-80-14-3712) used from 1853- 1854, Kawaiaha’o Cemetery (SIHP #50-80-14-4534) at Queen St. used from 1825-1920 and the Ka’ākaukukui Cemetery (SIHP #50-80-14-2918) at the former Honolulu Iron Works. In addition, the traditional wetland cultural layer of Kewalo (SIHP #50-80-14-6636) has been identified in numerous projects from Pi’ikoi St. to Ward Avenue. Remnants of fishponds and salt production sites have also been identified across the Kewalo plain. Other historic properties include historic trash pits, historic fill layers and other isolated finds. Table 3-3 and Figure 3-28 provide an overview of historic properties identified in the vicinity of the project area. Figure 33 also shows the identified historic properties in relationship to land awards, fishponds and salt production.

Table 3-3. Historic Sites in the vicinity of the project area (Figure 3-28).

SIHP 50-80-14	Report Description and Findings
-1388	Twenty 20 human burials were encountered; nine burials were discovered at the Pohulani Elderly Rental Housing SIHP # -4380 and eleven in and around Mother Waldron Park SIHP # -5820.
-1973	Historic subsurface cultural deposits.
-2918	5 burials were recorded Ka'ākaukui Cemetery at the Honolulu Iron Works project area
-2918	5 previously identified human burials, and a pit feature containing structural remains from a former trolley or rail line;
-2963	Subsurface pond sediments, human burials, and animal burials
-2963	1 historic property identified: 7 burials probably dating to pre-1850.
-2963	6 partial burial sets found. Tooth evulsion indicates probable pre-contact to 1850 date.
-3712	9 post-contact burials Honuakaha Smallpox Cemetery; and an early 20th century trash pit.
-3712	31 burials from 1853- 1854 Honuakaha Smallpox Cemetery
-4243	Inadvertent burial find, bone fragment <i>makai</i> of Kapi'olani Boulevard, southeast of Pi'ikoi Street
-4380	8 burials recorded and 5 disinterred.
-4380	1 burial recorded.
-4380	9 burials were discovered at the Pohulani Elderly Rental Housing
-4532	1 historic burial from Punchbowl St.
-4533	1 possibly pre-contact burial from Halekauwila St.
-4534	116 historic burials from Kawaiaha'o Cemetery at Queen St. used from 1825-1920.
-4847	1 set of human remains that might not have been an intentional burial
-5598	2 isolated historic coffin burials documented on Kamake'e Street, between the intersections of Kawaiaha'o and Waimanu Streets.
-5820	11 previously identified human burials and subsurface cultural deposits
-5820	11 sets of human remains in and around Mother Waldron Park

Table 3-3 (continued). Historic Sites in the vicinity of the project area (Figure 3-28).

SIHP 50-80-14	Report Description and Findings
-5942	A remnant of a light-gauge rail associated with the historic Honolulu Rapid Transit trolley system
-5942	1 previously identified historic property documented: remnants of the Honolulu Rapid Transit trolley system
-6376	1 pre-Contact burials recorded, a single cranium, was inadvertently discovered by construction personnel in the back-dirt pile at the base yard
-6377	1 pre-Contact burial recorded, adult individual, was encountered by a CSH archaeologist during backhoe excavations for a box drain. The burial was within an undisturbed beach sand deposit
-6378	location unknown as burial retrieved from large back dirt pile. A buried sand A horizon found in seven of ten profiles
-6636	Original wetland surface of Kewalo
-6636	Original wetland surface of Kewalo
-6636	Original wetland surface of Kewalo
-6636	Original wetland surface of Kewalo
-6636	Original wetland surface of Kewalo.
-6639	Historic trash pit dating from the early 20th century
-6641	Historic trash pit dating from the early 20th century, previously identified by O'Hare et al. 2004
-6641	Historic garbage layer. Previously identified by O'Hare et al. 2004
-6658	28 burials, cluster
-6659	2 isolated burials
-6660	Post-contact trash deposit
-6847	Post-contact trash deposit
-6854	Subsurface cultural layer/ containing both historic and prehistoric cultural material and 5 human burials
-6855	Subsurface cultural deposits
-6855	Pre-contact traditional Hawaiian cultural layer with six human burials

Table 3-3 (continued). Historic Sites in the vicinity of the project area (Figure 3-28).

SIHP 50-80-14	Report Description and Findings
-6856	Historic fishpond remnant
-6856	1 previously identified historic: a historic fishpond remnant, originally identified by Bell et al. 2006
-6910	1 pre-contact burial
-6911	16 historic coffin burials
-6912	1 burial.
-7124	Subsurface infrastructure remnants
-7189	Subsurface burnt trash deposit
-7190	Subsurface salt pan remnants
-7193	Historic trash layer dating from the 1930s to the 1950s
-7412	Discontinuous subsurface cultural layer containing post-Contact Western-introduced cultural material, including crushed red brick, cut faunal bone, glass fragments, slag, and metal fragments
-7413	Surface and subsurface features predominantly associated with the property's development and utilization as a Hawaiian Sugar Planters Immigration Station i.e., a reinforced concrete building, buried concrete structural remnants, and subsurface trash layers
-7442	A burned trash layer; majority of the project area contained modern developed land surface, fill layers, and hydraulic dredged fill overlying remnant buried A horizon or organic-rich peat material, Jaucas sand, and gleyed marine sandy clay
-7429	A previously identified subsurface cultural deposit, consisting of two discrete strata, a culturally enriched historic fill layer overlying a culturally enriched in situ A horizon, and 9 associated features
-7429	14 test excavations were completed. Further documented SIHP # -7429, subsurface cultural layers, including additional features and 1 traditional Hawaiian burial
-7429	Previously identified subsurface cultural deposits, consisting of culturally enriched historic fill layers and an <i>in situ</i> sand A horizon, and 60 associated features, including human burials
-7429	Subsurface historic salt pan remnants and associated cultural deposits, including a human burial
-7429	Ward Estate concrete water channel 'auwai

Table 3-3 (continued). Historic Sites in the vicinity of the project area (Figure 3-28).

SIHP 50-80-14	Report Description and Findings
-7512	Post-Contact structural remnants associated with early- to mid-twentieth century development
-7513	Post-Contact trash layer associated with early twentieth century land reclamation
-7578	An early to mid-twentieth century cultural layer
-7579	A pre- to post-Contact cultural layer with a historic burial cluster
-7580	A pre- to post-Contact cultural layer with a historic burial cluster, 8 burials
-7581	1 pre-Contact traditional Hawaiian bundle burial
-7582	1 set of disarticulated human skeletal remains within non-burial contexts
-7583	1 set of disarticulated human skeletal remains within non-burial contexts
-7655	Subsurface historic salt pan remnants
-7656	1 set of isolated human skeletal remains
-7658	Historic buried surfaces
-7659	Ward Estate concrete reinforced water channel 'auwai
-7660	Historic fill layer containing a concentration of historic artifacts.
-7686	Subsurface historic commercial infrastructure remnants
-7717	1 pre- to post-Contact subsurface residential and commercial surfaces; project area contained the modern developed land surface and fill layers overlying two sequences of natural layers: 1 loamy sand A horizon, Jaucas sand, and natural wetland or marine deposits; and 2 wetland A horizon over natural wetland or marine deposits, or a combination of both

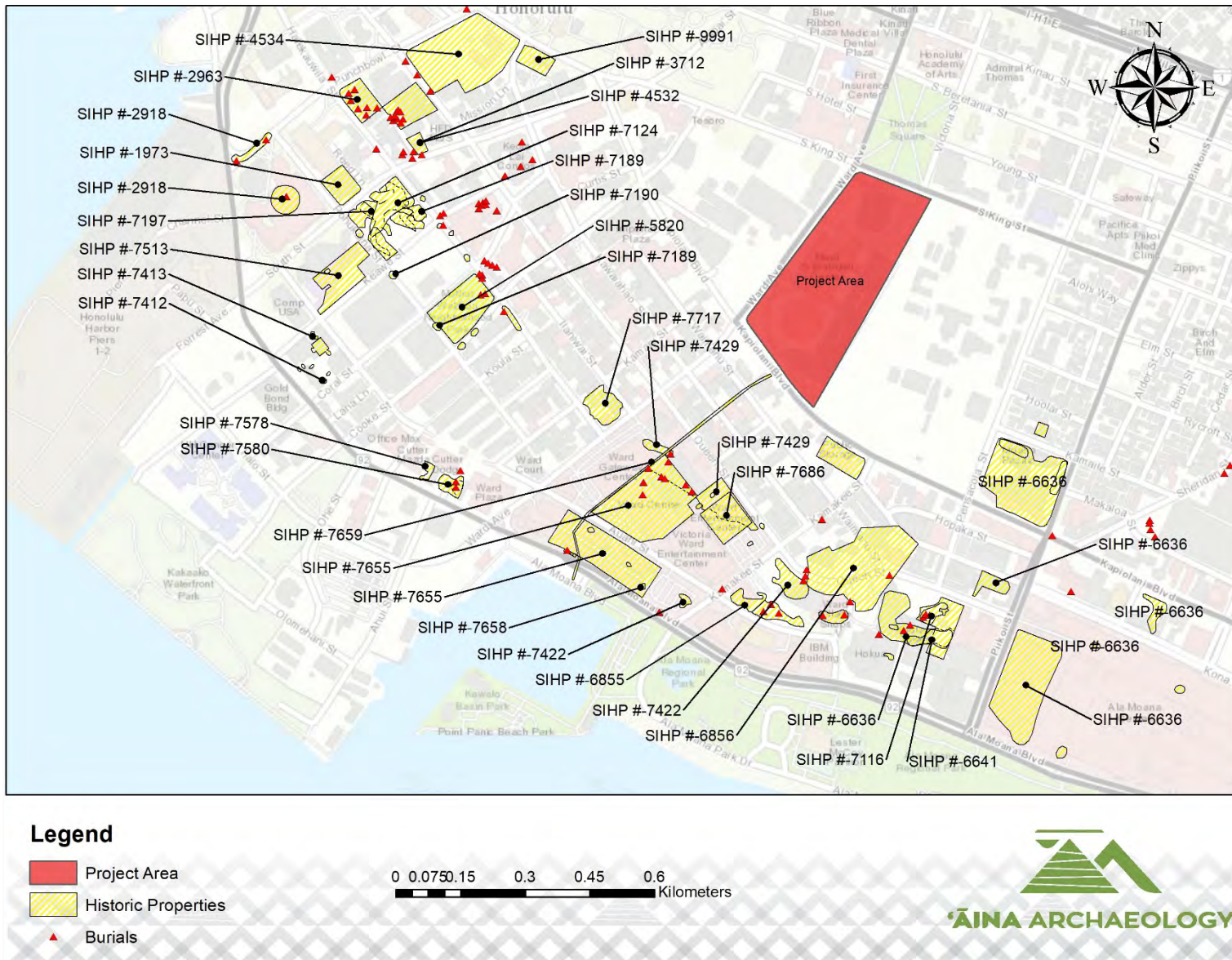


Figure 3-28. Historic properties identified in Previous Archaeological Studies conducted within .5 miles of the project area overlaid on ESRI Topographic Base Map 2017

4.0 CONSULTATION METHODS AND RESULTS

4.1 SCOPING AND COMMUNITY OUTREACH

All scoping and community outreach for this cultural impact assessment was completed by Kamoā Quitevis, B.A. In order to identify individuals with knowledge of the traditional cultural practices within and adjacent to the proposed project as it relates to this study, contact was initiated with government agencies, advisory councils, local community organizations, and traditional cultural practitioners, as well as *kama'āina* (local residents) and *kūpuna* (knowledgeable elders) with generational ties to the proposed project area. Follow up attempts were then made to all contacts on the initial mailing list in a good-faith effort to make contact. In addition, we posted a public notice in OHA's Ka Wai Ola (Figure 4-1). Each correspondence included an introduction letter and project area maps showing the location of the proposed Neal S. Blaisdell Center Master Plan Project (see Figure 4-2 through Figure 4-6).

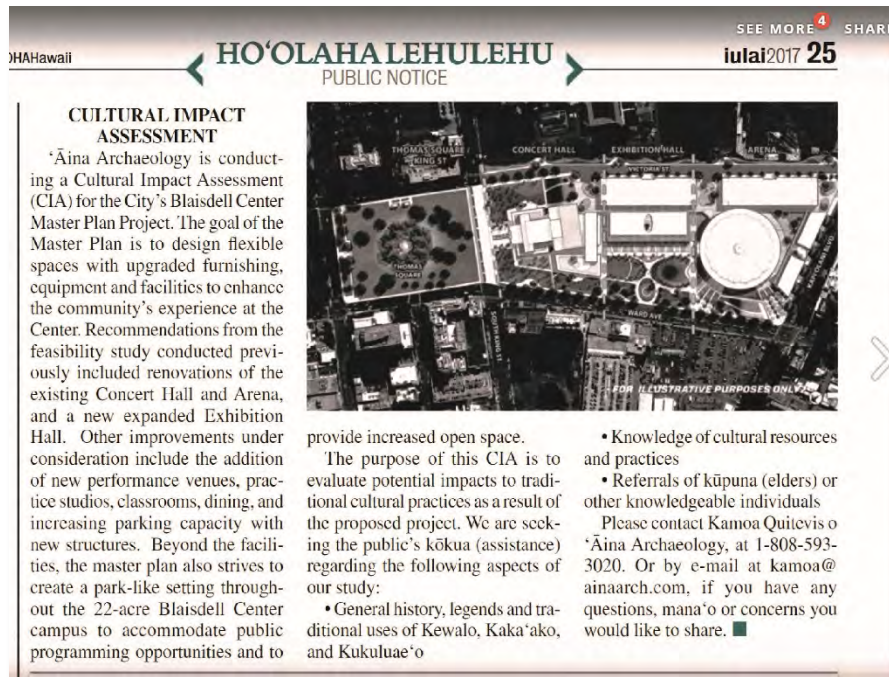


Figure 4-1. Public Announcement published in the Office of Hawaiian Affairs (OHA) monthly publication Ka Wai Ola, in the July 2017 Issue.



Subject: Cultural Impact Assessment for the Neal S. Blaisdell Master Plan Project, Honolulu Ahupua'a, Kona Moku (District), O'ahu Island (TMK: (1) 2-3-008:001).

Aloha,

Āina Archaeology is conducting a Cultural Impact Assessment (CIA) for the proposed Neal S. Blaisdell Master Plan project. The assessment will consider a "study area" of the 'ili of Kewalo and the ahupua' of Honolulu. The "project area" is defined as the site itself. The CIA is important because it ensures that the project takes into consideration impacts to the traditional cultural practices and resources within both the Blaisdell project area and the ahupua'a of Honolulu (Figure 1).

History:

The present day Blaisdell Center was within the Kona Moku, Kewalo ("the calling/echo") Ahupua'a, which is comprised of Kaka'ako 'ili on the east and Kukuluae'o 'ili on the west. Presently it is in the Honolulu Ahupua'a. The area of Kewalo connected the two more densely populated centers, Kou to the west, and Waikiki to the east, with a network of trails through irrigated fields, fishponds, marshes, and grassy plains where pill was gathered for thatched houses.

In 1870 the mauka area of the Ward estate, current site of the Neal S. Blaisdell Center was purchased by the Wards. In 1881 the Wards built their home, Old Plantation, on the parcel. Six thousand coconut trees, kiawe for firewood, and forage grasses for their horses and cattle were planted. The fishpond and 'auwai (connecting to the sea) were restored. A well was sunk to provide water to the home and irrigate the property by means of pumps "driven by windmills, there being an inexhaustible supply of water a few feet below the surface of the plains" (Pacific Commercial Advertiser, Sept 4, 1875)

The City and County of Honolulu, long interested in Old Plantation as a site for a concert hall and sports arena, purchased the property in 1957. Soon thereafter, the City commenced construction for the Honolulu International Center, now known as the Neal S. Blaisdell Center.

Project Overview

Eligible historic status of both the Arena and Concert Hall contributed to the desire to preserve significant portions of the original structures. The Exhibition Hall space has the lowest replacement cost and the largest potential to consolidate the building footprint by utilizing a stacking program, justifying the decision to rebuild this component. The Neal S. Blaisdell Center campus redevelopment project proposes to renovate the arena and concert hall, build a new exhibition hall and parking structures, and create new public and commercial spaces on the site. Following is an overview of the conceptual plans for the various aspects of the project depicted in (Figure 2).

Exhibition Hall

A new multipurpose venue and education studios provide a mixture of practice and learning spaces to the existing performance hall. This allows greater scheduling flexibility for the Concert Hall, promotes more innovative types of events, and extends periods of active use. Retail space along the front of the Exhibition Hall serves to activate the central open space and create an additional draw on nonperformance days.

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Figure 4-2 Consultation and Outreach Letter Page: 1

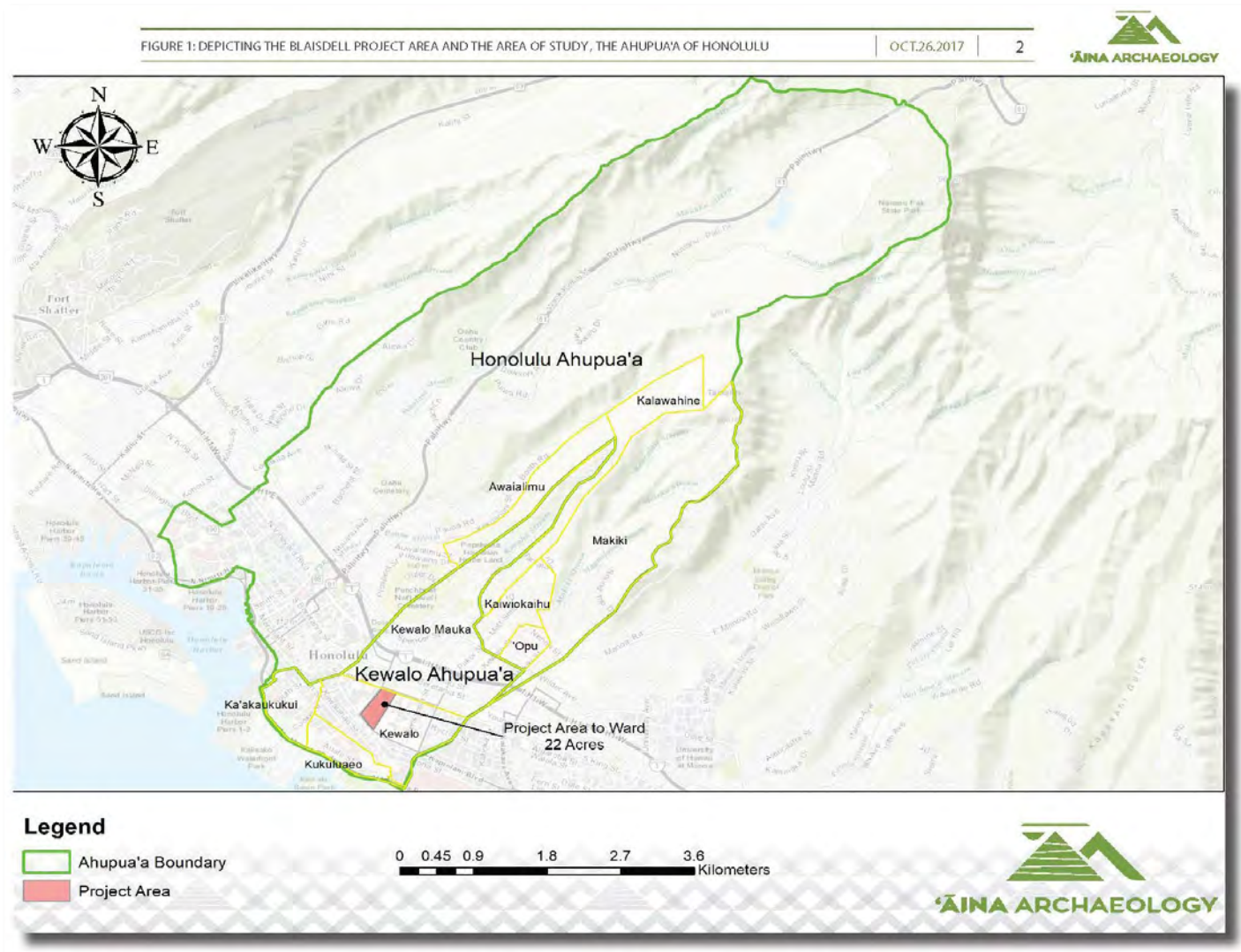


Figure 4-3. Consultation and Outreach Letter Page: 2



Similarly, commercial / retail space extends along Kapi'olani Boulevard to not only activate the urban edge, but to also encourage longer patron visitation before and after events. In addition, trades / warehouse and administration support space is needed in the meeting / event space facilities. Trash / recycling areas are also proposed in the reconfigured loading zones.

Arena

The conceptual design proposes raising the concourse to the second level for direct access to the main seating bowl area. This approach allows for expansion of retail and support spaces on the ground floor without significantly increasing the building footprint. Other recommended improvements to the Arena include enclosing the façade in glass, ADA and safety improvements, a moderate increase of food and beverage opportunities, mechanical upgrades and modernization, retail / commercial development, incorporating complete street elements along Kapi'olani Boulevard, the Victoria Street extension, a new café / ticketing building, and new and improved plazas / open space. Pedestrian connections occur at the ground level and the second level. Providing retail/commercial users and pre-show hangout opportunities on the ground floor strengthens the existing connection to Kapi'olani Boulevard, which has experienced new mixed-use development with residential, commercial, and retail uses on the makai side, as well as Kaka'ako.

Concert Hall

Modifications to this facility do present the potential to reduce scheduling conflicts, increase revenue, bolster outreach and educational offerings, provide needed support space, and improve patron experience. Recommended improvements to the Concert Hall include expanding and enclosing the lobby to provide air conditioned pre-function space, renovated bathrooms, and improved concessions. A new roof terrace at the balcony level was suggested as a unique indoor/outdoor experience and to reduce congestion during intermission. Renovations would also address ADA and safety concerns to provide access to the balcony and upper seating. Adding a new flexible theater looking over an event lawn creates a dynamic performance space that embraces the landscape and offers new opportunity for public / patron engagement. New studios and classrooms will help extend the reach of the Blaisdell Center to further serve the community.

The purpose of the cultural impact assessment is to evaluate potential impacts to traditional cultural practices as a result of the Neal S. Blaisdell Center campus redevelopment project. For this cultural impact assessment, the 'ili of Kalia and the ahupua'a of Honolulu are considered the overall "study area" while the footprint of the proposed project is identified as the "project area". We are seeking kōkua or help and guidance regarding the following questions:

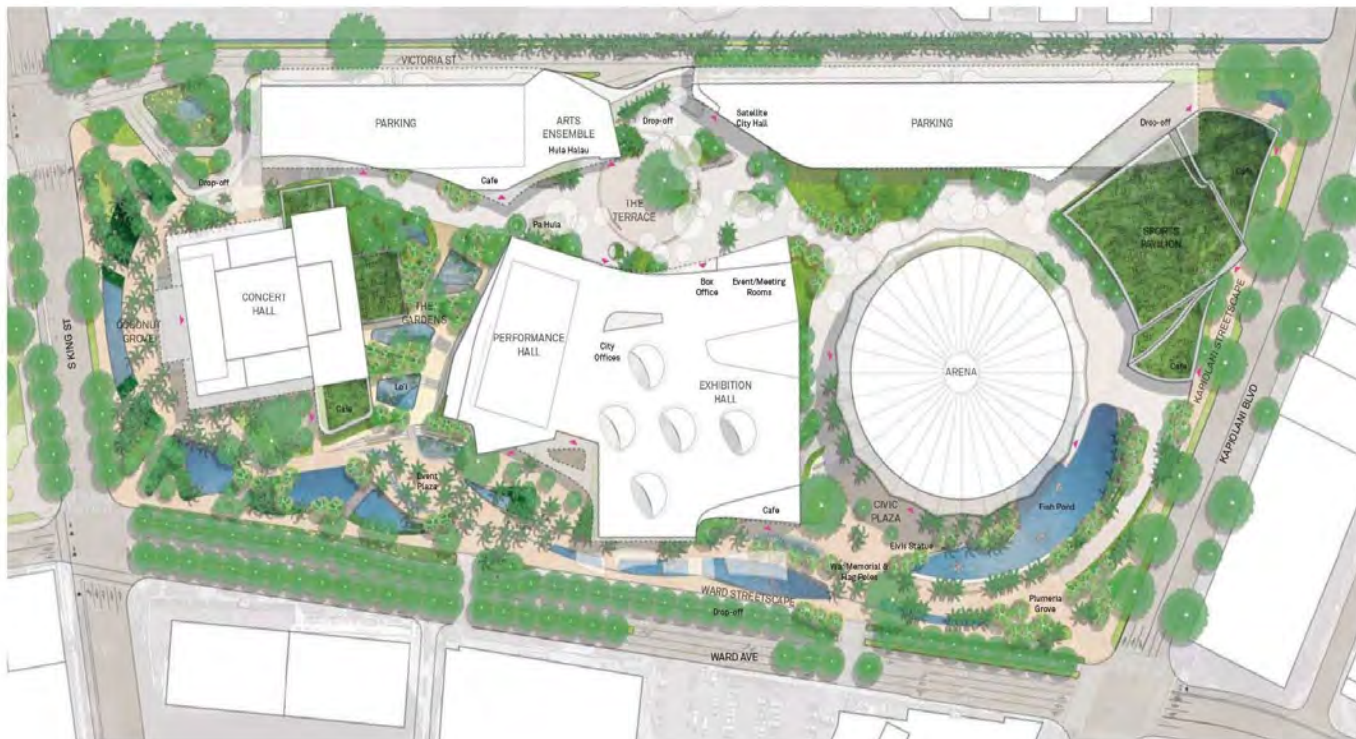
- General history and present and past land use of the study area including the project area.
- Knowledge of cultural resources which may be impacted by the Blaisdell project for example, traditional plant gathering sites, historic sites, archaeological sites, and burials.
- Knowledge of traditional gathering practices in Honolulu both past and ongoing.
- Cultural associations of the Honolulu study area, such as legends and traditional uses.
- Referrals of kūpuna (elders) who might be willing to share their cultural knowledge of the

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Figure 4-4. Consultation and Outreach Letter Page: 3

FIGURE 2: NEAL S. BLAISDELL CENTER CAMPUS REDEVELOPMENT PROJECT CONCEPTUAL PLAN

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Figure 4-5. Consultation and Outreach Letter Page: 4



Blaisdell project area and the surrounding ahupua'a lands.

- Any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the proposed Blaisdell project area.

In addition to the information you are willing to share the most valuable help you could give is providing Referrals of kūpuna (elders) and cultural practitioners who might also be willing to share their cultural knowledge or insight about the cultural practices of the project area and the surrounding ahupua'a lands.

If you have any questions about the project, mana'o (thoughts) or concerns you would like to share, I invite you on behalf of 'Āina Archaeology to contact Michelle Ngo at either 808-593-3048 or michelle@dtlhawaii.com.

Me ka ha'aha'a,



Kamao Quitevis
Managing Partner,
'Āina Archaeology

Figure 4-6. Consultation and Outreach Letter Page: 5

Additional outreach to the participants and organizers of the Queen Lili'uokalani Keiki Hula Competition, an annual *hula* competition for *hula* practitioners ages 6 through 12 that is hosted by the Kalihi-Palama Culture and Arts Society (KPCA) was completed in March and April 2019. Outreach methods included phone calls and e-mails, as well as the development of an online survey that was distributed to the 26 participating *hālau* to try and capture any concerns that the *kumu hula* might have with regard to the proposed master plan and anticipated three year construction closure.

Table 4-1 presents the community consultation effort conducted with *kama'āina*, Hawaiian cultural advisors and Hawaiian organizations. Consultation outreach was initiated via e-mail which included a scoping letter containing the project description along with figures that showed the project location and master plan conceptual design. If an e-mail was not obtained or was returned undelivered then a hard copy of the scoping letter and figures was sent to available physical addresses. Follow up telephone calls were then placed to certain individuals who did not respond to emails. Individuals who expressed personal knowledge of the study area and gave their consent to share their *mana'o* for this study, are presented in subsequent sections.

Table 4-1. Outreach Summary

Name	Title	Organization Name	Outreach	Contacted/Notes
Abiva, Nanea	Executive Director	Kalihi-Palama Culture & Arts Society, Inc. (KPCA) Keiki Hula Competition	Letter and figures sent via email 7/3/18, called and left a message at the KPCA, and followed up with an in-person visit	Y, Met with Nanea on 7/3/2018, she explained that formal consultation needs to be addressed by Trisha Kehaulani Watson-Sproat, JD, PhD.
<u>Ai, Olana</u>	<u>Kumu Hula</u>	<u>Hālau Hula Olana</u>	<u>Meeting 4/6/19</u>	<u>Y, provided insight into the importance of hula and the role of the Neal Blaisdell Center</u>
Akutagawa, Malia	Assistant Professor of Law and Hawaiian Studies	Ka Huli Ao	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
Allen, BJ		The King Kamehameha Chant and Hula Competition	E-mail	N
Armstrong-Wassel, Nanea	Board Member	Hawaiian Historical Society	Stacy Naipo - passed message along to them	N
Asam, Dr. J. Kuhio	Executive Director	King William Charles Lunalilo Trust	Letter and figures sent via email 6/12/17 11/1/17 Mailed hard copy out 11/6	N
Au Hoon, Annie	President	Kewalo Hawaiian Homestead Assoc	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17 (Returned mail)	N
<u>Bento, Snowbird</u>	<u>Kumu Hula Educator</u>	<u>Ka Pā Hula O Ka Lei Lehua Kamehameha Schools</u>	<u>Stakeholder outreach, 8/2017</u>	<u>Gave permission to reproduce and include <i>mana'o</i> shared during early stakeholder consultation, see Section 4.2.6.2</u>

Table 4-1 (continued). Outreach Summary

Last Name	Title	Organization Name	Outreach	Contacted/Notes
Boyd, Manu	Pelekikena	Hawaiian Civic Club of Honolulu	Letter and figures sent via email 6/12/17, 11/1/17 and Mailed hard copy on 11/17	N
<u>Dalire, Keola</u>	<u>Kumu Hula</u>	<u>Keolaulani Halau 'Olapa O Laka</u>	<u>email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>Y, partial survey response, answers provided in Section 4.2.5.4.9</u>
<u>Dalire-Moe, Kapualokeokalaniākea</u>	<u>Kumu Hula</u>	<u>Hāflau Ka Liko Pua O Kalaniākea</u>	<u>email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>N, no response</u>
De Fries, John	Executive Director & Board President	Native Hawaiian Hospitality Association Interim	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
<u>DeRego, Hokulani and Larry</u>	<u>Kumu Hula</u>	<u>Hālau Hula 'O Hokulani</u>	<u>Email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>N, no response</u>
<u>De Silva, Māpuana</u>	<u>Kumu Hula</u>	<u>Hālau Mōhala 'Ilima</u>	<u>Email 3/29/19, phone consultation 4/3/19</u>	<u>Y, consultation summary provided in Section 4.2.5.4.1</u>
Dr. Crabbe, Kamana'opono	CEO	Office of Hawaiian Affairs	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
Faulkner, Kiersten	Executive Director	Historic Hawaii Foundation	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N

Table 4-1 (continued). Outreach Summary

Last Name	Title	Organization Name	Outreach	Contacted/Notes
Gomes, Kinohi	Director	Na Pua No'eau	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
Gon, Sam	Senior Scientist	The Nature Conservancy	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
Hale, Kaipo		formerly of the Hawaiian Studies Institute	and 11/9/17, Stacy Naipo - passed message along to them	N
Harrison, Tanya	Cultural Descendant	N/A	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17 Met in person with Tanya on two separate occasions	Y, conducted informal interview, see Section 4.2.1 for a summary of the interview
Holt-Takamine, Vicky	Pesident	Pa'i Foundation	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
Jardine, Leina'ala Pavao	<u>Kumu Hula</u>	<u>Hālau KaLei Mokihana O Leinā'ala</u>	<u>email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>N, no response</u>
Kalama, Corbett	Trustee	Kamehameha Schools	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
Kaleikini, Paulete	Cultural Descendent Kona District	Cultural Descendent	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17.	Y – informal discussion in collaboration with project team's stakeholder outreach effort. Expressed concerns about the potential for encountering burials during construction

Table 4-1 (continued). Outreach Summary

Last Name	Title	Organization Name	Outreach	Contacted/Notes
Kame'eleihiwa, Lilikala	UH Mānoa - Kamakakuokalani	Senior Professor	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
Kana'iaupuni, Shawn	O'ahu Council Member		Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
Kanahele, Kamaki	President	Sovereign Councils of the Hawaiian Homelands Assembly	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
Kane, Micah	Trustee	Kamehameha Schools	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
Kaopua, Noelani		UH Manoa	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
Kaulukukui, Thomas	Board Chair	Queen Liliuokalani Children's Center/Queen Liliuokalani Trust	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
Kaupu, Robert Keano IV & Lono Padilla	<u>Kumu Hula</u>	<u>Hālau Hi'iakaināmakalehua</u>	<u>email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>Y, survey responses provided in Section 4.2.5.4.4</u>
Kuala'au, Kamani	Trustee	Lunalilo Trust	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
Kukona, Kamaka	<u>Kumu Hula</u>	<u>Hālau O Ka Hanu Lehua</u>	<u>email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>N, no response</u>

Table 4-1 (continued). Outreach Summary

Last Name	Title	Organization Name	Outreach	Contacted/Notes
<u>Lindsey, Līlinoe</u>	<u>Kumu Hula</u>	<u>Ka Pa Nani 'O Līlinoe</u>	<u>Email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>Y, survey responses in Section 4.2.5.4.5</u>
<u>Lopes, Tracie and Keawe</u>	<u>Kumu Hula</u>	<u>Ka Lā'ōnohi Mai o Ha'ha'e</u>	<u>email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>N, no response</u>
<u>Maluo, Kahulu</u>	<u>Kumu Hula</u>	<u>Hālau Kamaluokaleihulu</u>	<u>email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>N, no response</u>
<u>Mariteragi, Sunday</u>	<u>Kumu Hula</u>	<u>Napuananai Onapalionako'olau</u>		
Meyer, Manu	Professor	UH West O'ahu	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
<u>Moniz, Darcey</u>	<u>Kumu Hula</u>	<u>Halau Hula O Puka'ikapuaokalani</u>	<u>email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>N, no response</u>
<u>Mook, Kau'ionālani Kamana'o and Kunewa</u>	<u>Kumu Hula</u>	<u>Hula Hālau 'O Kamuela</u>	<u>Email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>N, no response</u>
Naipo, Stacy	Head Archivist	Kamehameha Schools	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17, personal communication 6/15/17	Y, provided copies of Baker/Van Dyke collection photos of Project Area and access to KS Library Archives
Nobrega, Malia		Waikīkī Hawaiian Civic Club	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
Noglemeier, Puakea	Executive Director	Awaiāulu	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	Y, responded by email on 12/13/17 provided a copy of a speech he delivered in 2013, regarding Thomas Square (see Section 4.2.4)

Table 4-1 (continued). Outreach Summary

Last Name	Title	Organization Name	Outreach	Contacted/Notes
<u>Ogawa, Mihoko</u>	<u>Kumu Hula</u>	<u>Hula Hālau ‘O Leilani</u>	<u>Email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>N, no response</u>
Osorio, Jon		UH Manoa- Kamakakuokalani	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
<u>Paredes, Brandon ‘Iliahi</u>	<u>Kumu Hula</u>	<u>Hālau Kekuakalā‘au‘ala‘Iliahi</u>	<u>Email 3/26/19, email Keiki Hula Survey 3/29/19</u>	<u>Y, interview on 3/29/19, interview summary provided in Section 4.2.5.3, survey responses provided in Section 4.2.5.4.6</u>
<u>Pedrina, Rich</u>	<u>Kumu Hula</u>	<u>Hālau Hula ‘O Nāpunahaeleonāpua</u>	<u>email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>Y, survey responses provided in Section 4.2.5.4.8</u>
Pereza, Donavan		UH Manoa - Kamakakuokalani	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
Po‘ai, Avis	Director of Archives and Legal History	Ka Huli Ao	Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17	N
Salā, Aaron	Director of Cultural Affairs Musician	Royal Hawaiian Center	<u>Stakeholder outreach, 8/2017</u>	<u>Gave permission to reproduce and include <i>mana‘o</i> shared during early stakeholder consultation, see Section 4.2.6.3</u>
<u>Shimizu, Seiko</u>	<u>Kumu Hula</u>	<u>Hālau o nā Pua‘ala Onaona</u>	<u>Email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>Y, survey responses provided in Section 4.2.5.4.3</u>

Table 4-1 (continued). Outreach Summary

Last Name	Title	Organization Name	Outreach	Contacted/Notes
<u>Sibilla, Guy</u>	<u>Executive Director</u>	<u>Kalihi-Palama Culture & Arts Society, Inc. (KPCA) Keiki Hula Competition</u>	<u>Email and phone call 3/1/19, phone consultation on 3/22/19</u>	<u>Y, consultation summary provided in Section 4.2.5.2</u>
<u>Sylvester, Donna Noelani</u>	<u>Kumu Hula</u>	<u>Aloha 'O Pu'uwailani Halau</u>	<u>Email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>N, no response</u>
<u>Trinidad, Kaleo</u>	<u>Kumu Hula Educator</u>	<u>Ka Ka Leo O Laka I Ka Hikina O Ka Lā Kamehameha Schools</u>	<u>Stakeholder outreach, 8/2017</u>	<u>Gave permission to reproduce and include <i>mana'o</i> shared during early stakeholder consultation, see Section 4.2.6.1</u>
<u>Victor, Kenneth Dean Alohapumehanaokalā</u>	<u>Kumu Hula</u>	<u>Hālau Kala'akeakauikawēkiu</u>	<u>Email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>N, no response</u>
<u>Watson-Sproat JD, PhD, Trisha Kehaulani</u>	<u>President</u>	<u>Kalihi-Palama Culture & Arts Society, Inc. (KPCA) Keiki Hula Competition</u>	<u>Letter and figures sent via email 7/3/18, phone consultation on 3/12/18</u>	<u>Y, consultation summary provided in Section 4.2.5.1.</u>
<u>Winchester, Imaikalani</u>	<u>Educator and Community Advocate</u>		<u>Letter and figures sent via email 11/16/2017 and on 7/3/18, Interviewed 7/17/18</u>	<u>Y, interview summary provided in Section 4.2.3</u>
<u>Wong-Kalu, Hinaleimoana</u>	<u>Kumu Hula</u>		<u>Letter and figures sent via email 6/12/17, 11/1/17 and 11/9/17, again on 7/3/18 emailed, called and left a message at OHA reception, and on personal line, Interviewed 7/9/18</u>	<u>Y, interview summary provided in Section 4.2.2</u>
<u>Yoza, Sallie</u>	<u>Kumu Hula</u>	<u>Hālau 'O Nāpuala'īkauikaiu</u>	<u>Email Keiki Hula Survey 3/29/19, follow up on 4/3/19</u>	<u>Y, partial survey response, answers provided in Section 4.2.5.4.10</u>

4.2 COMMUNITY OUTREACH RESULTS AND INTERVIEWS

Āina Archaeology would like to extend our deep appreciation to everyone who took time to speak and share their *manaʻo* and *ʻike*. Scoping letters were sent to a total 43 individuals with diverse backgrounds. Contacts included representatives of Native Hawaiian organizations including, The Office of Hawaiian Affairs (OHA), Department of Hawaiian Homelands (DHHL), the Waikīkī and Merchant Street Hawaiian Civic Clubs, Queen Liliʻuokalani Trust Children’s Center (QLT), The Paʻi Foundation and Kamehameha Schools. In addition, we reached out to representatives from the Oʻahu Island Burial Council (OIBC), the Outdoor Circle, and the William McKinley High School. At least three attempts were made to contact each potential consultant. Some individuals were contacted but chose not to share information regarding the cultural practices and resources of Kewalo.

Collectively, consultants emphasized the importance of the water to the area *ahupuaʻa* and *ʻili* of Kewalo and the surrounding landscape. The significance of the Ward family, the Ward Estate and Thomas Square were also common themes that people believe should be remembered and perpetuated in the future. Some informants expressed concerns about the potential for the project to impact subsurface burials associated with the numerous Kuleana awards and the traditional battles that occurred in and around the former wetlands of Kewalo. In addition, Several informants indicated that they were personally aware of people who still access aquatic resources in the Kewalo basin, Kukuluāeʻo, Kaʻākaukukui and Kakaʻako.

4.2.1 Tanya Harrison for the Bruce Family

On June 28, 2017 Tanya Harrison agreed to be interviewed. Tanya is a cultural descendant from the *ʻili* of Kōʻula and Kewalo. Her ancestors left the area in the 1830s possibly with a small contingent of Native Hawaiians who joined Captain John Sutter to establish a trading post in Sacramento, California which became known as Fort Sutter. Some accounts indicate nine Hawaiians, including two women, accompanied Sutter, but the record is not clear and states that the total “number of Hawaiians is uncertain.” The Bruce family indicates that a significantly larger group traveled to California. A Nisenan elder who held on to this history estimated more than 140 native Hawaiians came with Sutter. Whatever the total number, it included a large group of extended family from Kōʻula and Kewalo. The reason for their departure is not clear, although there is some indication that the living conditions of the area during that time period were difficult, due to stagnation of Hawaiʻi’s economy. In a letter included in the CIA developed for Thomas Square, the Bruce family made the following statement:

Kupuna left Hawaii in the late 1830’s for better opportunities. Life was difficult, and the land couldn’t provide for everyone. Men worked fishponds at Koula, a place in Kewalo between Honolulu and Waikiki. They “helped build the church”, which was “within walking distance” from where they lived. Women gathered makaloa from around the ponds and wove items to sell for food and other goods. Ohana ate fish, ducks, and other waterbirds from the ponds. They also killed and ate the birds that ate the fish, such as herons. Long ago men or boys shot herons with arrows. All birds were eaten except owls, who were aumakua. They helped by killing rats. It was good luck to see an owl (Dagher and Spear 2016:36).

Once in California, Native Hawaiians quickly integrated with the native Nisenan tribe. Oral traditions of the half Hawaiian and Nisenan Indian Bruce family continues to be perpetuated today. Over several decades the family continued to value their Hawaiian roots and passed down the memories of Kō'ula and Kewalo. Starting in the 1940's, Bruce family members returned to Honolulu in search of the home of their ancestors. One of their goals was to touch the waters of the ponds that their family considered to be theirs. They were disappointed to find a much different landscape than they imagined. The open marsh lands of fishponds, salt pans and taro fields were gone; the *pili* grass and *makaloa* were no longer growing in the area. While they did manage to locate a pond in the area, and though it is unclear which pond they found, it was identified in the vicinity of the current project area. They also learned that water flowed underground through Kō'ula. *Kūpuna* have maintained that the sites of the Neal S. Blaisdell Center and old Honolulu Advertiser building are located in the area once known as Kō'ula.

The Bruce family continues to value their ancestral home of Kō'ula and Kewalo. The main resource they identify with is the water. As stated above, their ancestors practiced fishing and bird catching in the wetlands of Kewalo. Historically, the family would also keep ducks and *pueo* (owls) as pets from time to time. For the family, the *pueo* was considered an *'aumakua* and thus protected. The *pueo* policed the ponds, catching other birds who came to harvest from the ponds, and were cherished because they protected babies from rats. In addition to actively honoring and caring for their *'aumakua*, the Bruce family mentioned other cultural practices maintained by their family that included bone, ivory, and wood carving.

The main concern of the family is to see that the waters are protected and that some sense of the original use is perpetuated for fish and aquatic birds that were once prolific in the area. They also wish to be consulted on future development projects that occur in the vicinity of Kō'ula and Kewalo.

4.2.2 Hinaleimoana Wong-Kalu

Hinaleimoana Kwai Kong Wong-Kalu, known as Hina or Kumu Hina in her community, holds a special place in her family. Her family traces their lineage back to "Alapa'inui and Keaweopala." She is the oldest grandchild on her mother's side, and the youngest grandchild on her fathers. Hina was considered the *punahele* (favorite) raised by her maternal grandparents, providing her with "diverse experiences" growing up. Her grandmother was Mona Kananiokalanikealoha of Hawaiian and English descent, the 14th of 16 children. She married a Hawaiian-Portuguese man named John Furtado Matias from Honokohau Maui. Hina was treated like the *hiapo* or first born who had privileges and responsibilities that other children in her family didn't. In the constant presence of her *kūpuna* and other family members of their generation, Hina was privy to *mo'olelo* (stories) "from a different time."

Hina grew up in Liliha, Kuanawai, and Pu'unui. As a child she considered the *ahupua'a* of Nu'uaniu to be her playground, she states:

"I had a bicycle, so I went everywhere in my neighborhood. So, the Wai Kahalulu stream, the Puehuehu stream, the Nu'uaniu stream, are the three major water tributaries of that area and

again my grandmother's stories didn't reflect that oh there was so much water but that there were poi factory and there were lo'i kalo in that area."

Today, Hina is a prominent *kumu hula*, educator, and *iwi kupuna* (ancestral burials) advocate. For the past ten years Hina has served on the O'ahu Island Burial Council (OIBC). She is the current Kona Moku representative and OIBC Chair person. Of those ten years, she has served as either the Chair or Vice-Chair of the OIBC for seven of those years. Inside and outside of her official capacity, Hina is a prominent figure in the social, political and economic well-being of Native Hawaiians.

Based on her experiences with her grandparents, her research as an educator and *kumu hula*, Hina was able to share information about cultural practices and resources in the area of study and the project area. In addition, she provides detailed recommendations to consider should any burial remains be encountered during the Neal S. Blaisdell Master Plan Project.

Hina recalls that the area she was raised in was prolific with *lo'i* (taro pond fields) fed by multiple streams. Her family was known for collecting *limu* (seaweed) from the coast of Kuloloio in current Honolulu town, through Waikiki and past to Kahala. Her grandparents remember the 'ili of Kewalo as a prominent hub of activity during their time, but they did not pass on knowledge of the fishponds, saltworks or *lo'i* of Kewalo. She indicated that Kewalo basin was a mud flat where the collection of *limu* wasn't ideal, and that the areas near the project were more sparsely populated than Honolulu and Waikiki. Hina mentions the following place names and provides her perception on their locations.

"Kō'ula is that, where channel four is, the cemetery, the powerplant, moving down where the old flamingo used to be, and the Jack in the box, and even going down a little further until you get to maybe past the, where the gas station is where the bank. Once you get past over there you start heading into the areas of Ka'akaukui and, Kewalo I believe would be a larger encompassing name for that general region because my grandmother used to tell me that the prominent name in my grandmother's generation is Kewalo."

Hina shared her knowledge of Victoria Ward who she says remained a strong Hawaiian Nationalist. She also recommended that this type of information be shared, stating:

"she was a staunch advocate, she flew the flag over the canopy of her bed and said should she pass in her sleep she would die beneath the flag of her country and the Blaisdell is located on the land that was her home. Should that not be recorded someplace? Should that not be highlighted, should this not be accessible information? That the whole gamut of information should be part of our soul in what you can experience when you go to a place like Blaisdell and Thomas Square."

Hina also highlighted the importance of Thomas Square and the Lā Ho'iho'i Ea celebration. She indicated that the park did not adequately reflect the significance of the restoration of the Hawaiian Kingdom, recommending the famous words of Kamehameha III should be on all the low walls surrounding the park. She stated that the other activities that regularly occur at Thomas Square should not supersede the traditional history of the space:

"I would envision that places like Thomas Square, places like the Blaisdell, they should be places that the youth can come to have a decent field trip, not just go to a theatre presentation or the opera or whatever they're going to go to. But they could actually make a

culturally significant tour of the area because it is yet another place where they can learn about the history, they can see things that were prevalent to the area. How would our children know that (about) Victoria Ward and her legacy?”

The springs of Kewalo are of great concern to Hina. She recently was able to access a historic culvert under the Ward Villages property where spring water was still flowing. She shared her experience of sitting in the cold water, fully clothed as small ocean fish either *nehu* (Hawaiian Sardines) or baby *ana'e* (mullet) swam past her in a *mauka* (towards the mountains) direction. Hina indicated that she believed the water was brackish, but was uncertain of its source. She emphasized that the Blaisdell Master Plan Project should not impact this cultural resource and should help to identify the source and path of the water. Throughout the interview, Hina advocated that access to cultural resources needed to be a priority whether those resources were existing or part of restoration efforts of the Blaisdell Master Plan, she says:

“Was it under the areas that currently have the water you know the water features or was it coming from beneath the Blaisdell main hall or was it coming beneath the Blaisdell Concert Hall, where is the source. That’s what I’m really curious to know. Because if in the upcoming upgrades and renovations that were to be done and if there was a way to determine where exactly it is and to be able to feature it I would be very supportive of that because that’s one of our last free flowing water sources that you’d be able to access anywhere in Kona.”

Hina’s extensive work on the O’ahu Island Burial Council (OIBC) and ongoing community advocacy provide her with a unique insight into potential impacts to native Hawaiian burials by the proposed project. Official recommendation of the OIBC will be solicited during the development and approval of the Archaeological Inventory Survey (AIS). Hina clarified that her recommendations related to burials are based on her understanding of past projects, but in no way take the place of actual consultation with the OIBC.

First and foremost, Hina advocates for adequate AIS, to insure every effort is made to identify any cultural properties including potential burials. This ensures the full participation of the OIBC and allows ample time for other cultural and lineal descendants to also participate in the process. She states that “adequate” means doing subsurface testing that takes into consideration potential impacts to historic properties based on the scope and scale of the proposed project. She says:

AIS it would come under the privy of the burial council and we will have to address issues as they come, but that is a clear process and it empowers folks to come forward with potential connection to this land and to seek recognition of the burial council which is simply acknowledging that they want to participate, and we acknowledge that they have come forward. So that’s what this process is, as far as any potential inadvertent discoveries, I believe that as long as there is earnest and honest integrity in the amount of surveying that is done. What more can one do you know, you do your best to make sure that you create opportunity. You don’t necessarily want to take the approach of looking for burials, but you want to look to make sure that you know if they’re there, how to handle them.

In the unfortunate case a burial is identified during AIS work or construction, Hina states that the norm at the OIBC is to recommend preservation in place. In short, this means that the burial would be reburied in its original location which could possibly require redesigning project

components to avoid further impacts to the burial. That being said, depending on the circumstances relocating burials is sometimes acceptable, she further clarifies:

So, from one Hawaiian family or one Hawaiian individual to the next you're going to definitely have a wide range of differences on how it will be treated. What has prevailed here in Kona has been an *in-situ* burial, preservation in place, it has been done in several locations where the building went up over the burial. What was done was the burial was protected by steel reinforcing or concrete.

Hina was able to explain a number of scenarios where burials were left in place and buildings were built around them and over them. She indicated that in some situations, redesigns included features, structures and even rooms memorializing the burial, and in other situations were protected in place with no additional accommodations. She was able to say that if burials were in immediate danger of further impacts, moving them may be acceptable. Hina went on to provide the following example and provided the following example:

Let's say for example the sewage pump was right there. And any potential maintenance or malfunction associated with that and now it could leach into the burial.

4.2.2.1 Concerns

Hina's primary concerns were the proper use and reintegration of traditional place names, protection of the springs, access to cultural resources and potential impacts to traditional Hawaiian burial sites. She mentions places like Kewalo, Kō'ula, Kulaokahua, Ka'akaukuku'i, Kuloloi'o, Kālia stating that by replacing these names with modern reinterpretations of geography diminishes the traditional history of a place. She says that resources such as native plants should be utilized in project design and be accessible to cultural practitioners. She provides comprehensive recommendations about potential burials that could be found during AIS work and construction.

4.2.2.2 Recommendations

- Use traditional place names whenever possible in project design, interpretive signage and other educational materials.
- Identify water sources and pathways to ensure that the spring is protected, and access is provided to cultural practitioners.
- Replant native plants, but not just for aesthetics but as cultural resources that can be accessed by cultural practitioners.
- Conduct thoughtful and thorough AIS work make every effort to minimize inadvertent impacts to historic properties and burials.
- Preserve any identified burials in place, redesign if necessary and work closely with the OIBC and any recognized cultural and lineal descendants.

4.2.3 Imaikalani Winchester

Imaikalani Winchester is an educator and community activator. He is the lead organizer for Ka Lā Ho'ihō'i Ea (Native Hawaiian Sovereignty Restoration Day), and a 14-year veteran teacher at Halau Ku Mana Hawaiian Public Charter School.

Imaikalani was born and raised on Oahu. His father is from Kalihi and Alewa. His father's family genealogy can be traced back to Moloka'i and Kohala. His mother is "*koko piha*" full blooded Hawaiian from Ni'ihau. Imaikalani's future was shaped by the social and political changes that were occurring when his parents were born. He states:

...they grew up in a time where Hawaiian language and Hawaiian culture and tradition was systemically being erased and replaced with American nationalism and industrial economies. That really set them into a pathway which made it real difficult to access somewhat traditional knowledge that we were able to sort of rediscover a generation later.

Like his parents, Imaikalani graduated from Kamehameha Schools. Imaikalani continued his education, acquiring a master's degree in political science from the University of Hawai'i at Mānoa. He had also been taught strong values of respecting and taking care of what he had, but it wasn't until Imaikalani attended college that he began to truly understand his culture, he explains:

...when I went to the University of Hawai'i after I had left Kamehameha schools is where I discovered sort of a real understanding and a truer identity of what a Hawaiian is, of what a kanaka is. Being that it sort of was my re-awakening or re-birth into the Hawaiian consciousness with being aloha 'āina.

It was during his collage years that Imaikalani began left his corporate job to begin teaching at Halua Kū Mana Public Charter School where he still works today teaching an array of topics including American history, Hawaiian history, politics, international law, Hawaiian language and restoration. It was during this time that Imaikalani also met several mentors like Kekuni Blaisdell, Imaikalani Kalahela, Terry Keko'olani and Bayron Ching. Every Thursday community leaders, organizers and academics would meet in Nu'uano at Kekuni's house to discuss social, political and economic issues facing native Hawaiians. It was there that Imaikalani gained a deeper understanding of the Hawaiian sovereignty movement and the Hawaiian national holiday Lā Ho'ihō'i Ea.

4.2.3.1 *Lā Ho'ihō'i Ea*

In 1843 Kamehameha III, Kauikeaouli, established a national celebration called Lā Ho'ihō'i Ea to celebrate the restoration of the Hawaiian Kingdom, from the momentary and unsanctioned occupation by British officials. The event webpage confirms:

Effective control of the government had been seized and all Hawaiian flags were lowered and burned by order of British Lord George Paulette. Months later, Queen Victoria sent Admiral Richard Thomas to Hawai'i to remove Paulette and correct this unwarranted transgression against the Hawaiian Kingdom.

The park just *mauka* of the Blaisdell Center is named after Admiral Thomas who corrected the injustice by returning Hawai'i's sovereignty to Kamehameha III. The process was symbolized with a ceremony that included lowering the Union Jack and Raising the Hae Hawai'i (Hawaiian Flag). From this event one of the first national holidays was created, Lā Ho'ihō'i Ea (Sovereignty Restoration Day). It also gave birth to the famous decree, *Ua mau ke ea o ka aina i ka pono*. The sovereignty of the Hawaiian nation is restored by righteousness.

The Lā Ho'īho'ī Ea celebration was revived in 1986 by Dr. Richard Kekuni Blaisdell. The burdens of old age and the necessity to empower the next generation motivated Kekuni to look for a successor. In 2005, Kekuni passed the *kuleana* (responsibility) of the events coordination to Imaikalani. As a young man, Imaikalani looked to the *kūpuna* for guidance and focused on keeping the event a “grassroots independence celebration.

Since then the event has grown, evolving from a commemoration of a sad event to a celebration of Hawaiian culture, Hawaiian history and Hawaiian nationalism. Lā Ho'īho'ī Ea is now a month-long celebration that includes weekly cultural gatherings, events and activities that occur across the *pae āina* (Hawaiian Archipelago). Lā Ho'īho'ī Ea celebrations in other *moku* and *mokupuni* have begun to coordinate their efforts to provide a cohesive celebration with unique geographic distinctions.

During the month of July, Thomas Square and Ka Lā Ho'īho'ī Ea become a *piko* or hub of cultural practices. Just as an *āuwai* (irrigation system) connects the *kahawai* (stream) to the *lo'i*, *loko i'a*, and back to the *kahakai* (sea), this event connects cultural practitioners and practices. Lā Ho'īho'ī Ea brings together farmers from Waiāhole, fishponds practitioners from Maunaloa and He'eia, and *kumu hula* and their *hālau* from all over the islands. In addition, it provides a bridge between Hawaiian language immersion and charter schools and the University of Hawai'i.

The culmination of the independence celebration is held on the last Sunday each July at Thomas Square. It has grown from a quiet commemoration event to a family affair. The primary focus of the event is to provide education on the accurate political history of the Hawaiian Kingdom and an ongoing analysis of the social, political and economic affairs of the Hawaiian people. However, this focus is facilitated by cultural activities such as *ku'i kalo* (pounding taro), *kākau uhi* (tattooing) and *mele* (music).

The sovereignty of a nation protects the cultural practices and resources of the culture as “it is the cultural practice that frames our political rhetoric.” Imaikalani also indicates that the more one engages in cultural practices the more their culture will influence their politics. Acting on those politics calls for regaining access, stewardship, and control of *āina* practices and resources. Imaikalani explains:

nationality is created to protect our cultural practices and our culture is so tightly ingrained with telling the story, that hula is telling the story you know, and the act of generating and calling people and mana and prayer together to a single spot every year at the same time, ...to call on ancestors, to call on akuas, to call on listening ears, to provide that space for others to witness and also be able to feel and plug in, even for the moment of that ceremony and plug in to the crux of the issue, to plug in to the heart of the people.

To Imaikalani, the continuity of Ka Lā Ho'īho'ī Ea is important to the foundation of all native Hawaiian cultural practices and resources because it supports the fundamental identity of Hawaiians as a living, thriving, sovereign people. His vision is to see the event continue to grow until it is once again a Hawaiian national holiday that can touch all cultures here in the Hawai'i and around the world.

As one of the only ongoing traditional cultural events that take place in the immediate vicinity of the Blaisdell Center, there is an opportunity to provide additional support to this important community event that highlights the traditional history of Hawai'i and the general landscape

surrounding the project area. In addition, the celebration helps to perpetuate multiple cultural practices and their resources across the island. Here are a few suggested support items that would help the event continue to grow, identified by Imaikalani.

- Address parking capacity provide free event parking
- Provide access to facilities such as the Concert Hall for exhibition
- Provide support to Build Capacity so that event can address a larger audience

4.2.3.2 *Concerns*

The main concern has to do with access. Renovations of Thomas Square and proposed renovations of the Blaisdell Master Plan Project bring with them opportunities for growth and positive change that could benefit the Lā Ho'ihō'i Ea celebration. However, it could also create new obstacles that hinder current access to the park. For example, the original permit process for using the park was a simple one-page form. Currently, the application process takes more than a month to complete and requires interfacing with multiple agencies along with event insurance. With multiple competing interests in the park, he believes that forming a formal relationship with standing agreements for the celebration would ensure that the cultural practices and resources attached to Lā Ho'ihō'i Ea would not only continue but also foster growth of the event. Imaikalani also expressed concerns about the flow of water in the vicinity, indicating that the project should not disconnect the natural flow from the subterranean springs to the ocean.

4.2.3.3 *Recommendations*

- Increase connectivity and awareness between Neal S. Blaisdell Center with Thomas Square and the social and political history of that space. Information in the form of interpretive signage or “small museum” could provide an overview of the parks history with trails and landscaping helping to reinforce the connectivity between the two spaces. Certain visitors, such as schools, could be physically guided to the park where they can obtain firsthand information. Build a Hawaiian national museum to educate students and visitors of the Hawai'i's unique history, with an emphasis on the events that took place at Thomas Square. Erect the tallest Hae Hawai'i (Hawaiian Flag) at the park to commemorate Ka Lā Ho'ihō'i Ea.
- Develop community-based partnerships. Identify Hawaiian businesses that could partner with different schools and develop a system for collecting and managing donations for the maintenance, restoration and stewardship of the park. Integrate interpretive signs throughout the park that retell the history of the geographic region and Ka Lā Ho'ihō'i Ea. Restore native plants and traditional food plants within the park.
- Provide access to restored cultural resources. If the springs are culturally important, then access to the *wai* for cultural practices is important. If native plants are restored, then access to the native plants for cultural practitioners needs to be ensured. If food plants are grown, then they should be used in some way for food. Natural resources become cultural resources when they are accessed for cultural practices.

4.2.4 Dr. Puakea Nogelmeier, Professor of Hawaiian Language

Dr. Puakea Nogelmeier responded via e-mail. In his electronic transmission, Dr. Nogelmeier indicated that the speech he gave in 2013 on the history and importance of Thomas Square could be used to highlight one of the major cultural events that occurred within the vicinity of the project. Following are the transcripts of his speech:

The historical event we celebrate today happened 170 years ago, but the park was not established until 7 years later, in 1850. The events that inspired it though, occurred right here, 170 years ago today. This area was called Kulaokahua, or Ku laokahu'a and it was the open land between the town of Honolulu and the cultivated wetlands and royal compounds of Waikīkī.

The event was a big thing. It was a pivotal turn in Hawai'i's history. But it's the story leading up to that day 170 years ago, and the outcomes of that day, that make Thomas Square worthy to celebrate.

So there's three parts to my talk -a back story, coverage of actual events, and some data about what followed after.

This all happened during the reign of Kamehameha III, whose name was Kauikeaouli. I use his name and title interchangeably, so please don't get tangled. Kauikeaouli means Kau I Ke Ao Uli (Placed In The Dark Cloud) you don't have to master it, just don't let it confuse you.

Kamehameha III was only 11 or 12 years old when he took the throne in 1825, so most international problems, like demands from irate ship captains were handled by the Kuhina Nui, the Prime minister, and by the other powerful chiefs of the King's circle. The Kuhina Nui was Kauikeaouli's step-mother Ka'ahumanu until 1832, then his half-sister Kīna'u, and by the time this happened in 1843, another half-sister/aunt, Kekauluohi, had been Kuhina Nui for a few years. [Kekauluohi was also the mother of William Charles Lunalilo, elected as King in 1873.]

But a lot had changed since Kauikeaouli came to the throne. Both he and his kingdom had grown up.

Kauikeaouli was 30 by the time Lord Paulet showed up in 1843, and he had been ruling a maturing nation for 18 years. Education was a national project, and international relations and trade had steadily expanded, while the population of the islands continued to diminish. Governance, both internal and external, was an ever-growing concern while Hawai'i moved, as a nation, into the modern world.

Gunship intrusion occurred sporadically, and had strained the patience of the King and his chiefs. In 1839, after the French demanded a compliance bond of \$20,000 in hastily-borrowed gold as a guarantee for their right to sell liquor in Hawai'i, Kauikeaouli moved to radically change the form of his government.

That same year he proclaimed a Bill of Rights that extended to all citizens, and the next year, 1840, he established a Constitutional Monarchy to replace his absolute rule.

These choices were partly to ward off gunship diplomacy, for the king and his country could not be so easily bullied if the King shared control with a legislature of Nobles and elected Representatives.

But experience warned that armed Captains would more likely heed the words of their own leaders than those of the Hawaiian King, so just over a year after the new constitution was proclaimed, Kamehameha sent special emissaries to America, England and France to secure formal recognition of Hawai'i as an independent nation, a nation where treaties made the difference, not cannons. A modern government system backed by official recognition from all of the great world powers would hopefully diffuse future attempts by armed Captains to impose their will upon the nation.

But the diplomatic envoys, Sir George Simpson, Timoteo Ha'alili o and William Richards, were still working to secure those super-power acknowledgments when trouble erupted.

The ever-cantankerous British Consul in Honolulu, Mr. Richard Charlton, dramatically presented his complaints about Hawai'i's mistreatment of British subjects to Lord Paulet when Charlton met him in Mexico on his way to Britain. As Commander of a British battleship, Paulet came to Hawai'i to demand special attention for British subjects, particularly Mr. Charlton, whose spurious land claims had tied up Hawaiian courts for years. The drama leading to Thomas Square began at that point.

February 11, 1843 - Arriving in Honolulu on the ship Carysfort, Lord Paulet demanded to see the King. Kamehameha was on Maui and appointed Gerrit Judd to handle the diplomatic interactions as the chief government minister. Paulet refused to meet with Judd and accused him of making up the King's response. He would only speak with the King.

February 17 - After many letters back and forth, Lord Paulet sent a list of demands to the King and announced he would attack the city the following day at 4:00 pm. He formally requested Captain Long of the USS Boston, in Honolulu Harbor at the time, not to interfere.

Kamehameha and the Kuhina Nui Kekauluohi responded that they would comply under protest, and Kamehameha met for several days with Lord Paulet and the interim British Consul. The King agreed to review Charlton's many claims, but refused to simply overrule the courts and grant all of Paulet's wishes. Lord Paulet was unwilling to negotiate.

February 25 - Rather than comply with all of Lord Paulet's commands, Kamehameha agreed to peacefully surrender the Hawaiian government to the British crown until Britain reviewed the setting. Rev. Damon described it like this in his newspaper *The Friend*:

He signed the treaty of cession while bathed in tears. At 3 o'clock, P. M. Feb. 25, 1843, the National Flag was taken down, while that of England was raised. Never shall we forget the day.

William Charles Lunalilo, who would later be King, was just eight years old during Paulet's time, and in a holiday speech in 1865, he recounted being there:

Ke hoomanao nei no au i ka'u mea i ike ai ia'u e ku ana ma loko o na pa o ka Papu kahiko me ka Moi e noho nei i keia wa a me kona mau kaikaina i hala e aku; ua ike iho makou i ke kuu ia ana iho o ko kakou Hae ilalo. Ma ia la, ua haawi ia aku keia mau mokupuni i ke Kalaunu o Beritania Nu i, a ma ia la, ua welo lanakila ae ka ha e hoku lele o Alebiona ma keia Pae Aina.

"I still recall what I saw as I stood in the grounds of the old Fort with our current King Kamehameha V and his younger brothers, who are now deceased; we witnessed our Flag being brought down. On that day, these islands were surrendered to the Crown of Great Britain, and the flying- star flag of Albion waved victoriously over these Islands."

Lunalilo then quoted the speech that Kauikeaouli made to his people that day to explain the crises, which had then been published in the newspaper *Ka Nonanona* a few days after the actual event: [7 March 1843]. Kauikeaouli said:

Listen, O Chiefs, People and Subjects from my Grandfather's time, as well as those from other lands, Heed my words.

I hereby inform you all that I am distressed as a result of predicaments into which I have been drawn without cause, and have therefore surrendered the *ea*, the sovereignty of our land; Be it known. But my Rule over you and your rights shall continue, for I am hopeful that the *ea*, the sovereignty of the nation, will be restored, once my actions have been justified.

The nation held its breath, awaiting the final outcome. During the 5 months of Paulet's occupation of Hawai'i, he appointed himself and his officers as the head of the government, destroyed all Hawaiian flags and raised the Union Jack in their places, preparing Hawai'i to be a British territory. He cleared the houses off the waterfront land at the wharf that Charlton claimed, and moved to control all land transactions.

July 26th - Admiral Richard Thomas, Lord Paulet's commander and the highest-ranking officer in the British Pacific Squadron, arrived from Valparaiso Chile on his ship, the HMS *Dublin*, and requested a meeting with Kauikeaouli. He reviewed the situation and decided that Paulet's actions were inappropriate, and that the occupation would end. They arranged for a public event to document the restoration of the nation's independence and self-rule.

Fortunately for us, Gerrit P. Judd, Minister of the government, carefully described the events at Thomas Square in his 1865 speech. He said:

Kauikeaouli emerged from the grounds of Kanaina on horseback, along with Kekuanaoa, Paki, Keoniana, Kanoa, Kivini, and some foreigners, and they rode for Kulaokahua.

Admiral Thomas was there with his troops and mounted guns in all his grandeur and also there were the young chiefs and a throng of natives and foreigners awaiting the appearance of the King.

When the King arrived, Admiral Thomas approached him, holding the Hawaiian flag in his hands. The King and all his people dismounted, and the Admiral came to him, opened the flag to the wind and then gave it to Kauikeaouli's flag bearer.

Right then, 21 mounted guns fired as a salute to the Flag, and the British flag atop Puowaina, Punchbowl Crater, was lowered, while the Hawaiian flag was drawn up again, whereupon 21 guns of Puowaina sounded. Then the British flag was pulled down at the Fort and the Hawaiian flag was raised, so the Fort fired a 21 gun salute followed by 21 guns from the ship *Carysfort*, 21 from the *Dublin*, 21 more from the *Hazzard*, and then the American ship *Constellation* fired a 21-gun salute. When that was over, the 21 mounted guns here in the park fired another salute in honor of the King.

The British soldiers stood in a circle saluting the King, and when that was done the King returned to the palace. At 1 o'clock the King, his soldiers and a crowd of people all went to the church of Kawaiaha'o and gave thanks to God for his grace in restoring the sovereignty of the Nation.

["*Ua Mau Ke Ea o ka 'Āina i ka Pono*" or "The *Ea*, Sovereignty or life, of the land is perpetuated in Righteousness" was proclaimed in the King's speech at Kawaiaha'o, became an adage for the Hawaiian Kingdom and has been adopted as the official motto of the State of Hawai'i]

At three o'clock that day, the King went aboard the ship Dublin to a dinner hosted by the Admiral, and when the Carysfort saw the King's flag on the skiffs, a 21-gun salute was fired, followed by 21 guns from the Hazzard, then the Dublin, and then a final 21-gun salute came from the Constellation.

When the dinner on board the ship was finished, the King and his retinue came ashore and the Dublin fired another salute. followed by the Carysfort, then the Hazzard and the Constellation, 21 guns each.

The next day at the great feast at Luakaha, Kamehameha proclaimed July 31st as a holiday for the Nation and the people.

315 guns fired in salute, speeches, feasts for thousands and songs composed for the event - which you will hear in a short bit. Lā Ho'ihoni'oni'oni Ea - Restoration Day, began right here as a huge jubilation and was celebrated throughout the islands every year until the overthrow in 1893.

There are two huge outcomes of the events that happened here 170 years ago.

Belgium, Britain, France and the US did grant official recognition of Hawai'i as an independent peer nation, the first non-European country to be so recognized. But that was already in process before Paulet or Thomas had arrived in Hawai'i,

The first major outcome of Lā Ho'ihoni'oni'oni Ea was that Kamehameha and his government initiated the Great Mahele, documenting title to all lands in the kingdom and ending the possibility of frivolous claims that could be backed up by gunships.

A second major outcome of the 1843 events was that in January of 1850, the Privy Council approved the establishment of the first park in the Hawaiian Islands - a brand-new concept - and named it Thomas Square in honor of British Admiral Richard Thomas.

Why 7 years later? The impetus for this Memorial Park might have been yet another international incident of the previous year, 1849, when a French warship seized and destroyed the Fort of Honolulu. The Hawaiian government moved to commemorate a historical act of justice - Thomas' restoration of sovereignty - rather than any of the many historical injustices; No monument recalls the previous French intrusion or any others like it.

But Thomas Square, laid out, as it is, in the design of the British Union Jack, has been maintained as a public park, the first in the islands, since 1850. It is a memorial to fairness overcoming force and power.

It is often cited that Queen Lili'uokalani, on relinquishing her government to the US forces that backed the 1893 overthrow, used as her diplomatic model Kamehameha's enduring belief that justice would win over military might. The outcomes of the two events were not the same, at least so far, but it is critical that we as a people continue to commemorate the historical models that can guide our hopes.

Thomas Square stands as an elegant example of that kind of model. It gives physical presence to the words of Kamehameha on that happy day in 1843: "Ua Mau Ke Ea O Ka 'Āina I Ka Pono" and reminds us that justice can, indeed, be more powerful than force and might.

Today we commemorate a historical sequence of events that helped to shape Hawai'i, past and present. As part of this celebration, the Hawaiian Flag is to be raised once again, just as was done 170 years ago.

Puakea’s speech provides a concise recounting of the events that led up to the temporary cession of Hawaiian sovereignty to a rogue representative of the British government and the subsequent restoration of the Hawaiian Kingdom. These events are a testament to Hawaiian nationalism and the early recognition of the Hawaiian Kingdom by foreign nations. It also highlights the origin of the saying “Ua Mau Ke Ea O Ka ‘Āina I Ka Pono” and the Hawaiian National Holiday of “Lā Ho’iho’i Ea” which continues to be celebrated today, not only at Thomas Square but across the Hawaiian Archipelago.

4.2.5 Kalihi-Palama Culture and Arts Society

The Kalihi-Palama Culture and Arts Society (KPCA) established the Queen Lili’uokalani Keiki Hula Competition in 1976 to honor Queen Lili’uokalani; as well as, support the growth of hula traditions that would begin with younger haumana (students) and continue through the generations. Understanding the genealogy and mission of KPCA is important when considering the relationship of KPCA to the City and County of Honolulu as an organization, as well as, the hula community as a keeper of educational and archival hula resources:

Under Mayor Neal Blaisdell, the City and County of Honolulu sought and received a Model Cities designation from the federal government. The Honolulu program had two areas designated as model neighborhood areas- the Waianae Coast and Kalihi-Palama. Each model area developed and created strong associations, elaborate citizen committees, and representative governing bodies. The Kalihi-Palama area did work centered on three major components geared towards Model Neighborhood area residents: 1.) Educational courses in appropriate facilities to conform to residents’ interests; 2.) An information and guidance center which centralizes information relating to educational and vocational opportunities in the community; and, 3.) A learning laboratory for the community that is equipped and staffed with Model Cities instructors.

The Kalihi-Palama neighborhood area ran an English language and Cultural Orientation center for several years, designed to assist non-English speaking residents who needed instruction in English and provide classes on cultural topics. The citizen participation component was heavily funded and professionally staffed, particularly in the Kalihi-Palama area. The Hawaii Community Action Program and Honolulu Model Cities Program demonstrated that it was possible to increase citizen participation and make that participation widespread and impactful. Coincidental with the demise of federal experiments with citizen participation in local decision making, came the mandated review of the Honolulu City Charter. During review, it was found that Honolulu, unlike any urbanized cities in the continental U.S., had a number of stable communities with strong community associations. In 1972, as part of the Model Cities Program and neighborhood-based decision making, the Kalihi-Palama Culture & Arts Society was organized for the purposes of providing education, training, and services in the area of culture and arts, something the community felt was lacking at the time.

KPCA’s primary target is the underprivileged population residing in the Kalihi-Palama area, however, they also conduct special projects on a statewide basis. Today KPCA is a nonprofit communitybased group with a 501(c)(3) tax exempt status. Year round, the society offers cultural and ethnic dance classes to the Kalihi-Palama area, reaching over 800 youth annually and offering free after-school activities. KPCA is also responsible for two annual cultural

events: The Queen Lili'uokalani Keiki Hula Competition and the Malia Craver Hula Kahiko Competition. They also conducted a project documenting 135 hula resources that reveal unique stories of hula lineage and philosophies, compiled into a two-volume text entitled, "Nana I na Loea Hula." As of today, KPCA is the only program left under the Kalihi-Palama Model Cities Program. It continues to fill important community needs, and several of its programs have become state-wide, impactful, cultural events.

Trisha Kehaulani Watson-Sproat Ph.D, J.D., President of the Kalihi-Palama Cultural & Arts Society (KPCA) Board of Directors to the City & County of Honolulu Department of Design and Construction Re: Neal S. Blaisdell Center Master Plan Draft Environmental Assessment (10 December 2018).

Under the guidance of Uncle George Na'ope and Uncle Wendell Silva with KPCA, Keiki Hula would become a major component of hula competitions in Hawai'i and a conduit to the Merrie Monarch Festival. Participation in Keiki Hula would help keiki to learn what it was like to dance on large stages and become accustomed to dancing in front of large audiences. As Keiki Hula grew in hālau participation and audience attendance, the competition moved from its inaugural event location at A'ala Park to Farrington High School and Kekūhaupi'o Gym at Kamehameha School Kapālama in order to accommodate its growth. In 1993, Keiki Hula finally found the right fit and home at the Neal Blaisdell Arena.

4.2.5.1 Dr. Trisha Kehaulani Watson-Sproat Ph.D, J.D – Kalihi-Palama Cultural & Arts Society Board of Directors, President

Trisha Kehaulani Watson-Sproat Ph.D, J.D. serves as the President of the Kalihi-Palama Cultural & Arts Society (KPCA) Board of Directors, the organization responsible for organizing the annual Queen Lili'uokalani Keiki Hula Competition. Established by Uncle George Na'ope, a founder of the Merrie Monarch Festival in Hilo, and Kahu Wendell Silva, the founder of KPCA, the Keiki Hula Competition was envisioned as a conduit to and preparation for the Merrie Monarch Festival. Keiki Hula provides an opportunity for young dancers to become ma'a to dancing in front of large audiences, dancing on formal stages with lighting and positioning requirements, and adhering to the age-appropriate rigors of performing at the level of the festival while also providing an environment that is understanding of the needs of young dancers.

Approximately 25 hālau participate in the annual festival, most of whom go on to compete in the Merrie Monarch Festival. Kumu Hula who have participated in the annual event over the years include Olana A'i, Mapuana de Silva, Johnny Lum Ho, 'Iliahi and Haunani Paredes, Napua Greig, Kahulu Maluo, Joan and Lili'noe Lindsey, Aunty Leimomi Ho, Ed Collier, Kau'i Kamana'o, and many, many more.

The organization has worked closer with knowledgeable kupuna such as Aunty Malia Craver, Aunty Edith Mackenzie, and Aunty Pat Namaka Bacon who have shared their knowledge and talents with the organization.

As the organizer of the annual Keiki Hula Competition, KPCA also maintains a rich archive of video, audio, photographic, and written hula resources that include copies of televised competition

since the first airing of the festival, copies of the television series that focused on the stories of kumu hula who have participated in the competition, and albums containing photographic documentation of the competition since its inception. KPCA also produced two volumes of *Nānā i nā Loea Hula*, a compilation of interviews with and/or biographies of influential kumu hula and the history of hula along with a magazine dedicated to the 40th anniversary of the Keiki Hula Competition that included interviews with five previous Miss Keiki Hula winners.

4.2.5.1.1 Concerns and Potential Impacts to Traditional and Customary Practices

While there is an understanding that the center will need to be closed for three years, there is concern about being able to re-secure a home for the competition at the center following the completion of renovations. With regard to the Keiki Hula Competition, the center is, overall, the best home for the competition when considering the safety needs of so many keiki, the space needed for the number hālau that participate, and the sound and lighting needs for telecast.

With regard to the proposed master plan, there is a concern about the adequacy of the dressing rooms and ensuring that the proposed facilities would meet the needs of the hālau. Beyond the practical uses of a dressing room, these spaces currently provide the privacy and quiet that is needed for hālau to prepare for their performances in keeping with the protocols of their hālau.

Keiki Hula has been in the Blaisdell for nearly three decades. As a critical cultural practice, it is essential that Native Hawaiians have spaces and opportunity to perpetuate their traditional activities. Keiki Hula and the Kalihi Palama Culture and Arts Society were both born out of concern of a decrease in hula and other cultural activities, and therefore its partnership with City, which existed since its inception, is now essential to the continuation of the Hawaiian culture.

4.2.5.1.2 Recommended Mitigation

Dr. Watson recommends a number of actions to mitigate any potential impact the City's actions may have on keiki hula and the competition:

- Development of a long-term MOA to continue to hold the competition at the Blaisdell once the facility reopens. The organization is open to holding the competition on dates that works for both organizations, allowing for the City to maximize revenue opportunities while continuing to serve important community / Hawaiian culture events like Keiki Hula.
- Include in the MOU long-term commitment from the City to minimize costs to the organization when holding the event at the Blaisdell. An increase in fees or costs could potentially result in effectively making it impossible to hold the event, resulting in an impact to the practice. Therefore, the organization would like to ensure that they can continue to hold the event at the Blaisdell at no cost or a very low cost, even when the P3 contract is executed and operations of the facility is potentially turned over to a private entity. Therefore, KPCA would like it included in the final P3 contract, should one be executed, that the Keiki Hula Competition would be a "legacy" event exempt from fair market rates and KPCA would additionally like assurance from the City, as the facility or property owner, that this will be enforced.
- To the extent feasible, KPCA would like to be kept apprised to design developments.

- KPCA would like to be integrated and included in interpretive design elements of the redeveloped facility. For example, numerous locations around town have statues depicting Hawaiian culture, in the event such a statue is erected at the campus, KPCA would like to encourage the statue to be of a keiki hula dancer or keiki hula dancers. If there are other interpretive elements created for the campus, KPCA would like some consideration made for including our archival materials. KPCA also urges the City to work with the organization, specially its knowledgeable Kumu Hula, on interpretation and design. KPCA feels it is most appropriate to work with the Kumu Hula and practitioners who have been active in that facility for years.
- KPCA would like to work with the City to increase opportunities for its participating hālau to participate in city events and other events held at the Blaisdell. This would increase opportunity to practice their craft and perpetuate the culture.

4.2.5.2 Guy Sibilla -- Kalihi-Palama Cultural & Arts Society, Executive Director

Guy Sibilla currently serves as the Executive Director of the KPCA and is a Past-President of the KPCA Board of Directors. Mr. Sibilla points out that 2019 marks the 44th year that KPCA has sponsored its signature event, "The Queen Lili'uokalani Keiki Hula Competition" and explains the significance of this Hawaiian cultural event that finds its home at the Neal Blaisdell Arena.

The legendary Uncle George Na'ope and Kahu Wendell Silva envisioned an organization that would help perpetuate Hawaiian dance, language and music and by doing so create the next generation of Kumu hula. Kalihi-Palama Culture and Arts Society is proud to stand as proof that in one generation the vision of our founders has been achieved! Many of the practicing Kumu hula today who dance at our annual competition also perform at the Merrie Monarch Festival. In fact, five ladies now claim title as both Miss Keiki Hula and Miss Aloha Hula winners! And many of our Master Keiki Hula Winners not only compete at the Keiki Hula Competition but also at the Merrie Monarch Festival.

Our Honolulu based annual competition increasingly provides an economic boost not only from the support of our local community but also from our international visitor industry. The Queen Lili'uokalani Keiki Hula Competition draws hālau from Kaua'i, Maui, and Hawai'i Island. Our event annually causes a small migration of family, friends, and hula dancers to fly on local airlines, stay at local hotels, buy food at local restaurants and rent cars and trucks at local vendors. They ship flowers and costumes and all manner of dance implements all purchased or sourced locally. In 2014 (our 40th Annual Competition) we estimated the economic impact to our Honolulu community at well over \$1 million dollars.

Since then, Kalihi-Palama has also expanded our reach into the Japanese community by partnering in with a national hula promoter. By doing so we engage in a "hula exchange program" whereby we send our Miss and Master Winners to Japan and they send their Miss And Master Winners (along with their winning 'auana hālau) to our competition. We can only guess that their contribution to our community economically adds another \$500,000 boost in hotel, food, air travel and souvenir spending.

As a 501(3)(c) entity, our mission is dedicated to perpetuating the knowledge of Hawaiian dance, language and music. Thus, we act as a repository of archival film, pictures, mele, and other media with open access to all who seek our history. In fact, we have now published two books on Kumu Hula. The first one now out-of-print, is a treasure as most of the Kumu hula featured in that book have passed away. The second is equally rare and both have been seen on eBay for hundreds of dollars. To eclipse this predatory practice, we plan to publish these

books on line for free as part of our mission. In the end, we at Kalihi-Palama Culture and Arts Society are here to serve our community without regard to profit. It is knowledge we gather and share to all who seek it.

4.2.5.3 Kumu Hula Brandon 'Iliahi Paredes -- Hālau Kekuaokalā'au'ala'iliahi

Kumu Hula Brandon 'Iliahi Paredes was raised on the island of O'ahu and currently resides on Maui where he and his wife, Haunani Paredes, have raised their family and established their hālau – Hālau Kekuaokalā'au'ala'iliahi. Both Kumu 'Iliahi and Kumu Haunani have a long history with the Keiki Hula festival and competition, as both have competed as keiki when the competition was held at Kekūhaupi'o Gym at Kamehameha Schools Kapālama. As a dancer in the competition, Kumu 'Iliahi also entered the solo competition in 1987 and won Master Keiki Hula at the age of 12 under Kumu Hula Olana Ai's Hālau Hula Olana. Kumu 'Iliahi and Kumu Haunani continue to participate in the Keiki Hula competition at its current home at the Neal Blaisdell Arena.

With regard to the early years of his participation in the Keiki Hula competition and the atmosphere and environment at Kekūhaupi'o Gym, Kumu 'Iliahi shared the following memories:

Kekūhaupi'o was amazing as a keiki because it was such a small place. As dancers we had to change in all the racket ball courts in the back. Each hālau had a racket ball court, and some shared racket ball courts. We had, I danced for Hālau Hula Olana at the time, so we had, boys and girls we had our own racket ball court and we had to change in there. It was real hustle and bustle in the back because all the hālau were together. That was pretty cool, because we got to see other hālau and got to see our friends. On the parent side, it was such a small venue that everybody had to sit really close together. Mostly on the bleachers on the side, it was real close quarters. Everybody got together. ... It was sort of forced bonding, but it was worth it. Everybody got to know each other and the excitement level picked up because of that. You had ohana outside barbecuing for the kids that were performing. Some hālau would pitch tents and the ohana would be cooking for them outside at Kekūhaupi'o. I remember those smells and those visions, so it was a different experience.

Kumu 'Iliahi noted that when the competition moved to the Blaisdell Arena the experience was different. At the arena, kumu would return to the competition as kumu hula of Hālau Kekuaokalā'au'ala'iliahi. With regard to the prospect of dancing at the Blaisdell, he shared the following:

Moving to the Blaisdell, I think as a dancer ... I remember when it first moved. I was, I was in high school already. But I remember thinking to myself, wow, that's awesome. Right. You know, I loved my experience at Kekūhaupi'o, I think moving to the Blaisdell gave Keiki Hula a bigger stage, a bigger platform for the keiki, for the dancers. Which I was awesome. Yeah. I would've loved to dance on a bigger stage in the Blaisdell, in the arena. I think that as a dancer, I would get excited about that.

Kumu 'Iliahi and Kumu Haunani have entered both their daughter and son in the solo competition portions of Keiki Hula with both children winning in their respective years. Their daughter went on to win Miss Keiki Hula in 2015 and their son won Master Keiki Hula in 2018. Kumu 'Iliahi shared that entering both of their keiki in the competition was an experience, however, entering their

son at the young age of seven wreaked havoc on their stress levels as the notion of hula legacy entered their thoughts:

That was a new experience for us. We've never run someone so young, but when you look at him, he's so full of life, and he was so ready already at seven. So we decided to give it a chance, but it would, it wreaked havoc on our stress level (laughing). Because you know, we stress there's a, there's a certain amount of stress when you enter these competitions and it's normal and it's things that we live with. We know how to sort of diffuse (the stress), so we have that, it's a normal stress level whenever we're entering competitions. But when we entered our son at seven years old, it just was so elevated. You know we always go into the competition saying there's no pressure, right? No pressure. We're just gonna (sic) do what we do, and whatever the judges think ... that's their kuleana ... and we just do what we do. Mahalo ke akua (Thanks be to god) for the experience. But I think this past year when my son ran ... the thought of legacy, yeah really that came into play and then there's pressure with that.

Throughout the whole process. My wife and I ... we would pule (pray) and pule, just make sure that yes, if there is any of that then we feel it instead of the keiki because this should be a wonderful experience. And my son throughout the whole process just a normal seven year old just loving the experience. Right. And not really thinking about that, the pressure of, oh my dad won 30 years ago. Right. But that day of the competition was probably my best and my worst day because the stress was so high, and I think I, I let it get a little bit into my son because I think I didn't, I didn't say anything, but he saw me sort of freaking out, I was trying to be the best non-freaker-utter (sic). As a parent and a kumu at the same time. And so he started to sort of breath. I could see him taking deep breaths, you know, that's sort of not him. He's like always straight. I'm gonna, I'm gonna do this go, go, go. So he could feel it. And so right before he goes on, he was in the white shirt, red tie, you know real classic look, his nose starts to bleed cause I, cause he's pressured. Now he's hearing all the music and there's two performances, one performance is on and then the next one, and then there's him.

Now we're all freaking out. There's four of us in the back, he has a white shirt, nose bleeding. What's going to happen? I have extra shirts in the back but that's going to take time to change ... So by miracle we clean him up, one of his uncles, Uncle Del Beasley is in the back there and just calms him down. He does his thing on the stage and we just leave it to ke akua (god) at that point. Such an experience and I was so happy for him to have that accomplishment. But I also thought to myself, wow, I wouldn't want to put, if I had a choice, I wouldn't want to put my keiki through that type of stress, so it's a balance. It's always a balance. But I'm so proud of him, now he's going all over the place, the learning experience was there.

Our faith, our foundation, really helped us get through it. At one point we just have to leave it up to ke akua. It's going to happen and there's angels that are around us that help us. Uncle Del Beasley there to calm him down in the backstage that's an angel there. But you know, that's happening there at the Blaisdell This has been our ... 11th year at Keiki Hula. So the Blaisdell has been our home. When I started Keiki Hula it was at a different place, it was Kekūhaupī'o Gym but shortly thereafter, maybe five or six years later it moved to the Blaisdell and it's been the home of Keiki Hula ever since.

With regard to the Blaisdell Arena as a venue for Keiki Hula, kumu noted:

The arena might be too big as far as seating for Keiki Hula itself. So unless we can get more people into to the competition, which I know they are trying to work on ... it's just the audience

seems now scattered. So the first maybe eight or nine years, the whole arena, except for that back portion of the stage was open. So it was really scattered. The bottom section, didn't have many people sitting here cause it those seats were more expensive, people (purchased tickets) in the general seating, and you didn't get that family feel. And in the last two or three years they've closed top section and now only open the bottom part, which helped it a little bit. It brought everybody down and it allowed it to have a little bit more of festival feel. So that's helping. I love that Keiki Hula is there at the Blaisdell and there's history there.

Hālau Kekuakalā'au'ala'iliahi is also a participant in the Merrie Monarch Festival and in the 2018 competition, the kane (men) of their hālau competed in the 'auna (modern hula) division to a mele (song) combination of "Old Plantation" and "Ike ia Pelekane". Kumu 'Iliahi explained the significance of the relationship between Queen Lili'uokalani and the Ward sisters, Victoria Ward in particular, which influenced the joining of the two mele for the competition and led to a 2nd place win in the Kane 'Auana division:

Because, I've always been involved in Keiki Hula, you know, since I was young, winning Master Keiki Hula when I was 12 in 1987, I've always had this fascination with the queen, Queen Lili'uokalani. I had this fascination and just pride. I guess as Master Keiki Hula I feel like I represent her in some way. Like I always have to be a good representative because of what she has done for our keiki. Over the years, I've done so much research on Lili'uokalani and her ohana, and when the opportunity arose we, we started to, my wife and I, we started to find, mele, old mele, that didn't have mea to it, didn't have leo to it, it was just poetry. Our friend, Zach, Zach Lum from Keauhou, the group Keauhou, and amazing musician and just awesome guy, was also doing his thesis on different mele from old books and ... he found some of these Lili'u mele that he thought we'd be interested in.

So I was, Okay! This is cool! So he puts some tunes to some of these mele and asked "Are you interested in this for like you're group for either Keiki Hula..." And I said "Absolutely!" You know ... we love that ... it's different, things that people really don't know but should know. So when we found this mele, 'Ike ia Pelekane, so it was a song written by Lili'uokalani, and it shared her story of when she went with Kapi'olani to England for the Jubilee of Queen Victoria. She wrote three specific mele ... sorry, five. I think it's five. She did five different mele. One of them, we know right? "The Queens Jubilee." That's very famous, but there's others, there's four others that aren't as familiar. 'Ike ia Pelekane we found that Uncle Bill Kaiwa, who is my ohana, as well, put the melody to Ike ia Pelekane, right in this chalanganq style. And Zach, what Zach did was he took that and he put it to piano and created sort of a more elegant sound and it was beautiful.

When we were listening to ('Ike ia Pelekane), I remembered a group from Maui, Na Mamoalii o Kauiki that entered Keiki Hula in in the late eighties and the early nineties, one of their presentations was "Old Plantation" and this mele that Zach was playing from Lili'u, sort of reminded me of that. So we started talking about "Old Plantation". And I kind of knew that it was written by Victoria Ward, but when we were doing the research on Victoria Ward herself and learned how she and her sister were staunch supporters for Lili'uokalani, and even through the overthrow they remained staunch supporters. There's a story when we were reading it, when I was reading her story. I was reading that portion of the book on Victoria Ward, when she finally had passed, she had passed under the flag of Hawai'i for the Queen and as a statement of her undying support for Lili'uokalani. To have that pilina (connection) with the Queen just makes, just made us decide ... you know what, let's put these two songs

together. This song that Lili'uokalani wrote and "Old Plantation", let's put it together for Merrie Monarch.

What people don't see in Merrie Monarch, they don't see the fact sheets that kumu have to write. That only the judges get to see. And I think that's one of the most beautiful things about hula competitions, like Merrie Monarch especially the kumu have to sort share their own thoughts on the pilina of these songs. And so it was, it was a great day for me to sit down and write, okay, this is why used these two songs together, "Old Plantation" and "Ike ia Pelekane", this pilina that our queen had with Victoria Ward and her sister and their ohana. There is something that needs to be written about, it's something that needs to be danced about.

But that's why we chose "Old Plantation." "Old Plantation" has always been one of my favorite songs, melody wise, it's just when you listen to it, the Brothers Cazimero have a version of it. So then to be able to just create that mele and then to bring that story to life and to then bring the pilina of it to Lili'uokalani really, it's priceless. It is that opportunity, whether you get an award for it or not. You've already won because you have gotten that experience.

Kumu 'Iliahi also noted that KPCA also has a great amount of information and mana'o from kumu on mele and those kinds of things that are appropriate for keiki. He points out that, what many may not know is that the organization has a good educational base to work with and turn to for hula resources. Specific to the proposed Blaisdell Master Plan, kumu noted that it was apparent that there was going to be a lot of construction and was glad to see that the waterscapes and landscaping plan would honor Old Plantation. When asked if he felt that the closure and/or design of the proposed master plan would affect the traditional cultural practices of the hālau, kumu shared the following:

I think the new look would be awesome. For the event. What I'm, what I'm worried about ... is there any, is there any way of solidifying or knowing that these events will come back to the Blaisdell? I know for a time they were looking at moving Keiki Hula to the convention center and I think one year that they were thinking of moving it to the Stan Sheriff (Center). So I know they're already looking at other venues. It would be really, I think for me as a kumu it would be really sad if it moved away from the Blaisdell just because I know the pilina of Lili'u (to the Ward ohana and Old Plantation). But there might be, there might be other sites that have the same type of pilina or another pilina to be understood.

That would be my concern is that if Keiki Hula moves for a three year period, it might be a permanent, move, right? So you know, what, from I guess Blaisdell standpoint would be the drawback for the Keiki Hula Competition to go back ... a guarantee, or something like that. I don't know I guess that all in the negotiations with Kalihi-Palama. Yet. I think that would be something that I would be concerned just because I know that they'd be looking for different places, to hold the event but the Blaisdell has been home for us for us for so long. It would be sad.

To me there's all pros and cons, but it's (the competition) so appropriate to be there because of that pilina, the two daughters were so supportive and in love with the Queen, you know. You hear those stories about the ladies that would grow flowers for Lili'u while she was in prison. The two daughters were part of that so, they would bring flowers to Lili'u when she was in prison. She, they were part of her aloali'i, part of her really close friends. To have it

(the competition) there is so appropriate, to honor Lili'u, I'm sure of Victoria Ward would be so happy about that.

But the most important thing I want to share about Keiki Hula and the Blaisdell area is that pilina that Lili'u had with Victoria Ward. I think that's why it is so important that it is there in some form. I'm actually really excited that it's going to develop a little bit, and maybe look a little bit more like Old Plantation. Maybe the competition doesn't need to be in the arena, maybe there's another part of the complex or the campus or whatever you going to call it that it can be there.

I think ultimately the other things, like what the hālau need to prepare for Keiki Hula and things like that, all of those things can happen someplace else ... but to have the actual event in that place (the Blaisdell) that's appropriate and the kids can learn from it. Every year when we bring our kids to Keiki Hula, we always teach them something about Lili'u and something about place, so we go visit Uluhaimalama¹. We take them there to get the kids knowing about that story, and then we bring them to the Blaisdell. Now we can tell them that story, the pilina of that place (to the queen). Educational wise for our kids to learn that.

4.2.5.3.1 Concerns

Kumu 'Iliahi's primary concern with regard to the proposed master plan centers around the approximate three year closure during construction. While he acknowledges that the renovations and additions are necessary moving forward and would only serve to improve the experience and usability of the Neal Blaisdell Center, the closure would result in the requirement of Keiki Hula to find a comparable venue in the interim. With the history of the project site, the significance of Old Plantation, and the role of the Ward sisters in the political history of the Hawaiian Kingdom along with their pilina to Queen Lili'uokalani, Kumu expressed concern about the ability of Keiki Hula to return to the Neal Blaisdell Center following the completion of renovations and construction. He pointed out that the site of Old Plantation is the appropriate place to hold a hula competition that honors Queen Lili'uokalani and would like to see an agreement with, or guarantee from, the City and County of Honolulu that ensures that the Queen Lili'uokalani Hula Competition would always have a home at the Neal Blaisdell Center.

4.2.5.4 Keiki Hula Competition – Survey of Past and Present Participating Kumu Hula and Hālau
Currently, the Keiki Hula Competition hosts 26 hula hālau at their annual competition. As a means to gain input on both the proposed master plan and anticipated closure timeline from the participating kumu hula, an online survey was developed and sent to kumu where electronic contact information was available. The following elements and questions, along with a project description and renderings were included in the survey:

Background Information

1. Name of Hālau

¹ Uluhaimalama is Queen Lili'uokalani's garden in Pauoa and the place from where her supporters would gather flowers and wrap them in newspapers as a way to keep the queen updated on the political happenings while under house-arrest. This was important because while under house arrest, the queen was otherwise forbidden from receiving news on the events of the kingdom by the usurpers of throne.

2. Contact Name
3. Kumu Hula
4. Email
5. Phone
6. How many years have you been participating in the Queen Lili'uokalani Keiki Hula Competition?
7. What year did your hālau begin competing?
8. On average, how many keiki from your hālau participate each year?
9. How many hours of preparation and rehearsal does your hālau put in to prepare for the competition?

Blaisdell Redevelopment

1. Blaisdell Center will be redeveloped to upgrade the aging facilities and to improve the facility for existing users and attendees. During construction and renovations, the Blaisdell Center would likely be closed for three years. Will this impact your hālau and traditional cultural practices of your hālau?
2. Can you share with us the ways you feel the campus improvements would affect your hālau?
3. Can you share with us any impacts the traditional cultural practices of your hālau might experience with the closure of the Blaisdell Center campus?
4. Please share any further comments or thoughts about the redevelopment of Blaisdell Center.

A total of nine responses were received and seven were completed in full. Generally, while kumu were supportive of the proposed renovations and pleased with the design concepts that honor "Old Plantation," seeing the upgrades as necessary from a safety perspective and increased dressing room capacity as a benefit for hālau, there was some anxiety with regard to the three year closure of the Neal Blaisdell Center and fears that the ability of the Keiki Hula Competition to return to the venue was not guaranteed. The following sections provide the individual responses from participating kumu hula.

4.2.5.4.1 Kumu Hula Māpuana de Silva – Hālau Mōhala 'Ilima

With preparations for Merrie Monarch consuming a lot of her time, Kumu Hula Māpuana de Silva graciously offered to conduct a telephone survey in lieu of filling out the survey online.

How many years have you been participating in the Queen Lili'uokalani Keiki Hula Competition?

The first year was in 1980 -- at Farrington High School and continued to participate in the competition every year until 2009, and then we participated intermittently over the years. We entered for the Fortieth Annual competition and I was a judge in last year's competition (2018).

On average, how many keiki from your hālau participate each year?

Smallest group of keiki was 13 during the early days of the competition. There were times when Kumu Māpuana would take up to 40 keiki. During the late '80s and through the '90s, hula 'auana was an activity where some years keiki were selected from the hālau to participate based on overall attitude and class attendance, and there were other years where all keiki in a particular class were invited to participate.

How many hours of preparation and rehearsal does your hālau put in to prepare for the competition?

The students of Hālau Mōhala 'Ilima do not specifically prepare for competition. Kumu Māpuana focuses on teaching keiki to work as hard as they can to be the best that they can be on the day of competition, or a concert, or a performance in the community. All of the years of teaching contribute to the performance. In preparing for the Keiki Hula Competition in the past the students practice for 6 hours a week over 2 months with some years upward of 100 hours.

Blaisdell Center will be redeveloped to upgrade the aging facilities and to improve the facility for existing users and attendees. During construction and renovations, the Blaisdell Center would likely be closed for three years. Will this impact your hālau and traditional cultural practices of your hālau?

No

Can you share with us the ways you feel the campus improvements would affect your hālau?

Kumu Māpuana does not necessarily view Keiki Hula, as it is today, as a cultural activity or cultural practice but rather it is a competition event. To contrast, there is the Maori Kapa Haka competition where, in order to participate there are specific cultural elements that must be present or fulfilled by the competitors in order to be recognized and included in the competition. For hula competitions the focus is on the competition (e.g. how students dance and look together) rather than being judged on individual student knowledge of the mele that they are performing, on whether or not the plants and flowers of the lei they are wearing were gathered then made into the lei by the participants, their families, or their hālau. The knowledge behind the dances may be known by the students of the hālau but it is not a requirement of the competition. If the kids had to learn how to make their own lei, explain the mele to judges, then perhaps there would be more of an element of cultural education and tradition. At Keiki Hula, the competition part of the event has become more important than the cultural aspects of it, and it seems to me that the more money you can spend on it has become an advantage for placing. In my opinion, anything that is done at the Blaisdell will not affect what the teachers do or how they teach their students, therefore I believe there will be no effect on the traditional

cultural practices of hula in regard to the competition and the site, the Blaisdell. A renovation of the site will not impact hula as a practice since no one lives there. The Blaisdell is a Western venue with a Western set up -- it does not really give me a Hawaiian sense of place.

Can you share with us any impacts the traditional cultural practices of your hālau might experience with the closure of the Blaisdell Center campus?

There should be no impact to the competition if Kalihi-Palama Culture and Arts Society does their work well. There is an opportunity with the closure to make other choices to improve what they do. As nice as it has been at the NBC, there are things that can be done better due to the facility limitations. There is a hope that by moving it to a new venue there will be improvements to the whole competition. There have been a total of five venues for Keiki Hula and since the competition has been at the Blaisdell and has been televised the feel of the competition has changed. The simplicity of the competition is gone and the playing field is different where those groups with the most elaborate costumes, lei, and makeup generally place higher.

Please share any further comments or thoughts about the redevelopment of Blaisdell Center.

When Kumu Māpuana first brought her hālau to the Keiki Hula Competition it was during the last year at Farrington. The next year the competition was held at McKinley then Kekūhaupi'o Gym at Kamehameha, followed by the Blaisdell. Kumu feels that the simplicity of the competition is gone and the fact that people would come and watch the whole thing is missed. Now, folks do not stay for the entire competition. They leave once the performance of their keiki or group is finished which has resulted in a loss of camaraderie and cheering on of other hālau. Kumu also misses the outdoor spaces where everyone could gather. While the dressing rooms are very comfortable and very nice, there is an isolation that comes with that. Today the hālau do not get to watch each other perform. Before Blaisdell, the lights stayed on and you could see each other, now the competition is so hyped up that it has become something else with too much focus on looks and fanfare. Kumu Māpuana shared that she prefers outdoor venues in order to move away from the fanfare (pageantry?) and look of a show-like performance.

4.2.5.4.2 Kumu Hula Darcey Moniz – Hālau Hula 'O Puka'ikapuaokalani

How many years have you been participating in the Queen Lili'uokalani Keiki Hula Competition?

Our hālau has been participating for 40 years.

What year did your hālau begin competing?

Since 1979.

On average, how many keiki from your hālau participate each year?

15

How many hours of preparation and rehearsal does your hālau put in to prepare for the competition?

Average of 150 - 180 hours for a competition.

Blaisdell Center will be redeveloped to upgrade the aging facilities and to improve the facility for existing users and attendees. During construction and renovations, the Blaisdell Center would likely be closed for three years. Will this impact your hālau and traditional cultural practices of your hālau?

Yes.

Can you share with us the ways you feel the campus improvements would affect your hālau?

I believe that improvements are necessary for the Blaisdell. I believe it may cause an impact the keiki hula in regard to a venue for the competition. I've seen the competition go from Farrington High School to Kamehameha Schools Gymnasium to the Blaisdell. Our hālau participated in the competition for many years and the effect would be in regards to the venue for the Keiki Hula Competition.

Can you share with us any impacts the traditional cultural practices of your hālau might experience with the closure of the Blaisdell Center campus?

From a Hālau that had competed in different Venues for the competition, I feel that the Blaisdell has been the best venue for the keiki to experience their hard work at its best. The lighting to the comfortable atmosphere allows the young ladies to do their best in their performance.

Please share any further comments or thoughts about the redevelopment of Blaisdell Center.

If there is a solution on assisting Kalihi Palama on a venue to hold the competition for the 3 years of closure that would be helpful. Seeing the competition grow as a student then as a kumu is amazing. I have young ladies that come from broken homes and families that look forward to this competition every year. These young ladies have hula as part of their lives. This competition is a highlight in their lives.

4.2.5.4.3 Kumu Hula Seiko Shimizu – Halau O Na Pua 'Ala Onaona

How many years have you been participating in the Queen Lili'uokalani Keiki Hula Competition?

12yrs (6 times) every 2 year.

What year did your hālau begin competing?

2006

On average, how many keiki from your hālau participate each year?

15

How many hours of preparation and rehearsal does your hālau put in to prepare for the competition?

4-10 hrs in a week

Blaisdell Center will be redeveloped to upgrade the aging facilities and to improve the facility for existing users and attendees. During construction and renovations, the Blaisdell Center would likely be closed for three years. Will this impact your hālau and traditional cultural practices of your hālau?

No.

Can you share with us the ways you feel the campus improvements would affect your hālau?

Blaisdell Center is one of the kind for Keiki Hula but sometimes we can see the some place like stairs or seats are getting old and might be dangerous for little keikis and the elders.

Can you share with us any impacts the traditional cultural practices of your hālau might experience with the closure of the Blaisdell Center campus?

None.

Please share any further comments or thoughts about the redevelopment of Blaisdell Center.

I'm excited to hear the renovation of it.

4.2.5.4.4 Kumu Hula Robert Keano Kaupu IV & Kumu Hula Lono Padilla – Hālau
Hi'iakaināmakalehua

How many years have you been participating in the Queen Lili'uokalani Keiki Hula Competition?

2

What year did your hālau begin competing?

2018

On average, how many keiki from your hālau participate each year?

20

How many hours of preparation and rehearsal does your hālau put in to prepare for the competition?

10 to 20 hours per week.

Blaisdell Center will be redeveloped to upgrade the aging facilities and to improve the facility for existing users and attendees. During construction and renovations, the Blaisdell Center would likely be closed for three years. Will this impact your hālau and traditional cultural practices of your hālau?

No.

Can you share with us the ways you feel the campus improvements would affect your hālau?

We don't really know if it will just yet. Perhaps it will affect dressing areas during competitions, but we don't know the plans between Queen Lili'iohalani Keiki Hula Competition and the NBC (Neal Blaisdell Center), so its hard to answer.

Can you share with us any impacts the traditional cultural practices of your hālau might experience with the closure of the Blaisdell Center campus?

Aqain, we're not completely clear what the intention of the NBC is and therefore cannot really say other than it sounds pretty. Culturally, it may not affect us at all

Please share any further comments or thoughts about the redevelopment of Blaisdell Center.

I love the fact that some of the thought behind it is to depict the waterways and gardens of the "old plantation" Ward Estate. What happens with many (not all) developments in Hawai'i now days, it really does nothing for the environment and society culturally, other than make it look pretty. A lot of times it has an adverse affect on the environment and society, especially culturally. My suggestion is to add cultural aspects (native plants, historical things, a place specific for cultural use, etc). I think more people will be more onboard to accept it. Once it becomes only for monetary qain for big corporations, which I understand profit must happen, people from this land and this culture get irritated and don't care to be associated with the place. Don't lose Hawai'i to or in development.

4.2.5.4.5 Kumu Hula Līlinoe Lindsey – Ka Pa Nani 'O Līlinoe

How many years have you been participating in the Queen Lili'uokalani Keiki Hula Competition?

Since 1980s

What year did your hālau begin competing?

1980s?

On average, how many keiki from your hālau participate each year?

20

How many hours of preparation and rehearsal does your hālau put in to prepare for the competition?

200+ hours

Blaisdell Center will be redeveloped to upgrade the aging facilities and to improve the facility for existing users and attendees. During construction and renovations, the Blaisdell Center would likely be closed for three years. Will this impact your hālau and traditional cultural practices of your hālau?

Yes

Can you share with us the ways you feel the campus improvements would affect your hālau?

Improvements made incorporating the host people's practices and traditions raises the pride and awareness of how important it is to preserve and protect the native people, their culture and traditions. Our environment should be a reflection of the native people of Hawai'i so we are reminded that we live in a very unique place.

Can you share with us any impacts the traditional cultural practices of your hālau might experience with the closure of the Blaisdell Center campus?

Our keiki class schedule is designed specifically with the QLKHC (Queen Lili'uokalani Keiki Hula Competition) in mind. From a class for 3 yr. old toddlers to classes for 11 year keiki, they are geared towards preparing them for the QLKHC. Although we do provide a class for the non-competitors, majority of our keiki make the QLKHC their early life goal.

In preparation of this event, flower gathering opportunities are presented. Workshops are conducted to teach various lei making techniques. Each year, we plan a family "malama 'aina," planting and harvesting at Ke Kahua O Kualii, Kawainui Marsh for various kinds of "na mea hula kanu" such as ki, ipu, kukui, etc. These gatherings provide us to hui together in lahui, planning, working and functioning as a family. These activities that we have done for 30 years will be greatly impacted should there be a complete halt to the QLKHC

Please share any further comments or thoughts about the redevelopment of Blaisdell Center.

It is our hope that another venue will be offered during the renovation period of the Neal Blaisdell Arena.

4.2.5.4.6 Kumu Hula 'Iliahi and Kumu Hula Haunani Paredes – Halau Kekuaokala'au'ala'iliahi

How many years have you been participating in the Queen Lili'uokalani Keiki Hula Competition?

12

What year did your hālau begin competing?

2007

On average, how many keiki from your hālau participate each year?

55

How many hours of preparation and rehearsal does your hālau put in to prepare for the competition?

600

Blaisdell Center will be redeveloped to upgrade the aging facilities and to improve the facility for existing users and attendees. During construction and renovations, the Blaisdell Center would likely be closed for three years. Will this impact your hālau and traditional cultural practices of your hālau?

Yes.

Can you share with us the ways you feel the campus improvements would affect your hālau?

It'll be sad to be away from the NBC complex for the 3 year period. After 12 years of competing at QLKHC, NBC has become our second home.

Can you share with us any impacts the traditional cultural practices of your hālau might experience with the closure of the Blaisdell Center campus?

Our practices will have to adapt to a new location. It won't be fatal to our practices, but our keiki will need to adjust.

Please share any further comments or thoughts about the redevelopment of Blaisdell Center.

Although closing the campus will have an affect upon our QLKHC experience, the improvements will be greatly appreciated! We just hope that the competition returns to the venue.

4.2.5.4.7 Kumu Hula Mihoko Ogawa – Hula Hālau ‘O Leilani

How many years have you been participating in the Queen Lili‘uokalani Keiki Hula Competition?

Since 2004

What year did your hālau begin competing?

2000

On average, how many keiki from your hālau participate each year?

15-20

How many hours of preparation and rehearsal does your hālau put in to prepare for the competition?

150 hours

Blaisdell Center will be redeveloped to upgrade the aging facilities and to improve the facility for existing users and attendees. During construction and renovations, the Blaisdell Center would likely be closed for three years. Will this impact your hālau and traditional cultural practices of your hālau?

Yes.

Can you share with us the ways you feel the campus improvements would affect your hālau?

Respondent skipped this question

Can you share with us any impacts the traditional cultural practices of your hālau might experience with the closure of the Blaisdell Center campus?

Respondent skipped this question

Please share any further comments or thoughts about the redevelopment of Blaisdell Center.

Respondent skipped this question

4.2.5.4.8 Kumu Hula Rich Pedrina – Hālau Hula ‘O Nāpunahleonāpua

How many years have you been participating in the Queen Lili‘uokalani Keiki Hula Competition?

Since 1995

What year did your hālau begin competing?

1995

On average, how many keiki from your hālau participate each year?

12-18

How many hours of preparation and rehearsal does your hālau put in to prepare for the competition?

15-20 a week.

Blaisdell Center will be redeveloped to upgrade the aging facilities and to improve the facility for existing users and attendees. During construction and renovations, the Blaisdell Center would likely be closed for three years. Will this impact your hālau and traditional cultural practices of your hālau?

Yes.

Can you share with us the ways you feel the campus improvements would affect your hālau?

Give us better use of facilities, hopefully to be able to use for more cultural events, workshops instead of just competitions.

Can you share with us any impacts the traditional cultural practices of your hālau might experience with the closure of the Blaisdell Center campus?

There's not many places that can accommodate events like Keiki Hula Competition and other cultural competitions being currently held at NBC.

Please share any further comments or thoughts about the redevelopment of Blaisdell Center.

I am looking forward to seeing the new updated blaisdell center.

4.2.5.4.9 Kumu Hula Keola Dalire – Keolalaulani Halau 'Olapa O Laka

How many years have you been participating in the Queen Lili'uokalani Keiki Hula Competition?

44

What year did your hālau begin competing?

1976

On average, how many keiki from your hālau participate each year?

10

How many hours of preparation and rehearsal does your hālau put in to prepare for the competition?

100

Blaisdell Center will be redeveloped to upgrade the aging facilities and to improve the facility for existing users and attendees. During construction and renovations, the Blaisdell Center would likely be closed for three years. Will this impact your hālau and traditional cultural practices of your hālau?

Respondent skipped this question

Can you share with us the ways you feel the campus improvements would affect your hālau?

Respondent skipped this question

Can you share with us any impacts the traditional cultural practices of your hālau might experience with the closure of the Blaisdell Center campus?

Respondent skipped this question

Please share any further comments or thoughts about the redevelopment of Blaisdell Center.

Respondent skipped this question

4.2.5.4.10 Kumu Hula Sallie Yoza – Hālau ‘O Nāpuala’ikauikaiu

How many years have you been participating in the Queen Lili‘uokalani Keiki Hula Competition?

14 years, this year 15 years

What year did your hālau begin competing?

2004

On average, how many keiki from your hālau participate each year?

14

How many hours of preparation and rehearsal does your hālau put in to prepare for the competition?

Blaisdell Center will be redeveloped to upgrade the aging facilities and to improve the facility for existing users and attendees. During construction and renovations, the Blaisdell Center would

likely be closed for three years. Will this impact your hālau and traditional cultural practices of your hālau?

Every Saturday from February-May 4 hours then June every other day for 5-6 hours except on Sundays then in July everynight except on Friday and Sundays 4 hours then on Saturday 5 hours

Can you share with us the ways you feel the campus improvements would affect your hālau?

Respondent skipped this question

Can you share with us any impacts the traditional cultural practices of your hālau might experience with the closure of the Blaisdell Center campus?

Respondent skipped this question

Please share any further comments or thoughts about the redevelopment of Blaisdell Center.

Respondent skipped this question

4.2.6 Stakeholder Interviews Completed During the Feasibility Phase of the Neal Blaisdell Center Master Plan

In August 2017, WCIT, the primary architecture firm for the master plan project and DTL, the public outreach firm for the project, conducted early stakeholder interviews with Hawaiian cultural practitioners to:

- Develop and maintain an iterative process with key stakeholders that are selected to inform the development of the Blaisdell Center Master Plan.
- Update stakeholders of the status of the planning process
- Collect candid feedback – understanding their concerns and suggestions
- Communicate City’s action, schedule and intent
- Discover how groups can participate
 1. Share Arts Ensemble concept
 2. If an arts ensemble were created and space were available at Blaisdell: a. What types of spaces would best support cultural practices and programming?
 3. How could you envision your organizations using the Center?
 4. Is it feasible to have a hālau at Blaisdell?

The sections below summarize the feed back as it relates to traditional cultural practices that were collected during this early outreach process. As the following *mana’o* was shared prior to the start of the cultural impact assessment scoping process and is un-published, those consulted have graciously given permission to include their *mana’o* in this document.

4.2.6.1 Kaleo Trinidad – Kumu Hula, Ka Ka Leo O Laka I Ka Hikina O Ka Lā and Kumu at Kamehameha Schools

4.2.6.1.1 General Thoughts on the Master Plan

- Exciting plans for redevelopment
- Blaisdell is often used by Kamehameha Schools
- Finally back for the KS Christmas Concert in the Concert Hall

4.2.6.1.2 Native Hawaiian Cultural Presence on Site

- Advocate for strong Hawaiian presence on site – make it an area to observe living art
 - Native Hawaiian artisans to observe practicing Native Hawaiian art
 - Board and stone demonstrations
 - Carving pahu
 - Watching hula (or any dance) rehearsals
- The space should try to tell a story of what Hawai'i embodies
- Address sustainability which is important to Native Hawaiians and Hawai'i
- Most hālau attract people:
 - People come to watch/rehearse
 - Examples of Kapi'olani Park/Molehu/Royal Hawaiian
- Kuahu: hula altar
 - Can be an issue to include on site
 - Kumu do not want to provide maintenance unless they are fully committed to the altar
 - Provide kuahu plants in place of actual altar
 - Needs to be placed on eastern side of room or facility

4.2.6.1.3 Arts Ensemble/Hālau Concept

- Great concept
- If Native Hawaiian groups are in the building, there are ways to support arts in the space
- Hālau need space
- Space preferences:
 - Room/Rehearsal space size: 40x50 square feet
 - 2,000 sq ft or Merrie Monarch size
 - Prefer to fit 20-85 people
 - Side doors that can open
 - Flexible needs with open air and air conditioning
 - Flooring: dance floors, sprung floors
 - A space like this would be booked every night or twice a night by various hālau

4.2.6.2 Snowbird Bento – Kumu Hula, Ka Pā Hula O Ka Lei Lehua and Kumu, Kamehameha Schools

4.2.6.2.1 General Thoughts

- Likes the plans for redevelopment
- Excited about brining Native Hawaiian arts and culture back to the space

- Likes having indoor and outdoor spaces for Native Hawaiian arts

4.2.6.2.2 Native Hawaiian Cultural Presence on Site

- How do we make this a cultural space again? How do we bring sacredness to the space again?
 - Through INTENTION
 - Create décor and environment that is supportive of a cultural space
 - Plants, trees, etc.
 - Create the sounds of a cultural space
 - Intentionally bring kūpuna to the space
 - Naming: bring Hawaiian names back in to the space
 - When you bring elements of the past back to the space, everything from the natural area and history begin to come back

4.2.6.2.3 Arts Ensemble/Hālau Concept

- If you build it, hālau will come
- Give a “relationship” or responsibility to those that are able to use the space/some sort of exchange
- Hālau have a need for space:
 - Concert Hall is too expensive
 - Hawai‘i Theatre dressing rooms are bad
- Need structure for use:
 - Pricing structure
 - How can we determine who gets to use the space?
 - Rental agreements
- There is a need for indoor/intimate presentation of material combined with outdoor space
- Space preferences:
 - Merrie Monarch size rehearsal room
 - Showers
 - Refrigerated spaces/lei rooms
 - Storage for instruments and implements
 - Open walls
 - Ventilation/fans

4.2.6.3 Aaron Salā -- Director of Cultural Affairs, Royal Hawaiian Center and Musician

4.2.6.3.1 Arts Ensemble/Hālau Concept:

- Less concerned about facilities, concerned about management of the arts ensemble
 - Need to work as a sustainable, holistic community with holistic needs
 - The community doesn’t necessarily like each other, but they work together
- Programming and space subsidized by the City
- Sees potential legal issues that come with using a City facility:
 - Add training/resources/support around insurance, legalities

- If there are too many challenges/City procedures, groups will still rehearse at Kapi'olani Park
- Create an incubator period or incubator concept for *hālau* to use the space
 - Create training program for *hālau* to learn how to self-sustain
 - Conceptually
 - Programmatically
 - Legally
 - Work with the City process
 - Create an opportunity to support each other and pathway to access success
- If you bring Hawaiians into the space:
 - They will take care of the space
 - Hula is high art
 - Don't let them become janitors
 - Consumption and *hula* needs to be understood as high art
- Spaces in the Arts Ensemble:
 - *Hālau* need space as separate organizations and as a group

5.0 TRADITIONAL CULTURAL PRACTICES

The arrangement of a typical Hawaiian *ahupuaʻa* extended from several fathoms out from the coastline to the upland forested areas. Depending on the location within this broad *makai* to *mauka* context, and guided by knowledge of the natural environment, a wide variety of cultural practices and resources within the *ahupuaʻa* could be found. Such resources and rights would include marine resources and fishing rights in the coastal area, arable lands for crop cultivation, as well as water rights in the planting zones, and valuable bird catching along with plant and timber harvesting privileges at the higher elevations and toward the valley headwater (Handy et al. 1991:48). Based on the land commission award distribution in the *makai* reaches of Kewalo, in addition to the stories and information gathered during the background research and consultation completed for this study, it is apparent that settlement and land use within Kewalo *Ahupuaʻa* functioned in the typical traditional sense, with a *makai* residence that could be near marine resources including the numerous *loko iʻa* and *loʻi* that stretched from Waikīkī to Kapālama, and from the coast to the foothills of Pūowaina and the Koʻolau mountains (Handy et al. 1991:270). Discussions on specific aspects of traditional Hawaiian cultural resources and practices, as identified through background research and community consultation, that may relate to the current study area, are presented below.

5.1 MAKAI RESOURCES

Kewalo is between two traditional centers of population, Kou (Honolulu) and Waikīkī. In Waikīkī, a system of irrigated taro *loʻi* fed by streams descending from Makiki, Mānoa, and Pālolo Valleys blanketed the plain, and networks of *loko iʻa* (fishponds) dotted the shoreline. Similarly, Kou—the area of downtown Honolulu surrounding the harbor was prolific with fishponds and irrigated fields watered by perennial streams descending from Nuʻuanu and Pauoa Valleys. Rev. Hiram Bingham, arriving in Honolulu (Kou) in 1820, described a still predominantly Native Hawaiian environment—still a “village”—on the brink of western-induced transformations:

.....ascending to the top of Punchbowl Hill, an extinguished crater, whose base bounds the northeast part of the village or town.....Below us, on the south and west, spread the plain of Honolulu, having its fishponds and salt making pools along the seashore, the village and fort between us and the harbor, and the valley stretching a few miles north into the interior, which presented its scattered habitations and numerous beds of *kalo* [taro] in its various stages of growth, with its large green leaves, beautifully embossed on the silvery water, in which it flourishes. (Bingham 1847:92-93)

Bingham’s description of the area that included the current project area emphasizes that proliferation of wetland agriculture and aquaculture the was extensively developed in the area.

Early accounts also highlighted the salt production that occurred in the area, this information is corroborated in the Mahele awards, Native and Foreign Testimonies that identify numerous *loko iʻa* (fishponds) and salt making ponds in Kewalo. The abundance of coastal Kewalo was made possible by the natural springs and rivers that inundated the plain. This is evidenced by the *ʻōlelo noʻeau*, “Ka wai huahuaʻi o Kewalo,” which translates as “The bubbling water of Kewalo” (Pukui

1983:178). The legend of Ha'ō also describes two springs in the area and highlights the importance and sacred nature that they held.

In addition, Moke Manu recounts the story of 'Ai'ai son of Kū'ula a god of fishing. 'Ai'ai was known to have spread the practice of erecting upright stones as shrines for fishermen to provide offerings and attracting fish. In the story 'Ai'ai visits the area of Kewalo where he observes the chief Kou (also the older name of the region of Honolulu) and his proficiency in catching *aku* or Skip Jack Tuna (*Katsuwonus pelamis*) which is considered a delicacy to Hawaiian elite and commoner alike. While in the region he also visits Kulolia, Kālia, Mamala, Kaka'ako, the *heiau* of Pākākā and Hanakaialama where he meets and marries a beautiful young woman named Pū'iwa. Pū'iwa was skilled in catching *o'opu* (fresh water gobies) and *opai* or glass shrimp that were abundant in the area. The Ward family continued the practices of the area, reestablishing fishponds and salt production in the area, converting subsistence methods into modern commerce.

5.2 TRADITIONAL ACCESS AND TRAILS

Ūi (1959) notes relevant place names of the region; as well as the settlement areas of both the Hawaiian ruling class and advisors to the monarchy when discussing the early nineteenth century trails in the Honolulu/Waikī area:

Beginning near the mouth of Nuuanu Stream, *makai* of King street was Kapuukolo, "where white men and such dwelt," Among them were Francisco de Paula Marin, the Spaniard who introduced horticulture to Hawaii, and Isaac Davis, friend and co-advisor with John Young to Kamehameha. Here too lived Kuihelani, a relative of li and an important chief who had charge of many of the king's lands. Near his place was the home of Keliimaikai, full brother of Kamehameha, on the coral point "where the first custom house stood" ... "*Mauka* of Kapuukolo were two *maika* fields and a *loku* site. A *loku* site contained a house for the enjoyment of various indoor games and amusements such as *kilu*, *puhenehene*, chanting, or dancing. The two *maika* fields at Kikihale were bordered with houses, notably those of Kaoleioku and Kekuaokalani, son and nephew respectively of Kamehameha. Next to their homes was one wall of a large yam field, where in 1812 the first Fourth of July celebration in Honolulu was held by the captains of three trading vessels just returned from China. *Makai* of the yam field were homes of warriors and lesser chiefs and on the shore at Nihoa, "between Kaahumanu and Nuuanu streets", was a shipyard where foreign style vessels were being made by the Hawaiians under the tutelage of whites.

Next along the shoreline "surrounded by a fence" was the establishment of Kamehameha himself, consisting of many houses, for himself, for Kaahumanu and other chiefesses, and for his gods and his personal attendants. Close by were two drilling sites and a "foot racing" and *maika* field, where the king kept a personal eye on the performances of his warriors and chiefs. Near the shore, "in front of the courthouse," was a Hale-o-Lono, where Liholiho, later Kamehameha II, regularly kept the kapus of the gods therein. Next along the beach of Kuloloia was the home of the chiefess Namahana, mother of Kaahumanu; that of Liliha, mother of Keopuolani, Kamehameha's sacred wife and mother of Kamehamehas II and III; then that of Kalaniakua, sister or cousin of Liliha. Then came the residence of Kalanimoku, the king's prime minister, known to the foreigners as "Billy Pitt." His residences were called Papakanene and Mokuaikaua, and the land long bore the name of Mokuaikaua. *Mauka* of his place was that

of Kalaimamahu, Kamehameha's half brother and his war leader in early battles for supremacy over Hawaii. Though his houses remained, Kalaimamahu had died some years before. Nearby were a gods' house and houses for the king's stewards, as well as a temporary house for the *lua* wrestlers.

Mauka of this area was "a duster of houses" and another *loku* site "at Merchant and Alakea streets." Beyond, along the shoreline, was the home of Kekumanoha, uncle of Kaahumanu, "on the south side of Richards street." Next came the establishment of Kekuaiwa—a son of Kamehameha by Kaheiheimalie—who died in young manhood. Farther along were the homes of kahunas (sic), headed by Hewahewa, high priest of Kamehameha, and the same man who abetted in the overthrow of the *kapu* system after the king's death. At Kakaako were the homes of fishermen who, together with those who lived at Kapuukolo, supplied the needs of the court.

Mauka of Kakaako was the coconut grove of Honuakaha, where Kinau, son of Kamehameha by Peleuli resided, and the home of Keopuolani, mother of Liholiho. Liholiho, then the heir apparent, lived nearby at his residence called Hookuku... (Rockwood and Barrère 1957)

The above distillation of the writings of I'i provides a 19th century glimpse of the area that would later become downtown Honolulu. Some of the main streets of modern Honolulu follow the exact path of the historic and pre-contact trails in the area. Ala Moana Boulevard follows the contour of the original coast and therefore the coastal trail. Beretania and South King Street also maintain the traditional pathways to Mānoa, Waikīkī, and Kālia that once meandered through the fishponds and taro fields that dominated the landscape (see also Figure 3-13).

5.3 TRADITIONAL HAWAIIAN SITES

Handy and Handy indicate that the number of *heiau* located in the area of Honolulu were an indication of the cultural importance of the vicinity (Handy et al. 1991:479). The *heiau* of Ka'ahaimauli, Mana, Pu'ukea and Pākākā played a major role in the identity of the area. John Papa I'i (1959:17) mentioned that Hewahewa and his *kahuna* also resided in the area near to the Papa's *heiau* depicted in. Early maps by Kotzbue and La Passe depict numerous *lo'i* and *loko i'a* from Honolulu to Waikīkī including the lands of Kewalo. In addition, salt ponds were also prolific. All of these features once had a network of physical structures of varying levels of cultural significance, *heiau* were dedicated to the gods, fish ponds were named and often had *Mo'ō* (water spirits) who acted as protectors over them. The ponds continued to play a major role in the area through the *mahele* and into the early twentieth century when the Wards revitalized the ponds for production.

Today the area has been heavily impacted by continuous development resulting in urban sprawl. Dredging of the Honolulu harbor and Kewalo basin support land reclamation within Kewalo and Kaka'ako, covering what remained of the once agriculturally productive wetlands and the famous waters of Kewalo. Surface cultural sites are limited to the historic buildings that have managed to persist over the last 100 years. Numerous archaeological studies have been conducted within the overall study area. Based on these studies, it is clear the sediments from the wetland agricultural systems are still just below the surface. In addition, due to the soil types and land use overtime, numerous burials have been identified in the area of study.

The chief Huanuikalala‘ila‘i governed Pu‘ukea Heiau in the land section of Kukuluāe‘o, according to Kamakau (1993:24). Pu‘ukea literally means “white hill” (Pukui et al. 1974:199) and is also the name of a small land division within the ‘ili of Kukuluāe‘o that is mentioned in at least two Land Commission cases, LCA 1502 (not awarded) and LCA 1504. LCA 1504 is located near the junction of Halekauwila Street and Cooke Street. It is common for a heiau to have the same name as the ‘ili in which it is located, so it is possible that Pu‘ukea Heiau was also near the junction of Halekauwila and Cooke Streets. The majority of the house sites in the mid-nineteenth century in Kukuluāe‘o were located near Halekauwila Street and Queen Street, *mauka* of the low-lying coastal swamp lands on higher, dry ground. It is possible that the *heiau* platform or the area that it was built on was one of the few elevated locations in the flat, low-lying swamp that surrounded it, and thus gained the name Pu‘u-kea, or “white hill.” In addition, the map titled Honolulu Trails, ca. 1810, by Paul Rockwood depicts two structures labeled Papa’s *heiau* and one Hale o Lono (‘Ū‘Ū 1959:90).

5.4 TRADITIONAL HAWAIIAN BURIALS AND HISTORIC CEMETERIES

A CIA completed for the Kaka‘ako Community Development District *mauka* area indicates that numerous cemeteries and burial grounds from large epidemics are located throughout Kewalo. Honuakaha Cemetery at the *makai* corner of Halekauwila and South Streets, *makai* of Kawaiaha‘o Church. It explains that “Honuakaha was a settlement located generally between Punchbowl and South Streets, on the *makai* side of Queen Street. A total of 274 historic burials have been recorded in the ‘ili of Kewalo also known as the Kaka‘ako *mauka* Development Area; the majority were interred in the Kawaiaha‘o and Honuakaha Cemeteries”. The report goes on to summarize additional burials and historic sites located in the area:

There is also a cluster of at least 28 historic coffin burials at the Kaka‘ako ID-10 area identified as State Inventory of Historic Properties (SIHP) #50-80-14-6658, a cluster of 16 coffin burials at the Ko‘olani Condominium *Mauka* Area District (SIHP #50-80-14-6911), two coffin burials at the Kaka‘ako ID-4 area (SIHP #50-80-14-5598), and two historic burials (one coffin and one with historic grave goods) at Kaka‘ako ID-3 area (SIHP #50-80-14-5280). There is no historic documentation on these small burial areas and their extent and time of use is unknown.

A total of 66 burials found in the Kewalo area were not buried in coffins, or do not have associated historic grave goods, or consist of partial, previously disturbed, burials. Some skeletons were found in a traditional flexed position, suggesting a traditional Hawaiian burial practice. These may date to the pre-Contact period or the early post-Contact period (before the mid-nineteenth century), when most Hawaiians adopted Western-style burial practices (usually extended within a coffin). Most of these burials cannot be assigned to a specific time period (Spearing et al. 2008).

Since then additional burials have been identified during an AIS for the Block N East project area located within the *mauka* portion of the Ward Industrial Center, between Ward Avenue and Kamake‘e Street. A burial ground was identified in the previously identified SIHP # -7429 where a total of 29 human burials and 9-10 isolated human remains. The AIS for Kamehameha Schools Kaka‘ako Block I, also uncovered 7 intact coffin burials and isolated human remains SIHP # -7580 and two additional burials SIHP # -7581 and SIHP # -7583 (J. Tulchin et al. 2014b:69-87).

Numerous historic properties have been identified in multiple archaeological studies conducted from the mid-1980s to the present. SIHP # -7429 documents a salt pond and other cultural layers including historic trash.

5.5 TRADITIONAL HAWAIIAN SPIRITUALITY AND HAWAIIAN CEREMONY

The presence of numerous *heiau* indicate that the importance of the area was constant up until the first westerners arrived. There is one clear account of ceremony associated with the consecration of a Kawaluna *heiau* by the Maui chief Kū'ali'i who through a series of battles with the 'Ewa and Kona chiefs, he also unified O'ahu under his rule. Keanakamanō is the name of both the upper valley of Kewalo and the ridge that separates it from Waolani Valley, a portion of Nu'uaniu *Ahupua'a* to the east. Somewhere in Waolani Valley stood an important *heiau* called Kawaluna:

In the valley of Waolani, a side valley from the great Nu'uaniu, stood one of the sacred *Heiaus* called Kawaluna, which only the highest chief of the island was entitled to consecrate at the annual sacrifice. As Moi [king] of O'ahu the undoubted right to perform the ceremony was with Kualii, and he resolved to assert his prerogative and try conclusions with the Kona chiefs, who were preparing to resist what they considered an assumption of authority by the Ko'olaupoko chief. Crossing the mountain by the Nu'uaniu and Kalihi passes, Kualii assembled his men on the ridge of Keanakamanō, overlooking the Waolani valley, descended to the *Heiau*, performed the customary ceremony on such occasions, and at the conclusion fought and routed the Kona forces that had ascended the valley to resist and prevent him. The Kona chiefs submitted themselves, and Kualii returned to Kailua (Fornander 1917a).

5.6 HULA TRADITIONS AND CONTEMPORARY COMPETITIONS

In the introduction and opening chapter of the ethnography, *Unwritten Literature of Hawaii, The Sacred Songs of the Hula (1909)*, Nathaniel B. Emerson provides the following statements on the importance of *hula* traditions to Native Hawaiians:

The most telling record of a people's intimate life is the record which it unconsciously makes in its songs. This record which the Hawaiian people have left of themselves is full and *specific* [emphasis added]. When, therefore, we ask what emotions stirred the heart of the old-time Hawaiian as he approached the great themes of life and death, of ambition and jealousy, of sexual passion, of romantic love, of conjugal love, and parental love, what his attitude toward nature and the dread forces of earthquake and storm, and the mysteries of spirit and the hereafter, we shall find our sewer in the songs and prayers and recitation of the hula.

The hula was a religious service, in which poetry, music, pantomime, and the dance lent themselves, under the forms of dramatic art, the refreshment of men's minds. Its view of life was idyllic and it gave itself to the celebration of those mythical times when gods and goddesses moved on the earth as men and women and when men and women were as gods. As to the subject-matter, its warp was spun largely from the bowels of the old-time mythology into cords through which the race maintained vital connection with its mysterious past. Interwoven with these, forming the woof, were threads of a thousand hues and many fabrics, representing the imaginations of the poet, the speculations of the philosopher, the aspirations of many a thirsty soul, as well as the ravings and flame-colored pictures of the sensualists, the mutterings and incantation of the *kahuna*, the mysteries and paraphernalia of Polynesian mythology, the annals of the nation's history—the material, in fact, which in

another nation and under different circumstances would have gone to the making of its poetry, its drama, its opera, its literature. (1909:7, 11-12)

To say that *hula* is simply performed for amusement, sport, or entertainment, is to over simplify the sacred expression of this Hawaiian tradition. Emerson (1909:57) notes that “every formal *hula* was regarded by the people of the olden times as a sacred and religious performance (*tabu*)” but not every *hula* style was of the same somberness, technique, or instrumentation. In his treatise on *hula*, Emerson describes the ceremonial aspects that practitioners shared with him (1909:14-48) and documented 28 different styles of *hula*. Such styles include portrayals of a particular animal’s style of movement like the Hula Kolea or Hula Manō, as well as the rarely known Hula Ki’i (a *hula* with the accompaniment of *ki’i* or marionettes) and more widely known Hula Pahu (a *hula* with the accompaniment of the *pahu* or drum), Emerson goes on to document *hula* styles that used the body as an instrument like the Hula Pa’iumauma (the chest-beating *hula*) or Hula Pālani to the non-instrumental Hula Ki’elei (Emerson 1909). In the introduction to the ethnography, Emerson acknowledges a custom of concealment and secrecy surrounding hula when he gives thanks and recognition to those that have shared their knowledge with him (1909:9). This acknowledgment leads to an understanding that, like all ethnographies and cultural anthropological studies reliant on informant interviews, his detailed descriptions of *hula* and *hula* traditions should by no means be considered exhaustive as the information contained therein consists only of information that practitioners were comfortable in sharing while possibly holding back and curating the most sensitive and sacred details within their *hālau*.

In contemporary times, there are two distinct categories of *hula*—*kahiko* (ancient) and *‘auana* (modern)—the former of which is aligned with the ancient practices and ceremonies that have been documented by Emerson and the latter of which literally refers to “*hula* that wanders” and is defined as “an informal *hula* [sic] without ceremony or offering, contrasted with the *hula kuahu*; modern *hula* [sic]” (Pukui and Elbert 1986:88; Stillman 1998:24). Elements of instrumentation and some of the techniques described by Emerson can be found in both categories of *hula*. *Hula* competitions have become a large part of our contemporary Hawaiian society for both practitioners and *hālau* support systems, as well as, non-practicing *kanaka*, *kama’āina*, and *malihini* alike. Stillman (1996) asserts that while not all *hālau* seek to compete, such competition events “have played an important role in stimulating participation in the *hula* [sic] and, thus, have contributed significantly to the preservation and perpetuation of the *hula* tradition ... [and] also provided the stage for performative innovations that have transformed the *hula* tradition.” Two such prominent *hula* competition events take place at the Neal S. Blaisdell Center.

5.6.1 The King Kamehameha Chant and Hula Competition

The King Kamehameha Chant and Hula Competition was founded in 1973 by the State Council on Hawaiian Heritage and has held a residency at the Neal S. Blaisdell Center since its inception. This annual competition started as component of the long-standing Kamehameha Day celebration that honors Kamehameha I (Stillman 1996) and was established as an additional competition venue to the renowned Merrie Monarch Festival where *hālau* could gather and compete on

O‘ahu (<http://hulacomp.webstarts.com/about.html>). What began as a single-day event held on Kamehameha Day (June 11), has grown into a colorful two-day event steeped in Hawaiian hula traditions (Stillman 1996). The competition includes both *kahiko* and *‘auna* categories that feature *kāne* (men), *wahine* (women), and *kūpuna wahine* (senior women) divisions; as well as an *oli* (chanter) competition. Along with *hula hālau* from across the *pae ‘āina*, international interest in *hula* traditions is also highlighted during this competition as participants have also included *hālau* from Canada, Japan, Mexico, and various States from within the Continental U.S., (<https://www.hawaiiifun.org/EventPopup.shtml?eventid=6856>).

5.6.2 The Queen Lili‘uokalani Keiki Hula Competition

The annual Queen Lili‘uokalani Keiki Hula Competition was founded on September 11, 1976 by the Kalihi-Palama Culture & Arts Society, Inc. (KPCA) as a part of a festival to honor Queen Lili‘uokalani—the las reigning monarch of Hawai‘i. First held at A‘ala Park in downtown Honolulu, the festival featured multi-ethnic dance, Hawaiian crafts demonstrations, a pageant of the *mō‘ī wahine* (ruling women) of Hawai‘i, and the first *keiki* (children’s) *hula* competition. George Na‘ope, a co-founder of the Merrie Monarch Festival, Hawai‘i’s premier annual *hula* event that is held in Hilo, served as a committee chairman for the Queen Lili‘uokalani Hula Competition and had the following vision for the *keiki* as an event “where children could share their achievements in *hula* while learning about Queen Lili‘uokalani, her *‘ohana* and Hawai‘i’s historical past.” In the initial years, the competition was meant for *keiki wahine* (girls) 6 to 12 years of age in *hula ‘auna* only. (<http://keikihula.org/about.html>)

Six groups entered the competition in its inaugural year and after the first two years, the competition moved indoors to the Farrington High School Auditorium as a better venue to showcase the *oli*, *mele*, and dance. Over the years the competition evolved into a three-day competition with the addition of solo and *hula kahiko* categories, along with a separate *keiki kāne* (boys) division and Hawaiian language scoring. Between 1976 and 1992, the success of the competition resulted in the growth of the event in terms of both the number of *hālau* that participate and the size of audience. Accordingly, the Keiki Hula Competition would outgrow various venues, from ‘A‘ala Park to Kekūhaupi‘o Gym at Kamehameha Schools Kapālama Campus, before landing and finding home at the Neal Blaisdell Arena in 1993 (Figure 5-1 through Figure 5-3).



Figure 5-1. 1993 Miss Keiki Hula Contestant, Neal Blaisdell Arena (photo courtesy of Kalihi-Palama Culture and Arts Society)



Figure 5-2. 1993 Master Keiki Hula Contestant, Neal Blaisdell Arena (photo courtesy of Kalihi-Palama Culture and Arts Society)



Figure 5-3. Hula 'Auana at the first year of the Keiki Hula Competition at the Neal Blaisdell Arena in 1993.

Kumu Hula Olana Ai profoundly states that with regard to Keiki Hula, “Queen Lili’uokalani is our true north”, a factor that is highlighted by Kumu Hula ‘Iliahi Paredes who notes that there is poetic *pilina* to having the *hula* competition that honors Queen Lili’uokalani at the site of “Old Plantation” (see also Section 4.2.5.3):

*... when we were doing the research on Victoria Ward herself and learned how she and her sister were staunch supporters for Lili’uokalani, and even through the overthrow they remained staunch supporters. There’s a story when we were reading it, when I was reading her story (Victoria Ward). I was reading that portion of the book on Victoria Ward, when she finally had passed, she had passed under the flag of Hawai’i for the Queen and as a statement of her undying support for Lili’uokalani. To have that *pilina* (connection) with the Queen just makes, just made us decide ... you know what, let’s put these two songs together. This song that Lili’uokalani wrote (‘Ike ia Pelekane) and “Old Plantation”, let’s put it together for Merrie Monarch.*

*... the most important thing I want to share about Keiki Hula and the Blaisdell area is that *pilina* that Lili’u had with Victoria Ward. I think that’s why it is so important that it (the competition) is there (at the Neal Blaisdell Center) in some form.*

For Kumu Hula Līlinoe Lindsey, the Keiki Hula Competition is an important part of her *hālau*:

Our keiki class schedule is designed specifically with the QLKHC (Queen Lili’uokalani Keiki Hula Competition) in mind. From a class for 3 yr. old toddlers to classes for 11 year keiki, they are geared towards preparing them for the QLKHC. Although we do provide a class for the non-competitors, majority of our keiki make the QLKHC their early life goal.

In preparation of this event, flower gathering opportunities are presented. Workshops are conducted to teach various lei making techniques. Each year, we plan a family “malama ‘aina,” planting and harvesting at Ke Kahua O Kualii, Kawainui Marsh for various kinds of “na mea hula kanu” such as ki, ipu, kukui, etc. These gatherings provide us to hui together in lahui, planning, working and functioning as a family. These activities that we have done for 30 years will be greatly impacted should there be a complete halt to the QLKHC

Today, the Queen Lili’uokalani Hula Competition is held every year in the month of July at the Neal S. Blaisdell Center where over 400 *keiki*, representing over twenty *hālau* from across the *pae ‘āina* and Japan, draws an audience of at least 2,000 people each day (Cook 2018; Hawaii News Now 2018). For Kumu Hula Darcy Moniz “the Blaisdell has been the best venue for the *keiki* to experience their hard work at its best.” In Hawai’i, *hula* and the values that *hula* instill can begin at a very young age:

Children who begin hula at an early age often stay with the same halau (sic) all of their lives and then bring their own keiki to learn from the same kumu. Kumu who teach keiki say that the younger dancers learn songs and chants at warp speed, while many adults struggle as if they were learning advanced calculus. Dancers might take breaks for college, marriage and career, but the pull of hula never lets up. When dancers find a hula home, they go back, often bringing friends, aunties and uncles with them. (Cook 2018)

6.0 ANALYSIS OF EFFECT AND PROPOSED RECOMMENDATIONS

The State of Hawai‘i has a constitutional and statutory obligation to protect native Hawaiian customary and traditional gathering rights. We offer this introductory section to explain the basis and substance of the state’s obligations, as well as the impact of this protection upon traditional western private property rights and the role of private landowners in the necessary research and analysis of traditional and customary practices. To provide the appropriate historical context for such traditional and customary practices, an authoritative treatise on this subject state:

At the time of Western contact in 1778, Native Hawaiians “lived in a highly organized, self-sufficient, subsistent social system based on communal land tenure with a sophisticated language, culture, and religion.” Access from one area to another—along the shore, between adjacent ahupua‘a (land divisions [usually extending from the mountains to the sea along rational lines, such as ridges or other natural characteristics]), to the mountains and the sea, and to small plots of land cultivated or harvested by native tenants—was a necessary part of early Hawaiian life. Gathering activities supplemented everyday food and medicinal supplies, while cultural and religious practices sustained the people in a variety of ways.

Prior to 1839, ancient Hawaiian custom and usage governed the islands. To ensure the political existence of the kingdom in the face of expanding foreign influence, Kamehameha III developed a system of codified laws that incorporated protections for ancient tradition, custom, and usage. In other words, the laws in force at the time of the Māhele in the mid-1800s and for some time thereafter recognized the importance of traditional and customary practices to the native people. Many of these laws survived later political transformations and continue to apply as background principles of private property law in the State of Hawai‘i. (MacKenzie et al. 2015:1082).

With respect to “laws [that] survived later political transformations”, the present-day obligation of the State to protect native Hawaiian traditional and customary practices is based, first, upon the State Constitution and, in addition, upon the legislature’s acts as codified in the Hawai‘i Revised Statutes and the judiciary’s interpretation of the state constitution and state statutes through case law. These authoritative sources of law, in essence, describe how the state seeks to integrate and protect native Hawaiian traditional and customary practices in a western system of private property ownership

Article XII, section 7 of the Hawai‘i Constitution provides:

The State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua‘a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights.

Delegates to the 1978 Hawai‘i Constitutional Convention explained:

The proposed new section reaffirms all rights customarily and traditionally held by ancient Hawaiians. . . . [B]esides fishing rights, other rights for sustenance, cultural and religious purposes exist. Hunting, gathering, access and water rights, while not provided for in the State Constitution, were nevertheless an integral part of the ancient Hawaiian civilization and are retained by its descendants.” Hawaiian Affairs Comm., Standing Comm. Rep. No. 57,

reprinted in 1 Proceedings of the Constitutional Convention of Hawai'i of 1978, at 637, 640 (1980).

With respect to legislative acts, Section 7-1 of the HRS specifically protects the right to gather, although that right is limited in scope to the enumerated items that are primarily used for constructing a house or starting a fire. Section 1-1 of the HRS offers broader protection for the exercise of traditional and customary rights. By codifying "Hawaiian usage" as an exception to the common law of the state, this statutory provision provides "a vehicle for the continued existence of those customary rights which continued to be practiced" after November 25, 1892. *Kalipi v. Hawaiian Trust Co.*, 66 Haw. 1, 10, 656 P.2d 745, 750-51 (1982).

In a series of landmark cases beginning with *Kalipi*, the Hawai'i Supreme Court reaffirmed the customary and traditional gathering rights of *ahupua'a* tenants, particularly under article XII, section 7 of the Hawai'i Constitution. See *Kalipi*, 66 Haw. at 10-12, 656 P.2d at 750-52; *Pele Defense Fund v. Paty*, 73 Haw. 578, 837 P.2d 1247 (1992), cert. denied, 507 U.S. 918 (1993); *Public Access Shoreline Haw. v. Haw. Cnty. Planning Comm'n*, 79 Hawai'i 425, 903 P.2d 1246 (1995), cert. denied, 517 U.S. 1163 (1996) (commonly known as "PASH"); *Ka Pa'akai O Ka 'Āina v. Land Use Com'n, State of Hawai'i*, 94 Hawai'i 31, 7P.3d 1068 (2000). Through this line of cases, the Supreme Court established the manner in which state agencies must apply constitutional protections of native Hawaiian gathering rights in the development of private real property.

In *Kalipi*, the Hawai'i Supreme Court ruled that "any argument for the extinguishing of traditional rights based simply upon the possible inconsistency of purported native rights with our modern system of land tenure must fail." *Kalipi*, 66 Haw. at 4, 656 P.2d at 748. In *Pele Defense Fund v. Paty*, the Court held that "native Hawaiian rights protected by article XII, section 7 may extend beyond the *ahupua'a* in which a native Hawaiian resides where such rights have been customarily and traditionally exercised in this manner." *Pele Defense Fund v. Paty*, 73 Haw. at 620, 837 P.2d 1272. In the PASH case, the Court stated that "legitimate customary and traditional practices must be protected to the extent feasible in accordance with article XII, section 7." *PASH*, 79 Hawai'i at 451, 903 P.2d at 1272

The Court in PASH stated that the "State retains the ability to reconcile competing interests under article XII, section 7". *PASH*, 79 Hawai'i at 447, 903 P.2d at 1268. As part of this balance of interests, the Court stated: (a) "[although access is only guaranteed in connection with undeveloped lands, and article XII, section 7 does not require the preservation of such lands, the State does not have the unfettered discretion to regulate the rights of *ahupua'a* tenants out of existence", *id.* at 451, 903 P.2d at 1272, and (b) "the balance of interests and harms clearly favors a right of exclusion for private property owners as against persons pursuing non-traditional practices or exercising otherwise valid customary rights in an unreasonable manner", although, "[o]n the other hand, the reasonable exercise of ancient Hawaiian usage is entitled to protection under article XII, section 7", *id.* at 442, 903 P.2d at 1272.

In *Ka Pa'akai O Ka 'Āina*, the Supreme Court provided further direction on the constitutional and statutory responsibility of state agencies to preserve and protect the rights of native Hawaiians to carry-out their traditional and customary practices to the extent feasible and, in so doing, "the Court

introduced an analytical framework that governmental agencies must specifically consider when balancing their obligations to protect traditional and customary practices against private property (as well as competing public) interests.” (MacKenzie et al. 2015:1109).

In *Ka Pa‘akai O Ka ‘Āina*, 94 Haw. at 35, 7 P.3d at 1072, the Court held that the State Land Use Commission (LUC) failed to satisfy its constitutional and statutory obligations to preserve and protect customary and traditional rights of native Hawaiians (Belatti 2003). At issue was the LUC’s grant of a petition to reclassify over 1,000 acres of land in the *ahupua‘a* of Ka‘upulehu on Hawai‘i Island from the State Land Use “Conservation District” to the State Land Use “Urban District” in order to allow the development of a new resort. The Court acknowledged a variety of traditional and customary rights asserted by the petitioners, who were comprised of a coalition of Native Hawaiian community organizations. These rights included “fishing [and] gathering salt, ‘opihi, limu, kūpe‘e (edible marine snails whose shells are used for ornaments; the rare ones by chiefs), Pele’s Tears (tear drops made from pahoehoe lava), and hā‘uke‘uke (edible sea urchins).” *Ka Pa‘akai O Ka ‘Āina*, 94 Haw. at 43 and nn.19-21, 7 P.3d at 1080 and nn. 19-21. The Court also recognized the “special religious significance” of an 1800-1801 lava flow to gather salt for subsistence and religious purposes. *Id.*

The petitioners further asserted that “the petition area is associated with important personages and events in Hawaiian history, contains well-known physical entities (such as the shoreline, Ka Lae Mano and the 1800-1801 lava flow) and remnants of the native tenants’ lateral shoreline and mauka-makai trail system, living areas and burials.” *Id.* at 43, 7 P.3d at 1080. Agreeing with the petitioners that their interests as native Hawaiians and as tenants of the *ahupua‘a* of Ka‘upulehu would be impaired by the proposed development in relation to the use of ancient trails and the shoreline area to practice traditional and customary gathering rights, the Court held the LUC had failed to develop a proper record on such rights and consider and analyze the extent of Native Hawaiian practitioners’ exercise of traditional and customary rights in the affected area. The Court stated that the LUC, as the reviewing state agency, must consider and make express findings of fact and conclusions of law regarding the cultural, historical, and natural resources of a subject property as they relate to Native Hawaiian rights when determining what restrictions should be placed on land use. *Ka Pa‘akai O Ka ‘Āina*, 94 Haw. at 35, 7 P.3d at 1072.

The Court further held that the LUC, by directing the developer to work independently to protect cultural rights, impermissibly delegated the LUC’s constitutional and statutory responsibility, as a State agency, to protect and preserve cultural resources and native Hawaiian rights. The Court vacated the LUC’s grant of the developer’s application for a land use boundary reclassification and remanded the case to the LUC to make findings of fact and conclusions of law relating to:

(1) the identity and scope of “valued cultural, historical, or natural resources” in the petition area, including the extent to which traditional and customary native Hawaiian rights are exercised in the petition area;

(2) the extent to which those resources - including traditional and customary native Hawaiian rights - will be affected or impaired by the proposed action; and,

(3) the feasible action, if any, to be taken by the LUC to reasonably protect native Hawaiian rights if they are found to exist. *Ka Pa‘akai O Ka ‘Āina*, 94 Haw. at 35, 7 P.3d at 1072.

The Court’s framework seeks “to effectuate the State’s obligation to protect native Hawaiian customary and traditional practices while reasonably accommodating competing private [property] interests”. *Id.* at 46-47, 7 P.3d at 1083-84. Beyond the directives to the LUC in this specific case, this three-part framework provides specific direction to state and county agencies when considering land use and development projects on previously undeveloped land and should provide guidance to developers with respect to the record that must be prepared for a discretionary land use authorization or permit.

In attempting to comply with the *PASH* and *Ka Pa’akai O Ka ‘Āina* cases, the LUC had to address the issue of who has the responsibility to identify (and place on the record) any pre-existing native Hawaiian gathering rights. In subsequent boundary amendment proceedings, the LUC directed the petitioner to consult with the Office of Hawaiian Affairs (OHA) and with *kūpuna* in the area regarding past and present practices. The Office of Planning (OP) also consults with OHA. The LUC does not do any independent investigation, rather relies on the record made by the petitioner and OP (and any intervenor) and determines whether that record is sufficient.

Once the rights have been identified and the impacts assessed, the LUC is faced with the difficult problem of reconciling the private property rights, particularly the right of exclusion, with the gathering rights of native Hawaiians, which of themselves can require a certain amount of privacy and seclusion. Following the Supreme Court’s remand in *Ka Pa’akai O Ka ‘Āina* and in another case, *In the Matter of the Petition of Destination Villages Kauai*, Docket No. A00731 (2001) in which native Hawaiian gathering rights were shown to exist, the LUC put conditions on its approval of reclassification of property that in each case required the formation of a committee made of up a developer’s representative and a representative from the local native Hawaiian community to develop a plan to ensure that the gathering rights are protected. The plans are subject to LUC approval; any controversy arising from the plan is to be resolved by the committee. In the event the committee members cannot agree, they must agree on a third person who then will break the tie.

The LUC chose the committee approach because it did not believe it had sufficient information on resource conservation and management for the area in either of the two cases to make the final decision and, as a practical matter, would not be able to create such a record within the statutorily-mandated (365-day) time frame for making a decision. Because the Supreme Court has forbidden the LUC to delegate its decision-making power over balancing the private property rights and native Hawaiian gathering rights, forming a committee with each party having an equal vote in the outcome and requiring that any plans be approved by the LUC ensured that both sides would have their interests adequately represented and that the LUC would be the final arbiter that the balance reached meets the requirements of the law.

For purposes of the present project, the following sections provide an analysis of potential effects to currently known traditional and customary practices within and adjacent to the proposed project footprint. Recommendations for managing potential impacts to on-going practices or protecting the integrity of traditional cultural resources that may be present within and adjacent to the project area should traditional cultural practices that were once carried out in the area be re-established.

6.1 POTENTIAL DIRECT EFFECTS

Traditional wetland agriculture, aquaculture, and salt production were abundant across the Kewalo plain. Cultural practices and resources associated with these features and the acquisition of marine resources were the primary cultural practices that occurred in and around the project area. Although, the background research resulted in the identification of native Hawaiian traditional and customary practices associated with fishing and shoreline gathering, agriculture, aquaculture, and salt production within the vicinity of the current project area, outreach and community consultation did not identify contemporary traditional cultural practices reliant on access to resources located within the project area or transit through the project area. The reclamation of land in the 1920s-1940s and subsequent development of the area has encapsulated the traditional landscape, which has been a major factor in the inability for such cultural practices to continue within and immediately adjacent to the project area.

Urbanization notwithstanding, numerous traditional and customary practices continue along the coast of Kewalo basin, Ka'ākaukui, Kukuluāe'ō and Kaka'ako and include ocean resource acquisition, surfing, and canoe practices. One participant expressed concerns about how the water use at the Blaisdell Center might affect the overall water system if it changes dramatically. Other concerns were expressed about the potential for impacting subsurface historic properties that are culturally significant and sensitive such as traditional burials.

Finally, should the entire campus of the Blaisdell Center be closed and inaccessible during construction, the ability to carry out the annual King Kamehameha Chant and Hula Competition and Queen Lili'uokalani Hula Competition would be directly affected as this historically utilized space would be unavailable for the duration of construction.

6.2 POTENTIAL INDIRECT EFFECTS

With regard to potential indirect effects, according to those consulted for this study, the most prominent and significant cultural practices that still persist within the area of study are associated with the coastal marine resources of Kewalo. Fishing and resource gathering continue to play a role in the Kewalo community. Nearly everyone who contributed to this study advocated for some level of resource restoration to occur.

The identified direct effects and potential indirect effects of the proposed project could be mitigated if the Neal S. Blaisdell Center Master Plan incorporates the elements presented in the recommendations into the Master Plan.

6.3 PROPOSED RECOMMENDATIONS

6.3.1 Ola I ka Wai – Water is Life

The dominant theme that is echoed throughout literature, historical texts, previous archaeological studies and community consultation is centered on the water. It is clear that the Kewalo region and most of the coastal plains of Honolulu and Waikīkī were natural wetlands that were modified by Hawaiians to develop intricate networks of agriculture, aquaculture and salt production. Numerous early explorers marveled at the productivity of the area. Traditional accounts such as *mo'olelo*, *oli* and *mele*, all indicate the importance of the natural springs that were once prolific in the area. The story of Ha'ō and the Kawaiha'ō spring, and the *'ōlelo noe'au* “*Ka wai huahua'i o Kewalo*, (The bubbling water of Kewalo)” confirm this theme of water (Pukui 1983:178). When Kamehameha I conquered O'ahu, he chose to set up the seat of government along the coast of Kou (Honolulu). Many of the most prominent *ali'i* made their homes here. In addition, the *kahuna* class, including Kamehameha's *kahuna nui* Hewahewa and principle healer Papa, built *heiau* here (Tī'i 1959:92). It is also clear that when Neal S. Blaisdell Center was first built, one of the main community concerns that was expressed, was related to preserving some elements of the Ward Estate ponds. Similarly, the Bruce family also confirmed that despite more than one hundred years, and more than 2,500 miles of ocean, descendants returned specifically to relocate the springs of their ancestors.

The importance of water is still echoed today by the community. Recommendations proposed by those who participated in this study are consistent with the proposed Neal S. Blaisdell Center Master Plan where water is incorporated into the design theme in all of its various aspects. Participants in the study went further in stating that water should not be incorporated as just an aesthetic design element, but as an active living thing that merges flow and function, consistent with traditional and contemporary Hawaiian understanding of the importance of water while providing access to cultural practitioners (see also 4.2.2.2 and 4.2.3.3).

6.3.2 Wahi Pana, Wahi 'Inoa – Storied Places, Traditional Place Names, and Re-Establishment of Hawaiian Sense of Place

Through the historical research it is clear that place names and boundaries fluctuate with political, social and economic changes. The project area is located in the Kaka'ako Mauka development district, that was once called the Kewalo section, as part of the *'ili kū* or *'ili lele* of Kewalo. Kewalo functioned as an *ahupua'a* independent of the surrounding land designations in the area, yet today its boundaries are difficult to definitively define. This being said there are over a thousand years of history embedded in the traditional place names of the area. These place names help to recount the epic battles of Kualī'i on the planes of Kulaokahua. They are a literal record of the natural environment, describing geological and environmental conditions of the area, like the springs of Ha'ō and Kewalo. In addition, they provide a continuity of connection between people and the land.

Just as it is important to maintain physical aspects of the area such as water, it is important that the place names and traditional *mo'olelo* are also carried forward. Kumu Hula Māpuana de Silva shared that “(t)he Blaisdell is a Western venue with a Western set up -- it does not really give (her) a Hawaiian sense of place.” Building upon this sentiment, Kumu Hula Robert Keano Kaupu IV and Kumu Hula Lono Padilla share that:

Improvements made incorporating the host people's practices and traditions raises the pride and awareness of how important it is to preserve and protect the native people, their culture and traditions. Our environment should be a reflection of the native people of Hawai'i so we are reminded that we live in a very unique place.

During early consultation as a part of the proposed master plan feasibility phase, Kumu Hula Kaleo Trinidad advocated for a strong Hawaiian presence at the Blaisdell Center with Kumu Hula Snowbird Bento stating that in order to bring a Hawaiian presence and make the area a cultural space again it must be done with intention. To accomplish this, traditional stories can be incorporated into architectural and landscape design themes. Place names can be reinforced and reintroduced through naming of buildings, features and interpretive signs (see also Sections 4.2.2.2, 4.2.5.4.4, 4.2.6.1, and 4.2.6.2). Additionally, native flora and fauna can be re-established to support the natural, native plant communities from which the *wahi inoa*, *mo'olelo*, *mele* and *oli* were derived not just as a landscaping aesthetic, but, as Kumu Hina Wong-Kalu recommends, a resource that could be accessed and utilized by cultural practitioners (see also Section 4.2.2.2). Initially, the idea of having a *kuahu* (*hula* altar) constructed as a part of the master plan was proposed during the feasibility study, however, *kumu hula* noted that this could present an issue at the site as a *kuahu* requires commitment from *kumu* to provide maintenance. The *kuahu* is the visible temporary home of Laka, the goddess of *hula*. The plants and other materials that were used in its construction were of such great importance that it was not entrusted to just anyone. Specific formalities need to be observed, *oli* recited, and *pule* had to be offered as a part of the construction and maintenance of the *kuahu* (Emerson 1909:15-16). As an alternative to constructing a *kuahu*, Kumu Kaleo Trinidad suggested that *kuahu* plants such as *maile*, *'ie'ie*, *'ilima*, *lehua*, and *halapepe* (Laitinen 2013) could be incorporated into the landscaping for the site.

Along with the connection between people and land and the perpetuation of Hawaiian cultural traditions, there is also a significant connection to man-made spaces that commemorate important aspects of the history of the Lāhui (Hawaiian Nation) and our collective world history. Imaikalani Winchester notes that the proximity of Thomas Square to the Blaisdell Center creates an opportunity to increase connectivity and awareness between the Neal S. Blaisdell Center and Thomas Square with an emphasis on social, political history of that space. The design of the Blaisdell Center could include appropriate signage and connecting paths between the two which might provide opportunities for those who utilize the Blaisdell Center to be guided to the park where they could gain firsthand information about the importance and history of this *wahi* (see also Section 4.2.3.3).

With regard to the potential for encountering significant historic properties associated with settlement and funerary practices in the area prior to the arrival of Western sailing vessels, Kumu Hina Wong-Kalu has expressed a need for the execution of a thorough AIS in order to minimize and impacts to historic properties and burials (see also Section 4.2.2.2). In the even that burials are identified, Kumu Hina Wong-Kalu advocates for preservation in place along with close coordination with the OIBC and recognized cultural and lineal descendants.

6.3.3 Hula Events at the Neal Blaisdell Center

Finally, with regard to *hula* traditions and the competitions that are held at the Blaisdell Center, an adverse effect connected to the potential closure of the entire Blaisdell Center campus and possible disruption of the annual *hula* competitions has been identified. Though the effect would be considered a short-term adverse effect that could be remedied following the opening of the new facility, the ability to adequately plan for the closure may mitigate interruption of these important cultural events. To this end, it is recommended that the project team remain in close contact with the organizers of the annual King Kamehameha Chant and Hula Competition and Queen Lili'uokalani Hula Competition so that all parties are aware of closure and construction schedules.

With regard to long term planning and recommendations, Dr. Watson-Sproat notes that there needs to be specific consideration paid to the adequacy of the dressing rooms for the *hula hālau* who participate in the Queen Lili'uokalani Hula Competition, a sentiment may also extend to the King Kamehameha Chant and Hula Competition. Additionally, during the feasibility and planning phases of the master plan process, many groups, as well as, Blaisdell staff noted that the backstage area at the Arena was too small and lacked industry standard appointments and functionality.

In general, an expansion of the amount of space available, along with the quality of dressing rooms and performers areas, is currently a major component of the planned improvements at all venues, including the Arena with several suites of large dressing rooms being integrated into the overall plan. Along these lines, increased event staff and storage space in the backstage areas are planned in an effort to reduce competition with performer spaces and improve the overall organization of the backstage zones. For very large shows, the locker rooms planned for the adjacent sports pavilion could provide even more staging and dressing areas for *hālau* dancers and support groups.

In addition to enclosed performance and performer spaces at the Center, the proposed site design that has developed out of the planning process could create several opportunities for outdoor performances. Although not dedicated as a traditional *hula pā*, proposed raised terrace areas could provide platforms that may function as informal stages and dancing areas of various sizes. Up on the proposed terrace areas, another platform adjoins proposed Arts Ensemble dressing rooms and fronts a large circular lawn which could accommodate a large crowd.

As the King Kamehameha Chant and Hula Competition enters its 46th year and the Queen Lili'uokalani Keiki Hula Competition enters its 44th year, with the Neal S. Blaisdell Center as the main venue, the center itself is now etched in the genealogy of these events and thus taken on an important role in honoring our *Mō'i* and the tradition of *hula*, from the formative years of a practitioner and on through their twilight years. Concerns regarding the ability to return to the Neal Blaisdell Center and secure the venue as a future performance space following the completion of the renovation were expressed by Dr. Trisha Watson-Sproat, as well as *kumu hula* of *hālau* who participate in the Keiki Hula Competition. Throughout the consultation process for this study, *kumu hula* have noted that the Blaisdell is the best home for O'ahu based *hula* competitions in terms of space and ability to accommodate multiple *hālau*, the *ohana* that come to support the *hālau*, and the general audience that enjoys attending *hula* events (see also Sections 4.2.5.1, 4.2.5.4, and 4.2.6.1). As a means to alleviate concerns about the future home of Keiki Hula, mitigate potential cost-prohibitive long-term effects that might make holding the event at the Blaisdell following the renovation difficult, and perpetuate *hula* traditions and customary practices, Dr. Watson outlined the following actions for consideration:

- *Development of a long-term MOA to continue to hold the competition at the Blaisdell once the facility reopens. The organization is open to holding the competition on dates that works for both organizations, allowing for the City to maximize revenue opportunities while continuing to serve important community / Hawaiian culture events like Keiki Hula.*
- *Include in the MOA long-term commitment from the City to minimize costs to the organization when holding the event at the Blaisdell. An increase in fees or costs could potentially result in effectively making it impossible to hold the event, resulting in an impact to the practice. Therefore, the organization would like to ensure that they can continue to hold the event at the Blaisdell at no cost or a very low cost, even when the P3 contract is executed and operations of the facility is potentially turned over to a private entity. Therefore, KPCA would like it included in the final P3 contract, should one be executed, that the Keiki Hula Competition would be a "legacy" event exempt from fair market rates and KPCA would additionally like assurance from the City, as the facility or property owner, that this will be enforced.*
- *To the extent feasible, KPCA would like to be kept apprised to design developments.*
- *KPCA would like to be integrated and included in interpretive design elements of the redeveloped facility. For example, numerous locations around town have statutes depicting Hawaiian culture, in the event such a statute is erected at the campus, KPCA would like to encourage the statute to be of a keiki hula dancer or keiki hula dancers. If there are other interpretive elements created for the campus, KPCA would like some consideration made for including our archival materials. KPCA also urges the City to work with the organization, specially its knowledgeable Kumu Hula, on interpretation and design. KPCA feels it is most appropriate to work with the Kumu Hula and practitioners who have been active in that facility for years.*

- KPCA would like to work with the City to increase opportunities for its participating hālau to participate in city events and other events held at the Blaisdell. This would increase opportunity to practice their craft and perpetuate the culture.

In addition to the proposed recommendation by Dr. Watson to increase opportunities for hālau to participate in events sponsored by the City or others at the Blaisdell, Kumu Hula Aaron Salā also proposes the creation of an incubator concept at the site for hālau to use space that could:

- Create training program for hālau to learn how to self-sustain
 - Conceptually
 - Programmatically
 - Legally
- Create an opportunity for hālau to support each other and as a pathway to access success

Kumu Aaron asserts that hula needs to be understood as a high art. The proposed renovations and design concepts of Neal S. Blaisdell Center Master Plan, as well as the proposed recommendations presented above, opens an opportunity for hula to be recognized and honored as a high art.

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Appendix C. Transportation Impact Assessment Report

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Neal S. Blaisdell Center

Transportation Impact Assessment Report

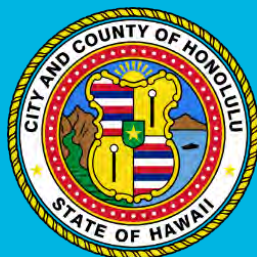
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September 2018

Project Reference: 60570680

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Neal S. Blaisdell Center

Transportation Impact Assessment Report

September 2018

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Acronyms and Abbreviations

%	percent
Biki	Bikeshare Hawai'i
City	City and County of Honolulu
EA	Environmental Assessment
HART	Honolulu Authority for Rapid Transportation
HDOT	Hawai'i Department of Transportation
HRT	Honolulu Rail Transit
LOS	level of service
mph	miles per hour
NBC	Neal S. Blaisdell Center
sec/veh	seconds per vehicle
TIAR	Transportation Impact Assessment Report
VMS	variable message signs
vph	vehicles per hour

1. Introduction

The Neal S. Blaisdell Center (NBC) was originally constructed by the City and County of Honolulu (the City) in 1964 as a major entertainment venue on a 22-acre site. The NBC has three major facilities: Concert Hall, Exhibition Hall, and Arena. Originally named the Honolulu International Center, it was later renamed the Neal S. Blaisdell Center in honor of Mayor Neal Blaisdell. In 1994, the NBC underwent renovations and expansions that added meeting rooms, a new box office, trade/warehouse buildings, and a parking garage. Figure 1 illustrates the NBC site location.

NBC is located near Downtown Honolulu and is surrounded by existing development. On the mauka side of the NBC are Thomas Square, the Honolulu Museum of Arts, and the Straub Clinic & Hospital. The area makai of NBC includes a mix of high-rise condominiums, shops, restaurants, and commercial businesses. This area includes the rapidly developing Villages of Victoria Ward and the future Honolulu Rail Transit station. The 'Ewa side along Ward Avenue is occupied by residential condominiums, an athletic club, Hawaiian Electric Company, and a luxury car and motorcycle dealership. On the Koko Head side of the NBC is McKinley High School.

The City is proposing a major renovation to the NBC. This renovation will update the facilities and enhance the site to provide more open space and other amenities to the community.

From a transportation perspective, the peak uses on the site will remain the same. The Concert Hall, Exhibition Hall, and Arena will continue to be the primary event venues. Additionally, a Sports Pavilion, a Performance Hall, an Arts Ensemble (Hula Hālau/community hall), and food and beverage are proposed to be added to the site. These added uses are expected to stimulate more consistent activity on the site, but are not expected to significantly increase the peak travel demand.

The existing parking garage is proposed to be replaced with a new garage with approximately 50 percent (%) more parking spaces. The larger amount of on-site parking is expected to increase the future traffic volumes generated for events. While increased parking on-site is assumed to increase the traffic volumes accessing NBC during events, proposed improvements are expected to reduce event congestion at the NBC access points, thereby benefitting the surrounding roadway system.

This Transportation Impact Assessment Report (TIAR) was conducted in support of the EA prepared for the NBC Master Plan. It documents the data collected and the analyses conducted and summarizes transportation issues identified and measures recommended to address transportation issues.



Figure 1: Existing NBC Site

2. Existing Conditions

2.1 Site Description

The NBC Arena is a multi-purpose facility with a varying capacity depending on the stage set-up for the event. The Arena is a circular facility with a 190-foot diameter and unobstructed sight lines, which allows hosting of concerts, sporting events, large meetings, conventions, consumer and family shows, graduations, and other specialty events. The Arena has a capacity of 8,800 people for stage shows with seating in the round and 7,700 people for court-side events.

The NBC Exhibition Hall is a large indoor facility that provides 65,000 square feet of exhibition space, which can be expanded to 85,000 square feet when used in conjunction with the adjoining spaces. The Exhibition Hall is a popular venue in Honolulu, averaging 45 shows per year that include community trade shows, consumer trade shows, large parties, and fundraising events. There are three different public entrances to the venue as well as an exhibitor entrance and a large sliding truck door. The Exhibition Hall also hosts several meeting rooms and the Pikake Room within the facility.

The NBC Concert Hall is a performing arts theater that is home to the Hawai'i Symphony Orchestra and the Hawai'i Opera Theatre. The Concert Hall has a capacity of 2,158 people and hosts many different Broadway and local productions. The features of the Concert Hall include continental seating, a proscenium stage, modern acoustic and lighting systems, a large loading entrance, and grand lawns. Every Wednesday from 4 P.M. to 7 P.M., the Honolulu Farmer's Market is held on the lawns of the Concert Hall.

The parking at the NBC is comprised of at-grade surface and garage parking. There are 1,508 parking stalls on-site at the NBC. In addition to parking for events, weekday day-time parking is offered to employees of the City and surrounding businesses. Weekend parking is reserved for event attendees only. There is also a service parking lot located between the Concert Hall and Exhibition Hall that is used as a loading zone and performer and vendor parking. During events, Elite Parking, the company that manages parking at the NBC, operates valet parking, where currently approximately 120 to 140 vehicles utilize this service. Overflow parking is absorbed within the surrounding areas for large events.

2.2 Roadway Conditions

South King Street, Ward Avenue, and Kapi'olani Boulevard are roadways adjacent to the NBC. Victoria Street intersects with South King Street at the main access driveway into the NBC. Kamake'e Street intersects Kapi'olani Boulevard Koko Head of the NBC and provides connects the Victoria Ward development area to the Kapi'olani Boulevard corridor.

The primary access driveway to NBC is located at the South King Street/Victoria Street intersection with a secondary access driveway located on Kapi'olani Boulevard. Access to the Box Office, drop-off lane, and vendor and performer parking is provided from Ward Avenue.

2.2.1 Roadways

South King Street is an 'Ewa-Koko Head major arterial roadway in Honolulu. South King Street is a one-way street, with traffic flowing in the Koko Head direction. South King Street includes five traffic lanes and the King Street Cycle Track, which is a protected, two-way bicycle facility. In the vicinity of the NBC, South King Street has two signalized intersections, one at Victoria Street and the other at Ward Avenue. On-street parallel parking is allowed on the mauka side of the street, adjacent to the Cycle Track. The 1-hour parking is metered, and the meters are active between 7:00 A.M. and 3:30 P.M. on weekdays and between 7:00 A.M. and 6:00 P.M. on Saturdays. Parking is free on Sundays and designated holidays. Peak hour restrictions are in effect for on-street parking in this area with a tow-away zone enforced between 3:30 P.M. and 6:30 P.M. on weekdays. The roadway is under the City's jurisdiction. The posted speed limit in the vicinity of the NBC is 25 miles per hour (mph).

Kapi 'olani Boulevard is also a major arterial roadway. Kapi 'olani Boulevard is an undivided, 'Ewa-Koko Head roadway, with three lanes in each direction. During the A.M. and P.M. peak commuter periods, a contraflow lane is implemented in the peak traffic direction: 'Ewa-bound in the A.M. and Koko Head-bound in the P.M. When the contraflow lane is in operation, left turns in the off-peak direction are not allowed. In the vicinity of the NBC, there are signalized intersections at Ward Avenue and Kamake 'e Street. The unsignalized NBC access driveway is located between Ward Avenue and Kamake'e Street. Generally, Kapi 'olani Boulevard on-street parking is prohibited from 6:00 A.M. to 6:30 P.M., except on Sundays. The curb area adjacent to the NBC has a slightly different parking restriction, with the area designated a tow-away zone between 6:00 A.M. and 12:00 midnight. Kapi 'olani Boulevard is under the City's jurisdiction. The posted speed limit is 25 mph.

Ward Avenue is a roadway that provides mauka-makai circulation between the Punchbowl area and Ala Moana Boulevard. The roadway has two lanes in each direction with designated turn lanes at most intersections. There are two signalized intersections at South King Street and Kapi 'olani Boulevard along Ward Avenue in the vicinity of the NBC. The intersections are both signalized. Between South King Street and Kapi 'olani Boulevard, on-street parallel parking is allowed at selected locations. On the Diamond Head side of Ward Avenue, on-street parking is allowed in front of the Exhibition Hall and ends just before the South King Street and Ward Avenue intersection. On the 'Ewa side of the street, there are a few on-street parking stalls in front of the condominium on Ward Avenue. The parking stalls allow 2-hour parking from 9:00 A.M. to 3:30 P.M. on weekdays and from 7:00 A.M. to 6:00 P.M. on Saturdays. The parking areas become tow-away zones from 6:30 A.M. to 9:00 A.M. and from 3:30 P.M. to 5:30 P.M. on weekdays. Ward Avenue is under the City's jurisdiction. The posted speed limit is 25 mph.

Kamake 'e Street is a mauka-makai road that provides access and circulation in the Victoria-Ward area between Kapi 'olani Boulevard and Ala Moana Boulevard. Kamake 'e Street is an undivided roadway with two lanes of travel in each direction. Kamake 'e Street intersects Kapi 'olani Boulevard at a signalized intersection. At selected locations, 2-hour parking is allowed between 8:30 A.M. and 3:30 P.M. on Monday through Friday and between 7:00 A.M. and 6:00 P.M. on Saturday. These areas are tow-away zones from 6:30 A.M. to 8:30 A.M. and from 3:30 P.M. to 5:30 P.M. on weekdays. The City has shared ownership with the Hawai'i Community Development Authority over Kamake 'e Street. The posted speed limit on Kamake 'e Street is 25 mph.

Victoria Street is a mauka-makai roadway. The segment in the vicinity of the NBC begins just makai of the H-1 Freeway and terminates at South King Street opposite the main entrance of NBC. Victoria Street is an undivided roadway with two lanes of travel in each direction. In the vicinity of NBC, Victoria Street is signalized at its intersections with South King Street and South Beretania Street. On-street parking is allowed on both sides of the street, and when present, reduces Victoria Street to a two-lane roadway with one lane in each direction. On the 'Ewa-side of the street, metered 2-hour parking is allowed from 8:30 A.M. to 6:00 P.M. on weekdays and from 7:00 A.M. to 6:00 P.M. on Saturdays. On the Koko Head-side, metered 2-hour parking is allowed from 7:00 A.M. to 6:00 P.M. Monday through Saturday. In front of the Honolulu Museum of Art School, metered 2-hour parking is allowed on weekdays from 7:00 A.M. to 3:30 P.M. and on Saturdays from 7:00 A.M. to 6:00 P.M. On-street parking in this area has a tow-away zone restriction between the hours of 3:30 P.M. and 5:30 P.M. on weekdays. Outside of these time periods, parking is free with no duration limits. The street is under the jurisdiction of the City. The posted speed limit is 25 mph.

Pensacola Street is a major roadway providing mauka-makai circulation in conjunction with Pi'ikoi Street where the two streets form a one-way couplet system. The traffic on Pensacola Street is makai bound. Between Lunalilo Street and Kapi 'olani Boulevard, the number of lanes varies but generally four lanes of travel are provided. This street is located Koko Head of the NBC, adjacent to McKinley High School. On-street parking is allowed on both sides of the street. Pensacola Street is under the City's jurisdiction. The posted speed limit is 30 mph.

2.2.2 Intersections

The following intersections were evaluated:

- South King Street and Victoria Street, which includes the main entrance to the NBC
- South King Street and Ward Avenue
- Kapi 'olani Boulevard and Ward Avenue

- Kapi 'olani Boulevard Blaisdell driveway
- Kapi 'olani Boulevard and Kamake 'e Street

At the signalized South King Street and Victoria Street intersection, the South King Street approach has three through lanes, one shared through/left-turn lane, and one shared through/right-turn lane. When turning right into the NBC, vehicles enter a channelized driveway that begins before the intersection. The approach on Victoria Street has an exclusive left-turn lane and a shared through/left-turn lane. The NBC driveway approach includes a right-turn lane and a through lane plus a channelized right-turn lane.

At the signalized South King Street and Ward Avenue intersection, the South King Street approach has three through lanes, one shared through/right-turn lane, and a shared through/left-turn lane. On the mauka-bound Ward Avenue approach, there are two through lanes and one exclusive right-turn lane. The makai-bound Ward Avenue approach has two through lanes. Left turns are prohibited from Ward Avenue to South King Street on this approach.

At the signalized Kapi 'olani Boulevard and Ward Avenue intersection, the Koko Head-bound Kapi 'olani Boulevard approach has three lanes. Two are through traffic lanes and the third lane is a shared through/right-turn lane. Left turns are prohibited from Kapi'olani Boulevard to Ward Avenue on this approach. In the 'Ewa-bound direction, the approach includes an exclusive left-turn lane, a through lane, and a shared through/right-turn lane. Both mauka- and makai-bound Ward Avenue approaches include an exclusive left-turn lane, an exclusive right-turn lane, and two through lanes.

The unsignalized NBC driveway on Kapi 'olani Boulevard allows right turns into and out of the driveway for 'Ewa-bound traffic. Left-turn traffic movements are not allowed into or out of this driveway.

The signalized Kapi 'olani Boulevard and Kamake 'e Street intersection is a three-legged "T"-intersection. In the Koko Head-bound direction, the Kapi 'olani Boulevard approach includes two through lanes and one shared through/right-turn lane. For the 'Ewa-bound approach, there are two through lanes and one shared through/left-turn lane. The Kamake 'e Street approach has one lane for left turns and one lane for right turns.

2.3 Pedestrian & Bicycle Conditions

2.3.1 Pedestrian Facilities

Roadways in the vicinity of the NBC have sidewalks on both sides of the street. Crosswalks exist at all intersections evaluated in this TIAR. Crosswalks also exist across the NBC entrances and exits, except for the Kapi 'olani Boulevard driveway. There are also two mid-block, unsignalized crosswalks on Ward Avenue between Kapi'olani Boulevard and South King Street.

During heavy pedestrian events, pedestrians traveling along the sidewalk located makai of South King Street and vehicles on South King Street turning into NBC at Victoria Street often come into conflict. Part of this issue is caused by the channelized right-turn lane into the NBC formed by a "pork chop" island. This channelized right-turn lane is accessed via a driveway as opposed to a curb cut like the rest of the NBC driveway at Victoria Street. Figure 2 is a photograph of this channelized right-turn lane.

2.3.2 Bicycle Facilities

The King Street Cycle Track was opened in December 2014 and passes by the NBC on its mauka side. This cycle track is a protected two-way bicycle facility located on the mauka side of South King Street. The King Street Cycle Track follows a 'Ewa-Koko Head route between Alapa'i Street and Isenberg Street.

There are three Bikeshare Hawai'i (Biki) stations set up around the NBC: one on the 'Ewa side facing Ward Avenue, one on the makai side facing Kapi 'olani Boulevard, and one on the mauka side facing South King Street.



Existing South King Street Channelized Right-Turn Lane into NBC

Figure 2: Existing South King Street Channelized Right-Turn Lane

2.4 Public Transit Conditions

There is a robust transit service around the NBC. The bus stops at or near the NBC are served by Routes 1, 1L, 2, 2L, 3, 9, 13, 40, 52, 53, 62, A, C, E, 15, 17, and 18.

Routes 1, 1L, 2, and 2L serve the South King Street/South Beretania Street corridor in the NBC area. Route 1 (Kaimukī – Kalihi) runs from around 4:00 A.M. to 1:00 A.M. (span of 21 hours), Route 1L (School Street – Hawai‘i Kai Limited) runs from around 5:30 A.M. to 7:30 P.M., Route 2 (Waikīkī – School – Middle) runs from around 5:00 A.M. to 1:00 A.M. (span of 20 hours), and Route 2L (Waikīkī – School – Middle Limited) runs from about 5:30 A.M. to 8:30 A.M. These routes serve the NBC primarily via the bus stop #135 on the makai side of South King Street directly in front of the Concert Hall.

Routes 3, 9, 13, 40, 52, 53, and 62 serve the Kapi‘olani Boulevard corridor and utilize the stops near the Kapi‘olani/Ward intersection. These routes serve the NBC primarily via two bus stops located near the Kapi‘olani/Ward intersection: Stop #433 on mauka side of Kapi‘olani Boulevard for ‘Ewa-bound buses and Stop #598 on the makai side that serves the Koko Head-bound buses. Route 3 (Kaimukī – Salt Lake) runs from approximately 4:00 A.M. to 1:00 A.M. (span of 21 hours), Route 9 (Kaimukī – Pearl Harbor) runs from around 6:00 A.M. to 11:00 P.M. (span of 17 hours), Route 13 (Liliha – Waikīkī – University) runs from about 4:00 A.M. to 12:00 A.M. (span of 20 hours), Route 40 (Honolulu – Mākaha) runs all day (span of 24 hours), Route 52/62 (Honolulu – Mililani – Hale ‘iwa/Honolulu – Wahiawā) run from about 5:00 A.M. to 1:00 A.M. (span of 20 hours), and Route 53 (Honolulu – Pacific Palisades) runs from approximately 5:00 A.M. to 11:30 P.M. (span of 18.5 hours).

City Express Route A and Country Express Routes C and E also serve the Kapi‘olani Boulevard corridor but utilize stops at the Kapi‘olani/Kamake‘e intersection located farther from the NBC instead of the Kapi‘olani/Ward intersection. Stop #431 on the mauka side serves the ‘Ewa-bound buses and Stop #600 on the makai side serves the Koko Head-bound buses. Route A (City Express! Waipahu – University of Hawai‘i) runs from around 4:00 A.M. to 10:00 P.M., Route C (Country Express! Mākaha to Honolulu) runs from about 4:00 A.M. to 11:00 P.M. (span of 19 hours), and Route E (Country Express! ‘Ewa – Waikīkī) runs from approximately 4:00 A.M. to 11:00 P.M. Service headways vary according to the time of day.

Route 15 provides access to the upper Makiki area and travels on Ward Avenue. There are two bus stops on the ‘Ewa side of Ward Avenue (Stop #3909 and Stop #3910) between South King Street and Kapi‘olani Boulevard. Route 15 (Makiki – Pacific Heights) runs from around 6:00 A.M. to 10:30 P.M. (span of 16.5 hours).

Routes 17 and 18 also provide access to the Makiki area but service bus stops located farther away from the NBC on Pensacola Street. There are three bus stops on the ‘Ewa side of Pensacola Street between South King Street and Kapi‘olani Boulevard (Stop #1375, Stop #1376, and Stop #2099). Route 17 (Makiki – Ala Moana) runs from approximately 6:00 A.M. to 10:00 P.M. (span of 16 hours), Route 18/24 (University – Ala Moana/Kapahulu – ‘Aina Haina) runs from about 6:00 A.M. to 10:00 P.M.

2.5 Traffic Conditions

2.5.1 Existing Traffic Volumes

Vehicular traffic turning movement counts were conducted on Sunday, October 15, 2017, and Wednesday, October 18, 2017. The movement counts were conducted at five different locations during each count:

- South King Street and Victoria Street intersection, which is the main entrance to the NBC
- South King Street and Ward Avenue intersection
- Kapi‘olani Boulevard and Ward Avenue intersection
- Kapi‘olani Boulevard and the NBC access point
- Kapi‘olani Boulevard and Kamake‘e Street intersection

Pedestrian counts were conducted at the South King Street/Victoria Street intersection only. The NBC driveway located opposite of Victoria Street functions as the main entrance to the NBC, which is where the greatest amount of vehicular-pedestrian interaction occurred.

The traffic and pedestrian count summary sheets are included in Appendix A.

Elite Parking, the company that manages parking at the NBC, provided its counts for vehicles entering the NBC on Sunday, October 15, 2017, and Wednesday, October 18, 2017. These counts are also included in Appendix A. These counts reflect only vehicles that were allowed to pass the parking kiosk. There were times when the parking facilities were full and vehicles that had turned into the NBC driveway were turned around before entering the kiosk.

2.5.1.1 Weekday Data Collection

Vehicular Counts

The A.M. and P.M. peak traffic periods were counted on Wednesday, October 18, 2017. The study periods were 6:30 A.M. to 8:30 A.M. and 4:30 P.M. to 7:00 P.M., with the A.M. peak hour identified to occur between 7:15 A.M. and 8:15 A.M. and the P.M. peak hour identified to occur between 4:45 P.M. and 5:45 P.M. There was a major event at the arena scheduled at 7:00 P.M. Figure 3 summarizes the vehicular counts for the weekday A.M. and P.M. peak hour time periods. Figure 3 summarizes the vehicular counts for the weekday event peak hour time period.

Pedestrian Counts

On Wednesday, October 18, 2017, at the South King Street/Victoria Street intersection, the heaviest pedestrian volumes were observed to be those crossing Victoria Street and the entrance to the NBC. During the A.M. peak hour, pedestrian volumes crossing Victoria Street and the entrance are more than double the volume crossing South King Street. The pedestrian volumes were 82 pedestrians per hour in the 'Ewa to Koko Head direction, and 28 pedestrians per hour in the Koko Head to 'Ewa direction. The pedestrian volumes crossing South King Street were 25 pedestrians per hour in the makai to mauka direction, and 22 pedestrians per hour in the mauka to makai direction. The bias toward the Koko Head direction reflects the proximity to the start of school at neighboring McKinley High School. Much of this pedestrian activity originated from those alighting at the bus stop #135 located on South King Street in front of the Concert Hall.

During the P.M. peak hour, the pedestrian volumes crossing Victoria Street and the entrance to the NBC were still found to be larger than the volume crossing South King Street. The pedestrian volumes were 54 pedestrians per hour in the 'Ewa to Koko Head direction, and 41 pedestrians per hour in the Koko Head to 'Ewa direction. Crossing South King Street, the pedestrian volumes were 36 pedestrians per hour in the makai to mauka direction, and 28 pedestrians per hour in the mauka to makai direction.

2.5.1.2 Weekend Event Count

Vehicular Counts

Weekend event counts were taken on Sunday, October 15, 2017. All three of the NBC's major facilities had events that were either starting or ending around the time of the data collection. On Sunday, October 15, 2017, the data collection period was from 3:00 P.M. to 6:00 P.M. with the event P.M. peak hour identified to occur between 3:00 P.M. and 4:00 P.M. Figure 5 summarizes the vehicular counts for the weekend event peak hour time period.

Pedestrian Counts

On Sunday, October 15, 2017, at the South King Street/Victoria Street intersection, the heaviest pedestrian volumes were those crossing South King Street. The pedestrian volumes were 284 pedestrians per hour in the 'Ewa-side crosswalk, and 29 pedestrians per hour in the Koko Head-side crosswalk in the mauka to makai direction during the event peak hour. The total pedestrian volume crossing South King Street in both crosswalks in the makai to mauka direction was 35 pedestrians per hour. The total pedestrian volumes crossing Victoria Street and the entrance to NBC were 135 pedestrians per hour in the Koko Head to 'Ewa direction, and 28 pedestrians per hour in the 'Ewa to Koko

Head direction. This particular pattern of pedestrian volumes is indicative that the peak count occurred at the time that most events were starting, reflecting an orientation of pedestrian traffic toward NBC. The large magnitude of pedestrian traffic on the weekend event peak hour versus the weekday P.M. peak hour correlates with the event activity at NBC during those time periods. The weekend time period surveyed a condition with all three major venues active, while the weekday time period surveyed a condition with only one of the major venues active. The former condition resulted in a full parking situation, with attendees using alternative parking areas off-site, hence leading to greater pedestrian traffic.

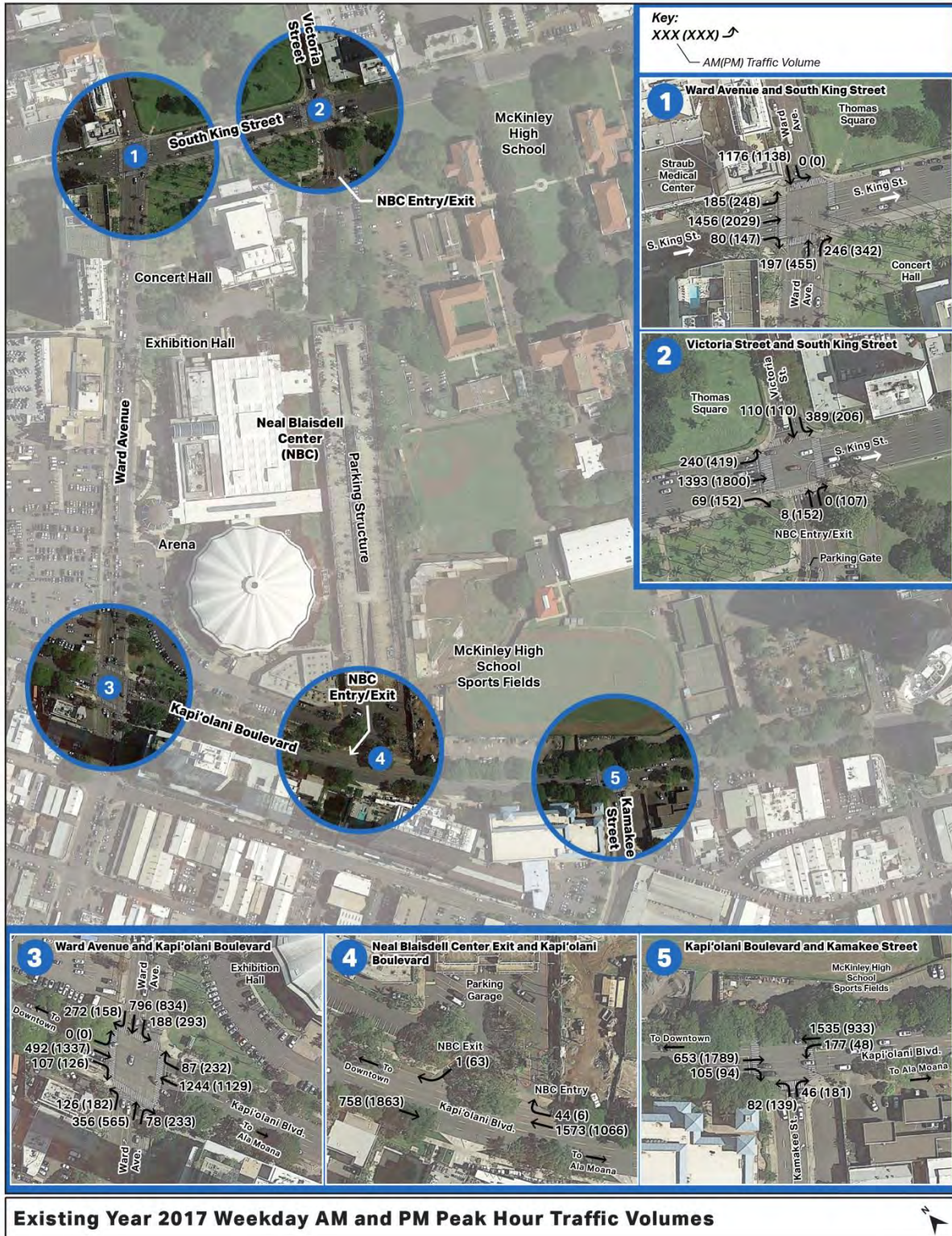


Figure 3: Existing Year 2017 Weekday A.M. and P.M. Peak Hour Traffic Volumes

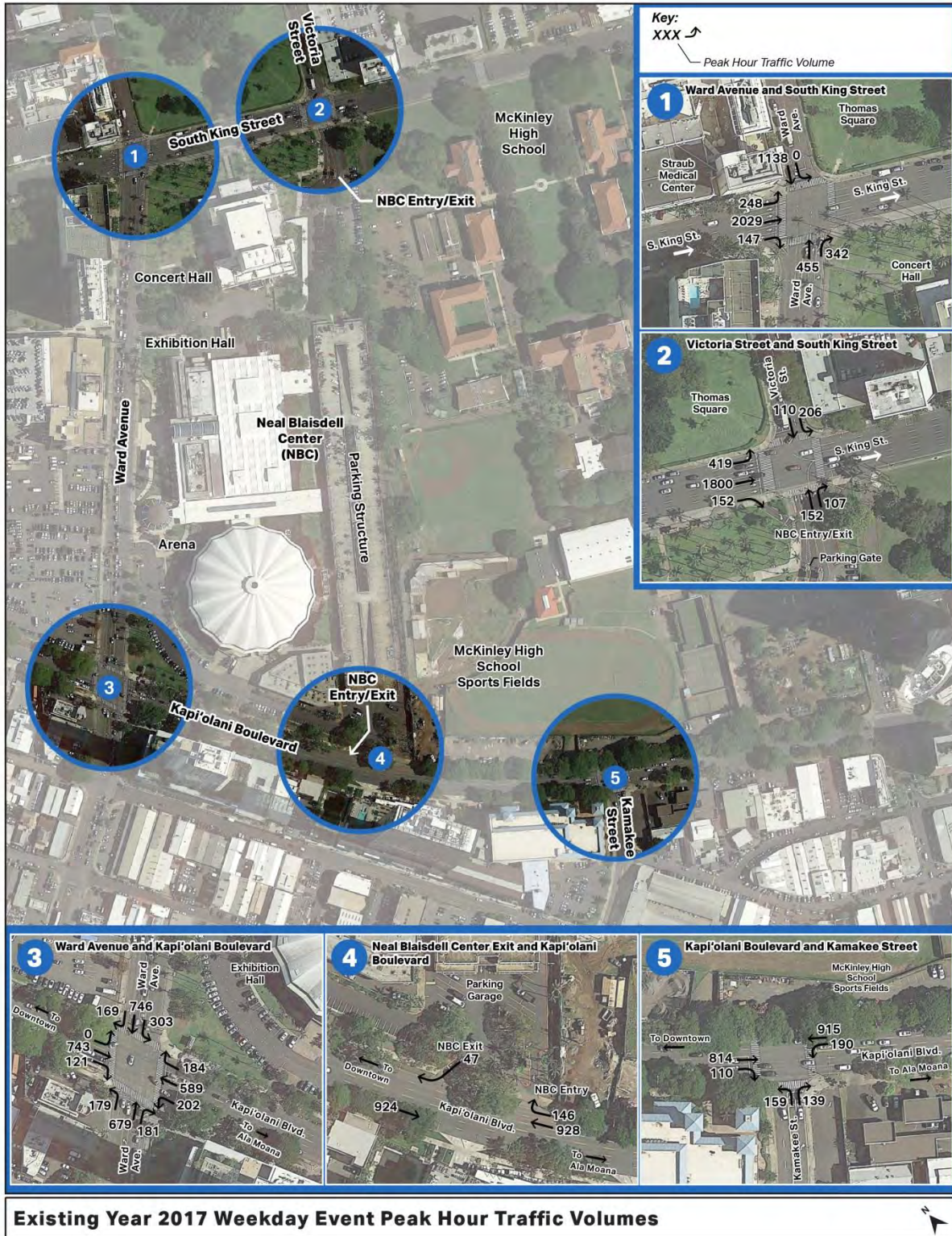


Figure 4 Existing Year 2017 Weekday Event Peak Hour Traffic Volumes

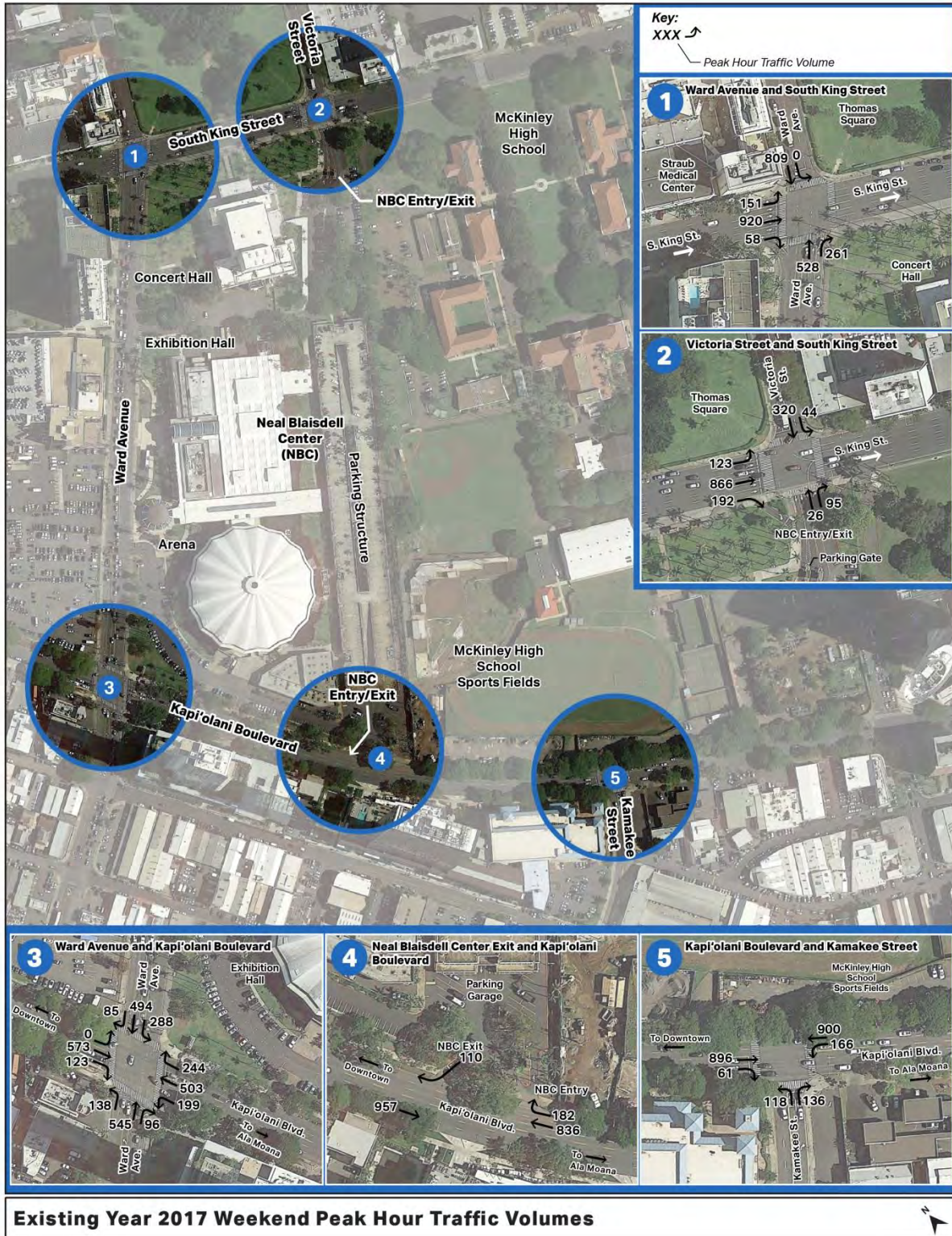


Figure 5: Existing Year 2017 Weekend Peak Hour Traffic Volumes

2.5.2 Existing Intersection Operations

2.5.2.1 Weekday Operations

Table 1 summarizes weekday A.M. and P.M. commuter peak hour operations at the four signalized intersections at South King Street/Victoria Street, South King Street/Ward Avenue, Kapi 'olani Boulevard/Ward Avenue, and Kapi 'olani Boulevard/Kamake 'e Street on Wednesday, October 18, 2017.

The signalized intersections were analyzed using the method described in Chapter 16 of the *Highway Capacity Manual* (Transportation Research Board of the National Academies 2010) through the Highway Capacity Software 2010. The analysis worksheets are included in Appendix C.

Table 1: Existing Weekday Commuter Peak Hour Intersection Operations

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
South King Street/Victoria Street	21.4	C	13.5	B
South King Street/Ward Avenue	20.5	C	28.2	C
Kapi 'olani Boulevard/Ward Avenue	40.2	D	36.7	D
Kapi 'olani Boulevard/Kamake 'e Street	10.8	B	11.3	B
Notes: Based on counts conducted on: Wednesday, 10/18/17 A.M. Peak Hour: 7:15 A.M. – 8:15 A.M. P.M. Peak Hour: 4:45 P.M. – 5:45 P.M. LOS = level of service sec/veh = seconds per vehicle				

As shown in Table 1, overall intersection operations are acceptable for urban peak hour conditions. All intersections operate at Level of Service (LOS) C or better during both peak hours with the exception of the Kapi 'olani Boulevard/Ward Avenue intersection, which is considered relatively low delay for urban peak hour conditions. The Kapi 'olani Boulevard/Ward Avenue operates at LOS D during both peak hours, indicating heavy but acceptable operations.

LOS for signalized intersections is a qualitative index that references a performance measure such as intersection delay to express the quality of traffic service. Definitions for LOS are included in Appendix B.

Although overall intersection operations are shown to be acceptable for peak hour conditions, specific traffic movements were observed to operate at congested LOS. Some of these congested LOS movements were caused by vehicles queues that originated at the NBC entrances.

Pedestrian-vehicle conflicts were observed at the main entrance to NBC on South King Street, but at a less intense level than during the weekend high-event peak hour.

Table 2 summarizes the weekday event peak hour operations at the four signalized intersections at South King Street/Victoria Street, South King Street/Ward Avenue, Kapi 'olani Boulevard/Ward Avenue, and Kapi 'olani Boulevard/Kamake 'e Street on Wednesday, October 18, 2017.

Table 2: Existing Weekday Event Peak Hour Intersection Operations

Intersection	P.M. Peak Hour	
	Delay (sec/veh)	LOS
South King Street/Victoria Street	13.5	B
South King Street/Ward Avenue	21.1	C
Kapi 'olani Boulevard/Ward Avenue	56.1	E
Kapi 'olani Boulevard/Kamake 'e Street	13.4	B
Notes: Based on counts conducted on: Wednesday, 10/18/17 Weekday P.M. Event Peak Hour: 6:00 P.M. – 7:00 P.M. LOS = level of service sec/veh = seconds per vehicle		

As shown in Table 2, the South King/Victoria Street, South King Street/Ward Avenue, and Kapi'olani Boulevard/Kamake 'e Street intersections operate at LOS C or better. The Kapi 'olani Boulevard/Ward Avenue operates with an overall intersection LOS E, which is undesirable, but can be common occurrence in large urban settings where there is traffic congestion.

2.5.2.2 Weekend Operations

Table 3 summarizes the intersection operations on Sunday, October 15, 2017, for the weekend event peak hour.

Table 3: Existing Weekend Event Peak Hour Intersection Operations

Intersection	Event P.M. Peak Hour	
	Delay (sec/veh)	LOS
South King Street/Victoria Street	14.7	B
South King Street/Ward Avenue	18.9	B
Kapi 'olani Boulevard/Ward Avenue	40.1	D
Kapi 'olani Boulevard/Kamake 'e Street	10.9	B
Notes: Based on counts conducted on: Sunday, 10/15/17 Weekend Event Peak Hour: 3:00 P.M. – 4:00 P.M. LOS = level of service sec/veh = seconds per vehicle		

As shown in Table 3, the South King Street/Victoria Street, South King Street/Ward Avenue, and Kapi 'olani Boulevard/Kamake 'e Street intersections operate at LOS B. The Kapi 'olani Boulevard/Ward Avenue intersection operates with an overall intersection LOS D, which is acceptable given peak hour urban conditions.

Although overall intersection operations are shown to be acceptable for peak hour conditions, specific traffic movements were observed to operate at congested LOS. Some of these congested LOS movements were caused by vehicles queues that originated at the NBC entrances. During the P.M. commuter peak hour, vehicles desiring to turn right into the NBC from South King Street were observed to queue along South King Street, interfering with bus stop #135 in front of the Concert Hall. Vehicle queues were also observed to impede traffic entering the NBC from Victoria Street. Most times, these queues were due to delays at the parking kiosks or vehicle-pedestrian conflicts with pedestrians on the makai sidewalk of South King Street.

During the Sunday event peak hour timeframe, there were significant pedestrian volumes entering and exiting the NBC. At the NBC main entrance on South King Street, these significant pedestrian volumes conflicted with vehicles turning right into the NBC from South King Street. In the existing intersection configuration, pedestrians walking along the

makai sidewalk of South King Street must cross a right-turn lane formed by a "pork chop" island. On several occasions, the pedestrians and/or the drivers did not notice each other, creating several close-call incidents at this location.

2.5.3 Existing Traffic Patterns

As illustrated in Figure 6, current roadway configurations tend to focus on the NBC access point at the South King Street/Victoria Street intersection.

As shown in red, Koko Head-bound H-1 Freeway drivers tend to use Exit 22, placing them onto Kinau Street, which logically leads to turning right onto Victoria Street and proceeding into the NBC. 'Ewa-bound H-1 Freeway drivers tend to use Exit 23, placing them onto Lunalilo Street with a large proportion following Lunalilo Street to Ward Avenue. After turning left onto Ward Avenue, this traffic turns onto Kinau Street (left-turns are not allowed at South King Street) and then turns right into Victoria Street to access the NBC. Victoria Street is also used by drivers approaching from South Beretania Street.

The green paths illustrate Koko Head-bound, non-freeway routes. Traffic on South King Street would naturally enter via the access at the South King Street/Victoria Street intersection. Traffic utilizing the Nimitz Highway/Ala Moana Boulevard corridor tends to utilize Ward Avenue to approach the NBC, turning onto South King Street and entering via the South King Street/Victoria Street intersection.

The blue paths illustrate 'Ewa-bound traffic on Kapi'olani Boulevard and traffic utilizing Kamake'e Street, accessing the NBC using the driveway on Kapi'olani Boulevard. Currently, this access point cannot be utilized by traffic traveling Koko Head-bound on Kapi'olani Boulevard because left-turn movements are not allowed.

The result of these patterns is that the predominant access point to the NBC is through the South King Street/Victoria Street intersection. During the weekday event, it was observed that approximately 98% of the traffic accessing the NBC did so through this driveway. During the major weekend event, it was observed that approximately 75% of the traffic accessing the NBC did so through this driveway.

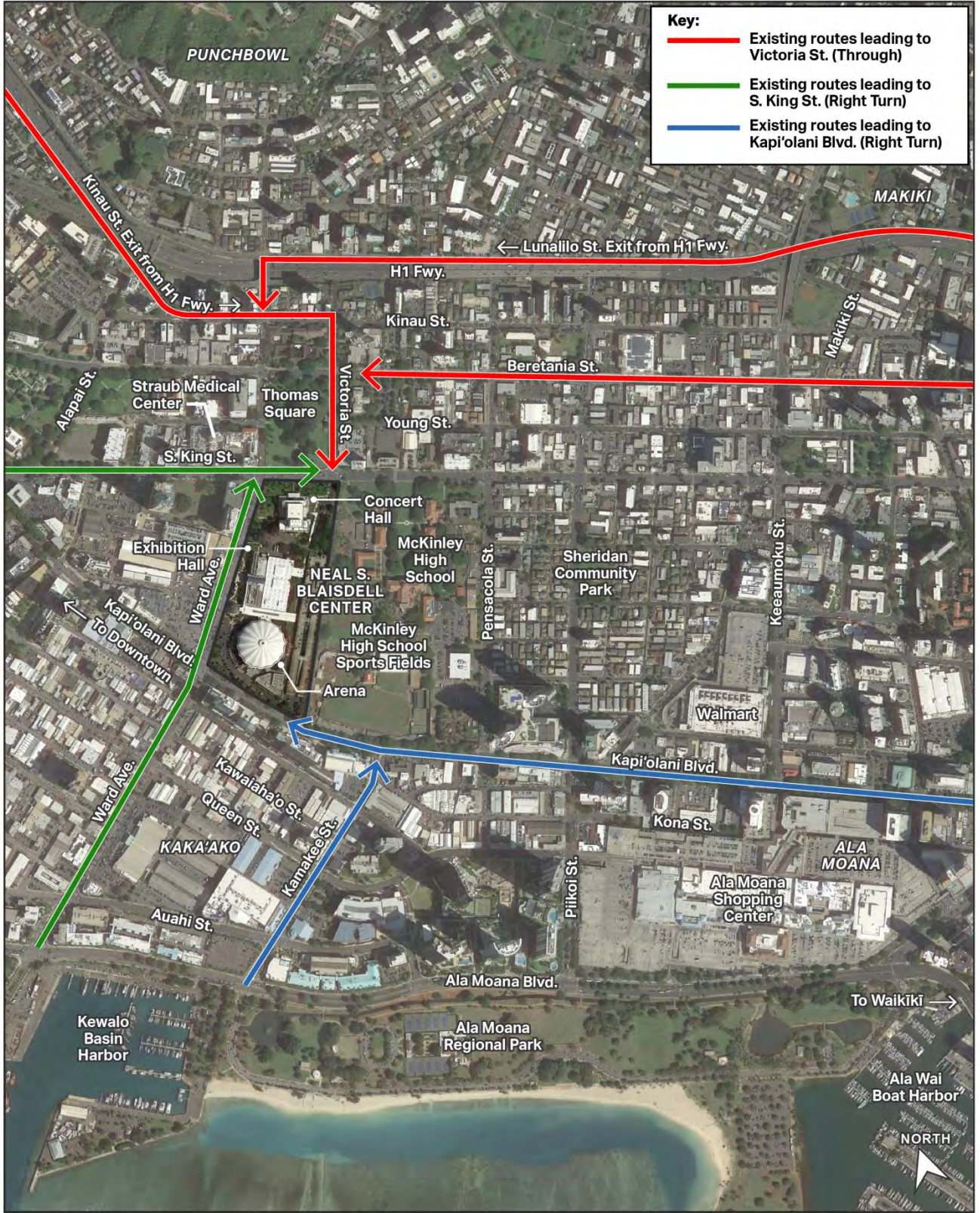


Figure 6: Existing NBC Access Traffic Patterns

3. Future Conditions

3.1 Site Conditions

The Master Plan proposes to retain and renovate the existing Arena and Concert Hall. The Exhibition Hall and the parking garage are proposed to be demolished and completely rebuilt.

NBC driveways on Ward Avenue are eliminated, while the existing accesses on South King Street and Kapi'olani Boulevard are maintained. A passenger loading zone is retained on Ward Avenue adjacent to the Exhibition Hall, but charter bus and group drop off and pick ups will be handled internally on the NBC site. Limited special purpose drop-offs and access are proposed on Kapi'olani Boulevard adjacent to the Arena.

A more direct driveway through the NBC site that connects South King Street and Kapi'olani Boulevard is proposed and referred to as the Victoria Street extension. While this direct driveway may be open to general traffic during non-event hours, it is not meant to be a public roadway and will be a two-lane, undivided road with one-lane in each direction. It is planned for this driveway to incorporate traffic calming measures such as raised crosswalks or speed humps to maintain low vehicular speeds.

Parking operations are proposed to be modified from the current "pay-at-the-kiosk-on-entry" to a "pay-before-you-leave" system. This proposed change is projected to expedite entry into the NBC site and to reduce the formation of vehicle queues that currently occur and impact traffic operations on the adjacent roadways.

3.2 Roadway Conditions

Roadway conditions are not expected to change significantly from the existing roadway configuration, with the exception of Ward Avenue. Currently the City and County of Honolulu Department of Transportation Services (DTS) is planning to install bike lanes on Ward Avenue between South King Street and Kapi'olani Boulevard. This improvement will be discussed in more detail in the section on pedestrian and bicycle facilities, but it will require the removal of a small amount of on-street parallel parking on both sides of Ward Avenue. This improvement is expected to be implemented within the year 2020 time frame.

The NBC Master Plan further proposes the addition of two City bus stops and a passenger drop-off/pick-up area along Ward Avenue. This would result in additional loss of on-street parking and will require modifications to the right-turn lane from Ward Avenue to South King Street. The proposed City bus stops are planned to service future circulator bus routes interfacing with the future Honolulu Rail Transit station located further makai on Ward Avenue. One bus stop is proposed near Kapi'olani Boulevard and the other is proposed near South King Street. The configuration of the exclusive right-turn lane from Ward Avenue to South King Street as shown in the DTS improvements will require lengthening to accommodate the proposed bus stop near South King Street bus. This will result in a loss of 3 on-street parking spaces. The bus stops will be discussed further in Section 3.4 of this TIAR.

The NBC Master Plan also proposes a minor change on South King Street at the NBC Driveway/Victoria Street intersection. There is currently a City bus stop pull out on South King Street in front of the NBC Concert Hall. It is proposed to extend this bus pull out to the NBC Driveway, thereby creating an exclusive right-turn lane into NBC.

The modification to the exclusive right-turn lane on Ward Avenue and the modification of the existing bus stop on South King Street both create situations where right-turn lane functions occur adjacent to City bus stops. Part of the lane length is right-turn lane and part of the lane length is bus stop. The recommended length for an articulated bus stop was accommodated and the remaining lengths of the right-turn lanes were checked to determine their adequacy to accommodate vehicle queueing. Figures 7 and 8 illustrate the length of the right-turn lanes after accommodating the dimensions for the proposed bus stops on both streets. The Ward Avenue right-turn lane is proposed to be 222 feet long and the South King Street right-turn lane is proposed to be 242 feet long. Both lanes would be able to handle vehicle queues of up to 10 vehicles. Based on average observed conditions, these lengths would be adequate to accommodate the vehicle queues for these movements.

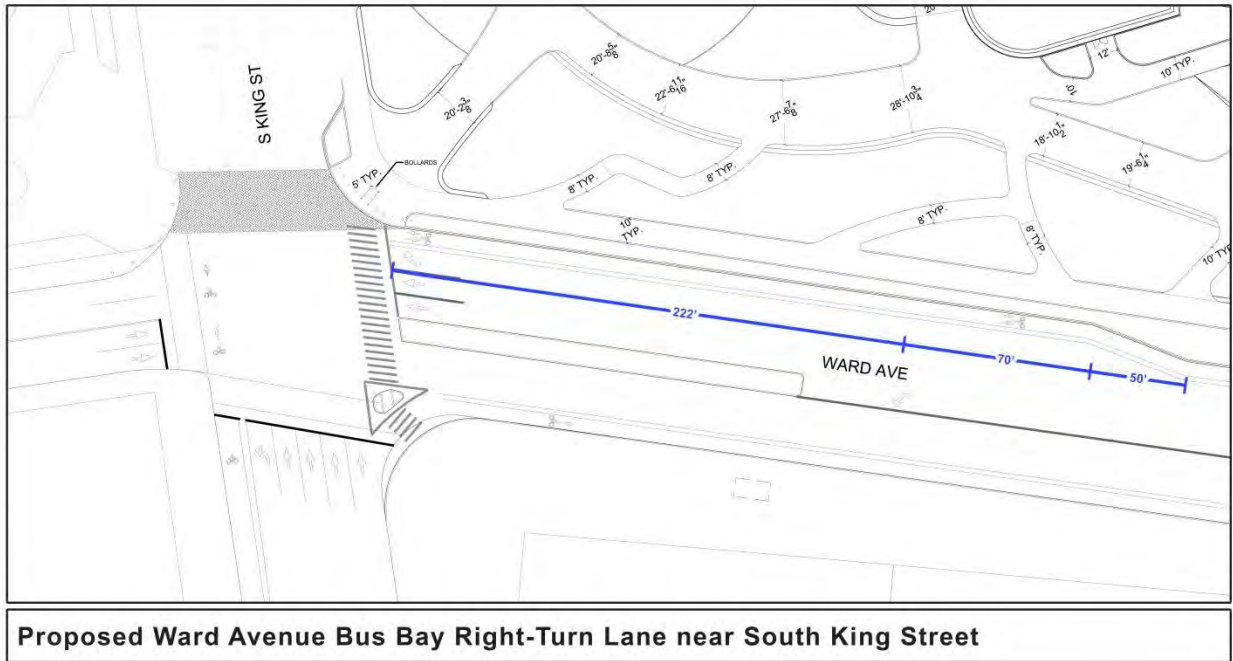


Figure 7 Proposed Ward Avenue Bus Bay and Right-Turn Lane Near South King Street

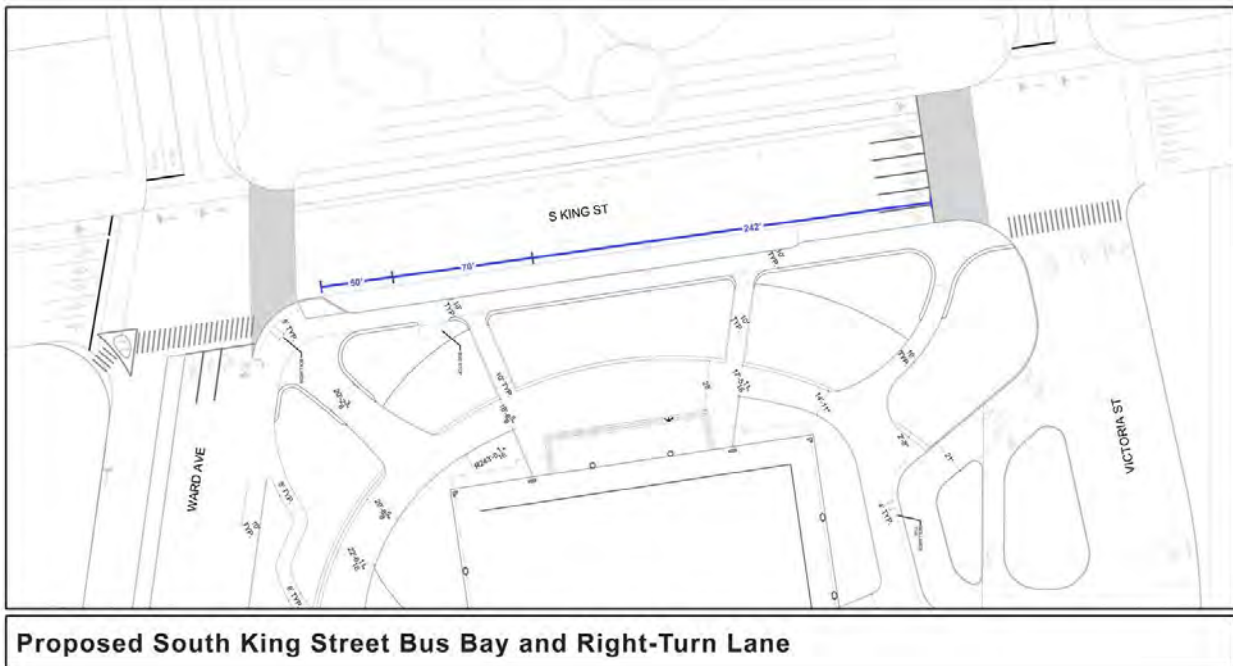


Figure 8 Proposed South King Street Bus Bay and Right-Turn Lane

3.3 Pedestrian & Bicycle Conditions

3.3.1 Pedestrian Facilities

Sidewalks exist in the vicinity of the NBC along South King Street and Kapi'olani Boulevard that is not proposed to change. The NBC Master Plan proposes improvements that would widen the sidewalk on the NBC side of Ward Avenue. Crosswalks are assumed to continue to exist at all intersections evaluated in this TIAR and across the NBC entrances and exits. The two existing mid-block, unsignalized crosswalks on Ward Avenue between Kapi'olani Boulevard and South King Street are planned to be merged into one crosswalk per current plans by DTS.

3.3.1.1 Pedestrian Circulation Plan

The DTS-Transportation Planning Division (TPD) is currently in the process of developing the O'ahu Pedestrian Circulation Plan. TPD was consulted to evaluate pedestrian circulation in the vicinity of NBC. Figure 9 illustrates a pedestrian circulation plan based on the consultation with TPD. Existing sidewalks are available for pedestrians on most of the roadways as shown in Figure 9. Two major elements of the pedestrian circulation plan include a pedestrian pathway along the Victoria Street extension and a merged mid-block crosswalk on Ward Avenue.



Figure 9 Pedestrian Circulation Plan

To facilitate increased pedestrian traffic between South King Street and Kapi'olani Boulevard by decreasing the size of the block between Ward Avenue and Pensacola Street, a continuous pedestrian walkway is proposed along the Victoria Street extension. This pedestrian pathway would be located on the Koko Head-side of the Victoria Street extension, adjacent to the culvert between NBC and McKinley High School. Providing a continuous sidewalk on the 'Ewa-side of the Victoria Street extension would be difficult as a sidewalk on this side of the Victoria Street extension would be discontinuous due to bus loading zones and accesses to the parking garage.

The Honolulu Complete Streets Design Manual guidelines indicate that a desirable width of the sidewalk is 6 feet for a public-facility development. The restricted width through the Victoria Street extension limits the width to 5 feet. This width satisfies ADA requirements and measures have been proposed in the railing design to minimize encroachment

in the sidewalk to maximize the pedestrian area. This walkway achieves the primary goal of providing a continuous pedestrian path between South King Street and Kapi'olani Boulevard.

3.3.1.2 Mid-Block Crosswalks on Ward Avenue

Between South King Street and Kapi'olani Boulevard, there are currently two unsignalized mid-block crosswalks. DTS is planning to merge these two mid-block crosswalks into one mid-block crosswalk and to signalize this merged mid-block crosswalk. DTS has informed the community about this future modification. The consolidation of the crosswalk and signalization are currently being programmed into the City's capital budget and is projected to be implemented in the short-range future.

The NBC Master Plan schemes are compatible with the proposed DTS improvements and there has been coordination to assure that the location of the merged crosswalk and traffic signal will work with both interim and future conditions. Figure 11 illustrates the location of the future merged crosswalk and traffic signal. The future merged crosswalk would be located just makai of the existing mauka driveway of the passenger drop off lane fronting the Exhibition Hall.

3.3.2 Bicycle Facilities

3.3.2.1 Bicycle Circulation Plan

The DTS-Traffic Engineering Division (TED) is in the process of updating its 2012 O'ahu Bike Plan. DTS-TED shared an in-progress version of the update and the bicycle circulation plan for the NBC Master Plan is consistent with this update. Figure 10 illustrates the existing and proposed bicycle facilities in the vicinity of NBC.



Figure 10 Bike Circulation Plan

Bicycle facilities include a multi-use path, bicycle lanes, a cycle track, and bicycle routes. A multi-use path is a facility that is dedicated for non-motorized travel such as pedestrians and bicyclists that is shared between those modes. A bicycle lane is a portion of the road designated for bicyclists through the use of striping and typically unidirectional

with the flow of traffic. A cycle track is similar to a bicycle lane, but includes a physical barrier that separates motorized traffic from bicycle traffic. Cycle tracks implemented in Honolulu usually provide two-way travel for bicycles. A bicycle route is a recommended route for bicyclists on streets shared with motorized traffic that do not have a bike lane or a cycle track. Bike routes are designated through use of signage and pavement markings such as a shared-lane marker (sharrows).

The proposed bicycle plans surrounding the NBC include the future bicycle lanes and a future cycle track on Pensacola Street. The proposed bicycle facilities having the most impact on the NBC Master Plan are the proposed bike lanes on Ward Avenue between South King Street and Kapi'olani Boulevard. DTS indicated a desire to include bicycle facilities along the Victoria Street extension if it is made as a public road.

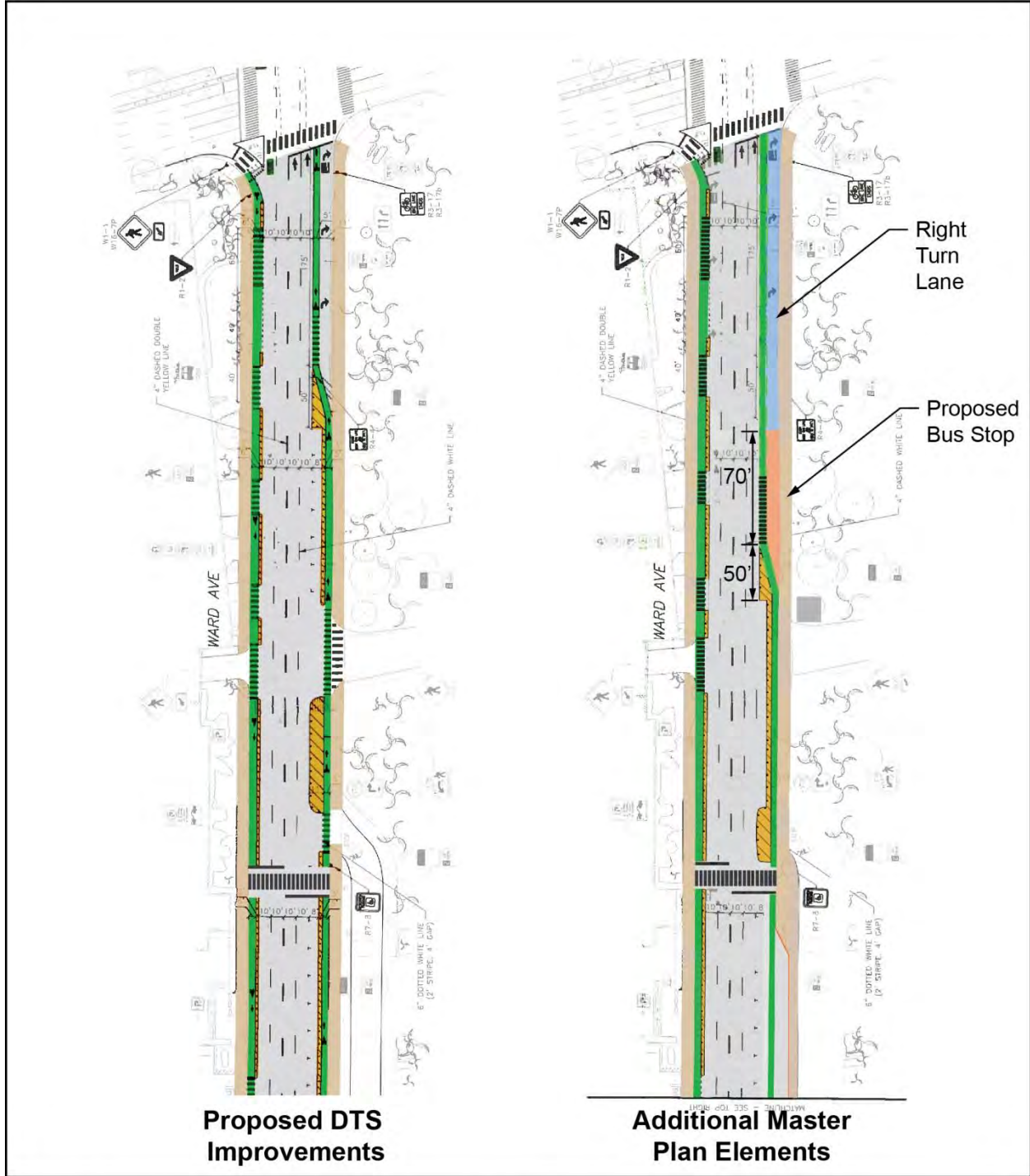
Biki bike share stations will continue to be located around the NBC site. The exact locations of these stations are still being planned, but they will be located to enable convenient access to the Biki system.

3.3.2.2 Ward Avenue Bicycle Lane Improvements

DTS is planning to implement a project to install bicycle lanes Ward Avenue between South King Street and Kapi'olani Boulevard. The preliminary design is completed, and the project is proceeding toward final design phase with the intent to implement the improvements by year 2020.

Improvements proposed in the NBC Master Plan are compatible with the planned DTS improvements on Ward Avenue. Figure 11 and Figure 12 below compare the Ward Avenue corridor with the planned DTS improvements as the base case and how the proposed NBC Master Plan elements would interact with that base plan. The bicycle lanes are shown in green.

All of the improvements shown in Figure 11 and Figure 12 will occur within the existing roadway prism with no widening of Ward Avenue. Current plans are for these improvements to be implemented within the 2019 to 2020 timeframe. Discussions with DTS and TRB about the future bicycle design elements on Ward Avenue have resulted in the desire to keep the bicycle lanes on the street rather than mixing bicyclists with pedestrians.



Ward Avenue Bike Lane Improvements - Mauka Section

Figure 11 Ward Avenue Bike Lane Improvements – Mauka Section

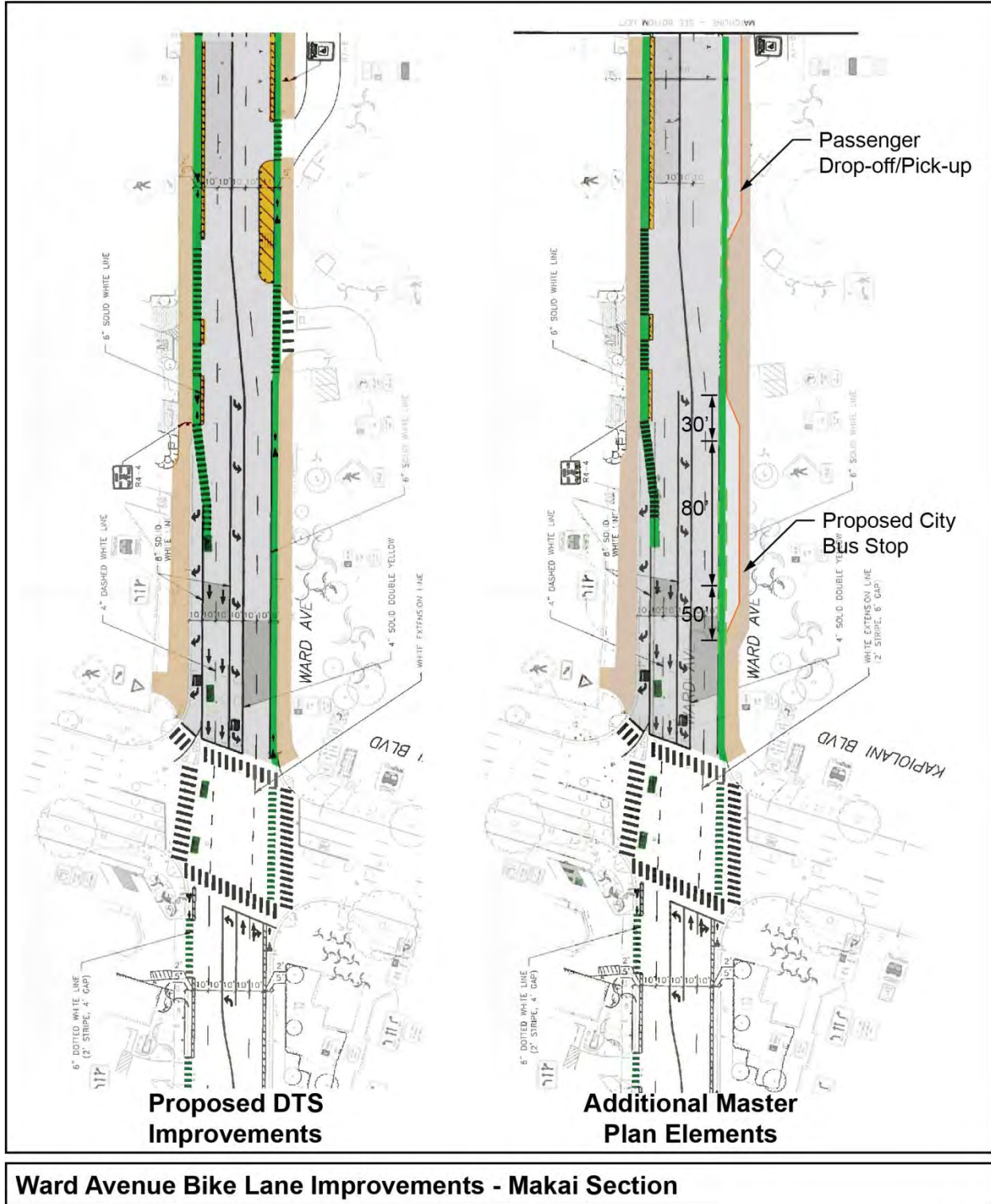


Figure 12: Ward Avenue Bike Lane Improvements – Makai Section

3.3.2.3 Victoria Street Extension Bicycle Facilities

The Bike Circulation Plan shown in shows that the Victoria Street extension would be a bicycle route in the future. This scheme is compatible with the plan for the Victoria Street extension to be an internal site driveway that would be open to the general public during non-event hours. The addition of a bicycle route through the NBC-site along the Victoria Street extension would augment the bike lanes on Ward Avenue and enhanced bicycle circulation in the vicinity of NBC.

3.4 Public Transit Conditions

It is assumed that the future Honolulu Rail Transit (HRT) will be operating by the projected Year 2030 timeframe. With a station located within walking distance of the NBC, the HRT is expected to be a major benefit to those accessing the NBC. Although this benefit is expected to increase transit mode share to the NBC, for the purposes of the Environmental Assessment (EA), travel mode share has not been altered to account for this increased transit use. This makes the results shown in the intersection analyses conservative by overestimating traffic impacts. The future plans for NBC will include two bus stops along Ward Avenue in the mauka-bound direction. When the HRT becomes operational, these stops will serve the potential modified routes that work with the HRT. Even so, it is expected that local bus routes will continue to run on South King Street and Kapi'olani Boulevard. These are expected to continue to utilize the existing bus stops on those roadways. Bus stop #135, which is located on South King Street in front of the Concert Hall and Bus Stop #433, which is located on Kapi'olani Boulevard near the Arena, are expected to remain at their current locations.

The two proposed bus stops on Ward Avenue are designed to be consistent with the guidelines documented in the Honolulu Complete Streets Design Manual for a 60-foot articulated bus.

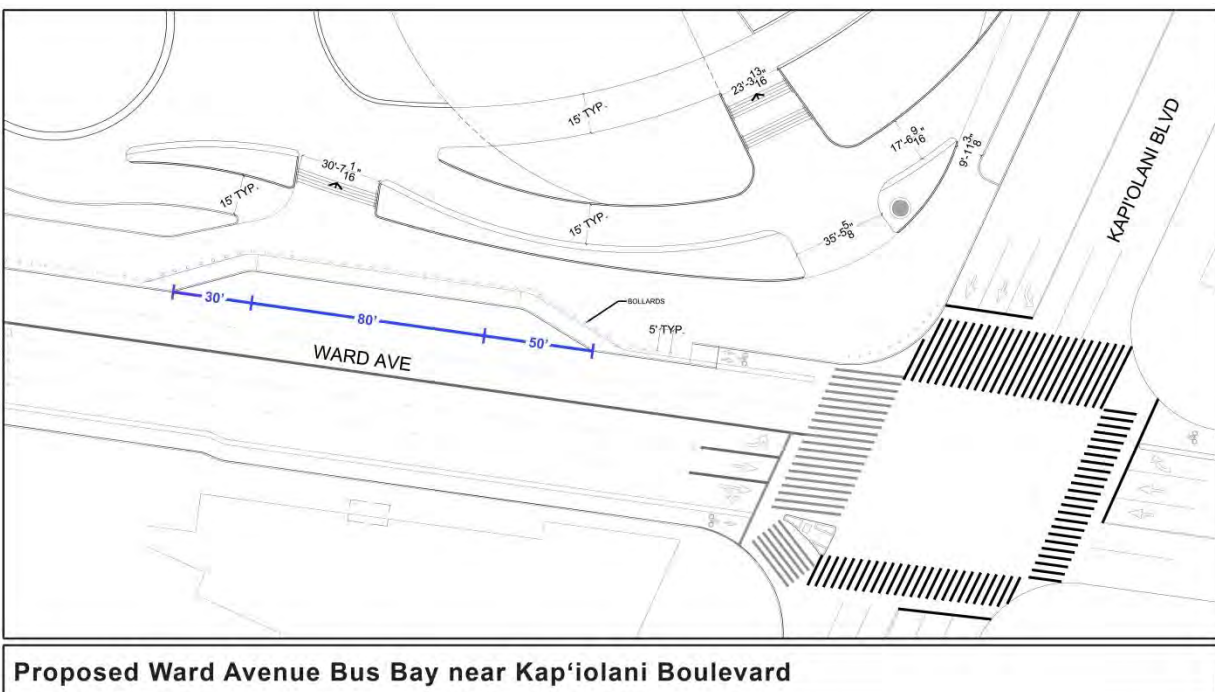


Figure 13 Proposed Ward Avenue Bus Bay near Kapi'olani Boulevard

Figure 13 illustrates the section of Ward Avenue near Kapi'olani Boulevard fronting the Arena and Exhibition Hall. This proposed bus stop satisfies the guidelines documented in the Honolulu Complete Streets Design Manual. As seen in

Figure 13, the total length available for this bus stop is 160 feet, which exceeds the length recommended in the guidelines.

Figure 7 located in Section 3.2.1 of this TIAR illustrates the section of Ward Avenue near South King Street and the Concert Hall. The proposed stop design meets the requirements from the [Honolulu Complete Streets Design Manual](#). The remaining length will be used as the right-turn lane from Ward Avenue to South King Street.

Figure 8, located in Section 3.2.1 of this TIAR, illustrates the segment of South King Street fronting the Concert Hall. The existing bus stop will remain and is consistent with the guidelines from the [Honolulu Complete Streets Design Manual](#). The remaining length will be used as the right-turn lane from South King Street to the NBC Driveway (Victoria Street extension).

3.5 Traffic Conditions

Future traffic conditions were projected for a year 2030 horizon year. This time frame was judged as a year that is consistent with other City and State transportation planning efforts and is a time frame that was judged that the NBC Master Plan improvements could be completed. It was also assumed that the Honolulu Rapid Transit (HRT) will be in revenue service by this horizon year.

Future background traffic and future NBC-generated traffic volumes for forecasted for the 2030 horizon year. Background traffic is traffic on the roadways adjacent to the NBC that are not directly related to the NBC as opposed to NBC-generated traffic caused by activity on the NBC site.

3.5.1 Projected Year 2030 Traffic Volumes

3.5.1.1 Projected Year 2030 Background Traffic Volumes

NBC is located within the heart of Honolulu, and traffic volumes on adjacent roadways have been stable over the past years. The traffic volumes during the P.M. peak hour and 24-hour periods were compared between three different sources. The three sources included the Hawai'i Department of Transportation (HDOT) Highway Division 2012 Traffic Station counts (HDOT 2012), the counts collected on Wednesday, October 18, 2017, and the Honolulu Authority for Rapid Transportation (HART) 2030 Forecasts. Table 4 summarizes these counts.

Table 4: Evaluation of Historical and Projected Traffic Volume Trends

Year	Ward Avenue		Kapi ' olani Boulevard	
	P.M. Peak Hour	24 Hour	P.M. Peak Hour	24 Hour
2012	1,621	23,288	3,097	34,533
2017	2,082	29,914	2,645	29,487
Projected 2030	1,341	14,511	5,654	41,845
Notes: P.M. Peak Hour Volume = vehicles per hour 24-Hour Volume = vehicles per day Sources: HDOT Highway Division Year 2012 Traffic Station Counts; AECOM counts from Sunday, October 15, 2017, and Wednesday, October 18, 2017; and HART Year 2030 Projected Traffic Volumes				

As shown in Table 4, the counted traffic data do not show signs of major growth between the year 2012 and 2017. While there is some fluctuation, the volumes are not significantly different. The forecasted counts for 2030 also show some fluctuation from the historical data, but overall indicate that volumes will remain stable in the future.

Based on the historical traffic volume trends and forecasts of future traffic volumes, it was assumed that the future background traffic volumes would remain stable and, therefore, the existing peak hour traffic volumes were used as background traffic for the purposes of the traffic analyses in the EA.

3.5.1.2 Projected Year 2030 NBC-Generated Traffic

Trip Generation

The NBC Master Plan retains and remodels the existing Arena and Concert Hall venues. The Exhibition Hall is completely rebuilt, a Sports Pavilion is added adjacent to the Arena, and a Performance Hall is added on the mauka side of the rebuilt Exhibition Hall. Figure 14 is an illustration of NBC Master Plan design concept.

Additionally, there may be other added uses such as food and beverage operations. These added uses may increase daily traffic generated by the NBC. However, peak hour traffic will be driven by future events at the venues within the NBC. Because traffic to NBC is constrained by the amount of parking on-site, the amount of parking is judged as a good indicator of peak vehicular traffic demand for NBC. Therefore, the magnitude of on-site parking was used as an estimator of NBC-generated peak hour traffic.

The NBC Master Plan proposes to replace the existing parking garage with two new garages: the mauka garage and the makai garage. The mauka garage is the smaller of the two garages and is located near the concert hall with its main access oriented toward South King Street. The makai garage is the larger garage located near the arena with its main access oriented toward Kapi'olani Boulevard. Although the two garages are interconnected at certain levels, the configuration of the parking garage circulation tends to focus makai garage access to Kapi'olani Boulevard and the mauka garage access to South King Street.

The total number of parking stalls on the NBC site is proposed to increase from 1,508 to 2,142. However, not all of the 2,142 parking stalls are intended for the general public. The general public parking is what drives the peak hour traffic volumes generated by NBC events. Part of the 2,142 parking stalls proposed are designated for the ground level loading and vendor parking areas, which is not available for parking by the general public.

The total amount of parking stalls available for the general public is therefore:

Total number of parking stalls:	2,142 stalls
<u>Total number of vendor parking stalls on the ground level:</u>	<u>107 stalls</u>
Total number of parking stalls for general public:	2,035 stalls

There are 2,035 parking stalls available to visitors between both garages. The second level of the garage is the terrace level of the NBC. At this level, all of the parking is used exclusively for valet parking. Self-parking is not available for the general public until the third level of parking.

The following details the distribution of visitor parking stalls available in both garages:

Mauka Garage:	718 stalls (652 self-park + 66 valet)
<u>Makai Garage:</u>	<u>1,317 stalls (1,157 self-park + 160 valet)</u>
Total number of parking stalls for general public:	2,035 stalls (1,809 self-park + 226 valet)

Even though the valet and self-parking operations are different, from a traffic analysis perspective, they both generate peak event traffic. Therefore, both the self-park and valet parking will be used to estimate peak NBC-generated traffic.

The number of parking stalls available for the general public was used to estimate the peak NBC-generated traffic based on models developed by Walker Parking Consultants for the NBC project. The traffic generated by the mauka and makai parking garages were estimated independently, since it was assumed that traffic in each garage would be oriented to either South King Street for the mauka garage and Kapi'olani Boulevard for the makai garage.

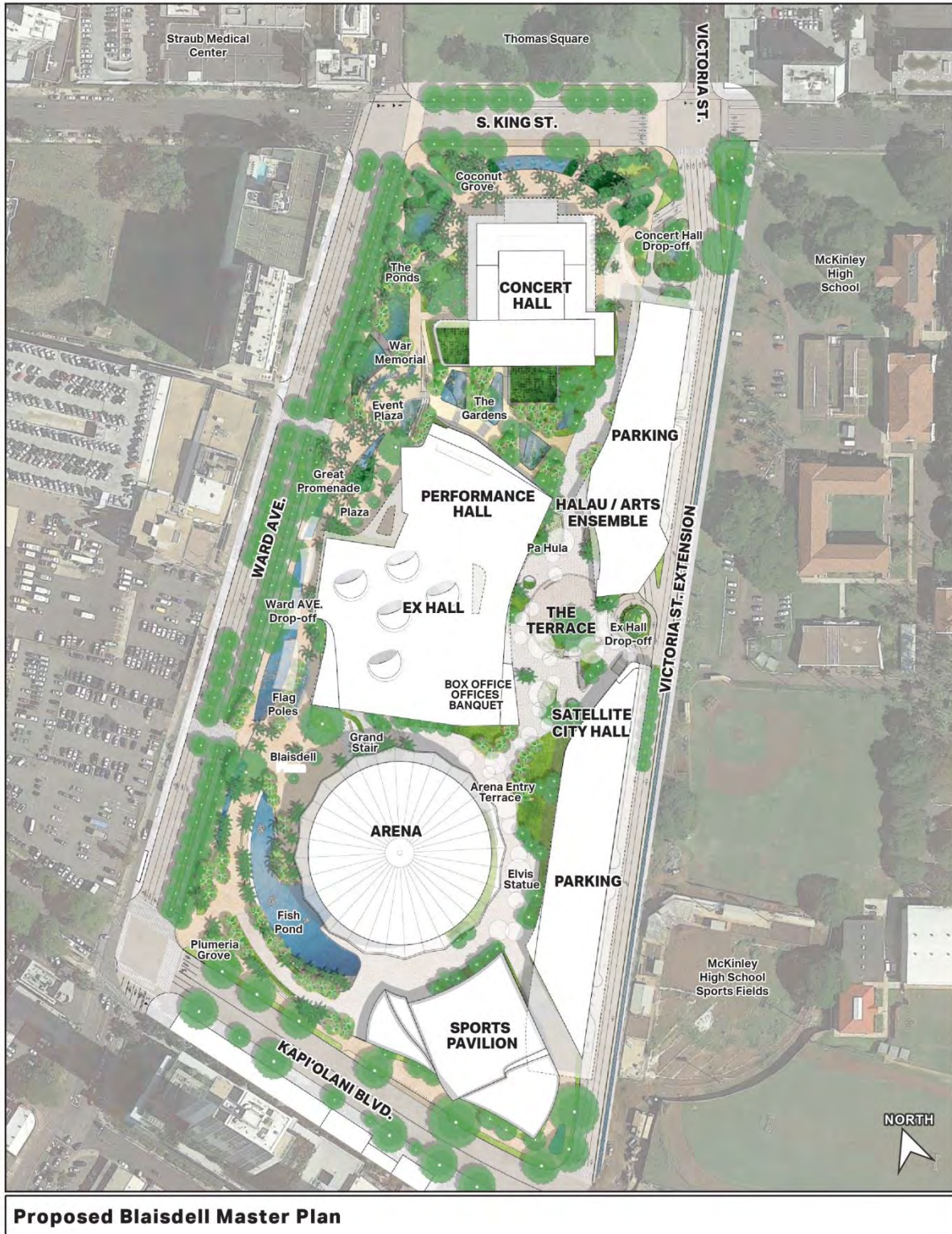


Figure 14: Proposed Blaisdell Master Plan

Based on vehicle arrival distributions of similar facilities and direct observations of existing operations at NBC, the majority of the NBC event-generated vehicles are estimated to arrive within a two-hour window prior to an event. Further, approximately 55 percent of these vehicles arrive in the hour immediately preceding the start of the event.

The other 45 percent was assumed to arrive in the hour beginning two hours before the start of the event. This secondary arrival peak was analyzed only for the weekday P.M. time period because the secondary arrival peak coincided with the weekday P.M. commuter peak hour.

Table 5 summarizes the peak vehicle trips generated by events at NBC.

Table 5 Summary of Peak Vehicle Trips Generated by NBC

	Weekday AM Commuter Peak Hour		Weekday PM Commuter Peak Hour	
	In	Out	In	Out
Garage				
Mauka	273	8	323	259
Makai	67	1	593	67
Total	340	9	916	326

	Weekday Event Peak Hour		Weekend Event Peak Hour	
	In	Out	In	Out
Garage				
Mauka	395	73	395	121
Makai	724	47	724	67
Total	1,119	120	1,119	188

Note: All traffic volumes are vehicles per hour.

Trip Distribution

As outlined in Section 2.5.3 of this TIAR, existing NBC event traffic is strongly oriented to the NBC driveway located at the South King Street/Victoria Street intersection. This is one of the factors that causes the South King Street NBC access to become overloaded during major or multiple events.

Replacement of the existing parking garage with two semi-independent parking garages oriented separately to South King Street and to Kapi'olani Boulevard changes this orientation by encouraging vehicles accessing the makai garage to use the NBC driveway located on Kapi'olani Boulevard instead of the NBC driveway on South King Street. Because the makai garage is larger than the mauka parking garage, the amount of peak hour traffic entering NBC from South King Street actually decreases, even though the total number of parking spaces on the NBC site increases. Figure 15 illustrates projected paths for vehicles accessing the mauka and makai parking garages.

Trip Assignment

The generated traffic was distributed as indicated in Figure 15. The resulting NBC-generated peak hour traffic volumes for are shown in Figure 16, Figure 17, and Figure 18. Figure 16 illustrates the NBC-generated A.M. and P.M. commuter peak hour traffic volumes, Figure 17 illustrates the NBC-generated P.M. event peak hour traffic volumes, and Figure 18 illustrates the NBC-generated weekend event peak hour traffic volumes.

Traffic volumes are summarized for two weekday P.M. peak time periods, because the secondary arrival peak (two hours before start of event) occurs at approximately the same time at the weekday commuter P.M. peak hour. So, even if the secondary arrival peak is smaller than the primary event arrival peak, it occurs during the peak background traffic and is, therefore, evaluated as well as the weekday primary event arrival P.M. peak hour. Only the primary event arrival peak is evaluated for the weekend peak hour. The weekday A.M. peak hour is not expected to involve event-oriented

traffic. The A.M. peak hour occurs during the commuter peak and is comprised mostly of those utilizing NBC as an employee parking lot for the City and other businesses in the area.

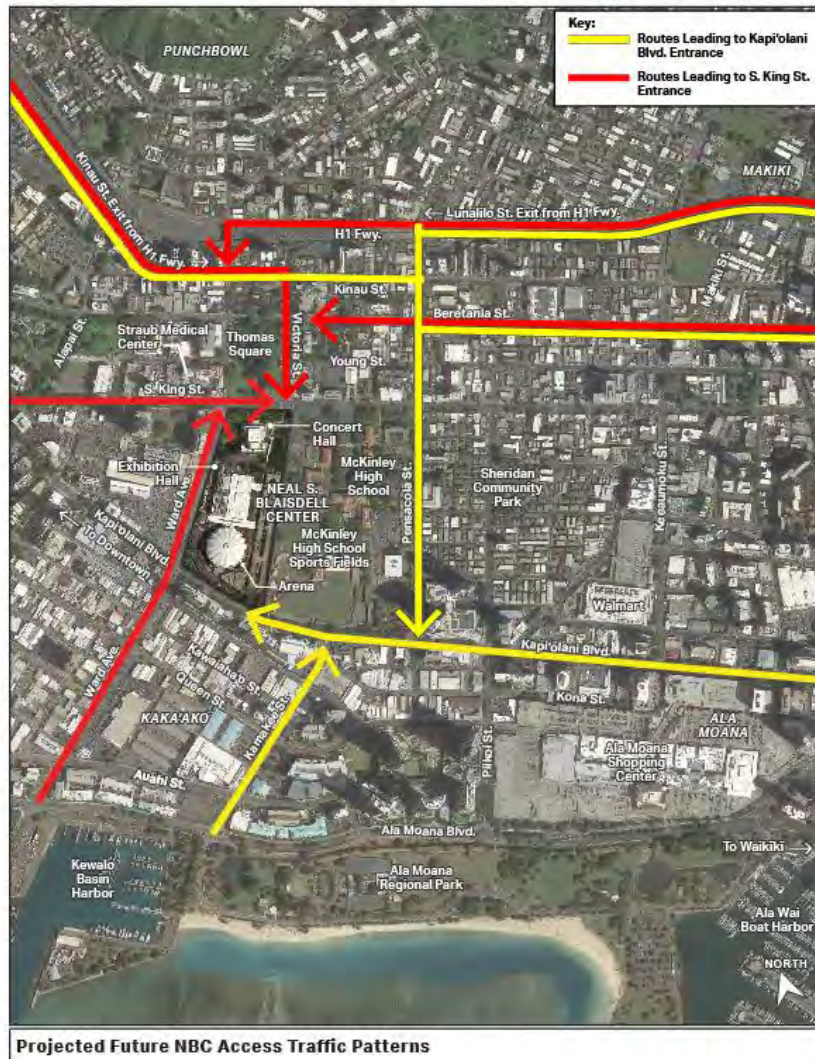


Figure 15: Projected Future NBC Access Traffic Patterns

3.5.1.3 Projected Year 2030 Total Traffic

The future background and future NBC-generated traffic were combined to create the future Year 2030 traffic volumes.

Figure 19, Figure 20, and Figure 21 illustrate the projected Year 2030 total peak hour traffic volumes. Figure 19 illustrates the NBC-generated A.M. and P.M. commuter peak hour traffic volumes, Figure 20 illustrates the NBC-generated P.M. event peak hour traffic volumes, and Figure 21 illustrates the NBC-generated weekend event peak hour traffic volumes.

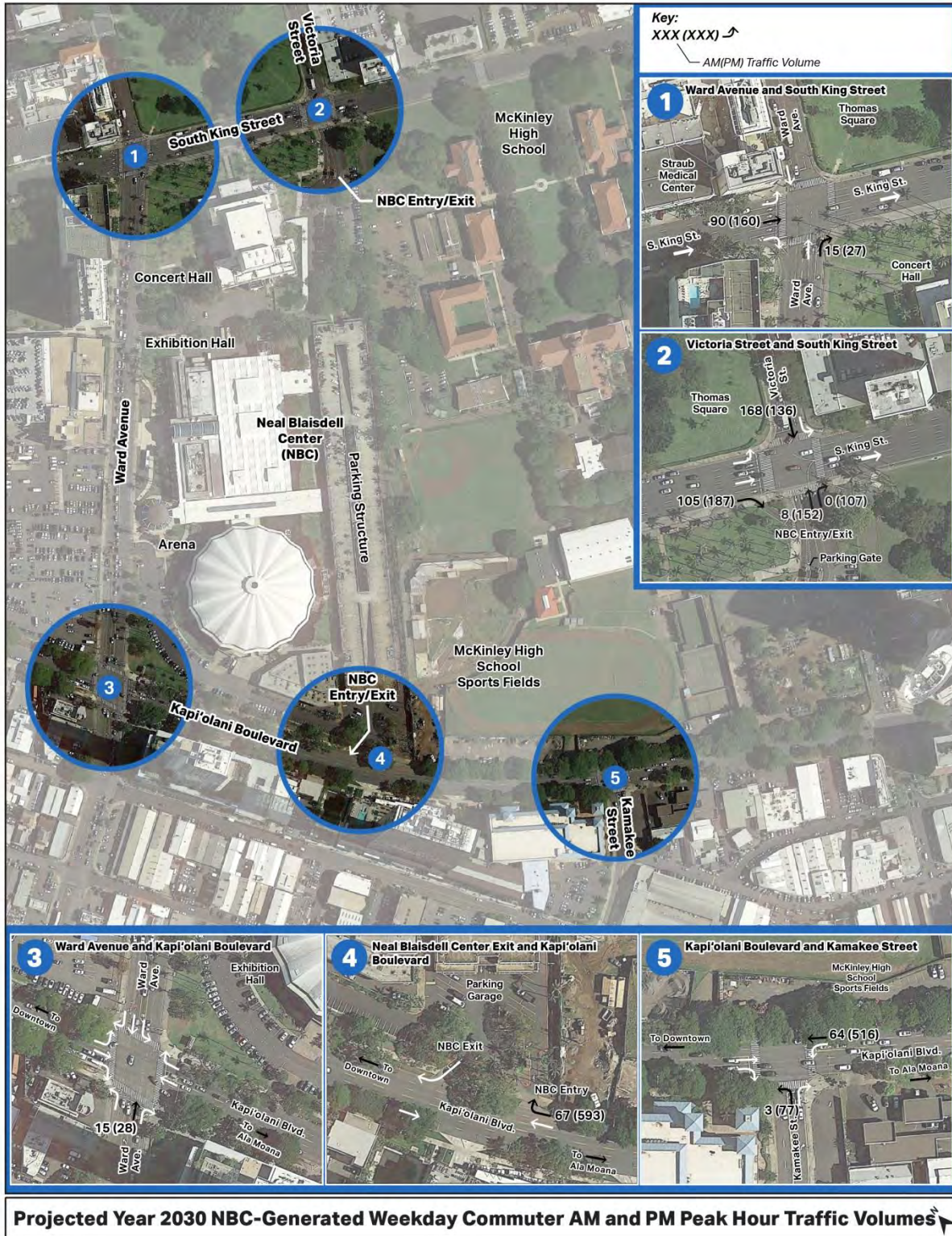


Figure 16: Projected Year 2030 NBC-Generated Weekday Commuter A.M. and P.M. Peak Hour Traffic Volumes

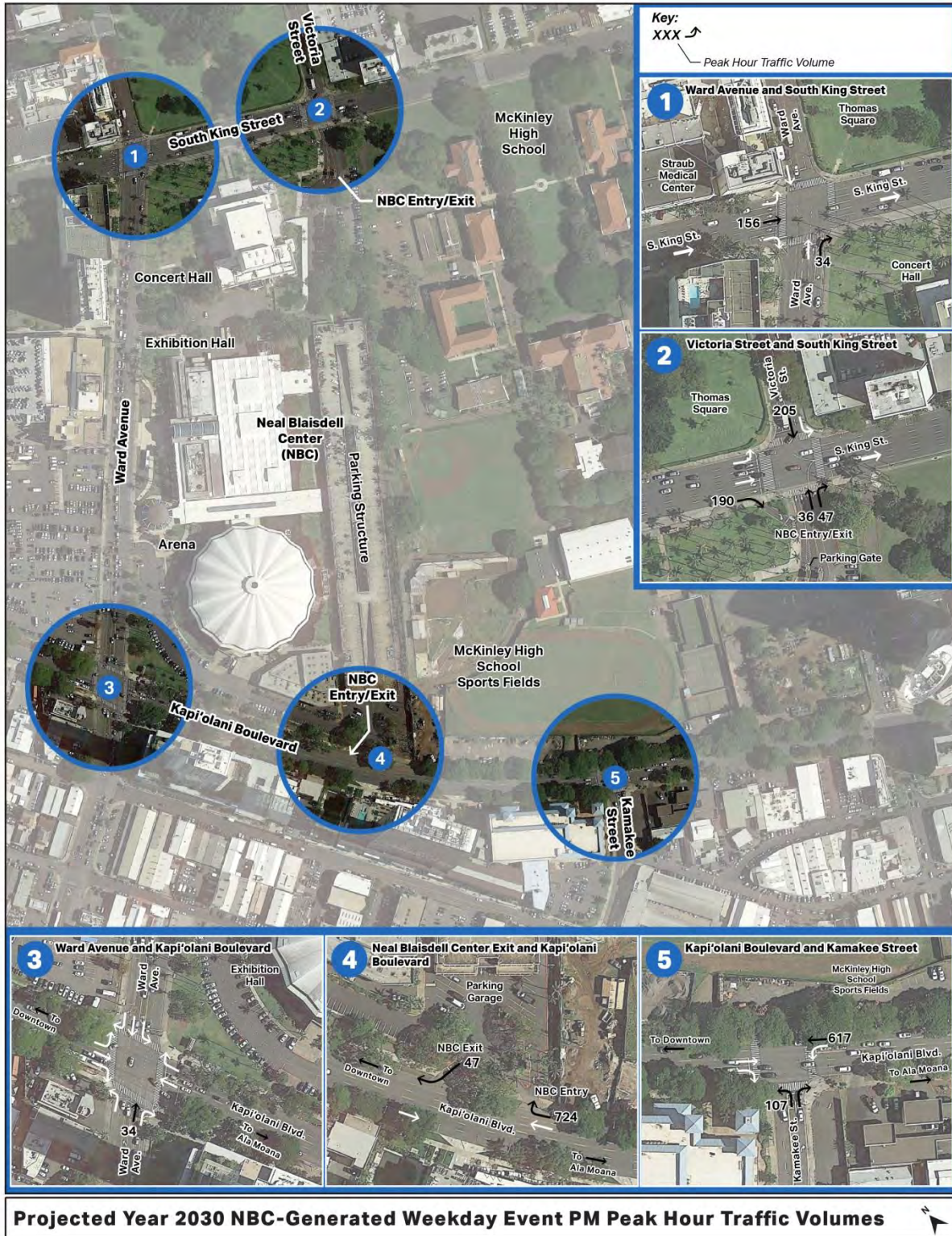


Figure 17: Projected Year 2030 NBC-Generated Weekday Event P.M. Peak Hour Traffic Volumes

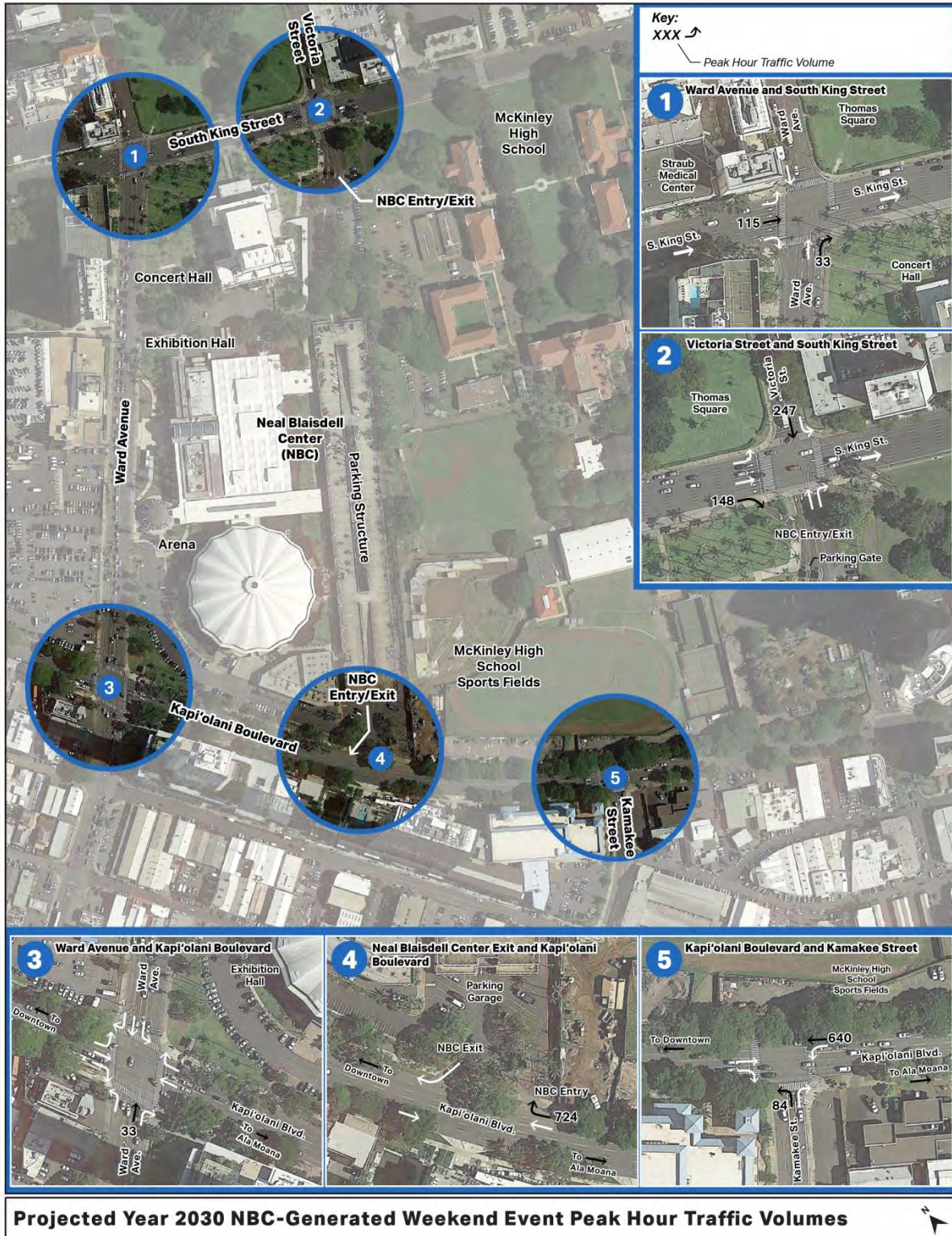


Figure 18: Projected Year 2030 NBC-Generated Weekend Event Peak Hour Traffic Volumes

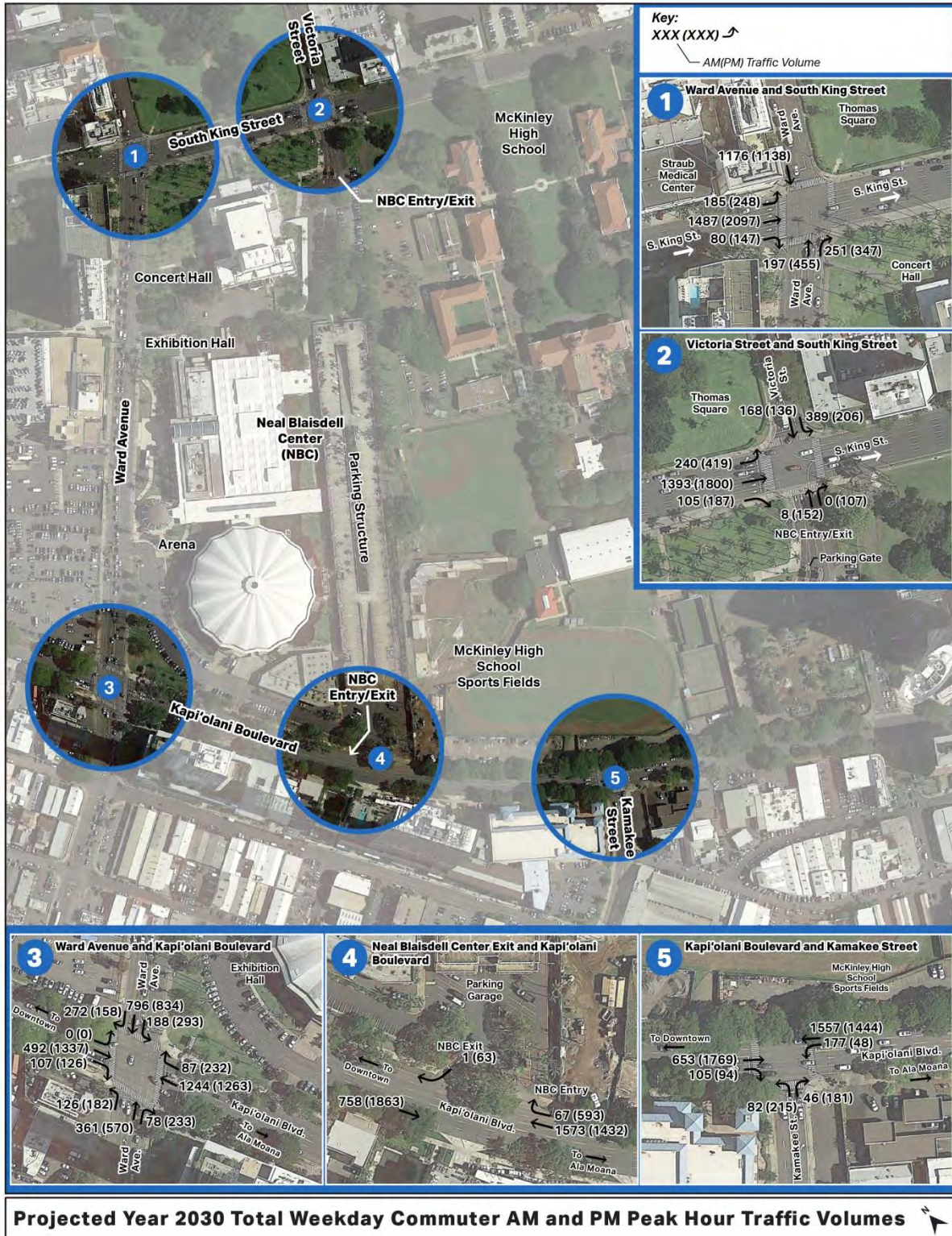


Figure 19: Projected Year 2030 Total Weekday Commuter A.M. and P.M. Peak Hour Traffic Volumes

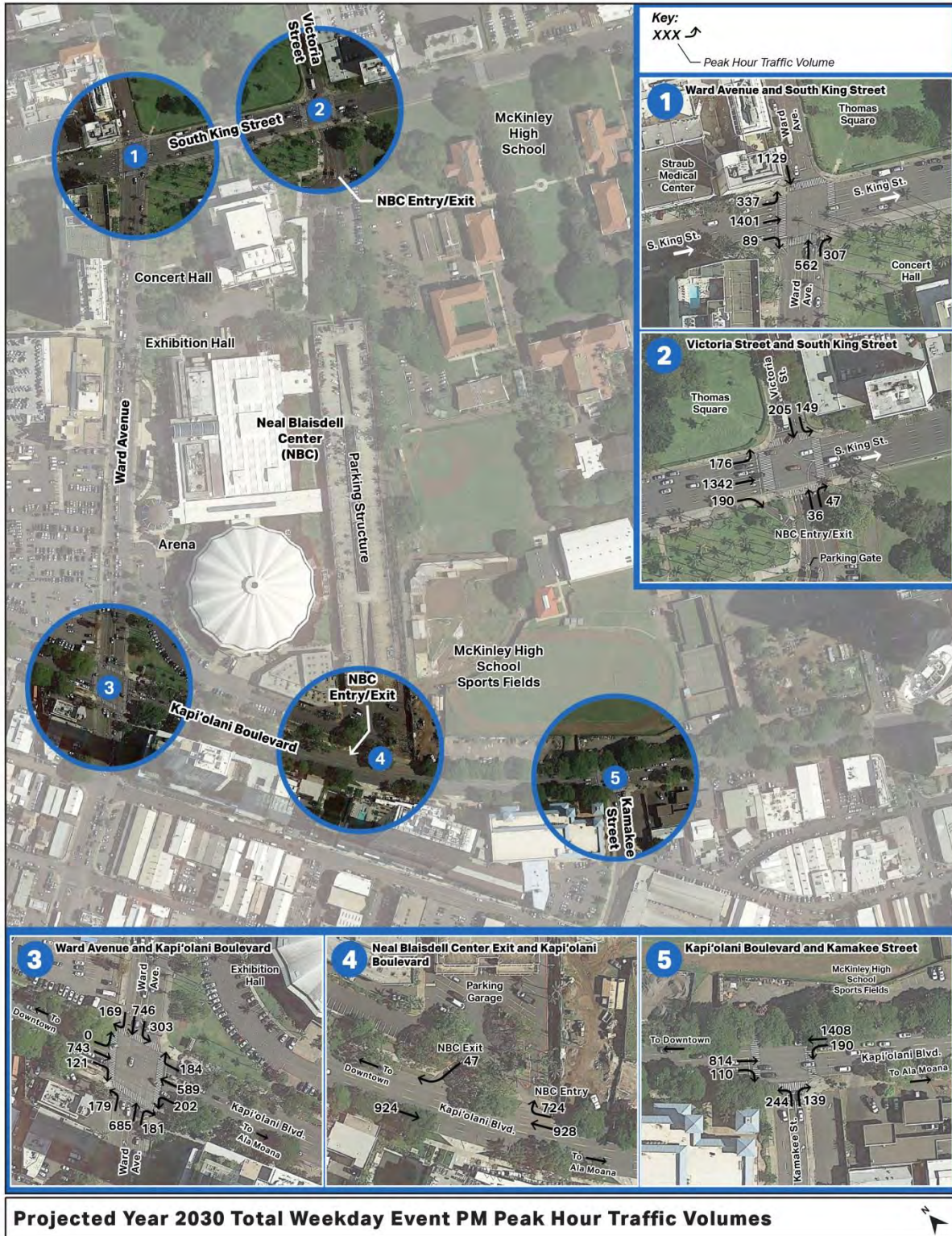


Figure 20: Projected Year 2030 Total Weekday Event P.M. Peak Hour Traffic Volumes

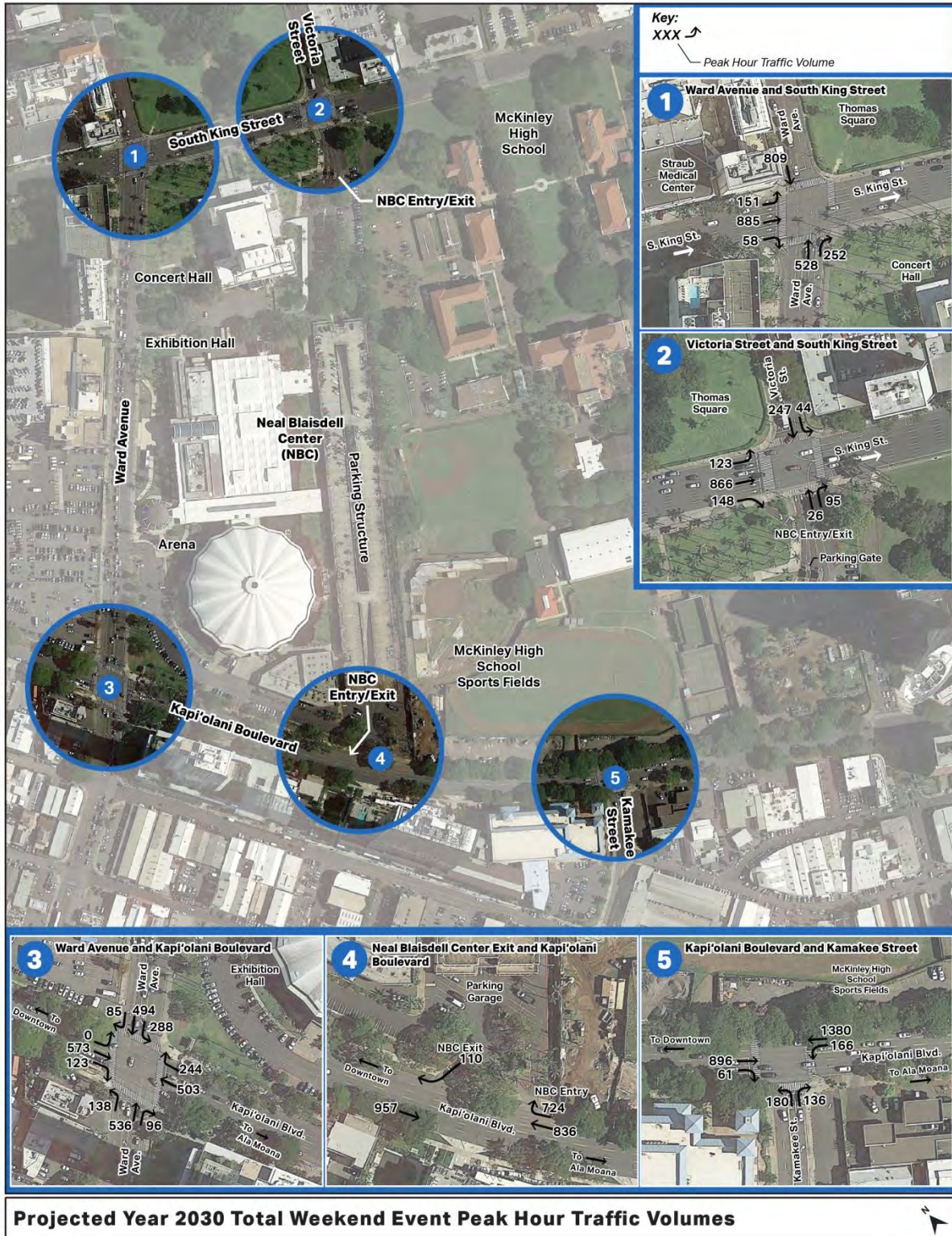


Figure 21: Projected Year 2030 Total Weekend Event Peak Hour Traffic Volumes

3.5.2 Projected Year 2030 Configurations

3.5.2.1 Parking Garage Access

There are two ramps that lead into and two ramps that lead out of each of the mauka and makai parking garages. One pair of entering and exiting ramps accesses the 2nd level of the garage, which is use only by valet parking. The second pair of entering and exiting ramps leads accesses the 3rd level, which is the first level of self-parking.

The mauka and makai garages are semi-independent of each another and have limited connections at the 2nd and 3rd levels. The access ramps are strongly oriented to either South King Street (mauka garage) or Kapi'olani Boulevard (makai garage). As discussed in the trip distribution section of section 3.5.1.2 of this report, this orientation is projected to redistribute the vehicle approach patterns to NBC with a greater percentage of the NBC traffic utilizing the Kapi'olani Boulevard driveway than under the current situation

3.5.2.2 Vehicular Entrance Configurations

The ramps connect to South King Street and Kapi'olani Boulevard in the proposed lane configurations as shown in Figure 22 and Figure 23.

Proposed NBC access at South King Street and Victoria Street is illustrated in Figure 22. The existing alignment between Victoria Street and the NBC Driveway (Victoria Street extension) will be maintained. Along South King Street, there is a new exclusive right-turn lane into NBC that is formed by extending the existing bus stop located in front of NBC Concert Hall. Along the Victoria Street extension approach, there will be two ingress lanes and three egress lanes. The configuration of this approach is similar to the existing configuration, with the additional right-turn lane on the Victoria Street extension approach replacing the existing channelized right turn lane exiting NBC. Entering lanes into NBC have been improved to eliminate the channelized entry lane.

The access on Kapi'olani Boulevard is illustrated in Figure 23. The proposed access retains the right-in ingress and the two right-turn egress lanes that currently exists on Kapi'olani Boulevard, but groups the lanes closer together. Because this access is expected to be implemented as an unsignalized, right-in/right-out intersection, it is assumed that the second exiting lane would not be in service under normal conditions. Under high demand conditions, the second exiting lane could be opened when there is a traffic control officer manually controlling traffic flow at the intersection. Due to the restricted width of the Victoria Street extension corridor, there is only one ingress lane into NBC. The access on Kapi'olani Boulevard is the primary access point for the large trucks and other vehicles that will be utilize the loading areas at the ground floor. The striping adjacent to the inbound right-turn lanes provides these large trucks turning into NBC the necessary clearance to maneuver into the site.

3.5.2.3 Victoria Street Extension Configuration

The Victoria Street extension will be a two-lane road, one in each direction within the site. The roadway will incorporate a 5-foot sidewalk on the Koko Head-side of the road, adjacent to the culvert separating NBC and McKinley High School. This sidewalk will connect South King Street and Kapi'olani Boulevard. On the 'Ewa-side of the road, there will be passenger loading areas for private buses and other group vehicles. Raised crosswalks across Victoria Street extension will connect the passenger loading areas to the 5-foot sidewalk.

Victoria Street extension will be an internal site roadway as opposed to a dedicated public roadway due to internal operational needs. During events, The City and County of Honolulu Department of Enterprise Services (DES) will probably limit its use to event-oriented traffic. During non-event hours, the Victoria Street extension could be open to non-NBC-related traffic.

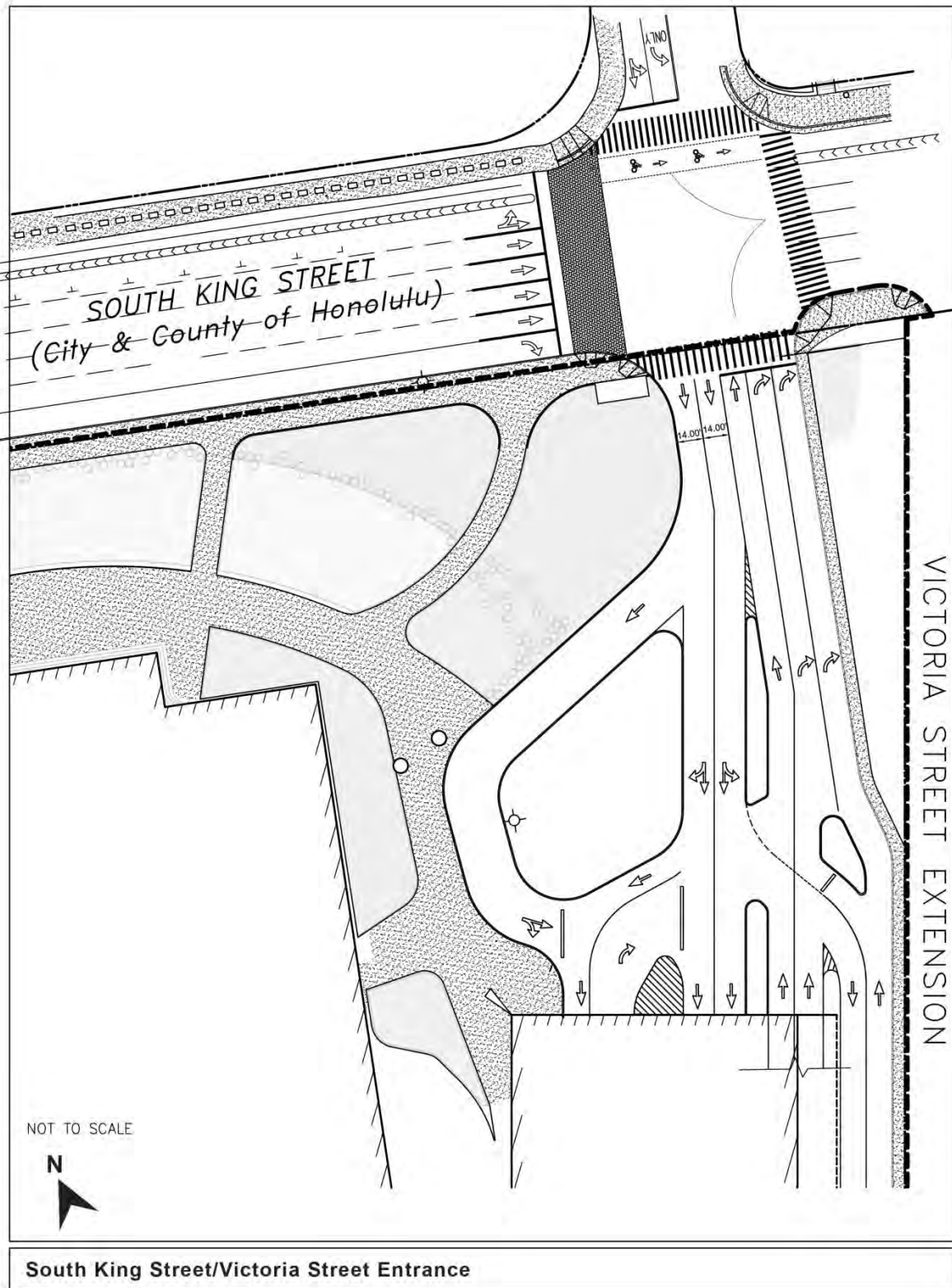


Figure 22: South King Street/Victoria Street Extension Entrance

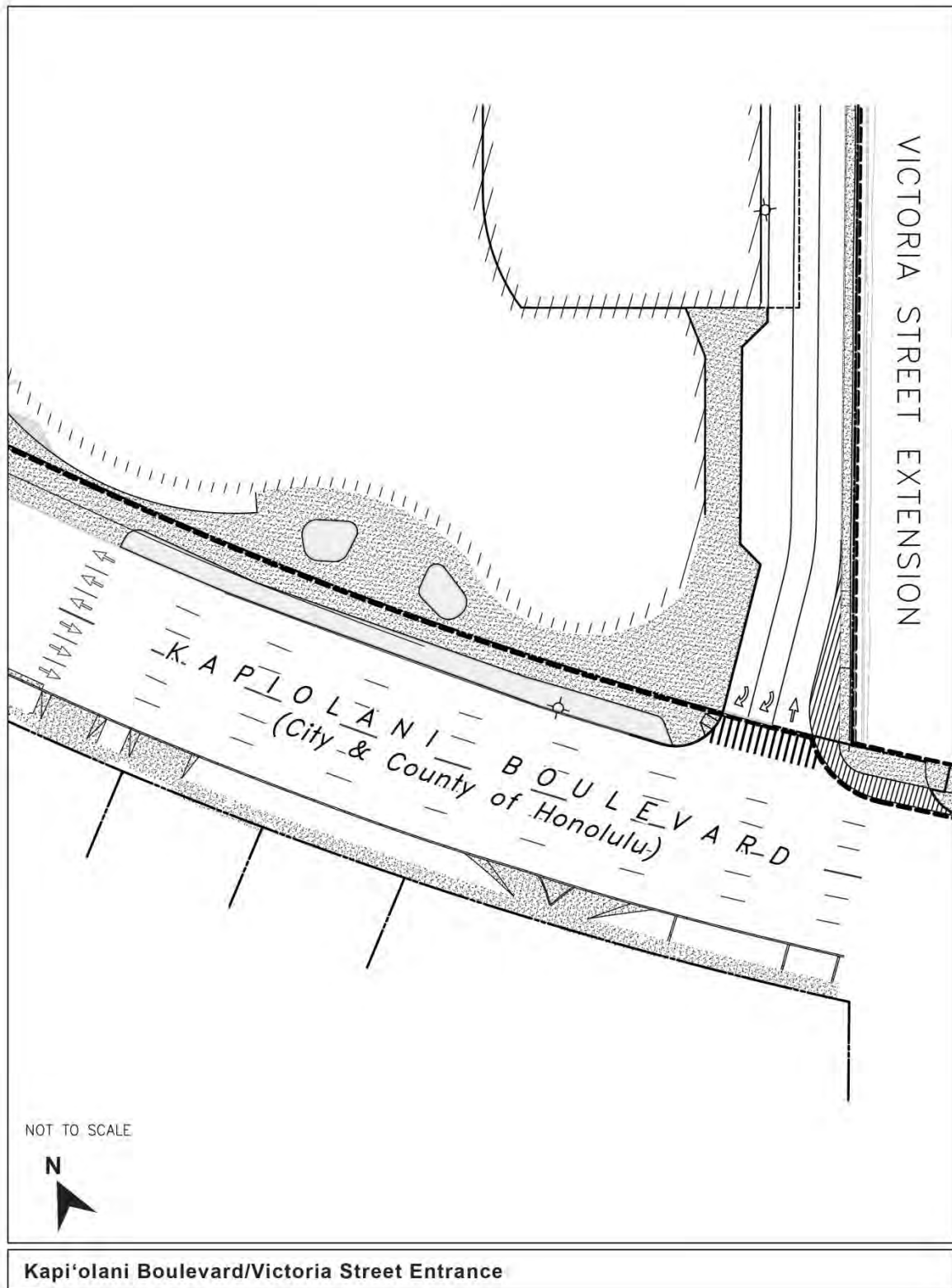


Figure 23: Kapi'olani Boulevard/Victoria Street Extension Entrance

3.5.3 Projected Year 2030 Intersection Operations

The projected Year 2030 peak hour volumes illustrated in Figure 18 and Figure 19 were evaluated using the signalized intersection capacity method documented in the *Highway Capacity Manual* (Transportation Research Board of the National Academies 2010).

Table 6 summarizes the resulting future weekday commuter peak period LOS and intersection delay at the four intersections. Future commuter peak hour time periods were assumed to occur at the same time as existing peak hour time periods. The analysis worksheets are included in Appendix C.

Table 6: Projected Year 2030 Weekday Commuter Peak Hour Intersection Operations

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
South King Street/Victoria Street	21.4	C	13.6	B
South King Street/Ward Avenue	20.5	C	28.2	C
Kapi'olani Boulevard/Ward Avenue	40.2	D	36.8	D
Kapi'olani Boulevard/Kamake'e Street	10.9	B	11.9	B
Notes: Weekday A.M. peak hour: 7:15 A.M. – 8:15 A.M. Weekday P.M. peak hour: 4:45 P.M. - 5:45 P.M. sec/veh = seconds per vehicle				

As shown in Table 6, all analyzed intersections are projected to operate acceptably for urban peak hour conditions with LOS D or better, which is considered acceptable.

Table 7 summarizes the resulting future weekday event peak period LOS and intersection delay at the four intersections. The analysis worksheets are included in Appendix C.

Table 7: Projected Year 2030 Weekday P.M. Event Peak Hour Intersection Operations

Intersection	P.M. Event Peak Hour	
	Delay (sec/veh)	LOS
South King Street/Victoria Street	13.7	B
South King Street/Ward Avenue	21.1	C
Kapi'olani Boulevard/Ward Avenue	56.2	E
Kapi'olani Boulevard/Kamake'e Street	15.5	B
Notes: Weekday event peak hour: 6:00 P.M. – 7:00 P.M. sec/veh = seconds per vehicle		

As shown in Table 7, the South King/Victoria Street, South King Street/Ward Avenue, and Kapi'olani Boulevard/Kamake'e Street intersections operate at LOS C or better. The Kapi'olani Boulevard/Ward Avenue operates with an overall intersection LOS E, which indicates operations involving significant delay. This intersection currently operates at this level of service.

Table 8 summarizes the future weekend LOS and intersection delay at the four intersections during the weekend P.M. event peak hour. The analysis worksheets are included in Appendix C.

Table 8: Projected Year 2030 Weekend Event Peak Hour Intersection Operations

Intersection	Weekend Event Peak Hour	
	Delay (sec/veh)	LOS
South King Street/Victoria Street	12.7	B
South King Street/Ward Avenue	18.9	B
Kapi'olani Boulevard/Ward Avenue	40.0	D
Kapi'olani Boulevard/Kamake'e Street	11.8	B
Notes: Weekend Event P.M. peak hour: 3:00 P.M. – 4:00 P.M. sec/veh = seconds per vehicle		

As shown in Table 8, all analyzed intersections are projected to operate acceptably for urban peak hour conditions.

With the redistribution of vehicles entering NBC, the intersection operations appear to operate well at the at South King Street/Victoria Street, South King Street/Ward Avenue, Kapi 'olani Boulevard/Ward Avenue, and Kapi 'olani Boulevard/Kamake 'e Street intersections. The LOS of the projected intersection operations do not appear to change with the redistribution of vehicles around the NBC. At some of the intersections, such as the South King Street/Victoria Street intersection, the delay improves slightly due to the reduced vehicular volume using the driveway at that intersection.

4. Summary and Recommendations

4.1 Summary

The City and County of Honolulu initiated a Master Planning effort to conceptualize a major remodeling of the existing Neal Blaisdell Center (NBC), the premier event facility for Honolulu. An environmental assessment (EA) is being prepared for the Master Plan and this evaluation of transportation conditions was conducted in support of the EA effort. Vehicular, pedestrian, bicycle, and transit modes were evaluated for existing and projected Year 2030 conditions.

The NBC Master Plan incorporates elements that make the future NBC site consistent with current City plans for pedestrian, bicycle, and transit operations. The NBC Master Plan transportation improvements incorporate elements of the current Pedestrian Circulation Plan and the O'ahu Bike Plan Update currently being developed by the Department of Transportation Services (DTS). A 5-foot wide continuous sidewalk is proposed on the Koko Head-side of the Victoria Street extension that connects South King Street and Kapi'olani Boulevard improving pedestrian circulation in the large superblock area bounded by Ward Avenue, South King Street, Pensacola Street and Kapi'olani Boulevard. The Victoria Street extension will also be designated a bike route that would augment DTS bike circulation in the area. The NBC Master Plan improvements are also compatible with future DTS plans to install bike lanes and to modify and improve crosswalk safety on Ward Avenue between South King Street and Kapi'olani Boulevard. NBC Master Plan transportation improvements also acknowledge future DTS plans to install City bus stops on the Koko Head side of Ward Avenue to accommodate future circulator buses that would serve the Honolulu Rapid Transit rail system station located further makai on Ward Avenue. The Master Plan accommodates proposed bus stop designs that meet the guidelines set forth in the [Honolulu Complete Streets Design Manual](#).

One of the most significant modifications proposed in the Master Plan from a transportation perspective is the replacement of the existing parking garage with two parking garages with a combined parking count larger than the existing garage. The larger parking count is projected to generate larger event peak-related traffic volumes than the existing NBC site. At the same time, the orientation of one parking garage to South King Street and the other parking garage to Kapi'olani Boulevard significantly changes the vehicular access patterns to NBC in a way that better distributes NBC-related traffic between South King Street and Kapi'olani Boulevard.

Table 9 compares the existing year 2017 peak hour intersection operations to projected year 2030 peak hour intersection operations at the intersections in the vicinity of NBC. Because background traffic growth is judged to be very low, the Year 2017 peak hour intersection operations can be considered representative of projected year 2030 peak hour traffic conditions without the proposed NBC Master Plan improvements. As shown in Table 9, intersections operated similarly for the A.M. and P.M. weekday commuter peak hour, the weekday P.M. event peak hour, and the weekend event peak hour time periods.

All intersections analyzed generally operate at acceptable peak hour overall LOS. There are selected traffic movements that were observed to be congested, and, in the case of the existing year 2017 time frame, there were several instances where NBC-generated traffic queues at its entrances caused significant traffic congestion on the roadways in the vicinity of NBC. The queuing situation is projected to be greatly improved by entrance improvements and major modifications to the parking system used by NBC.

Intersection configurations at the NBC improve operational efficiency and safety while maintaining intersection operational level of service.

The conclusion drawn is that the proposed modifications of NBC proposed in the Master Plan can be accommodated by the existing surrounding intersections while maintaining near current operational levels of service.

Table 9 Comparison of Intersection LOS - Existing 2017 vs. Projected 2030

Intersection	Existing Year 2017				Projected Year 2030			
	A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
South King Street/Victoria Street	21.4	C	13.5	B	21.4	C	13.6	B
South King Street/Ward Avenue	20.5	C	28.2	C	20.5	C	28.2	C
Kapi 'olani Boulevard/Ward Ave	40.2	D	36.7	D	40.2	D	36.8	D
Kapi 'olani Boulevard/Kamake 'e St	10.8	B	11.3	B	10.9	B	11.9	B

Notes: These tables contain analysis for the commuter peak periods.
Based on counts conducted on: Wednesday, 10/18/17
A.M. Peak Hour: 7:15 A.M. – 8:15 A.M.
P.M. Peak Hour: 4:45 P.M. – 5:45 P.M.
LOS = level of service
sec/veh = seconds per vehicle

Intersection	Existing Year 2017		Projected Year 2030	
	Weekday P.M. Event Peak Hour		Weekday P.M. Event Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
South King Street/Victoria Street	13.5	B	13.7	B
South King Street/Ward Avenue	21.1	C	21.1	C
Kapi 'olani Boulevard/Ward Ave	56.1	E	56.2	E
Kapi 'olani Boulevard/Kamake 'e St	13.4	B	15.5	B

Notes: Based on counts conducted on: Wednesday, 10/18/17
Event Peak Hour: 6:00 P.M. – 7:00 P.M.
LOS = level of service
sec/veh = seconds per vehicle

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Intersection	Existing Year 2017		Projected Year 2030	
	Weekend Event Peak Hour		Weekend Event Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
South King Street/Victoria Street	14.7	B	12.7	B
South King Street/Ward Avenue	18.9	B	18.9	B
Kapi 'olani Boulevard/Ward Avenue	40.1	D	40.0	D
Kapi 'olani Boulevard/Kamake 'e St	10.9	B	11.8	B

Notes: Based on counts conducted on: Sunday, 10/15/17
 Event Peak Hour: 3:00 P.M. – 4:00 P.M.
 LOS = level of service
 sec/veh = seconds per vehicle

4.2 Recommendations

Based on the analyses conducted as part of this transportation impact assessment, the following elements are discussed further:

- Parking operations;
- Passenger drop-off/pick-up;
- Traffic operations during large or multiple events;
- Pedestrian safety;
- Signalization of Victoria Street Extension/Kapi'olani Boulevard intersection.

4.2.1 Parking Operations

Currently, one of the largest contributing factors for traffic congestion caused by vehicles entering NBC for an event is the way parking fees are collected as vehicles enter the NBC site. The delay required for this type of parking fee collection causes vehicle queues to form that sometimes affect traffic operations at neighboring intersections.

The Master Plan proposes to upgrade the parking system to a “pay before leaving” system, essentially mitigating this issue.

It is suggested that the City consider implementing this parking scheme as an interim measure even before the NBC Master Plan renovations are implemented.

4.2.2 Passenger Drop-Off/Pick-Up

The Master Plan proposes improvements that greatly improve the handling of drop-off/pick-up of event attendees. There is a formalized drop-off/pick-up pull out on Ward Avenue and there is an extensive charter bus/group transportation pick-up/drop-off area along the Victoria Street extension internal to the NBC site.

There is one area that is recommended to be specifically avoided as a drop-off/pick-up area. The existing bus bay on South King Street fronting the NBC Concert Hall will take on added importance as it is extended to the NBC Driveway as an exclusive right-turn lane into NBC as part of the proposed Master Plan improvements. Allowing drop-off/pick-ups in this area would compromise the effectiveness of both the City bus stop and the right-turn lane.

4.2.3 Traffic Operations During Large or Multiple Events

The larger parking capacity on the NBC site and the increase in traffic that results make efficient operation at the access driveways important so that attendees do not experience unreasonable delay in entering and departing NBC.

For large events, deploying special duty officers would be helpful in promoting orderly processing of traffic without detrimentally affecting background traffic on adjacent streets such as South King Street and Kapi'olani Boulevard.

4.2.4 Pedestrian Safety

In addition to the substantial volume of traffic moving into and out of the NBC site, there are substantial numbers of pedestrians walking to and from NBC. Vehicles and pedestrians cross paths at both the South King Street and the Kapi'olani Boulevard access driveways. Observations indicate that vehicle-pedestrian conflicts are already an issue and they are expected to grow as the magnitude of traffic accessing NBC grows.

One of the largest issues is the conflict between vehicles turning right into an NBC driveway from the adjacent major roadway and pedestrians crossing the NBC driveway at the same time. This occurs at both the South King Street driveway and the Kapi'olani Boulevard driveway. In the case of the signalized South King Street driveway, both right-turning vehicles and pedestrians crossing the driveway receive the green/walk signal at the same time with the

understanding that vehicles must yield to pedestrians. However, when there is a large volume of pedestrians, drivers find it hard to execute their right-turn maneuver and some drivers end up forcing their way through the pedestrian flow.

There are several ways to mitigate this condition:

- o Utilize special duty officers to help manage vehicle-pedestrian conflicts;
- o Implement pedestrian-lead or vehicle-lead traffic signal phasing at the NBC access intersections.
- o Implement an all-pedestrian phase (Barnes Walk) at the NBC access intersections;

Special duty officers help to help reduce vehicle-pedestrian conflicts by managing the flow of vehicles and pedestrian at the intersection. Due to their cost, they are deployed primarily during large events.

At a signalized intersection, there is the option of using a pedestrian-lead or vehicle-lead phase, which would have the traffic signal controller to separate and regulate when each would be allowed to execute their movement.

Special duty officers and pedestrian-lead or vehicle-lead traffic signal phasing are similar; one is more automated than the other. The impact of these actions is that the right-turning vehicles would be delayed and in extreme cases, would not receive enough time to process into NBC on one signal cycle, resulting in vehicle queuing on the external roadway. When bad enough, the queue can affect adjacent intersections. The advantage of both of these actions is that only the right-turn movement is affected. The through traffic movement on the main street (S. King or Kapi'olani Blvd.) is not affected.

An all pedestrian phase signal timing would provide the safest environment for pedestrians but this type of action usually comes with an impact to vehicular traffic operations. The all pedestrian phase would affect not only the right-turn movements but it would also affect the through traffic movement on the main street and the cross-traffic movement on the minor intersecting street.

Table 10 South King Street/Victoria Street Intersection Operations with All-Pedestrian Phase

Time Period	Overall Operations	
	Delay (sec/veh)	LOS
Weekday PM Commuter Peak Hour	46.7	D
Weekday Event Peak Hour	27.5	C
Weekend Event Peak Hour	32.7	C
Notes: Weekday P.M. peak hour: 4:45 P.M. – 5:45 P.M. Weekday Event peak hour: 6:00 P.M. – 7:00 P.M. Weekend Event P.M. peak hour: 3:00 P.M. – 4:00 P.M. sec/veh = seconds per vehicle		

Table 10 summarizes the projected level of service (LOS) for an All-Pedestrian phase operation at the South King Street/Victoria Street intersection. The resulting LOS is acceptable for urban peak hour conditions and reflect LOS approximately one level lower than the scenario with a more traditional traffic signal phasing scheme. The primary concern would be the potential for vehicle queues on South King Street at Victoria Street to extend back into the South King Street/Ward Avenue intersection due to reduced green time for through traffic on South King Street. It is strongly recommended that detailed traffic simulation be conducted prior to implementation of an All-Pedestrian phase at the South King Street/Victoria Street intersection.

Regardless of the measure selected, pedestrian safety, especially during large events at NBC need to be addressed.

4.2.5 Signalization of the Victoria Street Extension/Kapi'olani Boulevard Intersection

The intersection of the Victoria Street extension and Kapi'olani Boulevard was evaluated to determine if it satisfies traffic signal warrants as documented in the Manual on Uniform Traffic Control Devices (MUTCD).

An evaluation found that as a dedicated public roadway, the Victoria Street extension/Kapi'olani Boulevard intersection could satisfy a peak hour warrant. However, Victoria Street extension is planned as a controlled, facility roadway due to the needs for internal operations, especially when an event is occurring on the NBC site. Under this condition, the Victoria Street extension/Kapi'olani intersection is not likely to warrant traffic signalization. The volume component of the warrant might be satisfied when a large event is generating traffic exiting the site. However, this situation usually occurs later during the evening when traffic on the adjacent main roadway may not reach the traffic volume threshold required. Additionally, MUTCD guidelines generally discourage traffic signals at roadways that are not consistently open for general traffic.

The conclusion is that the Victoria Street Extension/Kapi'olani Boulevard intersection would probably not warrant traffic signalization per MUTCD guidelines.

It is recommended to monitor the situation at this intersection. If circumstances or policy should change, and traffic signalization is warranted at some future date, the following considerations apply:

- left turns from Koko Head-bound Kapi'olani Boulevard to mauka-bound Victoria Street extension should be prohibited if the intersection becomes signalized. There is no median on Kapi'olani Boulevard, which means that a vehicle making the left turn from Koko Head-bound Kapi'olani Boulevard onto mauka-bound Victoria Street would turn the inner lane of Kapi'olani Boulevard into a de-facto left-turn lane similar to the Ke'eaumoku Street/Kapi'olani Boulevard intersection. This would leave only two lanes for the Kapi'olani Boulevard through movement and may negatively impact operations at the Ward Avenue/Kapi'olani Boulevard intersection.
- for similar reasons, it may be prudent to prohibit the left-turn out of Victoria Street extension even if its intersection with Kapi'olani Boulevard is signalized. The interruption of through traffic on Kapi'olani Boulevard could have detrimental impacts at the Ward Avenue intersection. It is recommended to allow the makai-bound left turn from the Victoria Street extension onto Kapi'olani Boulevard for large or multiple events using special duty officers to help expedite traffic out of the proposed NBC garages. The special duty officers would be able to provide the judgment on how much NBC-related traffic to allow that a signal cannot.
- A benefit of signalizing the Victoria Street extension/Kapi'olani Boulevard intersection is to provide a safer crossing of the Victoria Street extension approach to this intersection. The signalization could also provide a signalized pedestrian crossing of Kapi'olani Boulevard. The Kapi'olani Boulevard cross walk in this scheme would be located Koko Head of the Victoria Street extension. Protection of pedestrians would utilize an all-pedestrian phase. On this phase, pedestrians would cross Victoria Street extension and Kapi'olani Boulevard at the same time. The through movements on Kapi'olani Boulevard and the right turn from 'Ewa-bound Kapi'olani Boulevard to mauka-bound Victoria Street extension could use the second phase, and right turn from 'Ewa-bound Kapi'olani Boulevard to mauka-bound Victoria Street extension and the right-turns from makai-bound Victoria Street extension onto 'Ewa-bound Kapi'olani Boulevard would utilize the third phase. The Koko Head-bound Kapi'olani Boulevard through movement could be allowed through both of the non-pedestrian phases. The operational result of this type of intersection operation is summarized in Table 11.

Table 11: Kapi'olani Boulevard/Victoria Street Intersection Operations

Scenario	Weekend Peak Hour	
	Delay (sec/veh)	LOS
Weekday PM Commuter Peak Hour	9.3	A
Weekday Event Peak Hour	10.0	B
Weekend Event Peak Hour	10.8	B
Notes: Weekday P.M. peak hour: 4:45 P.M. – 5:45 P.M. Weekday Event peak hour: 6:00 P.M. – 7:00 P.M. Weekend Event P.M. peak hour: 3:00 P.M. – 4:00 P.M. sec/veh = seconds per vehicle		

As shown in Table 11, the intersection is projected to operate well overall during the event and commuter peak hours, even with an all-pedestrian phase. However, this phasing would reduce the through green band on Kapi'olani Boulevard and has the risk of creating long queues along Kapi'olani Boulevard that would disrupt the primary through traffic component. Queuing on Kapi'olani Boulevard at this intersection could extend to the Kapi'olani Boulevard/Kamake'e Street intersection and to the Kapi'olani Boulevard/Ward Avenue intersection. A detailed traffic simulation should be conducted prior to signaling the Victoria Street extension regardless of the phasing scheme proposed.

5. References

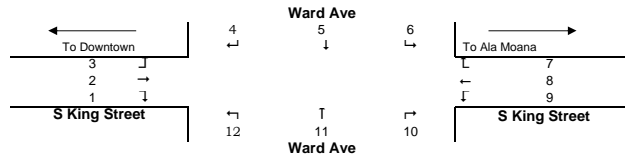
Hawaii Department of Transportation (HDOT). 2012. "Traffic Count Worksheets." In *Traffic Station Mapbook Island of O'ahu*.

Transportation Research Board of the National Academies. 2010. "Urban Street Facilities." In *Highway Capacity Manual 2010*, 3:16-1-16-47. Washington, DC: Transportation Research Board.

Appendix A: Traffic Count Worksheets

NEAL BLAISDELL TRANSPORTATION ANALYSIS TURNING MOVEMENT FORM

LOCATION: Ward Avenue and S King Street
 DATE: 10/18/17 (Wednesday)
 TIME: 6:30a-8:30a
 WEATHER: Cloudy/Rain
 RECORDER: RS

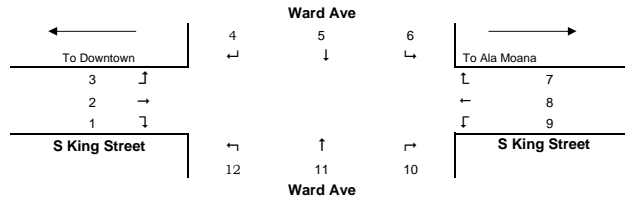


TIME PERIOD	MOVEMENT NUMBER											
	1	2	3	4	5	6	7	8	9	10	11	12
6:30-6:45a	18	184	34	0	187	0	0	0	0	34	31	0
6:45-7:00a	27	235	33	0	194	0	0	0	0	38	44	0
7:00-7:15a	24	359	38	0	174	0	0	0	0	41	53	0
7:15-7:30a	22	363	55	0	180	0	0	0	0	59	57	0
7:30-7:45a	15	368	52	0	203	0	0	0	0	79	46	0
7:45-8:00a	22	345	43	0	219	0	0	0	0	58	48	0
8:00-8:15a	21	380	35	0	259	0	0	0	0	50	31	0
8:15-8:30a	23	313	45	0	219	0	0	0	0	51	60	0
Peak Hour 7:15 - 8:15 AM	80	1456	185	0	861	0	0	0	0	246	182	0

Notes:

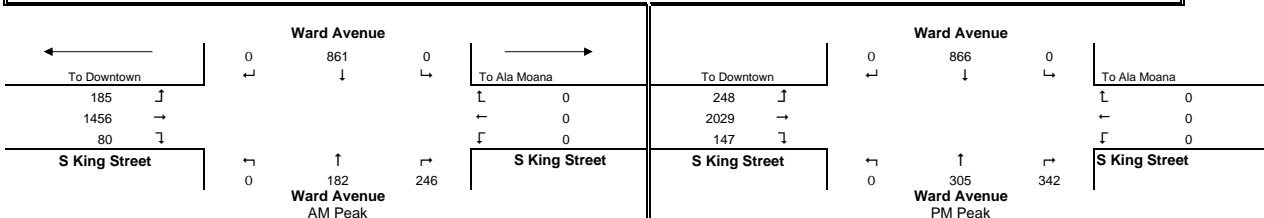
NEAL BLAISDELL TRANSPORTATION ANALYSIS TURNING MOVEMENT FORM

LOCATION: Ward Avenue and S King Street
 DATE: 10/18/17 (Wednesday)
 TIME: 4:30p-7:00p
 WEATHER: Cloudy
 RECORDER: RS



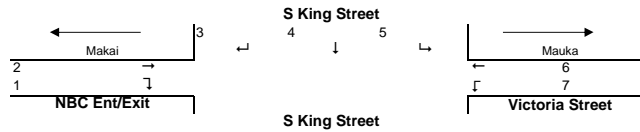
TIME PERIOD	MOVEMENT NUMBER											
	1	2	3	4	5	6	7	8	9	10	11	12
4:30-4:45p	36	393	56	0	212	0	0	0	1	73	104	0
4:45-5:00p	35	521	60	0	198	0	0	0	0	79	61	0
5:00-5:15p	44	531	71	0	218	0	0	0	0	94	78	0
5:15-5:30p	36	460	52	0	203	0	0	0	0	83	78	0
5:30-5:45p	32	517	65	0	247	0	0	0	0	86	88	0
5:45-6:00p	19	405	66	0	222	0	0	0	0	74	80	0
6:00-6:15p	24	420	77	0	239	0	0	0	0	89	108	0
6:15-6:30p	19	324	100	0	220	0	0	0	2	68	114	0
6:30-6:45p	23	314	80	0	256	0	0	0	0	72	115	0
6:45-7:00p												
Peak Hour 4:45 - 5:45 PM	147	2029	248	0	866	0	0	0	0	342	305	0

Notes: Stopped count a bit early and had to restart. Counter did not register last interval due to timing.



NEAL BLAISDELL TRANSPORTATION ANALYSIS TURNING MOVEMENT FORM

LOCATION: Victoria Street and S King Street
 DATE: 10/18/17 (Wednesday)
 TIME: 6:30a-8:30a
 WEATHER: Cloudy/Rain
 RECORDER: WYY

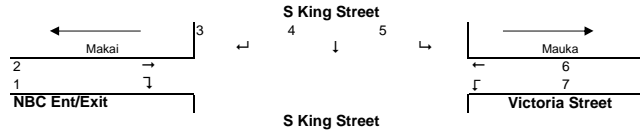


TIME PERIOD	MOVEMENT NUMBER							Pedestrian Movement				
	1	2	3	4	5	6	7	↓	↑	→	← (DH)	← (Ewa)
6:30-6:45a	0	1	33	176	23	86	30	5	11	4	0	4
6:45-7:00a	0	2	19	259	39	41	47	10	8	4	0	2
7:00-7:15a	1	1	19	378	35	33	45	23	14	11	0	2
7:15-7:30a	0	5	29	460	55	39	84	17	6	9	0	1
7:30-7:45a	0	2	18	396	80	27	92	29	5	6	4	1
7:45-8:00a	0	0	7	403	51	27	106	19	8	8	6	1
8:00-8:15a	0	1	15	414	54	17	107	17	9	2	4	5
8:15-8:30a	0	3	7	343	45	24	81	7	3	3	2	5
Peak Hour 7:15 - 8:15 AM	0	8	69	1673	240	110	389	82	28	25	14	8

Notes: 7:40 Queue back into S King

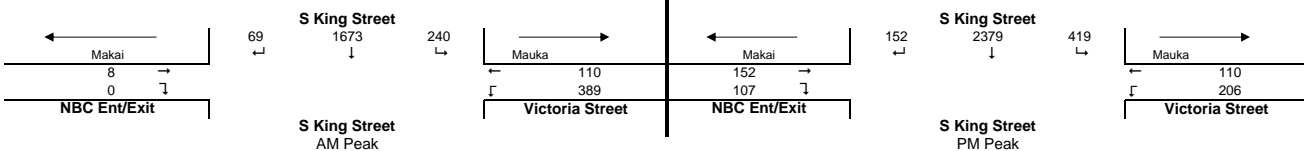
NEAL BLAISDELL TRANSPORTATION ANALYSIS TURNING MOVEMENT FORM

LOCATION: Victoria Street and S King Street
 DATE: 10/18/17 (Wednesday)
 TIME: 4:30p-7:00p
 WEATHER: Cloudy
 RECORDER: WYY



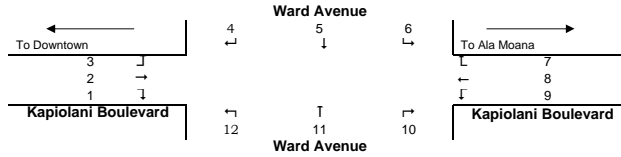
TIME PERIOD	MOVEMENT NUMBER							Pedestrian Movement				
	1	2	3	4	5	6	7	↓	↑	→	← (DH)	← (Ewa)
4:30-4:45p	37	58	18	517	97	25	44	16	9	7	6	8
4:45-5:00p	30	47	19	606	103	17	47	13	4	8	2	3
5:00-5:15p	31	32	28	581	92	25	49	12	13	5	5	3
5:15-5:30p	25	25	69	559	82	25	50	17	11	12	3	2
5:30-5:45p	21	48	36	633	142	43	60	12	13	11	3	7
5:45-6:00p	9	29	25	384	44	24	36	4	8	6	5	7
6:00-6:15p	13	16	43	487	63	33	39	18	14	11	5	4
6:15-6:30p	11	8	22	327	45	33	41	5	12	5	0	5
6:30-6:45p	13	6	52	393	42	43	36	13	2	3	3	6
6:45-7:00p	10	6	38	317	26	59	33	1	8	6	0	9
Peak Hour 4:45 - 5:45 PM	107	152	152	2379	419	110	206	54	41	36	13	15

Notes: Camera start 4:25
 6:55 queue block bus stop, interfere with Victoria traffic



NEAL BLAISDELL TRANSPORTATION ANALYSIS TURNING MOVEMENT FORM

LOCATION: Ward Avenue and Kapiolani Boulevard
 DATE: 10/18/17 (Wednesday)
 TIME: 6:30a-8:30a
 WEATHER: Cloudy/Rain
 RECORDER: JY

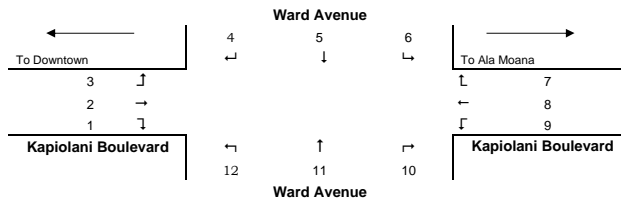


TIME PERIOD	MOVEMENT NUMBER											
	1	2	3	4	5	6	7	8	9	10	11	12
6:30-6:45a	16	71	0	33	168	25	25	157	47	4	55	18
6:45-7:00a	18	83	0	56	174	36	23	223	73	10	65	24
7:00-7:15a	19	82	0	57	168	23	22	244	45	11	88	17
7:15-7:30a	33	118	0	71	156	36	21	319	70	9	102	35
7:30-7:45a	23	119	0	67	212	55	19	317	62	16	113	39
7:45-8:00a	19	140	0	62	189	46	19	322	57	24	77	31
8:00-8:15a	32	115	0	72	239	51	28	286	54	29	64	21
8:15-8:30a	28	144	0	48	178	56	19	228	63	29	78	30
Peak Hour 7:15 - 8:15 AM	107	492	0	272	796	188	87	1244	243	78	356	126

Notes: Cycle length measured to be about 120 sec (around 7:30)

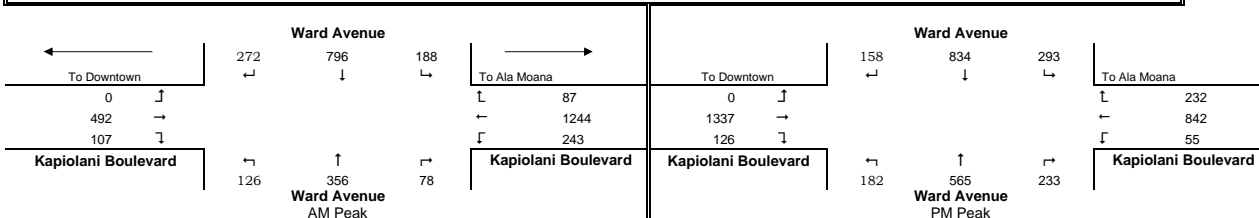
NEAL BLAISDELL TRANSPORTATION ANALYSIS TURNING MOVEMENT FORM

LOCATION: Ward Avenue and Kapiolani Boulevard
 DATE: 10/18/17 (Wednesday)
 TIME: 4:30p-7:00p
 WEATHER: Cloudy
 RECORDER: JY



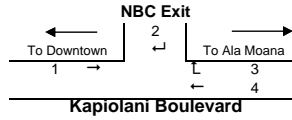
TIME PERIOD	MOVEMENT NUMBER											
	1	2	3	4	5	6	7	8	9	10	11	12
4:30-4:45p	29	237	0	37	195	74	39	210	0	46	138	27
4:45-5:00p	32	387	0	44	193	68	48	241	0	48	143	39
5:00-5:15p	32	322	0	40	225	75	83	168	0	63	164	56
5:15-5:30p	37	361	0	31	184	64	49	263	11	50	125	39
5:30-5:45p	25	267	0	43	232	86	52	170	44	72	133	48
5:45-6:00p	32	272	0	46	172	76	48	201	53	41	137	35
6:00-6:15p	34	190	0	24	187	73	41	141	45	48	187	47
6:15-6:30p	28	191	0	44	186	63	51	162	56	48	161	60
6:30-6:45p	31	173	0	58	188	84	44	152	59	43	169	37
6:45-7:00p	28	189	1	43	185	83	48	134	42	42	162	35
Peak Hour 4:45 - 5:45 PM	126	1337	0	158	834	293	232	842	55	233	565	182

Notes: 5:20 Ambulance came
 6:24 Ambulance came again
 Cycle times measured to be 120 sec (at 4:30) and 160 sec (at 7)
 Cars queued around corner of Blaisdell on Ward and it spilled over onto Kapiolani
 Also queue along Ward heading makai, which blocked the intersection at several instances



NEAL BLAISDELL TRANSPORTATION ANALYSIS TURNING MOVEMENT FORM

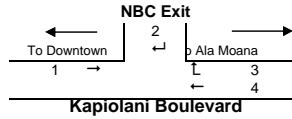
LOCATION: Kapiolani Boulevard and NBC Exit
 DATE: 10/18/17 (Wednesday)
 TIME: 6:30a-8:30a
 WEATHER: Cloudy/Rain
 RECORDER: TW



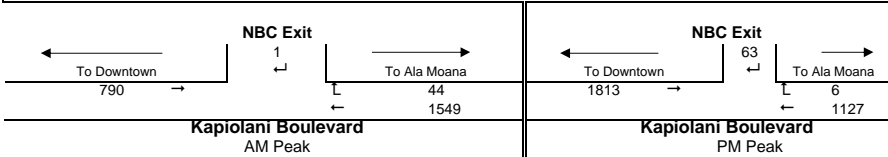
TIME PERIOD	MOVEMENT NUMBER				5	6	7	8	9	10	11	12
	1	2	3	4								
6:30-6:45a	122	2	29	242								
6:45-7:00a	136	0	17	298								
7:00-7:15a	131	0	13	306								
7:15-7:30a	170	0	8	353								
7:30-7:45a	234	0	22	440								
7:45-8:00a	189	0	7	386								
8:00-8:15a	197	1	7	370								
8:15-8:30a	242	0	4	304								
Peak Hour 7:15 - 8:15 AM	790	1	44	1549								
Notes:												

NEAL BLAISDELL TRANSPORTATION ANALYSIS TURNING MOVEMENT FORM

LOCATION: Kapiolani Boulevard and NBC Exit
 DATE: 10/18/17 (Wednesday)
 TIME: 4:30p-7:00p
 WEATHER: Cloudy
 RECORDER: CN

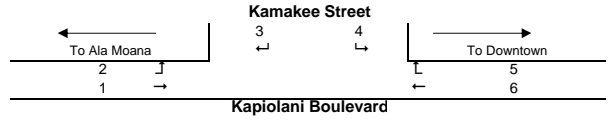


TIME PERIOD	MOVEMENT NUMBER				5	6	7	8	9	10	11	12
	1	2	3	4								
4:30-4:45p	421	18	1	289								
4:45-5:00p	485	16	4	275								
5:00-5:15p	469	18	2	281								
5:15-5:30p	462	15	0	312								
5:30-5:45p	397	14	0	259								
5:45-6:00p	333	11	1	252								
6:00-6:15p	296	12	10	220								
6:15-6:30p	309	24	30	230								
6:30-6:45p	297	8	46	227								
6:45-7:00p	237	3	60	174								
Peak Hour 4:45 - 5:45 PM	1813	63	6	1127								
Notes:												



NEAL BLAISDELL TRANSPORTATION ANALYSIS TURNING MOVEMENT FORM

LOCATION: Kapiolani Boulevard and Kamakee Street
 DATE: 10/18/17 (Wednesday)
 TIME: 6:30a-8:30a
 WEATHER: Cloudy/Rain
 RECORDER: AMF

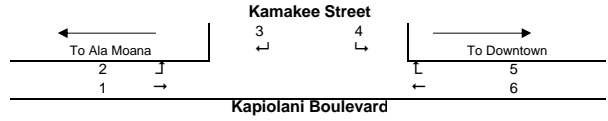


TIME PERIOD	MOVEMENT NUMBER						7	8	9	10	11	12
	1	2	3	4	5	6						
6:30-6:45a	231	30	9	12	27	90						
6:45-7:00a	252	19	13	24	27	104						
7:00-7:15a	289	24	13	10	22	120						
7:15-7:30a	330	41	15	27	33	142						
7:30-7:45a	362	52	14	15	33	185						
7:45-8:00a	331	42	6	18	19	185						
8:00-8:15a	286	42	11	22	20	192						
8:15-8:30a	185	31	13	19	20	179						
Peak Hour 7:15 - 8:15 AM	1309	177	46	82	105	704						

Notes:

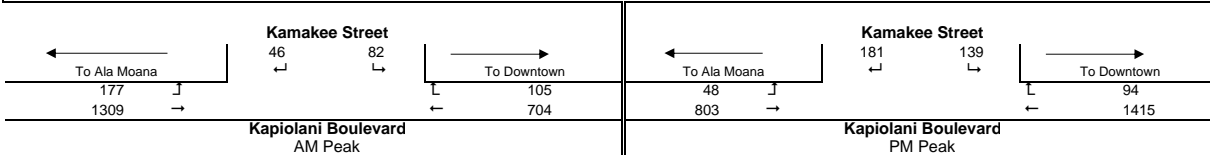
NEAL BLAISDELL TRANSPORTATION ANALYSIS TURNING MOVEMENT FORM

LOCATION: Kapiolani Boulevard and Kamakee Street
 DATE: 10/18/17 (Wednesday)
 TIME: 4:30p-7:00p
 WEATHER: Cloudy/Rain
 RECORDER: AMF



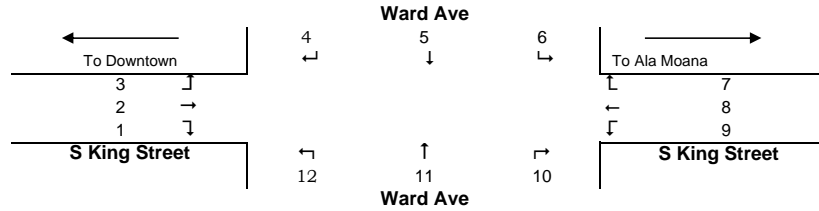
TIME PERIOD	MOVEMENT NUMBER						7	8	9	10	11	12
	1	2	3	4	5	6						
4:30-4:45p	214	1	41	36	25	364						
4:45-5:00p	209	1	47	35	26	408						
5:00-5:15p	187	2	51	41	18	339						
5:15-5:30p	249	8	44	27	20	406						
5:30-5:45p	158	37	39	36	30	262						
5:45-6:00p	189	47	25	39	29	286						
6:00-6:15p	153	43	32	48	35	202						
6:15-6:30p	128	42	37	49	24	186						
6:30-6:45p	153	48	31	30	23	178						
6:45-7:00p	174	57	38	32	28	195						
Peak Hour 4:45 - 5:45 PM	803	48	181	139	94	1415						

Notes:



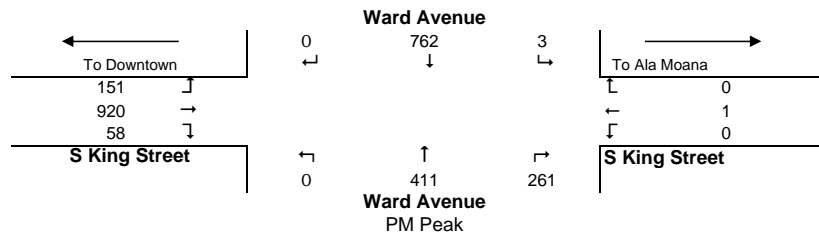
NEAL BLAISDELL TRANSPORTATION ANALYSIS TURNING MOVEMENT FORM

LOCATION: Ward Avenue and S King Street
DATE: 10/15/17 (Sunday)
TIME: 3:00p-6:00p
WEATHER: Cloudy/Drizzling
RECORDER: RS



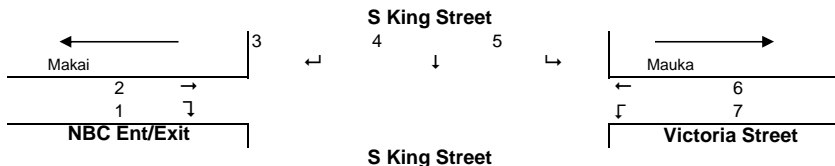
TIME PERIOD	MOVEMENT NUMBER											
	1	2	3	4	5	6	7	8	9	10	11	12
3:00-3:15p	7	202	43	0	187	0	0	0	0	69	93	0
3:15-3:30p	8	223	40	0	167	1	0	0	0	46	106	0
3:30-3:45p	18	280	33	0	195	0	0	0	0	65	113	0
3:45-4:00p	25	215	35	0	213	2	0	1	0	81	99	0
4:00-4:15p	8	171	36	0	171	2	0	0	0	58	88	0
4:15-4:30p	4	120	37	0	137	0	0	0	0	53	121	0
4:30-4:45p	15	137	43	0	174	1	0	0	0	35	91	0
4:45-5:00p	7	133	25	1	158	0	0	0	0	22	102	0
5:00-5:15p	8	122	44	5	120	0	1	0	0	34	74	0
5:15-5:30p	8	136	36	0	171	0	0	0	0	33	85	0
5:30-5:45p	5	133	31	0	148	0	0	0	0	33	80	1
5:45-6:00p	13	109	37	0	159	0	0	0	0	27	121	0
Peak hour 3:00 - 4:00 PM	58	920	151	0	762	3	0	1	0	261	411	0

Notes:



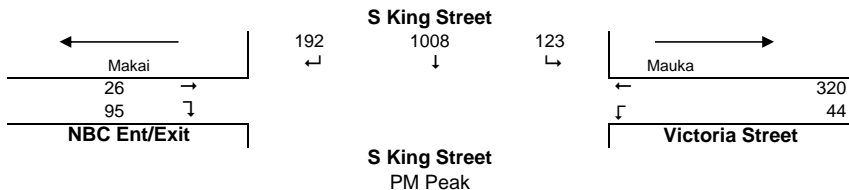
NEAL BLAISDELL TRANSPORTATION ANALYSIS TURNING MOVEMENT FORM

LOCATION: Victoria Street and S King Street
 DATE: 10/15/17 (Sunday)
 TIME: 3:00p-6:00p
 WEATHER: Cloudy/Drizzling
 RECORDER: WYY



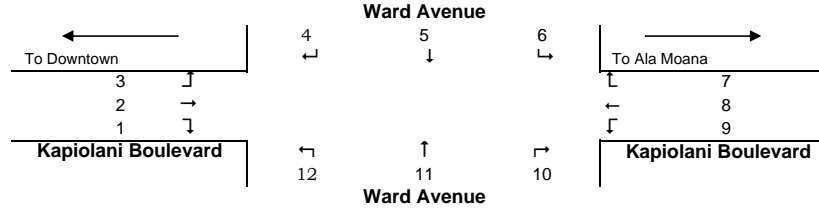
TIME PERIOD	MOVEMENT NUMBER							Pedesrian Movement				
	1	2	3	4	5	6	7	↓	↑	→	← (DH)	← (Ewa)
3:00-3:15p	21	7	35	215	29	84	26	3	22	9	5	39
3:15-3:30p	28	4	63	241	33	95	10	7	38	5	8	83
3:30-3:45p	16	2	53	252	32	89	4	5	49	10	9	97
3:45-4:00p	30	13	41	300	29	52	4	13	26	11	7	65
4:00-4:15p	28	9	3	270	23	18	41	8	6	8	12	14
4:15-4:30p	19	9	14	262	25	18	43	7	21	2	2	9
4:30-4:45p	9	9	7	185	21	13	26	15	4	11	0	11
4:45-5:00p	7	3	11	127	5	2	17	7	0	10	0	0
5:00-5:15p	15	23	6	204	17	8	26	6	3	13	1	4
5:15-5:30p	15	32	0	165	12	8	30	7	2	5	1	1
5:30-5:45p	25	30	2	180	22	1	36	2	1	3	0	2
5:45-6:00p	83	70	2	223	19	5	28	47	1	68	2	2
Peak Hour 3:00 - 4:00 PM	95	26	192	1008	123	320	44	28	135	35	29	284

Notes:
 2:45 Queing onto S. King St (5-6 vehicle interference with bus stop)
 2:48: 9 vehicles interference with bus stop
 2:50 8 vehicle interference with bus stop
 3:42 Police Incident
 3:50 Lot Full
 90 sec cycle



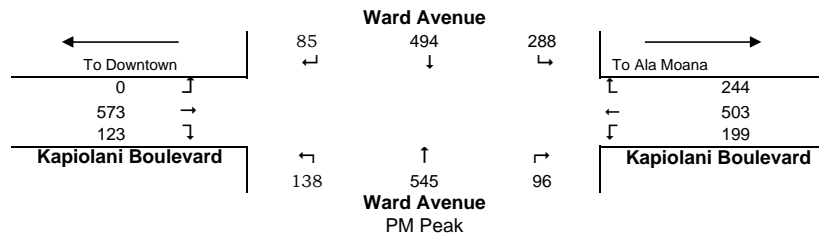
NEAL BLAISDELL TRANSPORTATION ANALYSIS TURNING MOVEMENT FORM

LOCATION: Ward Avenue and Kapiolani Boulevard
DATE: 10/15/17 (Sunday)
TIME: 3:00p- 6:00p
WEATHER: Cloudy/Drizzling
RECORDER: JY



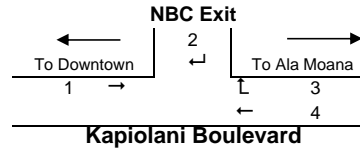
TIME PERIOD	MOVEMENT NUMBER											
	1	2	3	4	5	6	7	8	9	10	11	12
3:00-3:15p	21	108	0	11	109	67	75	126	40	21	137	25
3:15-3:30p	29	137	0	16	106	80	47	144	63	25	159	55
3:30-3:45p	36	189	0	21	131	75	62	115	47	24	111	33
3:45-4:00p	37	139	0	37	148	66	60	118	49	26	138	25
4:00-4:15p	18	121	0	24	155	67	54	114	56	31	138	40
4:15-4:30p	19	155	0	13	139	49	61	127	42	29	125	39
4:30-4:45p	21	128	0	19	125	69	35	124	48	17	103	37
4:45-5:00p	12	111	1	31	137	56	50	106	53	27	112	26
5:00-5:15p	21	102	0	36	139	52	31	153	43	21	138	40
5:15-5:30p	9	121	0	50	126	66	42	106	46	24	102	26
5:30-5:45p	11	99	0	28	132	58	38	107	44	35	93	16
5:45-6:00p	23	103	0	37	168	60	90	140	70	11	92	20
Peak Hour 3:00 - 4:00 PM	123	573	0	85	494	288	244	503	199	96	545	138

Notes: Started to queue around corner of Blaisdell from Ward onto Kapiolani



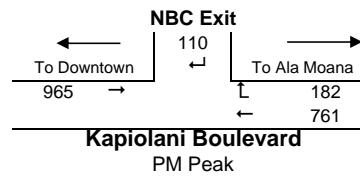
NEAL BLAISDELL TRANSPORTATION ANALYSIS TURNING MOVEMENT FORM

LOCATION: Kapiolani Boulevard and NBC Access Road
DATE: 10/15/17 (Sunday)
TIME: 3:00p-6:00p
WEATHER: Cloudy/Drizzling
RECORDER: CN



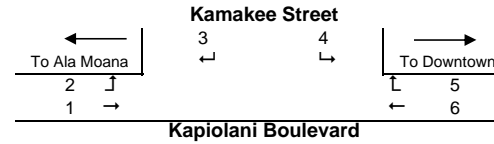
TIME PERIOD	MOVEMENT NUMBER										
	1	2	3	4							
3:00-3:15p	214	29	37	184							
3:15-3:30p	226	24	53	216							
3:30-3:45p	278	32	53	183							
3:45-4:00p	247	25	39	178							
4:00-4:15p	223	29	1	202							
4:15-4:30p	230	21	0	208							
4:30-4:45p	204	20	0	190							
4:45-5:00p	167	14	0	135							
5:00-5:15p	158	26	0	164							
5:15-5:30p	194	27	0	159							
5:30-5:45p	177	21	0	160							
5:45-6:00p	163	102	0	162							
Peak Hour 3:00 - 4:00 PM	965	110	182	761							

Notes:



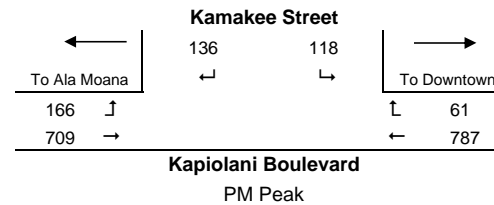
NEAL BLAISDELL TRANSPORTATION ANALYSIS TURNING MOVEMENT FORM

LOCATION: Kapiolani Boulevard and Kamakee Street
 DATE: 10/15/17 (Sunday)
 TIME: 3:00p-6:00p
 WEATHER: Cloudy/Drizzling
 RECORDER: AMF



TIME PERIOD	MOVEMENT NUMBER											
	1	2	3	4	5	6						
3:00-3:15p	199	48	37	37	12	189						
3:15-3:30p	204	39	37	29	19	213						
3:30-3:45p	152	30	22	18	11	194						
3:45-4:00p	154	49	40	34	19	191						
4:00-4:15p	140	36	33	22	19	174						
4:15-4:30p	172	25	35	29	18	188						
4:30-4:45p	115	42	41	23	12	154						
4:45-5:00p	131	39	22	20	7	149						
5:00-5:15p	125	30	19	20	19	148						
5:15-5:30p	137	35	32	20	19	158						
5:30-5:45p	116	37	17	16	15	145						
5:45-6:00p	131	37	20	11	18	123						
Peak Hour 3:00 - 4:00 PM	709	166	136	118	61	787						

Notes:

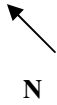


Time Period	Sunday 10/15/17		Wednesday 10/18/17	
	S King	Kapiolani	S King	Kapiolani
12:00 - 1:00 AM				
1:00 - 2:00 AM				
2:00 - 3:00 AM				
3:00 - 4:00 AM				
4:00 - 5:00 AM				
5:00 - 6:00 AM				26
6:00 - 7:00 AM				65
7:00 - 8:00 AM	88		88	31
8:00 - 9:00 AM	75		75	2
9:00 - 10:00 AM	260	18	278	
10:00 - 11:00 AM	271	36	307	
11:00 AM - 12:00 PM	214	34	248	
12:00 - 1:00 PM	230	31	261	
1:00 - 2:00 PM	243	35	278	
2:00 - 3:00 PM	326	81	407	
3:00 - 4:00 PM	346	139	485	
4:00 - 5:00 PM	52	1	53	
5:00 - 6:00 PM	10		10	1
6:00 - 7:00 PM				126
7:00 - 8:00 PM				163
8:00 - 9:00 PM				18
9:00 - 10:00 PM				
10:00 - 11:00 PM				
11:00 PM - 12:00 AM				

Notes: Counts from Elite Parking.
Counts are taken when the gate arm opens (taken as 1 count)
Exits were not counted
From the data, we cannot identify whether vehicles coming in from the S. King Street entrance came in from Victoria St or S. King St

Traffic Data Service

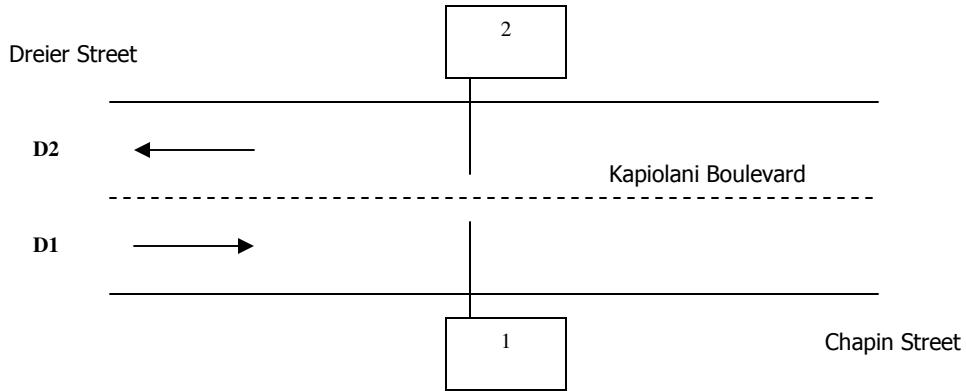
Traffic Station Sketch



Section ID/Station #: B72750300000

Island: Oahu

Area: Honolulu



<u>Meter #</u>	<u>File Name</u>	<u>GPS</u>
1. bt27	D0221005_B72750300000	21.30052, -157.85394
2. y217	D0221006_B72750300000	21.30052, -157.85394

Station Description: Kapiolani Boulevard: Dreier Street to Chapin Street					
Survey Beginning Date/Time: 2/21/2012 @ 0000			Survey Ending Date/Time: 2/22/2012 @ 2400		
Survey Method:	Road Tube	Data Type:	Volume		
Survey Crew:	LM			V5	
Sketch Updated:	By:			SR	
Remarks:					
FACILITY NAME	JURI	FUNC CLASS	AREA TYPE	ROUTE NO.	MILE
Kapiolani Boulevard		14		7503	
D1= Direction to End D2= Direction to Begin			D1: Chapin Street / Waialae Avenue D2: Dreier Street / South Street		

Run Date: 2013/02/28

Hawaii Department of Transportation
Highways Division Highways Planning Survey Section

2012 Program Count - Summary

Site ID: B72750300000

Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER

Location: Kapiolani Blvd b/t South St and Ward A

Town: Oahu

Count Type: VOLUME

DIR 1: +MP

DIR 2: -MP

Final AADT: 32000

Route No: 7503

Table with columns for TIME-AM, DIR 1, DIR 2, TOTAL, TIME-PM, DIR 1, DIR 2, TOTAL. Includes sub-sections for AM COMMUTER PERIOD, PM COMMUTER PERIOD, AM PERIOD, and NON-COMMUTER PERIOD, each with directional and peak volume data.

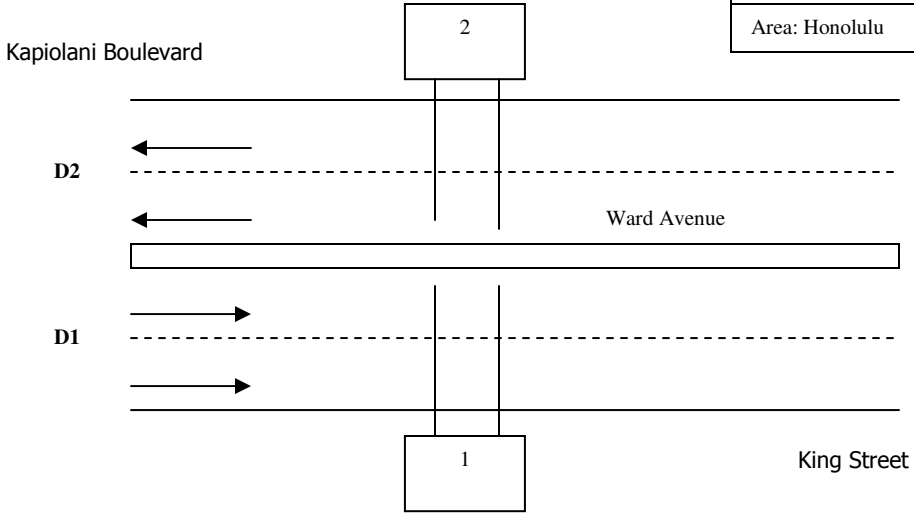


Traffic Data Service

Traffic Station Sketch

Section ID/Station #: B72751100042

Island: Oahu
Area: Honolulu



<u>Meter #</u>	<u>File Name</u>	<u>GPS</u>
1. s172	D0229003_B72751100042	21.2994, -157.85233
2. bw60	D0229004_B72751100042	

Station Description: Ward Avenue: Kapiolani Boulevard to King Street					
Survey Beginning Date/Time: 2/29/2012 @ 0000			Survey Ending Date/Time: 3/1/2012 @ 2400		
Survey Method:	Road Tube		Data Type:	Class	
Survey Crew:	LM			C1	
Sketch Updated:				By:	SR
Remarks:					
FACILITY NAME	JURI	FUNC CLASS	AREA TYPE	ROUTE NO.	ROUTE MILE
Ward Avenue		16		7511	
D1= Direction to End D2= Direction to Begin			D1: King Street / Prospect Street D2: Kapiolani Boulevard. / Ala Moana Boulevard		

Run Date: 2013/02/28

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2012 Program Count - Summary

Site ID: B72751100042
 Functional Class: URBAN:MINOR ARTERIAL
 Location:

Town: Oahu
 Count Type: CLASS

DIR 1: +MP DIR 2: -MP Final AADT: 21800
 Counter Type: Tube Route No: 7511

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 02/29/2012															
12:00-12:15	28	14	42	06:00-06:15	36	136	172	12:00-12:15	161	207	368	06:00-06:15	180	226	406
12:15-12:30	24	20	44	06:15-06:30	48	153	201	12:15-12:30	148	239	387	06:15-06:30	162	196	358
12:30-12:45	33	17	50	06:30-06:45	71	152	223	12:30-12:45	180	228	408	06:30-06:45	171	201	372
12:45-01:00	20	13	33	06:45-07:00	105	207	312	12:45-01:00	158	233	391	06:45-07:00	140	175	315
01:00-01:15	20	16	36	07:00-07:15	111	160	271	01:00-01:15	179	224	403	07:00-07:15	175	158	333
01:15-01:30	13	17	30	07:15-07:30	115	218	333	01:15-01:30	192	232	424	07:15-07:30	166	126	292
01:30-01:45	19	14	33	07:30-07:45	125	238	363	01:30-01:45	178	177	355	07:30-07:45	127	163	290
01:45-02:00	9	18	27	07:45-08:00	126	249	375	01:45-02:00	170	193	363	07:45-08:00	128	147	275
02:00-02:15	19	17	36	08:00-08:15	93	259	352	02:00-02:15	176	156	332	08:00-08:15	143	102	245
02:15-02:30	20	12	32	08:15-08:30	129	179	308	02:15-02:30	174	202	376	08:15-08:30	131	122	253
02:30-02:45	6	9	15	08:30-08:45	98	191	289	02:30-02:45	165	187	352	08:30-08:45	128	101	229
02:45-03:00	8	9	17	08:45-09:00	89	243	332	02:45-03:00	166	235	401	08:45-09:00	132	82	214
03:00-03:15	3	9	12	09:00-09:15	92	201	293	03:00-03:15	161	192	353	09:00-09:15	143	88	231
03:15-03:30	9	10	19	09:15-09:30	98	205	303	03:15-03:30	182	188	370	09:15-09:30	126	94	220
03:30-03:45	11	9	20	09:30-09:45	132	205	337	03:30-03:45	206	212	418	09:30-09:45	112	86	198
03:45-04:00	12	14	26	09:45-10:00	120	235	355	03:45-04:00	179	232	411	09:45-10:00	101	94	195
04:00-04:15	10	23	33	10:00-10:15	109	215	324	04:00-04:15	181	232	413	10:00-10:15	89	98	187
04:15-04:30	12	27	39	10:15-10:30	117	232	349	04:15-04:30	137	240	377	10:15-10:30	71	66	137
04:30-04:45	7	35	42	10:30-10:45	157	210	367	04:30-04:45	157	247	404	10:30-10:45	61	73	134
04:45-05:00	13	35	48	10:45-11:00	120	237	357	04:45-05:00	137	253	390	10:45-11:00	55	55	110
05:00-05:15	12	55	67	11:00-11:15	170	251	421	05:00-05:15	132	238	370	11:00-11:15	49	52	101
05:15-05:30	13	72	85	11:15-11:30	149	227	376	05:15-05:30	121	207	328	11:15-11:30	54	47	101
05:30-05:45	24	76	100	11:30-11:45	138	230	368	05:30-05:45	176	213	389	11:30-11:45	39	44	83
05:45-06:00	29	118	147	11:45-12:00	165	242	407	05:45-06:00	168	203	371	11:45-12:00	44	48	92
AM COMMUTER PERIOD (05:00-09:00)			DIR 1	DIR 2			PM COMMUTER PERIOD (15:00-19:00)			DIR 1	DIR 2				
TWO DIRECTIONAL PEAK			07:15 AM to 08:15 AM			TWO DIRECTIONAL PEAK			03:30 PM to 04:30 PM						
AM - PEAK HR TIME						PM - PEAK HR TIME									
AM - PEAK HR VOLUME			459	964		1423	PM - PEAK HR VOLUME			703	916		1619		
AM - K FACTOR (%)						6.10	PM - K FACTOR (%)			6.93					
AM - D (%)			32.26	67.74		100.00	PM - D (%)			43.42	56.58		100.00		
DIRECTIONAL PEAK			07:00 AM to 08:00 AM			07:15 AM to 08:15 AM			03:15 PM to 04:15 PM			04:15 PM to 05:15 PM			
AM - PEAK HR TIME						PM - PEAK HR TIME									
AM - PEAK HR VOLUME			477	964		PM - PEAK HR VOLUME			748	978					
AM PERIOD (00:00-12:00)						PM PERIOD (12:00-24:00)									
TWO DIRECTIONAL PEAK			11:00 AM to 12:00 PM			TWO DIRECTIONAL PEAK			12:30 PM to 01:30 PM						
AM - PEAK HR TIME						PM - PEAK HR TIME									
AM - PEAK HR VOLUME			622	950		1572	PM - PEAK HR VOLUME			709	917		1626		
AM - K FACTOR (%)						6.73	PM - K FACTOR (%)			6.96					
AM - D (%)			39.57	60.43		100.00	PM - D (%)			43.60	56.40		100.00		
NON-COMMUTER PERIOD (09:00-15:00)						6-HR, 12-HR, 24-HR PERIODS			DIR 1	DIR 2	Total				
TWO DIRECTIONAL PEAK			12:30 PM to 01:30 PM			AM 6-HR PERIOD (06:00-12:00)			2,713	5,075	7,788				
PEAK HR TIME						AM 12-HR PERIOD (00:00-12:00)			3,087	5,734	8,821				
PEAK HR VOLUME			709	917		1626	PM 6-HR PERIOD (12:00-18:00)			3,984	5,170	9,154			
DIRECTIONAL PEAK			01:00 PM to 02:00 PM			11:00 AM to 12:00 PM			PM 12-HR PERIOD (12:00-24:00)			6,711	7,814	14,525	
PEAK HR TIME						24 HOUR PERIOD			9,798	13,548	23,346				
PEAK HR VOLUME			719	950		D (%)			41.97	58.03	100.00				

Run Date: 2013/02/28

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2012 Program Count - Summary

Site ID: B72751100042

Functional Class: URBAN:MINOR ARTERIAL

Location:

Town: Oahu

Count Type: CLASS

DIR 1: +MP

DIR 2: -MP

Final AADT: 21800

Counter Type: Tube

Route No: 7511

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 03/01/2012															
12:00-12:15	44	23	67	06:00-06:15	41	130	171	12:00-12:15	169	260	429	06:00-06:15	194	174	368
12:15-12:30	27	17	44	06:15-06:30	44	168	212	12:15-12:30	159	181	340	06:15-06:30	166	187	353
12:30-12:45	39	20	59	06:30-06:45	53	160	213	12:30-12:45	163	220	383	06:30-06:45	167	165	332
12:45-01:00	35	15	50	06:45-07:00	74	192	266	12:45-01:00	167	223	390	06:45-07:00	171	174	345
01:00-01:15	25	10	35	07:00-07:15	105	191	296	01:00-01:15	152	193	345	07:00-07:15	151	164	315
01:15-01:30	26	10	36	07:15-07:30	113	226	339	01:15-01:30	176	205	381	07:15-07:30	137	157	294
01:30-01:45	27	12	39	07:30-07:45	121	240	361	01:30-01:45	165	183	348	07:30-07:45	147	177	324
01:45-02:00	42	21	63	07:45-08:00	121	252	373	01:45-02:00	166	204	370	07:45-08:00	122	137	259
02:00-02:15	41	2	43	08:00-08:15	102	221	323	02:00-02:15	143	182	325	08:00-08:15	122	136	258
02:15-02:30	31	15	46	08:15-08:30	88	200	288	02:15-02:30	193	168	361	08:15-08:30	120	121	241
02:30-02:45	18	7	25	08:30-08:45	102	215	317	02:30-02:45	191	228	419	08:30-08:45	135	126	261
02:45-03:00	19	15	34	08:45-09:00	94	217	311	02:45-03:00	163	185	348	08:45-09:00	105	97	202
03:00-03:15	9	13	22	09:00-09:15	104	225	329	03:00-03:15	142	201	343	09:00-09:15	146	88	234
03:15-03:30	10	14	24	09:15-09:30	92	230	322	03:15-03:30	188	191	379	09:15-09:30	139	95	234
03:30-03:45	7	15	22	09:30-09:45	115	229	344	03:30-03:45	167	224	391	09:30-09:45	97	90	187
03:45-04:00	14	24	38	09:45-10:00	123	210	333	03:45-04:00	201	216	417	09:45-10:00	90	80	170
04:00-04:15	16	19	35	10:00-10:15	141	227	368	04:00-04:15	192	207	399	10:00-10:15	88	64	152
04:15-04:30	16	31	47	10:15-10:30	109	232	341	04:15-04:30	168	216	384	10:15-10:30	58	77	135
04:30-04:45	12	38	50	10:30-10:45	128	206	334	04:30-04:45	191	232	423	10:30-10:45	73	65	138
04:45-05:00	11	40	51	10:45-11:00	123	238	361	04:45-05:00	154	220	374	10:45-11:00	50	39	89
05:00-05:15	12	50	62	11:00-11:15	121	242	363	05:00-05:15	165	198	363	11:00-11:15	45	49	94
05:15-05:30	14	87	101	11:15-11:30	152	239	391	05:15-05:30	168	230	398	11:15-11:30	54	41	95
05:30-05:45	22	70	92	11:30-11:45	141	233	374	05:30-05:45	194	180	374	11:30-11:45	43	36	79
05:45-06:00	22	89	111	11:45-12:00	156	226	382	05:45-06:00	177	211	388	11:45-12:00	50	41	91
AM COMMUTER PERIOD (05:00-09:00)			DIR 1	DIR 2			PM COMMUTER PERIOD (15:00-19:00)			DIR 1	DIR 2				
TWO DIRECTIONAL PEAK			07:15 AM to 08:15 AM			TWO DIRECTIONAL PEAK			03:45 PM to 04:45 PM						
AM - PEAK HR TIME						PM - PEAK HR TIME									
AM - PEAK HR VOLUME			457	939		1396	PM - PEAK HR VOLUME			752	871		1623		
AM - K FACTOR (%)						6.01	PM - K FACTOR (%)			6.99					
AM - D (%)			32.74	67.26		100.00	PM - D (%)			46.33	53.67		100.00		
DIRECTIONAL PEAK			07:00 AM to 08:00 AM			DIRECTIONAL PEAK			03:45 PM to 04:45 PM			04:30 PM to 05:30 PM			
AM - PEAK HR TIME						PM - PEAK HR TIME									
AM - PEAK HR VOLUME			460	939		PM - PEAK HR VOLUME			752	880					
AM PERIOD (00:00-12:00)						PM PERIOD (12:00-24:00)									
TWO DIRECTIONAL PEAK			11:00 AM to 12:00 PM			TWO DIRECTIONAL PEAK			03:45 PM to 04:45 PM						
AM - PEAK HR TIME						PM - PEAK HR TIME									
AM - PEAK HR VOLUME			570	940		1510	PM - PEAK HR VOLUME			752	871		1623		
AM - K FACTOR (%)						6.50	PM - K FACTOR (%)			6.99					
AM - D (%)			37.75	62.25		100.00	PM - D (%)			46.33	53.67		100.00		
NON-COMMUTER PERIOD (09:00-15:00)						6-HR, 12-HR, 24-HR PERIODS			DIR 1	DIR 2	Total				
TWO DIRECTIONAL PEAK			11:15 AM to 12:15 PM			AM 6-HR PERIOD (06:00-12:00)			2,563	5,149	7,712				
PEAK HR TIME						AM 12-HR PERIOD (00:00-12:00)			3,102	5,806	8,908				
PEAK HR VOLUME			618	958		1576	PM 6-HR PERIOD (12:00-18:00)			4,114	4,958	9,072			
DIRECTIONAL PEAK			01:45 PM to 02:45 PM			PM 12-HR PERIOD (12:00-24:00)			6,784	7,538	14,322				
PEAK HR TIME						24 HOUR PERIOD			9,886	13,344	23,230				
PEAK HR VOLUME			693	958		D (%)			42.56	57.44	100.00				

Run Date: 2013/02/28

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2012

Site ID: B72751100042

Route No: 7511

Date From: 2012/02/29 0:00

Town: Oahu

Direction: +MP

Date To: 2012/03/01 23:45

Location:

Functional Classification: 16 URBAN:MINOR ARTERIAL
REPORT TOTALS - 48 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
Cycles	442	0.95%	885
PC	20574	44.17%	41148
2A-4T	22711	48.76%	45422

LIGHT VEHICLE TOTALS	43728	93.88%	87455
HEAVY VEHICLES			
Bus	156	0.33%	390
SINGLE UNIT TRUCK			
2A-6T	405	0.87%	810
3A-SU	525	1.13%	1575
4A-SU	564	1.21%	2256
SINGLE-TRAILER TRUCKS			
4A-ST	962	2.07%	3848
5A-ST	23	0.05%	115
6A-ST	54	0.12%	324
MULTI-TRAILER TRUCKS			
5A-MT	62	0.13%	310
6A-MT	41	0.09%	246
7A-MT	55	0.12%	385

HEAVY VEHICLE TOTALS	2847	6.11%	10259
CLASSIFIED VEHICLES TOTALS	46574 (A)	100.00%	97714 (B)
UNCLASSIFIED VEHICLES TOTALS	2	0.00%	

AXLE
CORRECTION
FACTOR (A/C) = 0.953

ROADTUBE
EQUIVALENT(B/2) = 48857 (C)

PEAK HOUR VOLUME : 1584 2012/02/29 16:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	44	(65A-1) 2.78%	825	21800	(65A-2) 3.78%	7.27%
COMBINATION (TYPE 8-13)	44	(65B-1) 2.78%	598		(65B-2) 2.74%	7.27%

Appendix B: Intersection Level of Service Definitions

Highway Capacity Manual 2010

Signalized intersection level of service (LOS) is defined in terms of a weighted average control delay for the entire intersection. Control delay quantifies the increase in travel time that a vehicle experiences due to the traffic signal control as well as provides a surrogate measure for driver discomfort and fuel consumption. Signalized intersection LOS is stated in terms of average control delay per vehicle (in seconds) during a specified time period (e.g., weekday PM peak hour). Control delay is a complex measure based on many variables, including signal phasing and coordination (i.e., progression of movements through the intersection and along the corridor), signal cycle length, and traffic volumes with respect to intersection capacity and resulting queues. Table 1 summarizes the LOS criteria for signalized intersections, as described in the *Highway Capacity Manual 2010* (Transportation Research Board, 2010).

Table 1. Level of Service Criteria for Signalized Intersections

Level of Service	Average Control Delay (seconds/vehicle)	General Description
A	≤10	Free Flow
B	>10 – 20	Stable Flow (slight delays)
C	>20 – 35	Stable flow (acceptable delays)
D	>35 – 55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	>55 – 80	Unstable flow (intolerable delay)
F ¹	>80	Forced flow (congested and queues fail to clear)

Source: *Highway Capacity Manual 2010*, Transportation Research Board, 2010.

1. If the volume-to-capacity (v/c) ratio for a lane group exceeds 1.0 LOS F is assigned to the individual lane group. LOS for overall approach or intersection is determined solely by the control delay.

Unsignalized intersection LOS criteria can be further reduced into three intersection types: all-way stop, two-way stop, and roundabout control. All-way stop and roundabout control intersection LOS is expressed in terms of the weighted average control delay of the overall intersection or by approach. Two-way stop-controlled intersection LOS is defined in terms of the average control delay for each minor-street movement (or shared movement) as well as major-street left-turns. This approach is because major-street through vehicles are assumed to experience zero delay, a weighted average of all movements results in very low overall average delay, and this calculated low delay could mask deficiencies of minor movements. Table 2 shows LOS criteria for unsignalized intersections.

Table 2. Level of Service Criteria for Unsignalized Intersections

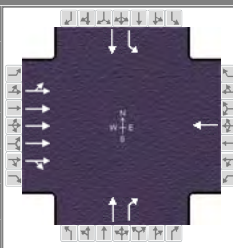
Level of Service	Average Control Delay (seconds/vehicle)
A	0 – 10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F ¹	>50

Source: *Highway Capacity Manual 2010*, Transportation Research Board, 2010.

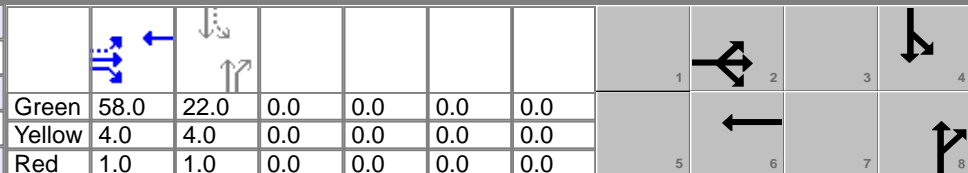
1. If the volume-to-capacity (v/c) ratio exceeds 1.0, LOS F is assigned an individual lane group for all unsignalized intersections, or minor street approach at two-way stop-controlled intersections. Overall intersection LOS is determined solely by control delay.

Appendix C: Highway Capacity Software 2010 Worksheets

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/25/2017				
Jurisdiction		Time Period					
Urban Street	South King Street	Analysis Year	2017				
Intersection	South King and Victoria...	File Name	King_Victoria_10.18_AM_ALL.xus				
Project Description	AM Peak Hour Wednesday 10/18/17						

Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	240	1393	69		0			8	0	389	110	

Signal Information												
Cycle, s	90.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
		Green	58.0	22.0	0.0	0.0	0.0	0.0				
		Yellow	4.0	4.0	0.0	0.0	0.0	0.0				
		Red	1.0	1.0	0.0	0.0	0.0	0.0				

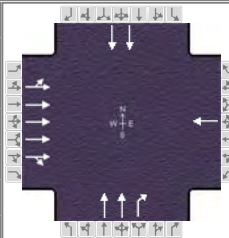
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		6.0
Phase Duration, s		63.0		63.0		27.0		27.0
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g_s), s						2.3		24.0
Green Extension Time (g_e), s		0.0		0.0		1.1		0.0
Phase Call Probability						1.00		1.00
Max Out Probability						0.00		1.00

Movement Group Results	EB			WB			NB			SB			
	L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement	5	2	12		6			8	18	7	4		
Adjusted Flow Rate (v), veh/h	356	1130	364		0			9	0	423	120		
Adjusted Saturation Flow Rate (s), veh/h/ln	1540	1729	1667		1900			1900	1610	1429	1900		
Queue Service Time (g_s), s	9.6	8.9	8.9		0.0			0.3	0.0	21.7	4.6		
Cycle Queue Clearance Time (g_c), s	9.6	8.9	8.9		0.0			0.3	0.0	22.0	4.6		
Green Ratio (g/C)	0.64	0.64	0.64		0.64			0.24	0.24	0.24	0.24		
Capacity (c), veh/h	1062	3343	1074		1224			464	394	424	464		
Volume-to-Capacity Ratio (X)	0.336	0.338	0.339		0.000			0.019	0.000	0.997	0.257		
Back of Queue (Q), ft/ln (50 th percentile)	78.5	76.9	78.7		0			3.6	0	361.6	52.1		
Back of Queue (Q), veh/ln (50 th percentile)	3.1	3.1	3.1		0.0			0.1	0.0	14.5	2.1		
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.00	1.38	0.00		
Uniform Delay (d_1), s/veh	7.4	7.3	7.3		0.0			25.8	0.0	36.2	27.4		
Incremental Delay (d_2), s/veh	0.9	0.3	0.9		0.0			0.0	0.0	42.7	0.1		
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0		
Control Delay (d), s/veh	8.3	7.5	8.1		0.0			25.8	0.0	78.9	27.5		
Level of Service (LOS)	A	A	A					C		E	C		
Approach Delay, s/veh / LOS	7.8		A		0.0			25.8		C	67.6		E
Intersection Delay, s/veh / LOS	21.4						C						

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.6	B	3.6	D	2.8	C
Bicycle LOS Score / LOS	1.1	A	0.5	A	0.5	A	1.4	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/24/2017		Area Type	Other	
Jurisdiction		Time Period				PHF	0.92
Urban Street	South King Street	Analysis Year	2017		Analysis Period	1 > 7:00	
Intersection	South King Street and...	File Name	King_Ward_10.15_Sunday_ALL.xus				
Project Description	AM Peak on Wednesday 10/18/17						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	185	1456	80		0			197	246		1176	

Signal Information				Signal Timing (s)								Signal Phases			
Cycle, s	90.0	Reference Phase	2												
Offset, s	0	Reference Point	End	Green	40.0	40.0	0.0	0.0	0.0	0.0					
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0					
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	0.0	0.0	0.0	0.0					

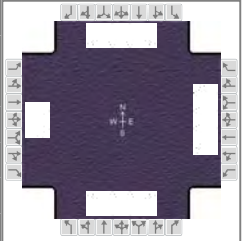
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		8.0
Phase Duration, s		45.0		45.0		45.0		45.0
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g_s), s						12.0		29.3
Green Extension Time (g_e), s		0.0		0.0		5.6		4.2
Phase Call Probability						1.00		1.00
Max Out Probability						0.02		0.29

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6			8	18		4	
Adjusted Flow Rate (v), veh/h	374	1134	363		0			214	267		1278	
Adjusted Saturation Flow Rate (s), veh/h/ln	1624	1729	1658		1900			1809	1610		1809	
Queue Service Time (g_s), s	14.5	14.0	14.0		0.0			3.1	10.0		27.3	
Cycle Queue Clearance Time (g_c), s	14.9	14.0	14.0		0.0			3.1	10.0		27.3	
Green Ratio (g/C)	0.44	0.44	0.44		0.44			0.44	0.44		0.44	
Capacity (c), veh/h	783	2305	737		844			1608	716		1608	
Volume-to-Capacity Ratio (X)	0.477	0.492	0.493		0.000			0.133	0.374		0.795	
Back of Queue (Q), ft/ln (50 th percentile)	147.4	139.4	142.4		0			32	90.5		291.6	
Back of Queue (Q), veh/ln (50 th percentile)	5.9	5.6	5.7		0.0			1.3	3.6		11.7	
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.00		0.00	
Uniform Delay (d_1), s/veh	18.0	17.8	17.8		0.0			14.8	16.7		21.5	
Incremental Delay (d_2), s/veh	2.1	0.8	2.3		0.0			0.0	0.1		2.6	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0		0.0			0.0	0.0		0.0	
Control Delay (d), s/veh	20.1	18.5	20.1		0.0			14.8	16.8		24.1	
Level of Service (LOS)	C	B	C					B	B		C	
Approach Delay, s/veh / LOS	19.1	B		0.0			15.9	B		24.1	C	
Intersection Delay, s/veh / LOS	20.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.8	C	2.7	B	3.5	D	2.7	B
Bicycle LOS Score / LOS	1.1	A	0.5	A	0.9	A	1.5	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	0.25			
Analyst		Analysis Date	10/25/2017		Area Type	Other
Jurisdiction		Time Period		PHF	0.92	
Urban Street	Kapiolani Boulevard	Analysis Year	2017		Analysis Period	1 > 7:00
Intersection	Kapiolani and Ward Ave...	File Name	Kapiolani_Ward_10.18_AM_ALL.xus			
Project Description	AM Peak Hour Wednesday 10/18/17					



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h		492	107	243	1244	87	126	356	78	188	796	272

Signal Information													
Cycle, s	120.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	No	Simult. Gap E/W	On	Green	20.0	27.0	13.0	3.0	32.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	4.0	4.0	0.0			
				Red	1.0	1.0	1.0	1.0	1.0	0.0			

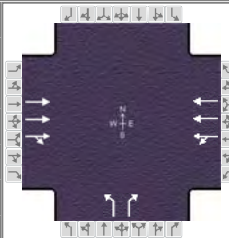
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6	5	2	3	8	7	4
Case Number		8.3	2.0	4.0	2.0	3.0	2.0	3.0
Phase Duration, s		32.0	25.0	57.0	18.0	37.0	26.0	45.0
Change Period, ($Y+R_c$), s		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (MAH), s		0.0	3.3	0.0	3.3	3.2	3.3	3.2
Queue Clearance Time (g_s), s			19.1		10.8	12.5	14.6	27.1
Green Extension Time (g_e), s		0.0	0.1	0.0	0.0	4.5	0.2	4.0
Phase Call Probability			1.00		1.00	1.00	1.00	1.00
Max Out Probability			1.00		1.00	0.04	0.05	0.16

Movement Group Results	EB			WB			NB			SB			
	L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement		6	16	5	2	12	3	8	18	7	4	14	
Adjusted Flow Rate (v), veh/h		335	316	264	976	471	137	387	85	204	865	296	
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1782	1810	1900	1834	1810	1809	1610	1810	1809	1610	
Queue Service Time (g_s), s		19.8	20.1	17.1	23.5	23.5	8.8	10.5	4.9	12.6	25.1	18.0	
Cycle Queue Clearance Time (g_c), s		19.8	20.1	17.1	23.5	23.5	8.8	10.5	4.9	12.6	25.1	18.0	
Green Ratio (g/C)		0.22	0.22	0.17	0.43	0.43	0.11	0.27	0.27	0.18	0.33	0.33	
Capacity (c), veh/h		428	401	302	1647	795	196	965	429	317	1206	537	
Volume-to-Capacity Ratio (X)		0.783	0.789	0.876	0.593	0.593	0.699	0.401	0.197	0.645	0.718	0.551	
Back of Queue (Q), ft/ln (50 th percentile)		275.1	262.9	242.2	275	274.6	112.3	118.2	48.9	150.6	285.4	179.6	
Back of Queue (Q), veh/ln (50 th percentile)		11.0	10.5	9.7	11.0	11.0	4.5	4.7	2.0	6.0	11.4	7.2	
Queue Storage Ratio (RQ) (50 th percentile)		0.00	0.00	0.00	0.00	0.00	0.80	0.00	0.27	0.61	0.00	0.00	
Uniform Delay (d_1), s/veh		43.7	43.8	48.8	25.9	25.9	51.6	36.1	34.1	46.0	35.0	32.7	
Incremental Delay (d_2), s/veh		13.4	14.5	23.0	1.6	3.2	8.9	0.1	0.1	3.5	1.8	0.7	
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (d), s/veh		57.1	58.3	71.8	27.5	29.2	60.5	36.2	34.1	49.6	36.8	33.4	
Level of Service (LOS)		E	E	E	C	C	E	D	C	D	D	C	
Approach Delay, s/veh / LOS	57.7	E		34.8			C			41.4		D	
Intersection Delay, s/veh / LOS	40.2						D						

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	2.9	C	3.0	C	3.1	C
Bicycle LOS Score / LOS	1.0	A	1.4	A	1.0	A	1.6	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	0.25			
Analyst		Analysis Date	10/24/2017		Area Type	Other
Jurisdiction		Time Period		PHF	0.92	
Urban Street	Kapiolani Boulevard	Analysis Year	2017		Analysis Period	1 > 7:00
Intersection	Kapiolani and Kamakee	File Name	Kapiolani_Kamakee_10.18_AM_ALL.xus			
Project Description	AM Peak on Wednesday 10/18/17					



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h		653	105	177	1535		82		46			

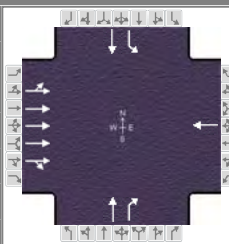
Signal Information												
Cycle, s	120.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
		Green	85.0	25.0	0.0	0.0	0.0	0.0				
		Yellow	4.0	4.0	0.0	0.0	0.0	0.0				
		Red	1.0	1.0	0.0	0.0	0.0	0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		8.0		8.0		9.0		
Phase Duration, s		90.0		90.0		30.0		
Change Period, (Y+R _c), s		5.0		5.0		5.0		
Max Allow Headway (MAH), s		0.0		0.0		3.3		
Queue Clearance Time (g _s), s						6.9		
Green Extension Time (g _e), s		0.0		0.0		0.2		
Phase Call Probability						1.00		
Max Out Probability						0.00		

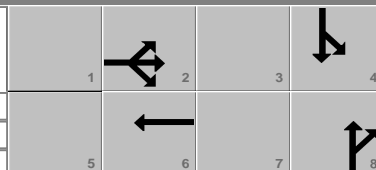
Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement		2	12	1	6		3		18			
Adjusted Flow Rate (v), veh/h		560	264	438	1423		89		50			
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1763	1003	1729		1810		1610			
Queue Service Time (g _s), s		6.0	6.2	26.0	19.7		4.9		3.0			
Cycle Queue Clearance Time (g _c), s		6.0	6.2	32.2	19.7		4.9		3.0			
Green Ratio (g/C)		0.71	0.71	0.71	0.71		0.21		0.21			
Capacity (c), veh/h		2692	1249	754	2449		377		335			
Volume-to-Capacity Ratio (X)		0.208	0.211	0.581	0.581		0.236		0.149			
Back of Queue (Q), ft/ln (50 th percentile)		59.4	57.9	170.6	221.6		55.9		30.8			
Back of Queue (Q), veh/ln (50 th percentile)		2.4	2.3	6.8	8.9		2.2		1.2			
Queue Storage Ratio (RQ) (50 th percentile)		0.00	0.00	0.00	0.00		0.40		0.22			
Uniform Delay (d ₁), s/veh		6.0	6.0	10.8	8.7		39.6		38.8			
Incremental Delay (d ₂), s/veh		0.2	0.4	3.3	1.0		0.1		0.1			
Initial Queue Delay (d ₃), s/veh		0.0	0.0	0.0	0.0		0.0		0.0			
Control Delay (d), s/veh		6.2	6.4	14.1	9.7		39.7		38.9			
Level of Service (LOS)		A	A	B	A		D		D			
Approach Delay, s/veh / LOS	6.2	A		10.7	B		39.4	D		0.0		
Intersection Delay, s/veh / LOS	10.8						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.6	A	0.7	A	3.2	C	3.2	C
Bicycle LOS Score / LOS	0.9	A	1.5	A		F		

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/25/2017				
Jurisdiction		Time Period					
Urban Street	South King Street	Analysis Year	2017				
Intersection	South King and Victoria...	File Name	King_Victoria_10.18_PM_ALL.xus				
Project Description	PM Peak Hour Wednesday 10/18/17						

Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	419	1800	152		0			152	107	206	110	

Signal Information												
Cycle, s	90.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
		Green	58.0	22.0	0.0	0.0	0.0	0.0				
		Yellow	4.0	4.0	0.0	0.0	0.0	0.0				
		Red	1.0	1.0	0.0	0.0	0.0	0.0				

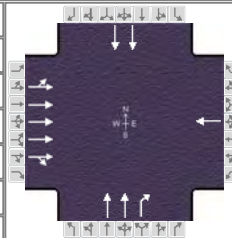
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		6.0
Phase Duration, s		63.0		63.0		27.0		27.0
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		3.2		0.0		3.4		3.4
Queue Clearance Time (g_s), s		17.4				8.5		24.0
Green Extension Time (g_e), s		9.4		0.0		1.2		0.0
Phase Call Probability		1.00				1.00		1.00
Max Out Probability		0.04				0.01		1.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6			8	18	7	4	
Adjusted Flow Rate (v), veh/h	473	1562	499		0			165	100	224	120	
Adjusted Saturation Flow Rate (s), veh/h/ln	1453	1729	1656		1900			1900	1610	1240	1900	
Queue Service Time (g_s), s	15.4	13.8	13.8		0.0			6.5	4.5	15.5	4.6	
Cycle Queue Clearance Time (g_c), s	15.4	13.8	13.8		0.0			6.5	4.5	22.0	4.6	
Green Ratio (g/C)	0.64	0.64	0.64		0.64			0.24	0.24	0.24	0.24	
Capacity (c), veh/h	1015	3343	1067		1224			464	394	294	464	
Volume-to-Capacity Ratio (X)	0.466	0.467	0.467		0.000			0.356	0.254	0.762	0.257	
Back of Queue (Q), ft/ln (50 th percentile)	110.3	116	111.7		0			73.9	43.5	143.7	52.1	
Back of Queue (Q), veh/ln (50 th percentile)	4.4	4.6	4.5		0.0			3.0	1.7	5.7	2.1	
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.32	0.55	0.00	
Uniform Delay (d_1), s/veh	8.4	8.1	8.1		0.0			28.1	27.4	37.6	27.4	
Incremental Delay (d_2), s/veh	0.1	0.0	0.1		0.0			0.2	0.1	10.1	0.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0	
Control Delay (d), s/veh	8.6	8.2	8.3		0.0			28.3	27.5	47.7	27.5	
Level of Service (LOS)	A	A	A					C	C	D	C	
Approach Delay, s/veh / LOS	8.3		A		0.0			28.0		C	40.7	D
Intersection Delay, s/veh / LOS	13.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.8	C	3.6	D	2.7	B
Bicycle LOS Score / LOS	1.3	A	0.5	A	0.9	A	1.1	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/25/2017		Area Type	Other	
Jurisdiction		Time Period				PHF	0.92
Urban Street	South King Street	Analysis Year	2017		Analysis Period	1 > 7:00	
Intersection	South King and Ward Av...	File Name	King_Ward_10.18_PM_ALL.xus				
Project Description	PM Peak Wednesday 10/18/17						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	248	2049	147		0			455	342		1138	

Signal Information				Signal Phases									
Cycle, s	90.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	50.0	30.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
				Red	1.0	1.0	0.0	0.0	0.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		8.0
Phase Duration, s		55.0		55.0		35.0		35.0
Change Period, (Y+R _c), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		3.2		0.0		3.2		3.2
Queue Clearance Time (g _s), s		20.6				17.4		32.0
Green Extension Time (g _e), s		9.3		0.0		5.3		0.0
Phase Call Probability		1.00				1.00		1.00
Max Out Probability		0.12				0.29		1.00

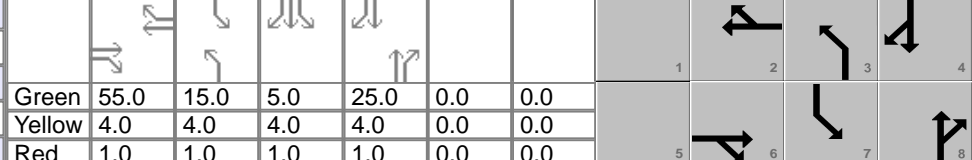
Movement Group Results	EB			WB			NB			SB			
	L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement	5	2	12		6			8	18		4		
Adjusted Flow Rate (v), veh/h	516	1588	509		0			495	328		1237		
Adjusted Saturation Flow Rate (s), veh/h/ln	1628	1729	1661		1900			1809	1610		1809		
Queue Service Time (g _s), s	18.6	17.7	17.7		0.0			9.5	15.4		30.0		
Cycle Queue Clearance Time (g _c), s	18.6	17.7	17.7		0.0			9.5	15.4		30.0		
Green Ratio (g/C)	0.56	0.56	0.56		0.56			0.33	0.33		0.33		
Capacity (c), veh/h	966	2882	923		1056			1206	537		1206		
Volume-to-Capacity Ratio (X)	0.535	0.551	0.551		0.000			0.410	0.612		1.026		
Back of Queue (Q), ft/ln (50 th percentile)	162	161.9	157.4		0			100.5	149.9		453.4		
Back of Queue (Q), veh/ln (50 th percentile)	6.5	6.5	6.3		0.0			4.0	6.0		18.1		
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.00		0.00		
Uniform Delay (d ₁), s/veh	13.0	12.8	12.8		0.0			23.2	25.1		30.0		
Incremental Delay (d ₂), s/veh	0.3	0.1	0.4		0.0			0.1	1.5		32.7		
Initial Queue Delay (d ₃), s/veh	0.0	0.0	0.0		0.0			0.0	0.0		0.0		
Control Delay (d), s/veh	13.3	12.9	13.2		0.0			23.3	26.6		62.7		
Level of Service (LOS)	B	B	B					C	C		F		
Approach Delay, s/veh / LOS	13.1		B		0.0			24.6		C	62.7		E
Intersection Delay, s/veh / LOS	28.2						C						

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.9		C	2.7		B	3.6		D	2.8		C
Bicycle LOS Score / LOS	1.3		A	0.5		A	1.2		A	1.5		A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/25/2017				
Jurisdiction		Time Period					
Urban Street	Kapiolani Boulevard	Analysis Year	2017				
Intersection	Kapiolani and Ward Ave...	File Name	Kapiolani_Ward_10.18_PM_ALL.xus				
Project Description	PM Peak Wednesday 10/18/17						

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h		1337	126		1263	232	182	565	233	293	834	158

Signal Information												
Cycle, s	120.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
		Green	55.0	15.0	5.0	25.0	0.0	0.0				
		Yellow	4.0	4.0	4.0	4.0	0.0	0.0				
		Red	1.0	1.0	1.0	1.0	0.0	0.0				

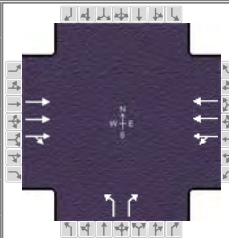
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2	3	8	7	4
Case Number		8.0		8.0	2.0	3.0	2.0	3.0
Phase Duration, s		60.0		60.0	20.0	30.0	30.0	40.0
Change Period, ($Y+R_c$), s		5.0		5.0	5.0	5.0	5.0	5.0
Max Allow Headway (MAH), s		3.2		3.2	3.3	3.2	3.3	3.2
Queue Clearance Time (g_s), s		26.9		27.2	14.9	21.4	22.3	30.4
Green Extension Time (g_e), s		11.7		11.6	0.0	2.1	0.2	2.5
Phase Call Probability		1.00		1.00	1.00	1.00	1.00	1.00
Max Out Probability		0.25		0.25	1.00	0.95	1.00	0.81

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16		2	12	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h		1051	507		1062	498	198	614	221	318	907	139
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1832		1900	1780	1810	1809	1610	1810	1809	1610
Queue Service Time (g_s), s		24.8	24.9		25.0	25.2	12.9	19.4	15.1	20.3	28.4	8.0
Cycle Queue Clearance Time (g_c), s		24.8	24.9		25.0	25.2	12.9	19.4	15.1	20.3	28.4	8.0
Green Ratio (g/C)		0.46	0.46		0.46	0.46	0.12	0.21	0.21	0.21	0.29	0.29
Capacity (c), veh/h		1742	840		1742	816	226	754	335	377	1055	470
Volume-to-Capacity Ratio (X)		0.603	0.603		0.610	0.610	0.875	0.815	0.658	0.845	0.859	0.296
Back of Queue (Q), ft/ln (50 th percentile)		281.7	274.3		286	271.2	191.7	236	160.2	269	342.1	80.1
Back of Queue (Q), veh/ln (50 th percentile)		11.3	11.0		11.4	10.8	7.7	9.4	6.4	10.8	13.7	3.2
Queue Storage Ratio (RQ) (50 th percentile)		0.00	0.00		0.00	0.00	1.37	0.00	0.89	1.09	0.00	0.00
Uniform Delay (d_1), s/veh		24.3	24.3		24.4	24.4	51.6	45.3	43.6	45.6	40.2	33.0
Incremental Delay (d_2), s/veh		0.4	0.9		0.5	1.0	28.4	6.4	3.7	15.2	6.9	0.1
Initial Queue Delay (d_3), s/veh		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh		24.8	25.2		24.9	25.4	80.0	51.7	47.3	60.9	47.1	33.1
Level of Service (LOS)		C	C		C	C	E	D	D	E	D	C
Approach Delay, s/veh / LOS	24.9	C		25.1	C		56.2	E		48.9	D	
Intersection Delay, s/veh / LOS		36.7				D						

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	3.0	C	3.3	C	3.2	C
Bicycle LOS Score / LOS	1.3	A	1.3	A	1.3	A	1.6	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	0.25			
Analyst		Analysis Date	10/24/2017		Area Type	Other
Jurisdiction		Time Period		PHF	0.92	
Urban Street	Kapiolani Boulevard	Analysis Year	2017		Analysis Period	1 > 7:00
Intersection	Kapiolani and Kamakee	File Name	Kapiolani_Kamakee_10.18_PM_ALL.xus			
Project Description	PM Peak on Wednesday 10/18/17					



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h		1769	94	48	933		139		181			

Signal Information													
Cycle, s	120.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	85.0	25.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
				Red	1.0	1.0	0.0	0.0	0.0	0.0			

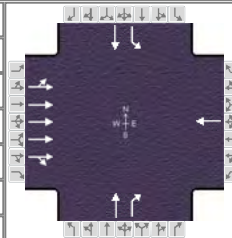
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		8.0		8.0		9.0		
Phase Duration, s		90.0		90.0		30.0		
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		
Max Allow Headway (MAH), s		3.4		3.4		3.4		
Queue Clearance Time (g_s), s		21.4		27.9		15.2		
Green Extension Time (g_e), s		17.4		17.1		0.6		
Phase Call Probability		1.00		1.00		1.00		
Max Out Probability		0.07		0.09		0.01		

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1	6		3		18			
Adjusted Flow Rate (v), veh/h		1352	662	119	947		151		197			
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1854	390	1729		1810		1610			
Queue Service Time (g_s), s		19.3	19.4	6.5	10.0		8.7		13.2			
Cycle Queue Clearance Time (g_c), s		19.3	19.4	25.9	10.0		8.7		13.2			
Green Ratio (g/C)		0.71	0.71	0.71	0.71		0.21		0.21			
Capacity (c), veh/h		2692	1313	319	2449		377		335			
Volume-to-Capacity Ratio (X)		0.502	0.504	0.374	0.387		0.401		0.586			
Back of Queue (Q), ft/ln (50 th percentile)		185.5	182.7	23.1	115.1		98.4		137			
Back of Queue (Q), veh/ln (50 th percentile)		7.4	7.3	0.9	4.6		3.9		5.5			
Queue Storage Ratio (RQ) (50 th percentile)		0.00	0.00	0.00	0.00		0.70		0.98			
Uniform Delay (d_1), s/veh		7.9	7.9	7.1	7.0		41.0		42.8			
Incremental Delay (d_2), s/veh		0.1	0.1	0.3	0.0		0.3		1.8			
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0		0.0		0.0			
Control Delay (d), s/veh		8.0	8.1	7.4	7.1		41.3		44.6			
Level of Service (LOS)		A	A	A	A		D		D			
Approach Delay, s/veh / LOS	8.0	A		7.1	A		43.2	D		0.0		
Intersection Delay, s/veh / LOS	11.3						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.6	A	0.7	A	3.2	C	3.2	C
Bicycle LOS Score / LOS	1.6	A	1.1	A		F		

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/25/2017		Area Type	Other	
Jurisdiction		Time Period				PHF	0.92
Urban Street	South King Street	Analysis Year	2017		Analysis Period	1 > 7:00	
Intersection	South King and Victoria...	File Name	King_Victoria_10.18_EVENT.xus				
Project Description	Event Peak Hour Wednesday 10/18/17						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	176	1342	155		0			36	47	149	168	

Signal Information														
Cycle, s	90.0	Reference Phase	2											
Offset, s	0	Reference Point	End											
Uncoordinated	Yes	Simult. Gap E/W	On	Green	50.0	30.0	0.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0				
				Red	1.0	1.0	0.0	0.0	0.0	0.0				

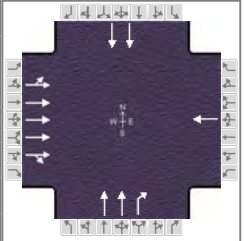
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		6.0
Phase Duration, s		55.0		55.0		35.0		35.0
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		3.2		0.0		3.2		3.2
Queue Clearance Time (g_s), s		13.2				3.8		11.3
Green Extension Time (g_e), s		5.4		0.0		0.8		0.8
Phase Call Probability		1.00				1.00		1.00
Max Out Probability		0.00				0.00		0.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6			8	18	7	4	
Adjusted Flow Rate (v), veh/h	363	1103	341		0			39	47	162	183	
Adjusted Saturation Flow Rate (s), veh/h/ln	1634	1729	1596		1900			1900	1610	1390	1900	
Queue Service Time (g_s), s	9.9	10.8	10.9		0.0			1.3	1.8	8.1	6.4	
Cycle Queue Clearance Time (g_c), s	11.2	10.8	10.9		0.0			1.3	1.8	9.3	6.4	
Green Ratio (g/C)	0.56	0.56	0.56		0.56			0.33	0.33	0.33	0.33	
Capacity (c), veh/h	969	2882	887		1056			633	537	524	633	
Volume-to-Capacity Ratio (X)	0.375	0.383	0.385		0.000			0.062	0.087	0.309	0.288	
Back of Queue (Q), ft/ln (50 th percentile)	98.4	98.8	92.1		0			14	16.9	66.2	71	
Back of Queue (Q), veh/ln (50 th percentile)	3.9	4.0	3.7		0.0			0.6	0.7	2.6	2.8	
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.12	0.25	0.00	
Uniform Delay (d_1), s/veh	11.3	11.3	11.3		0.0			20.4	20.6	23.6	22.1	
Incremental Delay (d_2), s/veh	0.1	0.0	0.1		0.0			0.0	0.0	0.1	0.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0	
Control Delay (d), s/veh	11.4	11.3	11.4		0.0			20.4	20.6	23.7	22.2	
Level of Service (LOS)	B	B	B					C	C	C	C	
Approach Delay, s/veh / LOS	11.4	B		0.0			20.5	C		22.9	C	
Intersection Delay, s/veh / LOS	13.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.8	C	3.6	D	2.8	C
Bicycle LOS Score / LOS	1.1	A	0.5	A	0.6	A	1.1	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/25/2017		Area Type	Other	
Jurisdiction		Time Period				PHF	0.92
Urban Street	South King Street	Analysis Year	2017		Analysis Period	1 > 7:00	
Intersection	South King and Ward Av...	File Name	King_Ward_10.18_EVENT_ALL.xus				
Project Description	Event Peak Wednesday 10/18/17						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	337	1372	89		0			562	301		1129	

Signal Information													
Cycle, s	90.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	45.0	35.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
				Red	1.0	1.0	0.0	0.0	0.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		8.0
Phase Duration, s		50.0		50.0		40.0		40.0
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		3.2		0.0		3.2		3.2
Queue Clearance Time (g_s), s		17.5				13.8		30.2
Green Extension Time (g_e), s		5.8		0.0		6.7		2.9
Phase Call Probability		1.00				1.00		1.00
Max Out Probability		0.03				0.10		0.82

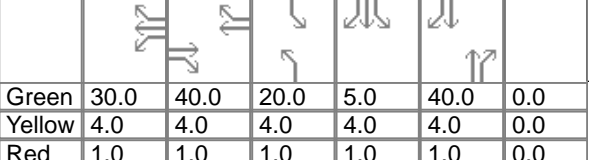
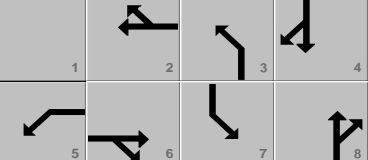
Movement Group Results	EB			WB			NB			SB			
	L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement	5	2	12		6			8	18		4		
Adjusted Flow Rate (v), veh/h	371	1191	382		0			611	284		1227		
Adjusted Saturation Flow Rate (s), veh/h/ln	1444	1729	1662		1900			1809	1610		1809		
Queue Service Time (g_s), s	15.5	13.4	13.4		0.0			11.2	11.8		28.2		
Cycle Queue Clearance Time (g_c), s	15.5	13.4	13.4		0.0			11.2	11.8		28.2		
Green Ratio (g/C)	0.50	0.50	0.50		0.50			0.39	0.39		0.39		
Capacity (c), veh/h	802	2594	831		950			1407	626		1407		
Volume-to-Capacity Ratio (X)	0.463	0.459	0.460		0.000			0.434	0.453		0.872		
Back of Queue (Q), ft/ln (50 th percentile)	123.7	126.8	122.6		0			116.2	109.4		322.3		
Back of Queue (Q), veh/ln (50 th percentile)	4.9	5.1	4.9		0.0			4.6	4.4		12.9		
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.00		0.00		
Uniform Delay (d_1), s/veh	15.1	14.6	14.6		0.0			20.2	20.4		25.4		
Incremental Delay (d_2), s/veh	0.2	0.0	0.1		0.0			0.1	0.2		6.0		
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0		0.0			0.0	0.0		0.0		
Control Delay (d), s/veh	15.3	14.6	14.8		0.0			20.3	20.6		31.5		
Level of Service (LOS)	B	B	B					C	C		C		
Approach Delay, s/veh / LOS	14.8		B		0.0			20.4		C	31.5		C
Intersection Delay, s/veh / LOS	21.1						C						

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.9		C	2.7		B	3.5		D	2.7		B
Bicycle LOS Score / LOS	1.1		A	0.5		A	1.2		A	1.5		A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/25/2017				
Jurisdiction		Time Period					
Urban Street	Kapiolani Boulevard	Analysis Year	2017				
Intersection	Kapiolani and Ward Ave...	File Name	Kapiolani_Ward_10.18_EVENT.xus				
Project Description	Event Peak Wednesday 10/18/17						

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h		743	121	202	589	184	179	679	181	303	746	169

Signal Information												
Cycle, s	160.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
		Green	30.0	40.0	20.0	5.0	40.0	0.0				
		Yellow	4.0	4.0	4.0	4.0	4.0	0.0				
		Red	1.0	1.0	1.0	1.0	1.0	0.0				

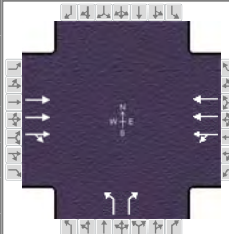
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6	5	2	3	8	7	4
Case Number		8.3	2.0	4.0	2.0	3.0	2.0	3.0
Phase Duration, s		45.0	35.0	80.0	25.0	45.0	35.0	55.0
Change Period, ($Y+R_c$), s		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (MAH), s		3.2	3.3	3.2	3.3	3.2	3.3	3.2
Queue Clearance Time (g_s), s		25.7	20.0	25.4	18.9	32.8	30.9	33.8
Green Extension Time (g_e), s		3.9	0.3	4.5	0.0	3.5	0.0	5.1
Phase Call Probability		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability		0.14	0.00	0.00	1.00	0.53	1.00	0.13

Movement Group Results	EB			WB			NB			SB				
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R		
Assigned Movement		6	16	5	2	12	3	8	18	7	4	14		
Adjusted Flow Rate (v), veh/h		621	294	220	409	383	195	738	173	329	811	160		
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1783	1810	1900	1773	1810	1809	1610	1810	1809	1610		
Queue Service Time (g_s), s		23.4	23.7	18.0	23.3	23.4	16.9	30.8	14.4	28.9	31.8	12.1		
Cycle Queue Clearance Time (g_c), s		23.4	23.7	18.0	23.3	23.4	16.9	30.8	14.4	28.9	31.8	12.1		
Green Ratio (g/C)		0.25	0.25	0.19	0.47	0.47	0.12	0.25	0.25	0.19	0.31	0.31		
Capacity (c), veh/h		950	446	339	891	831	226	904	403	339	1131	503		
Volume-to-Capacity Ratio (X)		0.654	0.660	0.647	0.460	0.461	0.860	0.816	0.429	0.971	0.717	0.318		
Back of Queue (Q), ft/ln (50 th percentile)		288.8	278.8	216.8	274.1	256.4	237.9	372.4	149.1	432.3	371.8	124.1		
Back of Queue (Q), veh/ln (50 th percentile)		11.6	11.2	8.7	11.0	10.3	9.5	14.9	6.0	17.3	14.9	5.0		
Queue Storage Ratio (RQ) (50 th percentile)		0.00	0.00	1.14	0.00	0.00	1.70	0.00	0.83	1.75	0.00	0.00		
Uniform Delay (d_1), s/veh		53.8	53.9	60.1	28.8	28.8	68.6	56.5	50.4	64.6	48.7	42.0		
Incremental Delay (d_2), s/veh		1.3	2.9	3.3	0.1	0.1	25.8	5.5	0.3	40.7	1.9	0.1		
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Control Delay (d), s/veh		55.1	56.8	63.4	28.9	28.9	94.4	62.0	50.7	105.3	50.6	42.1		
Level of Service (LOS)		E	E	E	C	C	F	E	D	F	D	D		
Approach Delay, s/veh / LOS	55.6	E		36.4			D			65.9			E	
Intersection Delay, s/veh / LOS	56.1						E							

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	3.0	C	3.3	C	2.9	C
Bicycle LOS Score / LOS	1.0	A	1.3	A	1.4	A	1.6	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	0.25			
Analyst		Analysis Date	10/24/2017		Area Type	Other
Jurisdiction		Time Period		PHF	0.92	
Urban Street	Kapiolani Boulevard	Analysis Year	2017		Analysis Period	1 > 7:00
Intersection	Kapiolani and Kamakee	File Name	Kapiolani_Kamakee_10.18_EVENT.xus			
Project Description	Event Peak on Wednesday 10/18/17					



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h		814	110	190	915		159		139			

Signal Information													
Cycle, s	100.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	60.0	30.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
				Red	1.0	1.0	0.0	0.0	0.0	0.0			

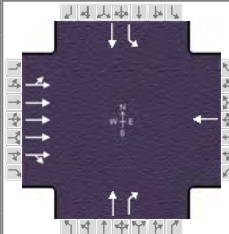
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		8.0		8.0		9.0		
Phase Duration, s		65.0		65.0		35.0		
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		
Max Allow Headway (MAH), s		3.5		3.5		3.4		
Queue Clearance Time (g_s), s		10.7		37.9		9.4		
Green Extension Time (g_e), s		9.6		8.2		0.7		
Phase Call Probability		1.00		1.00		1.00		
Max Out Probability		0.01		0.18		0.00		

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1	6		3		18			
Adjusted Flow Rate (v), veh/h		674	319	207	995		173		151			
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1790	492	1729		1810		1610			
Queue Service Time (g_s), s		8.6	8.7	27.2	12.3		7.4		7.2			
Cycle Queue Clearance Time (g_c), s		8.6	8.7	35.9	12.3		7.4		7.2			
Green Ratio (g/C)		0.60	0.60	0.60	0.60		0.30		0.30			
Capacity (c), veh/h		2280	1074	367	2075		543		483			
Volume-to-Capacity Ratio (X)		0.296	0.297	0.562	0.479		0.318		0.313			
Back of Queue (Q), ft/ln (50 th percentile)		86.6	82.5	90.4	147.6		80.5		70.3			
Back of Queue (Q), veh/ln (50 th percentile)		3.5	3.3	3.6	5.9		3.2		2.8			
Queue Storage Ratio (RQ) (50 th percentile)		0.00	0.00	0.00	0.00		0.58		0.50			
Uniform Delay (d_1), s/veh		9.7	9.7	18.5	11.2		27.1		27.0			
Incremental Delay (d_2), s/veh		0.0	0.1	1.2	0.1		0.1		0.1			
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0		0.0		0.0			
Control Delay (d), s/veh		9.8	9.8	19.7	11.3		27.2		27.2			
Level of Service (LOS)		A	A	B	B		C		C			
Approach Delay, s/veh / LOS	9.8	A		12.7	B		27.2	C		0.0		
Intersection Delay, s/veh / LOS	13.4						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.7	A	0.7	A	3.2	C	3.2	C
Bicycle LOS Score / LOS	1.0	A	1.1	A		F		

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/24/2017		Area Type	Other	
Jurisdiction		Time Period				PHF	0.92
Urban Street	South King Street	Analysis Year	2017		Analysis Period	1 > 7:00	
Intersection	South King and Victoria...	File Name	King_Victoria_10.15_Sunday_ALL.xus				
Project Description	PM Peak Sunday 10/15/17						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	123	866	192		0			26	95	44	320	

Signal Information													
Cycle, s	90.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	58.0	22.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
				Red	1.0	1.0	0.0	0.0	0.0	0.0			

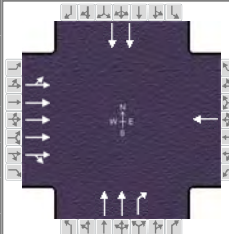
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		6.0
Phase Duration, s		63.0		63.0		27.0		27.0
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		3.2		0.0		3.2		3.2
Queue Clearance Time (g_s), s		7.6				5.9		17.2
Green Extension Time (g_e), s		3.3		0.0		1.0		0.6
Phase Call Probability		1.00				1.00		1.00
Max Out Probability		0.00				0.00		0.42

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6			8	18	7	4	
Adjusted Flow Rate (v), veh/h	254	757	230		0			28	87	48	348	
Adjusted Saturation Flow Rate (s), veh/h/ln	1635	1729	1531		1900			1900	1610	1404	1900	
Queue Service Time (g_s), s	3.8	5.5	5.6		0.0			1.0	3.9	2.4	15.2	
Cycle Queue Clearance Time (g_c), s	5.6	5.5	5.6		0.0			1.0	3.9	3.5	15.2	
Green Ratio (g/C)	0.64	0.64	0.64		0.64			0.24	0.24	0.24	0.24	
Capacity (c), veh/h	1115	3343	986		1224			464	394	407	464	
Volume-to-Capacity Ratio (X)	0.228	0.226	0.233		0.000			0.061	0.221	0.117	0.749	
Back of Queue (Q), ft/ln (50 th percentile)	46.3	46	42.2		0			11.7	37.5	20.6	191.5	
Back of Queue (Q), veh/ln (50 th percentile)	1.9	1.8	1.7		0.0			0.5	1.5	0.8	7.7	
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh	6.6	6.7	6.7		0.0			26.1	27.2	27.4	31.4	
Incremental Delay (d_2), s/veh	0.0	0.0	0.0		0.0			0.0	0.1	0.0	5.9	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0	
Control Delay (d), s/veh	6.7	6.7	6.7		0.0			26.1	27.3	27.5	37.4	
Level of Service (LOS)	A	A	A					C	C	C	D	
Approach Delay, s/veh / LOS	6.7	A		0.0				27.0	C	36.2	D	
Intersection Delay, s/veh / LOS	14.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.4	B	3.6	D	2.9	C
Bicycle LOS Score / LOS	0.9	A	0.5	A	0.7	A	1.1	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/24/2017		Area Type	Other	
Jurisdiction		Time Period				PHF	1.00
Urban Street	South King Street	Analysis Year	2017		Analysis Period	1 > 7:00	
Intersection	South King Street and...	File Name	King_Ward_10.15_Sunday_ALL.xus				
Project Description	PM Peak on Sunday 10/15/17						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	151	920	58		0			528	261		809	

Signal Information													
Cycle, s	90.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	50.0	30.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
				Red	1.0	1.0	0.0	0.0	0.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		8.0
Phase Duration, s		55.0		55.0		35.0		35.0
Change Period, (Y+R _c), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		3.2		0.0		3.2		3.2
Queue Clearance Time (g _s), s		8.5				12.3		19.3
Green Extension Time (g _e), s		2.9		0.0		4.1		3.4
Phase Call Probability		1.00				1.00		1.00
Max Out Probability		0.00				0.04		0.19

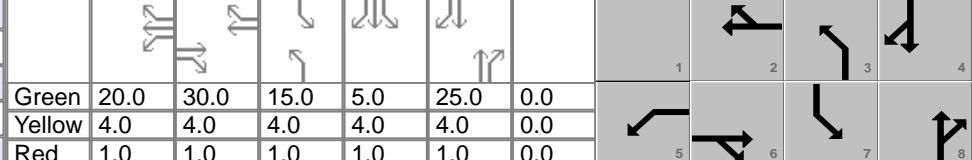
Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6			8	18		4	
Adjusted Flow Rate (v), veh/h	226	676	219		0			528	181		809	
Adjusted Saturation Flow Rate (s), veh/h/ln	1573	1729	1661		1900			1809	1610		1809	
Queue Service Time (g _s), s	5.5	6.0	6.1		0.0			10.3	7.6		17.3	
Cycle Queue Clearance Time (g _c), s	6.5	6.0	6.1		0.0			10.3	7.6		17.3	
Green Ratio (g/C)	0.56	0.56	0.56		0.56			0.33	0.33		0.33	
Capacity (c), veh/h	940	2882	923		1056			1206	537		1206	
Volume-to-Capacity Ratio (X)	0.240	0.235	0.237		0.000			0.438	0.337		0.671	
Back of Queue (Q), ft/ln (50 th percentile)	55.9	54.7	53.5		0			108.6	71.8		187.3	
Back of Queue (Q), veh/ln (50 th percentile)	2.2	2.2	2.1		0.0			4.3	2.9		7.5	
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.00		0.00	
Uniform Delay (d ₁), s/veh	10.3	10.2	10.2		0.0			23.4	22.5		25.8	
Incremental Delay (d ₂), s/veh	0.0	0.0	0.0		0.0			0.1	0.1		1.2	
Initial Queue Delay (d ₃), s/veh	0.0	0.0	0.0		0.0			0.0	0.0		0.0	
Control Delay (d), s/veh	10.3	10.2	10.3		0.0			23.5	22.7		27.0	
Level of Service (LOS)	B	B	B					C	C		C	
Approach Delay, s/veh / LOS	10.3	B		0.0			23.3	C		27.0	C	
Intersection Delay, s/veh / LOS	18.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.7	B	3.6	D	2.7	B
Bicycle LOS Score / LOS	0.9	A	0.5	A	1.1	A	1.2	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/24/2017				
Jurisdiction		Time Period					
Urban Street	Kapiolani Boulevard	Analysis Year	2017				
Intersection	Kapiolani Boulevard and...	File Name	Kapiolani_Ward_10.15_Sunday_ALL.xus				
Project Description	PM Peak on Sunday 10/15/17						

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h		573	123	199	503	244	138	545	96	288	494	85

Signal Information												
Cycle, s	120.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
		Green	20.0	30.0	15.0	5.0	25.0	0.0				
		Yellow	4.0	4.0	4.0	4.0	4.0	0.0				
		Red	1.0	1.0	1.0	1.0	1.0	0.0				

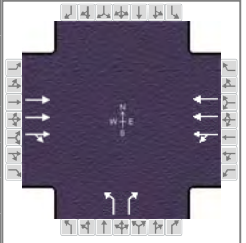
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6	5	2	3	8	7	4
Case Number		8.3	2.0	4.0	2.0	3.0	2.0	3.0
Phase Duration, s		35.0	25.0	60.0	20.0	30.0	30.0	40.0
Change Period, ($Y+R_c$), s		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (MAH), s		3.2	3.3	3.2	3.3	3.2	3.3	3.2
Queue Clearance Time (g_s), s		15.9	15.6	19.6	11.5	20.6	21.9	16.8
Green Extension Time (g_e), s		3.4	0.2	3.8	0.1	1.7	0.2	3.3
Phase Call Probability		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability		0.11	0.34	0.00	0.76	0.72	1.00	0.02

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h		500	235	216	403	365	150	592	83	313	537	71
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1750	1810	1900	1713	1810	1809	1610	1810	1809	1610
Queue Service Time (g_s), s		13.6	13.9	13.6	17.5	17.6	9.5	18.6	5.1	19.9	14.8	3.9
Cycle Queue Clearance Time (g_c), s		13.6	13.9	13.6	17.5	17.6	9.5	18.6	5.1	19.9	14.8	3.9
Green Ratio (g/C)		0.25	0.25	0.17	0.46	0.46	0.12	0.21	0.21	0.21	0.29	0.29
Capacity (c), veh/h		950	437	302	871	785	226	754	335	377	1055	470
Volume-to-Capacity Ratio (X)		0.526	0.537	0.717	0.463	0.465	0.663	0.786	0.246	0.830	0.509	0.150
Back of Queue (Q), ft/ln (50 th percentile)		161.5	153.5	168.5	197.8	179.4	117.4	223.2	52	260.1	165.6	38.8
Back of Queue (Q), veh/ln (50 th percentile)		6.5	6.1	6.7	7.9	7.2	4.7	8.9	2.1	10.4	6.6	1.6
Queue Storage Ratio (RQ) (50 th percentile)		0.00	0.00	0.89	0.00	0.00	0.84	0.00	0.29	1.05	0.00	0.00
Uniform Delay (d_1), s/veh		38.9	39.0	47.3	22.3	22.4	50.1	45.0	39.6	45.5	35.4	31.5
Incremental Delay (d_2), s/veh		0.3	0.7	6.9	0.1	0.2	5.7	5.1	0.1	13.6	0.2	0.1
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh		39.1	39.7	54.2	22.5	22.5	55.8	50.0	39.8	59.1	35.5	31.5
Level of Service (LOS)		D	D	D	C	C	E	D	D	E	D	C
Approach Delay, s/veh / LOS	39.3	D		29.5	C		50.1	D		43.2	D	
Intersection Delay, s/veh / LOS	40.1						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	3.0	C	3.2	C	2.9	C
Bicycle LOS Score / LOS	0.9	A	1.3	A	1.2	A	1.2	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	0.25			
Analyst		Analysis Date	10/24/2017		Area Type	Other
Jurisdiction		Time Period		PHF	0.92	
Urban Street	Kapiolani Boulevard	Analysis Year	2017		Analysis Period	1 > 7:00
Intersection	Kapiolani and Kamakee	File Name	Kapiolani_Kamakee_10.15_Sunday_ALL.xus			
Project Description	PM Peak on Sunday 10/15					



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h		896	61	166	900		118		136			

Signal Information													
Cycle, s	120.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	85.0	25.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
				Red	1.0	1.0	0.0	0.0	0.0	0.0			

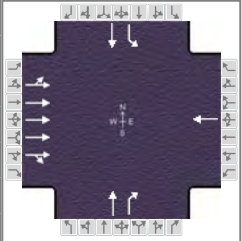
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		8.0		8.0		9.0		
Phase Duration, s		90.0		90.0		30.0		
Change Period, (Y+R _c), s		5.0		5.0		5.0		
Max Allow Headway (MAH), s		3.5		3.5		3.4		
Queue Clearance Time (g _s), s		9.8		30.4		11.6		
Green Extension Time (g _e), s		9.4		9.3		0.5		
Phase Call Probability		1.00		1.00		1.00		
Max Out Probability		0.00		0.01		0.00		

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1	6		3		18			
Adjusted Flow Rate (v), veh/h		692	337	180	978		128		148			
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1845	505	1729		1810		1610			
Queue Service Time (g _s), s		7.8	7.8	20.5	10.4		7.2		9.6			
Cycle Queue Clearance Time (g _c), s		7.8	7.8	28.4	10.4		7.2		9.6			
Green Ratio (g/C)		0.71	0.71	0.71	0.71		0.21		0.21			
Capacity (c), veh/h		2692	1307	418	2449		377		335			
Volume-to-Capacity Ratio (X)		0.257	0.258	0.432	0.399		0.340		0.441			
Back of Queue (Q), ft/ln (50 th percentile)		74.7	72.9	62.4	120.6		82.4		97.3			
Back of Queue (Q), veh/ln (50 th percentile)		3.0	2.9	2.5	4.8		3.3		3.9			
Queue Storage Ratio (RQ) (50 th percentile)		0.00	0.00	0.00	0.00		0.59		0.69			
Uniform Delay (d ₁), s/veh		6.2	6.2	11.3	7.1		40.5		41.4			
Incremental Delay (d ₂), s/veh		0.0	0.0	0.3	0.0		0.2		0.3			
Initial Queue Delay (d ₃), s/veh		0.0	0.0	0.0	0.0		0.0		0.0			
Control Delay (d), s/veh		6.3	6.3	11.6	7.2		40.7		41.7			
Level of Service (LOS)		A	A	B	A		D		D			
Approach Delay, s/veh / LOS	6.3	A		7.8	A		41.2	D		0.0		
Intersection Delay, s/veh / LOS	10.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.6	A	0.7	A	3.2	C	3.2	C
Bicycle LOS Score / LOS	1.1	A	1.1	A		F		

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	0.25			
Analyst		Analysis Date	10/25/2017		Area Type	Other
Jurisdiction		Time Period				
Urban Street	South King Street	Analysis Year	2017		Analysis Period	1 > 7:00
Intersection	South King and Victoria...	File Name	King_Victoria_10.18_AM_Future.xus			
Project Description	AM Peak Hour Wednesday 10/18/17					



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	240	1393	105		0			8	0	389	168	

Signal Information												
Cycle, s	90.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
Green	58.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

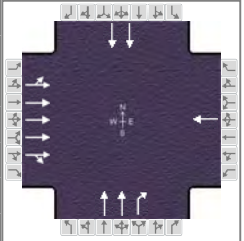
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		6.0
Phase Duration, s		63.0		63.0		27.0		27.0
Change Period, (Y+R _c), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g _s), s						2.3		24.0
Green Extension Time (g _e), s		0.0		0.0		1.2		0.0
Phase Call Probability						1.00		1.00
Max Out Probability						0.00		1.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6			8	18	7	4	
Adjusted Flow Rate (v), veh/h	365	1157	366		0			9	0	423	183	
Adjusted Saturation Flow Rate (s), veh/h/ln	1547	1729	1637		1900			1900	1610	1429	1900	
Queue Service Time (g _s), s	9.9	9.2	9.2		0.0			0.3	0.0	21.7	7.2	
Cycle Queue Clearance Time (g _c), s	9.9	9.2	9.2		0.0			0.3	0.0	22.0	7.2	
Green Ratio (g/C)	0.64	0.64	0.64		0.64			0.24	0.24	0.24	0.24	
Capacity (c), veh/h	1066	3343	1055		1224			464	394	424	464	
Volume-to-Capacity Ratio (X)	0.343	0.346	0.347		0.000			0.019	0.000	0.997	0.393	
Back of Queue (Q), ft/ln (50 th percentile)	81.1	79.4	79.9		0			3.6	0	361.6	82.6	
Back of Queue (Q), veh/ln (50 th percentile)	3.2	3.2	3.2		0.0			0.1	0.0	14.5	3.3	
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.00	1.38	0.00	
Uniform Delay (d ₁), s/veh	7.4	7.3	7.3		0.0			25.8	0.0	36.2	28.4	
Incremental Delay (d ₂), s/veh	0.9	0.3	0.9		0.0			0.0	0.0	42.7	0.2	
Initial Queue Delay (d ₃), s/veh	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0	
Control Delay (d), s/veh	8.3	7.6	8.2		0.0			25.8	0.0	78.9	28.6	
Level of Service (LOS)	A	A	A					C		E	C	
Approach Delay, s/veh / LOS	7.9		A	0.0			25.8	C		63.7		E
Intersection Delay, s/veh / LOS	21.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.6	B	3.6	D	2.7	B
Bicycle LOS Score / LOS	1.1	A	0.5	A	0.5	A	1.5	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	0.25			
Analyst		Analysis Date	10/25/2017		Area Type	Other
Jurisdiction		Time Period				
Urban Street	South King Street	Analysis Year	2017		Analysis Period	1 > 7:00
Intersection	South King and Ward Av...	File Name	King_Ward_10.18_AM_Future.xus			
Project Description	AM Peak Hour Wednesday 10/18/17					



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	185	1487	80		0			197	251		1176	

Signal Information												
Cycle, s	90.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
Green	40.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		8.0
Phase Duration, s		45.0		45.0		45.0		45.0
Change Period, (Y+R _c), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g _s), s						12.2		29.3
Green Extension Time (g _e), s		0.0		0.0		5.7		4.2
Phase Call Probability						1.00		1.00
Max Out Probability						0.02		0.29

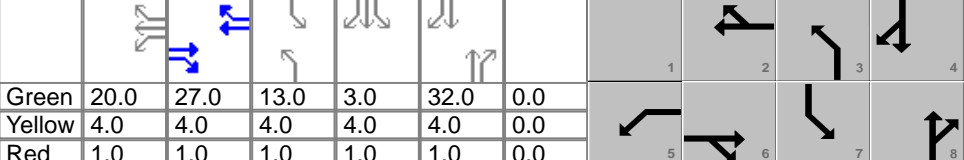
Movement Group Results	EB			WB			NB			SB			
	L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement	5	2	12		6			8	18		4		
Adjusted Flow Rate (v), veh/h	381	1154	370		0			214	273		1278		
Adjusted Saturation Flow Rate (s), veh/h/ln	1629	1729	1659		1900			1809	1610		1809		
Queue Service Time (g _s), s	14.8	14.3	14.3		0.0			3.1	10.2		27.3		
Cycle Queue Clearance Time (g _c), s	15.2	14.3	14.3		0.0			3.1	10.2		27.3		
Green Ratio (g/C)	0.44	0.44	0.44		0.44			0.44	0.44		0.44		
Capacity (c), veh/h	785	2305	737		844			1608	716		1608		
Volume-to-Capacity Ratio (X)	0.485	0.500	0.501		0.000			0.133	0.381		0.795		
Back of Queue (Q), ft/ln (50 th percentile)	150.8	142.8	145.7		0			32	92.7		291.6		
Back of Queue (Q), veh/ln (50 th percentile)	6.0	5.7	5.8		0.0			1.3	3.7		11.7		
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.00		0.00		
Uniform Delay (d ₁), s/veh	18.1	17.9	17.9		0.0			14.8	16.7		21.5		
Incremental Delay (d ₂), s/veh	2.1	0.8	2.4		0.0			0.0	0.1		2.6		
Initial Queue Delay (d ₃), s/veh	0.0	0.0	0.0		0.0			0.0	0.0		0.0		
Control Delay (d), s/veh	20.2	18.6	20.3		0.0			14.8	16.8		24.1		
Level of Service (LOS)	C	B	C					B	B		C		
Approach Delay, s/veh / LOS	19.3		B		0.0			15.9		B	24.1		C
Intersection Delay, s/veh / LOS	20.5						C						

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.8	C	2.7	B	3.5	D	2.7	B
Bicycle LOS Score / LOS	1.1	A	0.5	A	0.9	A	1.5	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/25/2017				
Jurisdiction		Time Period					
Urban Street	Kapiolani Boulevard	Analysis Year	2017				
Intersection	Kapiolani and Ward Ave...	File Name	Kapiolani_Ward_10.18_AM_Future.xus				
Project Description	AM Peak Hour Wednesday 10/18/17						

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h		492	107	243	1244	87	126	361	78	188	796	272

Signal Information				Signal Timing Diagram									
Cycle, s	120.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	No	Simult. Gap E/W	On										
Force Mode	Fixed	Simult. Gap N/S	On										
				Green	20.0	27.0	13.0	3.0	32.0	0.0			
				Yellow	4.0	4.0	4.0	4.0	4.0	0.0			
				Red	1.0	1.0	1.0	1.0	1.0	0.0			

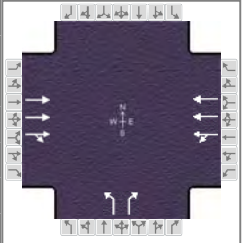
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6	5	2	3	8	7	4
Case Number		8.3	2.0	4.0	2.0	3.0	2.0	3.0
Phase Duration, s		32.0	25.0	57.0	18.0	37.0	26.0	45.0
Change Period, ($Y+R_c$), s		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (MAH), s		0.0	3.3	0.0	3.3	3.2	3.3	3.2
Queue Clearance Time (g_s), s			19.1		10.8	12.7	14.6	27.1
Green Extension Time (g_e), s		0.0	0.1	0.0	0.0	4.5	0.2	4.0
Phase Call Probability			1.00		1.00	1.00	1.00	1.00
Max Out Probability			1.00		1.00	0.05	0.05	0.16

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h		335	316	264	976	471	137	392	85	204	865	296
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1782	1810	1900	1834	1810	1809	1610	1810	1809	1610
Queue Service Time (g_s), s		19.8	20.1	17.1	23.5	23.5	8.8	10.7	4.9	12.6	25.1	18.0
Cycle Queue Clearance Time (g_c), s		19.8	20.1	17.1	23.5	23.5	8.8	10.7	4.9	12.6	25.1	18.0
Green Ratio (g/C)		0.22	0.22	0.17	0.43	0.43	0.11	0.27	0.27	0.18	0.33	0.33
Capacity (c), veh/h		428	401	302	1647	795	196	965	429	317	1206	537
Volume-to-Capacity Ratio (X)		0.783	0.789	0.876	0.593	0.593	0.699	0.407	0.197	0.645	0.718	0.551
Back of Queue (Q), ft/ln (50 th percentile)		275.1	262.9	242.2	275	274.6	112.3	120.1	48.9	150.6	285.4	179.6
Back of Queue (Q), veh/ln (50 th percentile)		11.0	10.5	9.7	11.0	11.0	4.5	4.8	2.0	6.0	11.4	7.2
Queue Storage Ratio (RQ) (50 th percentile)		0.00	0.00	0.00	0.00	0.00	0.80	0.00	0.27	0.61	0.00	0.00
Uniform Delay (d_1), s/veh		43.7	43.8	48.8	25.9	25.9	51.6	36.2	34.1	46.0	35.0	32.7
Incremental Delay (d_2), s/veh		13.4	14.5	23.0	1.6	3.2	8.9	0.1	0.1	3.5	1.8	0.7
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh		57.1	58.3	71.8	27.5	29.2	60.5	36.3	34.1	49.6	36.8	33.4
Level of Service (LOS)		E	E	E	C	C	E	D	C	D	D	C
Approach Delay, s/veh / LOS	57.7	E		34.8	C		41.4	D		38.0	D	
Intersection Delay, s/veh / LOS	40.2						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	2.9	C	3.0	C	3.1	C
Bicycle LOS Score / LOS	1.0	A	1.4	A	1.0	A	1.6	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	0.25			
Analyst		Analysis Date	10/24/2017		Area Type	Other
Jurisdiction		Time Period		PHF	0.92	
Urban Street	Kapiolani Boulevard	Analysis Year	2017		Analysis Period	1 > 7:00
Intersection	Kapiolani and Kamakee	File Name	Kapiolani_Kamakee_10.18_AM_Future.xus			
Project Description	AM Peak on Wednesday 10/18/17					



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h		653	105	177	1557		83		46			

Signal Information												
Cycle, s	120.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On	Green	85.0	25.0	0.0	0.0	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0		
				Red	1.0	1.0	0.0	0.0	0.0	0.0		

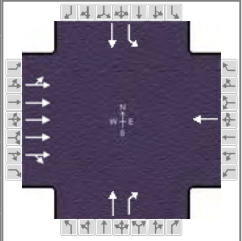
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		8.0		8.0		9.0		
Phase Duration, s		90.0		90.0		30.0		
Change Period, (Y+R _c), s		5.0		5.0		5.0		
Max Allow Headway (MAH), s		0.0		0.0		3.3		
Queue Clearance Time (g _s), s						7.0		
Green Extension Time (g _e), s		0.0		0.0		0.2		
Phase Call Probability						1.00		
Max Out Probability						0.00		

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement		2	12	1	6		3		18			
Adjusted Flow Rate (v), veh/h		560	264	448	1437		90		50			
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1763	1013	1729		1810		1610			
Queue Service Time (g _s), s		6.0	6.2	26.6	20.0		5.0		3.0			
Cycle Queue Clearance Time (g _c), s		6.0	6.2	32.8	20.0		5.0		3.0			
Green Ratio (g/C)		0.71	0.71	0.71	0.71		0.21		0.21			
Capacity (c), veh/h		2692	1249	760	2449		377		335			
Volume-to-Capacity Ratio (X)		0.208	0.211	0.589	0.587		0.239		0.149			
Back of Queue (Q), ft/ln (50 th percentile)		59.4	57.9	176.1	225.4		56.6		30.8			
Back of Queue (Q), veh/ln (50 th percentile)		2.4	2.3	7.0	9.0		2.3		1.2			
Queue Storage Ratio (RQ) (50 th percentile)		0.00	0.00	0.00	0.00		0.40		0.22			
Uniform Delay (d ₁), s/veh		6.0	6.0	11.0	8.7		39.6		38.8			
Incremental Delay (d ₂), s/veh		0.2	0.4	3.3	1.0		0.1		0.1			
Initial Queue Delay (d ₃), s/veh		0.0	0.0	0.0	0.0		0.0		0.0			
Control Delay (d), s/veh		6.2	6.4	14.3	9.8		39.7		38.9			
Level of Service (LOS)		A	A	B	A		D		D			
Approach Delay, s/veh / LOS	6.2	A		10.8	B		39.4	D		0.0		
Intersection Delay, s/veh / LOS	10.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.6	A	0.7	A	3.2	C	3.2	C
Bicycle LOS Score / LOS	0.9	A	1.5	A		F		

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/25/2017		Area Type	Other	
Jurisdiction		Time Period				PHF	0.92
Urban Street	South King Street	Analysis Year	2017		Analysis Period	1 > 7:00	
Intersection	South King and Victoria...	File Name	King_Victoria_10.18_PM_Future.xus				
Project Description	PM Peak Hour Wednesday 10/18/17						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	419	1800	187		0			152	107	206	136	

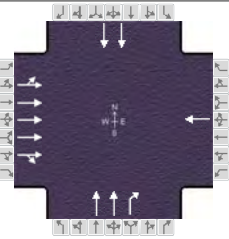
Signal Information												
Cycle, s	90.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
		Green	58.0	22.0	0.0	0.0	0.0	0.0				
		Yellow	4.0	4.0	0.0	0.0	0.0	0.0				
		Red	1.0	1.0	0.0	0.0	0.0	0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		6.0
Phase Duration, s		63.0		63.0		27.0		27.0
Change Period, (Y+R _c), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		3.2		0.0		3.4		3.4
Queue Clearance Time (g _s), s		17.8				8.5		24.0
Green Extension Time (g _e), s		9.7		0.0		1.3		0.0
Phase Call Probability		1.00				1.00		1.00
Max Out Probability		0.04				0.01		1.00

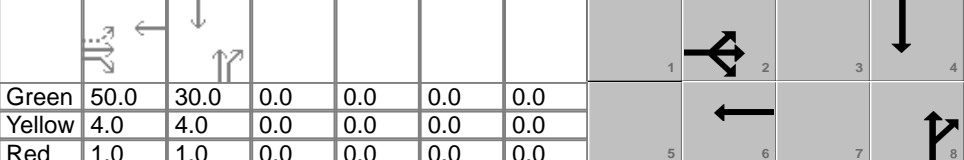
Movement Group Results	EB			WB			NB			SB			
	L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement	5	2	12		6			8	18	7	4		
Adjusted Flow Rate (v), veh/h	482	1589	501		0			165	100	224	148		
Adjusted Saturation Flow Rate (s), veh/h/ln	1460	1729	1635		1900			1900	1610	1240	1900		
Queue Service Time (g _s), s	15.8	14.1	14.1		0.0			6.5	4.5	15.5	5.7		
Cycle Queue Clearance Time (g _c), s	15.8	14.1	14.1		0.0			6.5	4.5	22.0	5.7		
Green Ratio (g/C)	0.64	0.64	0.64		0.64			0.24	0.24	0.24	0.24		
Capacity (c), veh/h	1018	3343	1054		1224			464	394	294	464		
Volume-to-Capacity Ratio (X)	0.474	0.475	0.475		0.000			0.356	0.254	0.762	0.318		
Back of Queue (Q), ft/ln (50 th percentile)	113.4	118.7	112.9		0			73.9	43.5	143.7	65.4		
Back of Queue (Q), veh/ln (50 th percentile)	4.5	4.7	4.5		0.0			3.0	1.7	5.7	2.6		
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.32	0.55	0.00		
Uniform Delay (d ₁), s/veh	8.5	8.2	8.2		0.0			28.1	27.4	37.6	27.9		
Incremental Delay (d ₂), s/veh	0.1	0.0	0.1		0.0			0.2	0.1	10.1	0.1		
Initial Queue Delay (d ₃), s/veh	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0		
Control Delay (d), s/veh	8.6	8.2	8.3		0.0			28.3	27.5	47.7	28.0		
Level of Service (LOS)	A	A	A					C	C	D	C		
Approach Delay, s/veh / LOS	8.3		A		0.0			28.0		C	39.8		D
Intersection Delay, s/veh / LOS	13.6						B						

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.8	C	3.6	D	2.7	B
Bicycle LOS Score / LOS	1.3	A	0.5	A	0.9	A	1.1	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/25/2017				
Jurisdiction		Time Period					
Urban Street	South King Street	Analysis Year	2017				
Intersection	South King and Ward Av...	File Name	King_Ward_10.18_PM_Future.xus				
Project Description	PM Peak Wednesday 10/18/17						

Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	248	2059	147		0			455	347		1138	

Signal Information												
Cycle, s	90.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
		Green	50.0	30.0	0.0	0.0	0.0	0.0				
		Yellow	4.0	4.0	0.0	0.0	0.0	0.0				
		Red	1.0	1.0	0.0	0.0	0.0	0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		8.0
Phase Duration, s		55.0		55.0		35.0		35.0
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		3.2		0.0		3.2		3.2
Queue Clearance Time (g_s), s		20.7				17.7		32.0
Green Extension Time (g_e), s		9.4		0.0		5.3		0.0
Phase Call Probability		1.00				1.00		1.00
Max Out Probability		0.12				0.31		1.00

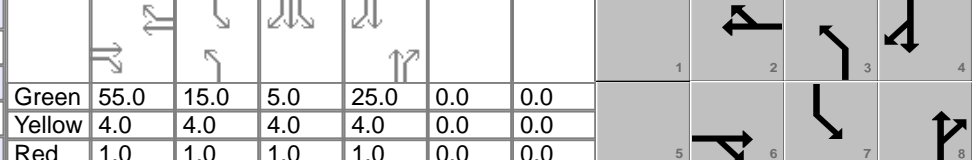
Movement Group Results	EB			WB			NB			SB			
	L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement	5	2	12		6			8	18		4		
Adjusted Flow Rate (v), veh/h	519	1594	511		0			495	334		1237		
Adjusted Saturation Flow Rate (s), veh/h/ln	1630	1729	1661		1900			1809	1610		1809		
Queue Service Time (g_s), s	18.7	17.8	17.8		0.0			9.5	15.7		30.0		
Cycle Queue Clearance Time (g_c), s	18.7	17.8	17.8		0.0			9.5	15.7		30.0		
Green Ratio (g/C)	0.56	0.56	0.56		0.56			0.33	0.33		0.33		
Capacity (c), veh/h	966	2882	923		1056			1206	537		1206		
Volume-to-Capacity Ratio (X)	0.537	0.553	0.553		0.000			0.410	0.622		1.026		
Back of Queue (Q), ft/ln (50 th percentile)	163.2	162.6	158.1		0			100.5	153.3		453.4		
Back of Queue (Q), veh/ln (50 th percentile)	6.5	6.5	6.3		0.0			4.0	6.1		18.1		
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.00		0.00		
Uniform Delay (d_1), s/veh	13.0	12.8	12.8		0.0			23.2	25.2		30.0		
Incremental Delay (d_2), s/veh	0.3	0.1	0.4		0.0			0.1	1.7		32.7		
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0		0.0			0.0	0.0		0.0		
Control Delay (d), s/veh	13.4	13.0	13.3		0.0			23.3	26.9		62.7		
Level of Service (LOS)	B	B	B					C	C		F		
Approach Delay, s/veh / LOS	13.1		B		0.0			24.7		C	62.7		E
Intersection Delay, s/veh / LOS	28.2						C						

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.7	B	3.6	D	2.8	C
Bicycle LOS Score / LOS	1.4	A	0.5	A	1.2	A	1.5	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information					
Agency		Duration, h	0.25						
Analyst		Analysis Date	10/25/2017					Area Type	Other
Jurisdiction		Time Period						PHF	0.92
Urban Street	Kapiolani Boulevard	Analysis Year	2017					Analysis Period	1 > 7:00
Intersection	Kapiolani and Ward Ave...	File Name	Kapiolani_Ward_10.18_PM_Future.xus						
Project Description	PM Peak Wednesday 10/18/17								

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h		1337	126		1263	233	182	570	233	293	834	158

Signal Information												
Cycle, s	120.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
		Green	55.0	15.0	5.0	25.0	0.0	0.0				
		Yellow	4.0	4.0	4.0	4.0	0.0	0.0				
		Red	1.0	1.0	1.0	1.0	0.0	0.0				

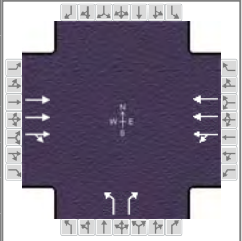
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2	3	8	7	4
Case Number		8.0		8.0	2.0	3.0	2.0	3.0
Phase Duration, s		60.0		60.0	20.0	30.0	30.0	40.0
Change Period, ($Y+R_c$), s		5.0		5.0	5.0	5.0	5.0	5.0
Max Allow Headway (MAH), s		3.2		3.2	3.3	3.2	3.3	3.2
Queue Clearance Time (g_s), s		26.9		27.3	14.9	21.6	22.3	30.4
Green Extension Time (g_e), s		11.7		11.6	0.0	2.0	0.2	2.5
Phase Call Probability		1.00		1.00	1.00	1.00	1.00	1.00
Max Out Probability		0.25		0.26	1.00	0.98	1.00	0.81

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16		2	12	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h		1051	507		1063	498	198	620	221	318	907	139
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1832		1900	1779	1810	1809	1610	1810	1809	1610
Queue Service Time (g_s), s		24.8	24.9		25.0	25.3	12.9	19.6	15.1	20.3	28.4	8.0
Cycle Queue Clearance Time (g_c), s		24.8	24.9		25.0	25.3	12.9	19.6	15.1	20.3	28.4	8.0
Green Ratio (g/C)		0.46	0.46		0.46	0.46	0.12	0.21	0.21	0.21	0.29	0.29
Capacity (c), veh/h		1742	840		1742	815	226	754	335	377	1055	470
Volume-to-Capacity Ratio (X)		0.603	0.603		0.610	0.611	0.875	0.822	0.658	0.845	0.859	0.296
Back of Queue (Q), ft/ln (50 th percentile)		281.7	274.3		286.6	271.4	191.7	239.5	160.2	269	342.1	80.1
Back of Queue (Q), veh/ln (50 th percentile)		11.3	11.0		11.5	10.9	7.7	9.6	6.4	10.8	13.7	3.2
Queue Storage Ratio (RQ) (50 th percentile)		0.00	0.00		0.00	0.00	1.37	0.00	0.89	1.09	0.00	0.00
Uniform Delay (d_1), s/veh		24.3	24.3		24.4	24.4	51.6	45.4	43.6	45.6	40.2	33.0
Incremental Delay (d_2), s/veh		0.4	0.9		0.5	1.0	28.4	6.8	3.7	15.2	6.9	0.1
Initial Queue Delay (d_3), s/veh		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh		24.8	25.2		24.9	25.4	80.0	52.2	47.3	60.9	47.1	33.1
Level of Service (LOS)		C	C		C	C	E	D	D	E	D	C
Approach Delay, s/veh / LOS	24.9	C		25.1	C		56.5	E		48.9	D	
Intersection Delay, s/veh / LOS	36.8						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	3.0	C	3.3	C	3.2	C
Bicycle LOS Score / LOS	1.3	A	1.3	A	1.3	A	1.6	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	0.25			
Analyst		Analysis Date	10/24/2017		Area Type	Other
Jurisdiction		Time Period		PHF	0.92	
Urban Street	Kapiolani Boulevard	Analysis Year	2017		Analysis Period	1 > 7:00
Intersection	Kapiolani and Kamakee	File Name	Kapiolani_Kamakee_10.18_PM_Future.xus			
Project Description	PM Peak on Wednesday 10/18/17					



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h		1769	94	48	1444		215		181			

Signal Information													
Cycle, s	120.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	85.0	25.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
				Red	1.0	1.0	0.0	0.0	0.0	0.0			

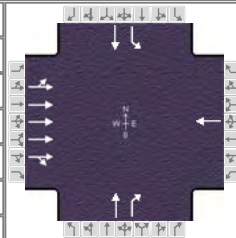
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		8.0		8.0		9.0		
Phase Duration, s		90.0		90.0		30.0		
Change Period, (Y+R _c), s		5.0		5.0		5.0		
Max Allow Headway (MAH), s		3.4		3.4		3.4		
Queue Clearance Time (g _s), s		21.4		26.8		16.1		
Green Extension Time (g _e), s		23.8		23.2		0.7		
Phase Call Probability		1.00		1.00		1.00		
Max Out Probability		0.18		0.21		0.04		

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1	6		3		18			
Adjusted Flow Rate (v), veh/h		1352	662	345	1277		234		197			
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1854	923	1729		1810		1610			
Queue Service Time (g _s), s		19.3	19.4	5.4	17.1		14.1		13.2			
Cycle Queue Clearance Time (g _c), s		19.3	19.4	24.8	17.1		14.1		13.2			
Green Ratio (g/C)		0.71	0.71	0.71	0.71		0.21		0.21			
Capacity (c), veh/h		2692	1313	688	2449		377		335			
Volume-to-Capacity Ratio (X)		0.502	0.504	0.501	0.521		0.620		0.586			
Back of Queue (Q), ft/ln (50 th percentile)		185.5	182.7	75.3	179		165.1		137			
Back of Queue (Q), veh/ln (50 th percentile)		7.4	7.3	3.0	7.2		6.6		5.5			
Queue Storage Ratio (RQ) (50 th percentile)		0.00	0.00	0.00	0.00		1.18		0.98			
Uniform Delay (d ₁), s/veh		7.9	7.9	6.7	8.1		43.2		42.8			
Incremental Delay (d ₂), s/veh		0.1	0.1	0.2	0.1		2.3		1.8			
Initial Queue Delay (d ₃), s/veh		0.0	0.0	0.0	0.0		0.0		0.0			
Control Delay (d), s/veh		8.0	8.1	6.9	8.2		45.5		44.6			
Level of Service (LOS)		A	A	A	A		D		D			
Approach Delay, s/veh / LOS	8.0	A		7.9	A		45.1	D		0.0		
Intersection Delay, s/veh / LOS	11.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.6	A	0.7	A	3.2	C	3.2	C
Bicycle LOS Score / LOS	1.6	A	1.4	A		F		

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/25/2017		Area Type	Other	
Jurisdiction		Time Period				PHF	0.92
Urban Street	South King Street	Analysis Year	2017		Analysis Period	1 > 7:00	
Intersection	South King and Victoria...	File Name	King_Victoria_10.18_EVENT_Future.xus				
Project Description	Event Peak Hour Wednesday 10/18/17						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	176	1342	190		0			36	47	149	205	

Signal Information				Signal Phases									
Cycle, s	90.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	50.0	30.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
				Red	1.0	1.0	0.0	0.0	0.0	0.0			

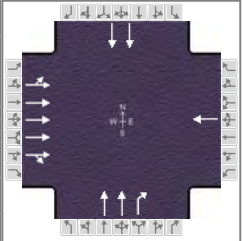
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2		8		4
Case Number		8.0		8.0		7.0		6.0
Phase Duration, s		55.0		55.0		35.0		35.0
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		3.2		0.0		3.2		3.2
Queue Clearance Time (g_s), s		13.5				3.8		11.3
Green Extension Time (g_e), s		5.6		0.0		0.9		0.9
Phase Call Probability		1.00				1.00		1.00
Max Out Probability		0.01				0.00		0.00

Movement Group Results	EB			WB			NB			SB			
	L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement	1	6	16		2			8	18	7	4		
Adjusted Flow Rate (v), veh/h	372	1130	343		0			39	47	162	223		
Adjusted Saturation Flow Rate (s), veh/h/ln	1639	1729	1568		1900			1900	1610	1390	1900		
Queue Service Time (g_s), s	10.2	11.1	11.2		0.0			1.3	1.8	8.1	8.0		
Cycle Queue Clearance Time (g_c), s	11.5	11.1	11.2		0.0			1.3	1.8	9.3	8.0		
Green Ratio (g/C)	0.56	0.56	0.56		0.56			0.33	0.33	0.33	0.33		
Capacity (c), veh/h	971	2882	871		1056			633	537	524	633		
Volume-to-Capacity Ratio (X)	0.383	0.392	0.394		0.000			0.062	0.087	0.309	0.352		
Back of Queue (Q), ft/ln (50 th percentile)	101.4	101.7	93.4		0			14	16.9	66.2	88.7		
Back of Queue (Q), veh/ln (50 th percentile)	4.1	4.1	3.7		0.0			0.6	0.7	2.6	3.5		
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.12	0.25	0.00		
Uniform Delay (d_1), s/veh	11.4	11.4	11.4		0.0			20.4	20.6	23.6	22.7		
Incremental Delay (d_2), s/veh	0.1	0.0	0.1		0.0			0.0	0.0	0.1	0.1		
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0		
Control Delay (d), s/veh	11.5	11.4	11.5		0.0			20.4	20.6	23.7	22.8		
Level of Service (LOS)	B	B	B					C	C	C	C		
Approach Delay, s/veh / LOS	11.4		B		0.0			20.5		C	23.2		C
Intersection Delay, s/veh / LOS	13.7						B						

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.8	C	3.6	D	2.8	C
Bicycle LOS Score / LOS	1.1	A	0.5	A	0.6	A	1.1	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/25/2017		Area Type	Other	
Jurisdiction		Time Period				PHF	0.92
Urban Street	South King Street	Analysis Year	2017		Analysis Period	1 > 7:00	
Intersection	South King and Ward Av...	File Name	King_Ward_10.18_EVENT_FUTURE.xus				
Project Description	Event Peak Wednesday 10/18/17						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	337	1401	89		0			562	307		1129	

Signal Information														
Cycle, s	90.0	Reference Phase	2											
Offset, s	0	Reference Point	End											
Uncoordinated	Yes	Simult. Gap E/W	On	Green	45.0	35.0	0.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0				
				Red	1.0	1.0	0.0	0.0	0.0	0.0				

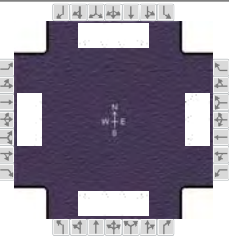
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		8.0
Phase Duration, s		50.0		50.0		40.0		40.0
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		3.2		0.0		3.2		3.2
Queue Clearance Time (g_s), s		17.8				14.1		30.2
Green Extension Time (g_e), s		6.0		0.0		6.7		2.9
Phase Call Probability		1.00				1.00		1.00
Max Out Probability		0.03				0.11		0.82

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6			8	18		4	
Adjusted Flow Rate (v), veh/h	377	1210	388		0			611	290		1227	
Adjusted Saturation Flow Rate (s), veh/h/ln	1450	1729	1663		1900			1809	1610		1809	
Queue Service Time (g_s), s	15.8	13.7	13.7		0.0			11.2	12.1		28.2	
Cycle Queue Clearance Time (g_c), s	15.8	13.7	13.7		0.0			11.2	12.1		28.2	
Green Ratio (g/C)	0.50	0.50	0.50		0.50			0.39	0.39		0.39	
Capacity (c), veh/h	804	2594	831		950			1407	626		1407	
Volume-to-Capacity Ratio (X)	0.469	0.466	0.467		0.000			0.434	0.463		0.872	
Back of Queue (Q), ft/ln (50 th percentile)	126.2	129.4	125.2		0			116.2	112.3		322.3	
Back of Queue (Q), veh/ln (50 th percentile)	5.0	5.2	5.0		0.0			4.6	4.5		12.9	
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.00		0.00	
Uniform Delay (d_1), s/veh	15.2	14.7	14.7		0.0			20.2	20.5		25.4	
Incremental Delay (d_2), s/veh	0.2	0.0	0.2		0.0			0.1	0.2		6.0	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0		0.0			0.0	0.0		0.0	
Control Delay (d), s/veh	15.4	14.7	14.8		0.0			20.3	20.7		31.5	
Level of Service (LOS)	B	B	B					C	C		C	
Approach Delay, s/veh / LOS	14.9	B		0.0			20.4	C		31.5	C	
Intersection Delay, s/veh / LOS	21.1						C					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.9	C		2.7	B		3.5	D		2.7	B	
Bicycle LOS Score / LOS	1.1	A		0.5	A		1.2	A		1.5	A	

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	0.25			
Analyst		Analysis Date	10/25/2017		Area Type	Other
Jurisdiction		Time Period		PHF	0.92	
Urban Street	Kapiolani Boulevard	Analysis Year	2017		Analysis Period	1 > 7:00
Intersection	Kapiolani and Ward Ave...	File Name	Kapiolani_Ward_10.18_EVENT_FUTURE.xus			
Project Description	Event Peak Wednesday 10/18/17					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h		743	121	202	589	184	179	685	181	303	746	169

Signal Information													
Cycle, s	160.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	30.0	40.0	20.0	5.0	40.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	4.0	4.0	0.0			
				Red	1.0	1.0	1.0	1.0	1.0	0.0			

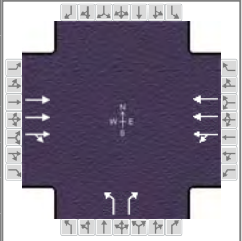
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6	5	2	3	8	7	4
Case Number		8.3	2.0	4.0	2.0	3.0	2.0	3.0
Phase Duration, s		45.0	35.0	80.0	25.0	45.0	35.0	55.0
Change Period, (Y+R _c), s		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (MAH), s		3.2	3.3	3.2	3.3	3.2	3.3	3.2
Queue Clearance Time (g _s), s		25.7	20.0	25.4	18.9	33.1	30.9	33.8
Green Extension Time (g _e), s		3.9	0.3	4.5	0.0	3.4	0.0	5.1
Phase Call Probability		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability		0.14	0.00	0.00	1.00	0.56	1.00	0.13

Movement Group Results	EB			WB			NB			SB					
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R			
Assigned Movement		6	16	5	2	12	3	8	18	7	4	14			
Adjusted Flow Rate (v), veh/h		621	294	220	409	383	195	745	173	329	811	160			
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1783	1810	1900	1773	1810	1809	1610	1810	1809	1610			
Queue Service Time (g _s), s		23.4	23.7	18.0	23.3	23.4	16.9	31.1	14.4	28.9	31.8	12.1			
Cycle Queue Clearance Time (g _c), s		23.4	23.7	18.0	23.3	23.4	16.9	31.1	14.4	28.9	31.8	12.1			
Green Ratio (g/C)		0.25	0.25	0.19	0.47	0.47	0.12	0.25	0.25	0.19	0.31	0.31			
Capacity (c), veh/h		950	446	339	891	831	226	904	403	339	1131	503			
Volume-to-Capacity Ratio (X)		0.654	0.660	0.647	0.460	0.461	0.860	0.823	0.429	0.971	0.717	0.318			
Back of Queue (Q), ft/ln (50 th percentile)		288.8	278.8	216.8	274.1	256.4	237.9	377.7	149.1	432.3	371.8	124.1			
Back of Queue (Q), veh/ln (50 th percentile)		11.6	11.2	8.7	11.0	10.3	9.5	15.1	6.0	17.3	14.9	5.0			
Queue Storage Ratio (RQ) (50 th percentile)		0.00	0.00	1.14	0.00	0.00	1.70	0.00	0.83	1.75	0.00	0.00			
Uniform Delay (d ₁), s/veh		53.8	53.9	60.1	28.8	28.8	68.6	56.7	50.4	64.6	48.7	42.0			
Incremental Delay (d ₂), s/veh		1.3	2.9	3.3	0.1	0.1	25.8	5.8	0.3	40.7	1.9	0.1			
Initial Queue Delay (d ₃), s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Control Delay (d), s/veh		55.1	56.8	63.4	28.9	28.9	94.4	62.5	50.7	105.3	50.6	42.1			
Level of Service (LOS)		E	E	E	C	C	F	E	D	F	D	D			
Approach Delay, s/veh / LOS	55.6	E		36.4			D			66.2			E		
Intersection Delay, s/veh / LOS				56.2						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	3.0	C	3.3	C	2.9	C
Bicycle LOS Score / LOS	1.0	A	1.3	A	1.4	A	1.6	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/24/2017		Area Type	Other	
Jurisdiction		Time Period				PHF	0.92
Urban Street	Kapiolani Boulevard	Analysis Year	2017		Analysis Period	1 > 7:00	
Intersection	Kapiolani and Kamakee	File Name	Kapiolani_Kamakee_10.18_EVENT_FUTURE.xus				
Project Description	Event Peak on Wednesday 10/18/17						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h		814	110	190	1408		244		139			

Signal Information													
Cycle, s	100.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	60.0	30.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
				Red	1.0	1.0	0.0	0.0	0.0	0.0			

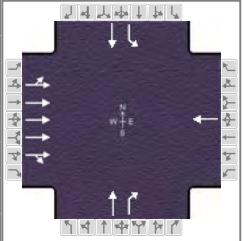
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		8.0		8.0		9.0		
Phase Duration, s		65.0		65.0		35.0		
Change Period, (Y+R _c), s		5.0		5.0		5.0		
Max Allow Headway (MAH), s		3.4		3.4		3.3		
Queue Clearance Time (g _s), s		10.7		41.6		14.0		
Green Extension Time (g _e), s		13.9		9.8		0.8		
Phase Call Probability		1.00		1.00		1.00		
Max Out Probability		0.07		0.41		0.00		

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement		2	12	1	6		3		18			
Adjusted Flow Rate (v), veh/h		674	319	307	1430		265		151			
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1790	662	1729		1810		1610			
Queue Service Time (g _s), s		8.6	8.7	30.9	20.8		12.0		7.2			
Cycle Queue Clearance Time (g _c), s		8.6	8.7	39.6	20.8		12.0		7.2			
Green Ratio (g/C)		0.60	0.60	0.60	0.60		0.30		0.30			
Capacity (c), veh/h		2280	1074	457	2075		543		483			
Volume-to-Capacity Ratio (X)		0.296	0.297	0.672	0.689		0.489		0.313			
Back of Queue (Q), ft/ln (50 th percentile)		86.6	82.5	144.5	263		131.2		70.3			
Back of Queue (Q), veh/ln (50 th percentile)		3.5	3.3	5.8	10.5		5.2		2.8			
Queue Storage Ratio (RQ) (50 th percentile)		0.00	0.00	0.00	0.00		0.94		0.50			
Uniform Delay (d ₁), s/veh		9.7	9.7	18.3	13.6		28.7		27.0			
Incremental Delay (d ₂), s/veh		0.0	0.1	3.1	0.8		0.3		0.1			
Initial Queue Delay (d ₃), s/veh		0.0	0.0	0.0	0.0		0.0		0.0			
Control Delay (d), s/veh		9.8	9.8	21.4	14.5		29.0		27.2			
Level of Service (LOS)		A	A	C	B		C		C			
Approach Delay, s/veh / LOS	9.8	A		15.7	B		28.3	C		0.0		
Intersection Delay, s/veh / LOS	15.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.7	A	0.7	A	3.2	C	3.2	C
Bicycle LOS Score / LOS	1.0	A	1.4	A		F		

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/24/2017		Area Type	Other	
Jurisdiction		Time Period				PHF	0.92
Urban Street	South King Street	Analysis Year	2017		Analysis Period	1 > 7:00	
Intersection	South King and Victoria...	File Name	King_Victoria_10.15_Sunday_Future.xus				
Project Description	PM Peak Sunday 10/15/17						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	123	866	148		0			26	95	44	247	

Signal Information													
Cycle, s	90.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	58.0	22.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
				Red	1.0	1.0	0.0	0.0	0.0	0.0			

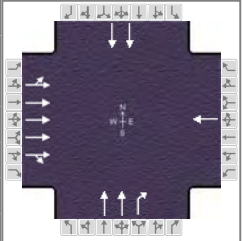
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		6.0
Phase Duration, s		63.0		63.0		27.0		27.0
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		3.2		0.0		3.2		3.2
Queue Clearance Time (g_s), s		7.3				5.9		13.2
Green Extension Time (g_e), s		3.2		0.0		0.8		0.7
Phase Call Probability		1.00				1.00		1.00
Max Out Probability		0.00				0.00		0.03

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6			8	18	7	4	
Adjusted Flow Rate (v), veh/h	243	724	226		0			28	87	48	268	
Adjusted Saturation Flow Rate (s), veh/h/ln	1624	1729	1581		1900			1900	1610	1404	1900	
Queue Service Time (g_s), s	3.7	5.2	5.3		0.0			1.0	3.9	2.4	11.2	
Cycle Queue Clearance Time (g_c), s	5.3	5.2	5.3		0.0			1.0	3.9	3.5	11.2	
Green Ratio (g/C)	0.64	0.64	0.64		0.64			0.24	0.24	0.24	0.24	
Capacity (c), veh/h	1108	3343	1019		1224			464	394	407	464	
Volume-to-Capacity Ratio (X)	0.219	0.217	0.221		0.000			0.061	0.221	0.117	0.578	
Back of Queue (Q), ft/ln (50 th percentile)	44.1	43.7	41.2		0			11.7	37.5	20.6	130.6	
Back of Queue (Q), veh/ln (50 th percentile)	1.8	1.7	1.6		0.0			0.5	1.5	0.8	5.2	
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh	6.6	6.6	6.6		0.0			26.1	27.2	27.4	29.9	
Incremental Delay (d_2), s/veh	0.0	0.0	0.0		0.0			0.0	0.1	0.0	1.2	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0	
Control Delay (d), s/veh	6.6	6.6	6.7		0.0			26.1	27.3	27.5	31.1	
Level of Service (LOS)	A	A	A					C	C	C	C	
Approach Delay, s/veh / LOS	6.6	A		0.0			27.0	C		30.5	C	
Intersection Delay, s/veh / LOS	12.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.4	B	3.6	D	2.9	C
Bicycle LOS Score / LOS	0.9	A	0.5	A	0.7	A	1.0	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/24/2017		Area Type	Other	
Jurisdiction		Time Period				PHF	1.00
Urban Street	South King Street	Analysis Year	2017		Analysis Period	1 > 7:00	
Intersection	South King Street and...	File Name	King_Ward_10.15_Sunday_Future.xus				
Project Description	PM Peak on Sunday 10/15/17						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	151	920	58		0			528	252		809	

Signal Information				Signal Timing (s)									
Cycle, s	90.0	Reference Phase	2										
Offset, s	0	Reference Point	End	Green	50.0	30.0	0.0	0.0	0.0	0.0			
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	0.0	0.0	0.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		8.0
Phase Duration, s		55.0		55.0		35.0		35.0
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		3.2		0.0		3.2		3.2
Queue Clearance Time (g_s), s		8.5				12.3		19.3
Green Extension Time (g_e), s		2.9		0.0		4.0		3.4
Phase Call Probability		1.00				1.00		1.00
Max Out Probability		0.00				0.04		0.19

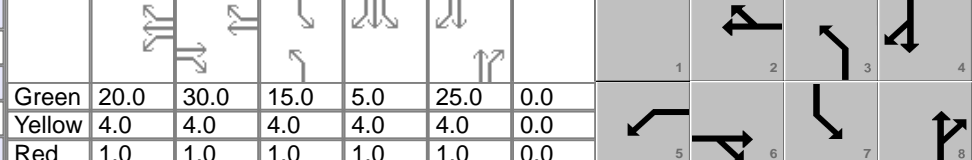
Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6			8	18		4	
Adjusted Flow Rate (v), veh/h	226	676	219		0			528	172		809	
Adjusted Saturation Flow Rate (s), veh/h/ln	1573	1729	1661		1900			1809	1610		1809	
Queue Service Time (g_s), s	5.5	6.0	6.1		0.0			10.3	7.2		17.3	
Cycle Queue Clearance Time (g_c), s	6.5	6.0	6.1		0.0			10.3	7.2		17.3	
Green Ratio (g/C)	0.56	0.56	0.56		0.56			0.33	0.33		0.33	
Capacity (c), veh/h	940	2882	923		1056			1206	537		1206	
Volume-to-Capacity Ratio (X)	0.240	0.235	0.237		0.000			0.438	0.320		0.671	
Back of Queue (Q), ft/ln (50 th percentile)	55.9	54.7	53.5		0			108.6	67.8		187.3	
Back of Queue (Q), veh/ln (50 th percentile)	2.2	2.2	2.1		0.0			4.3	2.7		7.5	
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.00		0.00	
Uniform Delay (d_1), s/veh	10.3	10.2	10.2		0.0			23.4	22.4		25.8	
Incremental Delay (d_2), s/veh	0.0	0.0	0.0		0.0			0.1	0.1		1.2	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0		0.0			0.0	0.0		0.0	
Control Delay (d), s/veh	10.3	10.2	10.3		0.0			23.5	22.5		27.0	
Level of Service (LOS)	B	B	B					C	C		C	
Approach Delay, s/veh / LOS	10.3	B		0.0			23.3	C		27.0	C	
Intersection Delay, s/veh / LOS	18.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.7	B	3.6	D	2.7	B
Bicycle LOS Score / LOS	0.9	A	0.5	A	1.1	A	1.2	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/24/2017				
Jurisdiction		Time Period					
Urban Street	Kapiolani Boulevard	Analysis Year	2017				
Intersection	Kapiolani Boulevard and...	File Name	Kapiolani_Ward_10.15_Sunday_Future.xus				
Project Description	PM Peak on Sunday 10/15/17						

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h		573	123	199	503	244	138	536	96	288	494	85

Signal Information												
Cycle, s	120.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
		Green	20.0	30.0	15.0	5.0	25.0	0.0				
		Yellow	4.0	4.0	4.0	4.0	4.0	0.0				
		Red	1.0	1.0	1.0	1.0	1.0	0.0				

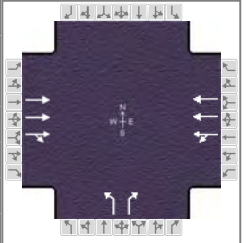
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6	5	2	3	8	7	4
Case Number		8.3	2.0	4.0	2.0	3.0	2.0	3.0
Phase Duration, s		35.0	25.0	60.0	20.0	30.0	30.0	40.0
Change Period, ($Y+R_c$), s		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (MAH), s		3.2	3.3	3.2	3.3	3.2	3.3	3.2
Queue Clearance Time (g_s), s		15.9	15.6	19.6	11.5	20.2	21.9	16.8
Green Extension Time (g_e), s		3.4	0.2	3.8	0.1	1.8	0.2	3.3
Phase Call Probability		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability		0.11	0.34	0.00	0.76	0.65	1.00	0.02

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h		500	235	216	403	365	150	583	83	313	537	71
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1750	1810	1900	1713	1810	1809	1610	1810	1809	1610
Queue Service Time (g_s), s		13.6	13.9	13.6	17.5	17.6	9.5	18.2	5.1	19.9	14.8	3.9
Cycle Queue Clearance Time (g_c), s		13.6	13.9	13.6	17.5	17.6	9.5	18.2	5.1	19.9	14.8	3.9
Green Ratio (g/C)		0.25	0.25	0.17	0.46	0.46	0.12	0.21	0.21	0.21	0.29	0.29
Capacity (c), veh/h		950	437	302	871	785	226	754	335	377	1055	470
Volume-to-Capacity Ratio (X)		0.526	0.537	0.717	0.463	0.465	0.663	0.773	0.246	0.830	0.509	0.150
Back of Queue (Q), ft/ln (50 th percentile)		161.5	153.5	168.5	197.8	179.4	117.4	217.6	52	260.1	165.6	38.8
Back of Queue (Q), veh/ln (50 th percentile)		6.5	6.1	6.7	7.9	7.2	4.7	8.7	2.1	10.4	6.6	1.6
Queue Storage Ratio (RQ) (50 th percentile)		0.00	0.00	0.89	0.00	0.00	0.84	0.00	0.29	1.05	0.00	0.00
Uniform Delay (d_1), s/veh		38.9	39.0	47.3	22.3	22.4	50.1	44.8	39.6	45.5	35.4	31.5
Incremental Delay (d_2), s/veh		0.3	0.7	6.9	0.1	0.2	5.7	4.5	0.1	13.6	0.2	0.1
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh		39.1	39.7	54.2	22.5	22.5	55.8	49.4	39.8	59.1	35.5	31.5
Level of Service (LOS)		D	D	D	C	C	E	D	D	E	D	C
Approach Delay, s/veh / LOS	39.3	D		29.5	C		49.6	D		43.2	D	
Intersection Delay, s/veh / LOS	40.0						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	3.0	C	3.2	C	2.9	C
Bicycle LOS Score / LOS	0.9	A	1.3	A	1.2	A	1.2	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	0.25			
Analyst		Analysis Date	10/24/2017		Area Type	Other
Jurisdiction		Time Period		PHF	0.92	
Urban Street	Kapiolani Boulevard	Analysis Year	2017		Analysis Period	1 > 7:00
Intersection	Kapiolani and Kamakee	File Name	Kapiolani_Kamakee_10.15_Sunday_Future.xus			
Project Description	PM Peak on Sunday 10/15					



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h		896	61	166	1380		180		136			

Signal Information													
Cycle, s	120.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	85.0	25.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
				Red	1.0	1.0	0.0	0.0	0.0	0.0			

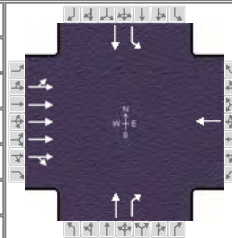
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		
Case Number		8.0		8.0		9.0		
Phase Duration, s		90.0		90.0		30.0		
Change Period, (Y+R _c), s		5.0		5.0		5.0		
Max Allow Headway (MAH), s		3.4		3.4		3.4		
Queue Clearance Time (g _s), s		9.8		32.2		13.5		
Green Extension Time (g _e), s		13.7		13.3		0.6		
Phase Call Probability		1.00		1.00		1.00		
Max Out Probability		0.01		0.05		0.00		

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement		2	12	1	6		3		18			
Adjusted Flow Rate (v), veh/h		692	337	319	1362		196		148			
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1845	763	1729		1810		1610			
Queue Service Time (g _s), s		7.8	7.8	22.3	17.4		11.5		9.6			
Cycle Queue Clearance Time (g _c), s		7.8	7.8	30.2	17.4		11.5		9.6			
Green Ratio (g/C)		0.71	0.71	0.71	0.71		0.21		0.21			
Capacity (c), veh/h		2692	1307	587	2449		377		335			
Volume-to-Capacity Ratio (X)		0.257	0.258	0.543	0.556		0.519		0.441			
Back of Queue (Q), ft/ln (50 th percentile)		74.7	72.9	111.5	199		131.6		97.3			
Back of Queue (Q), veh/ln (50 th percentile)		3.0	2.9	4.5	8.0		5.3		3.9			
Queue Storage Ratio (RQ) (50 th percentile)		0.00	0.00	0.00	0.00		0.94		0.69			
Uniform Delay (d ₁), s/veh		6.2	6.2	10.3	8.4		42.2		41.4			
Incremental Delay (d ₂), s/veh		0.0	0.0	0.6	0.2		0.6		0.3			
Initial Queue Delay (d ₃), s/veh		0.0	0.0	0.0	0.0		0.0		0.0			
Control Delay (d), s/veh		6.3	6.3	10.9	8.6		42.8		41.7			
Level of Service (LOS)		A	A	B	A		D		D			
Approach Delay, s/veh / LOS	6.3	A		9.0	A		42.3	D		0.0		
Intersection Delay, s/veh / LOS	11.8						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.6	A	0.7	A	3.2	C	3.2	C
Bicycle LOS Score / LOS	1.1	A	1.4	A		F		

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	0.25			
Analyst		Analysis Date	10/25/2017		Area Type	Other
Jurisdiction		Time Period				
Urban Street	South King Street	Analysis Year	2017		Analysis Period	1 > 7:00
Intersection	South King and Victoria...	File Name	King_Victoria_10.18_PM_Future_What If.xus			
Project Description	PM Peak Hour Wednesday 10/18/17					



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	419	1800	187		0			152	107	206	136	

Signal Information													
Cycle, s	90.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
				Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

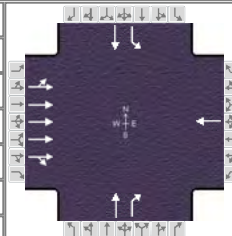
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		6.0
Phase Duration, s		39.0		39.0		18.0		18.0
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		0.0		0.0		0.0		0.0
Queue Clearance Time (g_s), s		0.0		0.0		0.0		0.0
Green Extension Time (g_e), s		0.0		0.0		0.0		0.0
Phase Call Probability		0.00		0.00		0.00		0.00
Max Out Probability		0.00		0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6			8	18	7	4	
Adjusted Flow Rate (v), veh/h	0	0	0		0			0	0	0	0	
Adjusted Saturation Flow Rate (s), veh/h/ln	0	0	0		0			0	0	0	0	
Queue Service Time (g_s), s	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0	
Cycle Queue Clearance Time (g_c), s	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0	
Green Ratio (g/C)	0.38	0.38	0.38		0.38			0.14	0.14	0.14	0.14	
Capacity (c), veh/h	633	1960	617		718			274	233	158	274	
Volume-to-Capacity Ratio (X)	0.794	0.803	0.803		0.000			0.602	0.430	1.417	0.539	
Back of Queue (Q), ft/ln (50 th percentile)	274.2	253.1	259.4		0			89.7	50.6	330.1	77.1	
Back of Queue (Q), veh/ln (50 th percentile)	11.0	10.1	10.4		0.0			3.6	2.0	13.2	3.1	
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.37	1.26	0.00	
Uniform Delay (d_1), s/veh	26.4	25.0	25.0		0.0			36.1	35.1	43.6	35.7	
Incremental Delay (d_2), s/veh	6.4	2.3	7.0		0.0			2.6	0.5	220.4	1.2	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0	
Control Delay (d), s/veh	32.8	27.3	32.0		0.0			38.7	35.6	264.0	36.9	
Level of Service (LOS)	C	C	C					D	D	F	D	
Approach Delay, s/veh / LOS	29.3	C		0.0				37.5	D	173.7	F	
Intersection Delay, s/veh / LOS	46.7						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.9	C	3.6	D	2.8	C
Bicycle LOS Score / LOS	1.3	A	0.5	A	0.9	A	1.1	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/25/2017		Area Type	Other	
Jurisdiction		Time Period				PHF	0.92
Urban Street	South King Street	Analysis Year	2017		Analysis Period	1 > 7:00	
Intersection	South King and Victoria...	File Name	King_Victoria_10.18_EVENT_Future_What If.xus				
Project Description	Event Peak Hour Wednesday 10/18/17						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	176	1342	190		0			36	47	149	205	

Signal Information													
Cycle, s	90.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
				Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

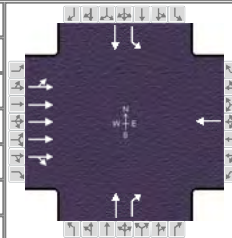
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2		8		4
Case Number		8.0		8.0		7.0		6.0
Phase Duration, s		39.0		39.0		18.0		18.0
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		0.0		0.0		0.0		0.0
Queue Clearance Time (g_s), s		0.0		0.0		0.0		0.0
Green Extension Time (g_e), s		0.0		0.0		0.0		0.0
Phase Call Probability		0.00		0.00		0.00		0.00
Max Out Probability		0.00		0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16		2			8	18	7	4	
Adjusted Flow Rate (v), veh/h	0	0	0		0			0	0	0	0	
Adjusted Saturation Flow Rate (s), veh/h/ln	0	0	0		0			0	0	0	0	
Queue Service Time (g_s), s	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0	
Cycle Queue Clearance Time (g_c), s	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0	
Green Ratio (g/C)	0.38	0.38	0.38		0.38			0.14	0.14	0.14	0.14	
Capacity (c), veh/h	679	1960	592		718			274	233	256	274	
Volume-to-Capacity Ratio (X)	0.554	0.575	0.578		0.000			0.143	0.201	0.633	0.812	
Back of Queue (Q), ft/ln (50 th percentile)	160	155.7	144.9		0			18.9	22.8	94.8	147.9	
Back of Queue (Q), veh/ln (50 th percentile)	6.4	6.2	5.8		0.0			0.8	0.9	3.8	5.9	
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.17	0.36	0.00	
Uniform Delay (d_1), s/veh	22.6	22.3	22.3		0.0			33.6	33.9	38.9	37.3	
Incremental Delay (d_2), s/veh	0.6	0.3	0.9		0.0			0.1	0.2	3.9	15.6	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0	
Control Delay (d), s/veh	23.2	22.5	23.2		0.0			33.7	34.1	42.7	52.9	
Level of Service (LOS)	C	C	C					C	C	D	D	
Approach Delay, s/veh / LOS	22.8	C		0.0			33.9	C	48.6		D	
Intersection Delay, s/veh / LOS	27.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.9	C	3.6	D	2.8	C
Bicycle LOS Score / LOS	1.1	A	0.5	A	0.6	A	1.1	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	10/24/2017		Area Type	Other	
Jurisdiction		Time Period				PHF	0.92
Urban Street	South King Street	Analysis Year	2017		Analysis Period	1 > 7:00	
Intersection	South King and Victoria...	File Name	King_Victoria_10.15_Sunday_Future_What If.xus				
Project Description	PM Peak Sunday 10/15/17						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	123	866	148		0			26	95	44	247	

Signal Information													
Cycle, s	90.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
				Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

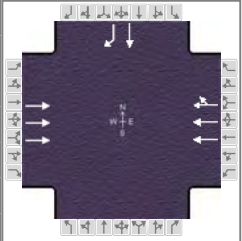
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		7.0		6.0
Phase Duration, s		39.0		39.0		18.0		18.0
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (MAH), s		0.0		0.0		0.0		0.0
Queue Clearance Time (g_s), s		0.0		0.0		0.0		0.0
Green Extension Time (g_e), s		0.0		0.0		0.0		0.0
Phase Call Probability		0.00		0.00		0.00		0.00
Max Out Probability		0.00		0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12		6			8	18	7	4	
Adjusted Flow Rate (v), veh/h	0	0	0		0			0	0	0	0	
Adjusted Saturation Flow Rate (s), veh/h/ln	0	0	0		0			0	0	0	0	
Queue Service Time (g_s), s	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0	
Cycle Queue Clearance Time (g_c), s	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0	
Green Ratio (g/C)	0.38	0.38	0.38		0.38			0.14	0.14	0.14	0.14	
Capacity (c), veh/h	679	1960	597		718			274	233	265	274	
Volume-to-Capacity Ratio (X)	0.365	0.368	0.376		0.000			0.103	0.374	0.181	0.978	
Back of Queue (Q), ft/ln (50 th percentile)	94.1	89.9	84.8		0			13.5	43.6	23.8	237.6	
Back of Queue (Q), veh/ln (50 th percentile)	3.8	3.6	3.4		0.0			0.5	1.7	1.0	9.5	
Queue Storage Ratio (RQ) (50 th percentile)	0.00	0.00	0.00		0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh	20.4	20.2	20.3		0.0			33.4	34.8	35.1	38.4	
Incremental Delay (d_2), s/veh	0.1	0.0	0.1		0.0			0.1	0.4	0.1	48.0	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0		0.0			0.0	0.0	0.0	0.0	
Control Delay (d), s/veh	20.5	20.3	20.5		0.0			33.5	35.2	35.3	86.3	
Level of Service (LOS)	C	C	C					C	D	D	F	
Approach Delay, s/veh / LOS	20.4	C		0.0			34.8	C		78.6	E	
Intersection Delay, s/veh / LOS	32.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.4	B	2.4	B	3.6	D	2.9	C
Bicycle LOS Score / LOS	0.9	A	0.5	A	0.7	A	1.0	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	0.25			
Analyst		Analysis Date	9/26/2018		Area Type	Other
Jurisdiction		Time Period				
Urban Street	Kapiolani Boulevard	Analysis Year	2018		Analysis Period	1 > 7:00
Intersection	Kapiolani and Victoria	File Name	Kapiolani_Victoria_Weekday_PM_Future.xus			
Project Description	Weekday PM Peak Hour					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h		1863			1432	593					0	63

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

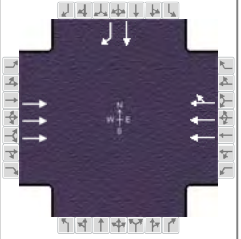
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6				4
Case Number		8.0		8.0				11.0
Phase Duration, s		75.0		75.0				23.0
Change Period, (Y+R _c), s		5.0		5.0				5.0
Max Allow Headway (MAH), s		3.2		3.2				3.5
Queue Clearance Time (g _s), s		34.1		32.7				6.5
Green Extension Time (g _e), s		21.8		22.3				0.1
Phase Call Probability		1.00		1.00				1.00
Max Out Probability		0.47		0.46				0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2			6	16					4	14
Adjusted Flow Rate (v), veh/h		2025			1416	634					0	68
Adjusted Saturation Flow Rate (s), veh/h/ln		1725			1900	1666					1900	1610
Queue Service Time (g _s), s		32.1			28.7	30.7					0.0	4.5
Cycle Queue Clearance Time (g _c), s		32.1			28.7	30.7					0.0	4.5
Green Ratio (g/C)		0.58			0.58	0.58					0.15	0.15
Capacity (c), veh/h		3019			2217	972					285	242
Volume-to-Capacity Ratio (X)		0.671			0.639	0.652					0.000	0.284
Back of Queue (Q), ft/ln (50 th percentile)		314.1			320.4	294.9					0	46.3
Back of Queue (Q), veh/ln (50 th percentile)		12.6			12.8	11.8					0.0	1.9
Queue Storage Ratio (RQ) (50 th percentile)		0.00			0.00	0.00					0.00	0.00
Uniform Delay (d ₁), s/veh		17.1			16.6	16.8					0.0	45.3
Incremental Delay (d ₂), s/veh		0.5			0.5	1.2					0.0	0.2
Initial Queue Delay (d ₃), s/veh		0.0			0.0	0.0					0.0	0.0
Control Delay (d), s/veh		17.6			17.1	18.0					0.0	45.5
Level of Service (LOS)		B			B	B						D
Approach Delay, s/veh / LOS	17.6	B		17.4	B		0.0			45.5	D	
Intersection Delay, s/veh / LOS	17.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.9	A	1.7	A	3.4	C	3.2	C
Bicycle LOS Score / LOS	1.6	A	1.6	A			0.6	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information		
Agency		Duration, h	0.25			
Analyst		Analysis Date	9/26/2018		Area Type	Other
Jurisdiction		Time Period				
Urban Street	Kapiolani Boulevard	Analysis Year	2018		Analysis Period	1 > 7:00
Intersection	Kapiolani and Victoria	File Name	Kapiolani_Victoria_Weekday_Event_Future_REV...			
Project Description	Weekday Event Peak Hour					



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h		924			928	724					0	47

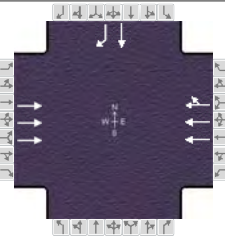
Signal Information													
Cycle, s	160.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	104.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				Red	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6				4
Case Number		8.0		8.0				11.0
Phase Duration, s		109.0		109.0				29.0
Change Period, (Y+R _c), s		5.0		5.0				5.0
Max Allow Headway (MAH), s		3.2		3.2				3.5
Queue Clearance Time (g _s), s		15.5		37.2				6.5
Green Extension Time (g _e), s		11.2		11.1				0.1
Phase Call Probability		1.00		1.00				1.00
Max Out Probability		0.00		0.01				0.00

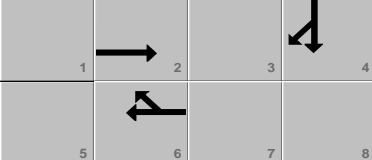
Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2			6	16					4	14
Adjusted Flow Rate (v), veh/h		1004			1009	622					0	51
Adjusted Saturation Flow Rate (s), veh/h/ln		1725			1900	1610					1900	1610
Queue Service Time (g _s), s		13.5			20.2	35.2					0.0	4.5
Cycle Queue Clearance Time (g _c), s		13.5			20.2	35.2					0.0	4.5
Green Ratio (g/C)		0.65			0.65	0.65					0.15	0.15
Capacity (c), veh/h		3364			2470	1047					285	242
Volume-to-Capacity Ratio (X)		0.299			0.408	0.594					0.000	0.212
Back of Queue (Q), ft/ln (50 th percentile)		133.8			221.3	330.6					0	46.6
Back of Queue (Q), veh/ln (50 th percentile)		5.4			8.9	13.2					0.0	1.9
Queue Storage Ratio (RQ) (50 th percentile)		0.00			0.00	0.00					0.00	0.00
Uniform Delay (d ₁), s/veh		12.2			13.3	16.0					0.0	59.7
Incremental Delay (d ₂), s/veh		0.0			0.0	0.6					0.0	0.2
Initial Queue Delay (d ₃), s/veh		0.0			0.0	0.0					0.0	0.0
Control Delay (d), s/veh		12.2			13.4	16.6					0.0	59.9
Level of Service (LOS)		B			B	B						E
Approach Delay, s/veh / LOS	12.2	B		14.6	B		0.0			59.9	E	
Intersection Delay, s/veh / LOS	14.6						B					

Multimodal Results	EB		WB		NB		SB	
	Pedestrian LOS Score / LOS	1.9	A	1.7	A	3.4	C	3.2
Bicycle LOS Score / LOS	1.0	A	1.4	A			0.6	A

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency		Duration, h	0.25				
Analyst		Analysis Date	9/26/2018				
Jurisdiction		Time Period					
Urban Street	Kapiolani Boulevard	Analysis Year	2018				
Intersection	Kapiolani and Victoria	File Name	Kapiolani_Victoria_Weekend_Future.xus				
Project Description	Weekend Peak Hour						

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h		957			836	724					0	110

Signal Information													
Cycle, s	120.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On										
Force Mode	Fixed	Simult. Gap N/S	On										
		Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
		Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
		Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6				4
Case Number		8.0		8.0				11.0
Phase Duration, s		75.0		75.0				23.0
Change Period, ($Y+R_c$), s		5.0		5.0				5.0
Max Allow Headway (MAH), s		0.0		0.0				0.0
Queue Clearance Time (g_s), s		0.0		0.0				0.0
Green Extension Time (g_e), s		0.0		0.0				0.0
Phase Call Probability		0.00		0.00				0.00
Max Out Probability		0.00		0.00				0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2			6	16					4	14
Adjusted Flow Rate (v), veh/h		0			0	0					0	0
Adjusted Saturation Flow Rate (s), veh/h/ln		0			0	0					0	0
Queue Service Time (g_s), s		0.0			0.0	0.0					0.0	0.0
Cycle Queue Clearance Time (g_c), s		0.0			0.0	0.0					0.0	0.0
Green Ratio (g/C)		0.58			0.58	0.58					0.15	0.15
Capacity (c), veh/h		3019			2217	939					285	242
Volume-to-Capacity Ratio (X)		0.345			0.410	0.641					0.000	0.495
Back of Queue (Q), ft/ln (50 th percentile)		121.8			167.6	277.3					0	83.8
Back of Queue (Q), veh/ln (50 th percentile)		4.9			6.7	11.1					0.0	3.4
Queue Storage Ratio (RQ) (50 th percentile)		0.00			0.00	0.00					0.00	0.00
Uniform Delay (d_1), s/veh		13.0			13.7	16.6					0.0	46.8
Incremental Delay (d_2), s/veh		0.0			0.0	1.2					0.0	0.6
Initial Queue Delay (d_3), s/veh		0.0			0.0	0.0					0.0	0.0
Control Delay (d), s/veh		13.1			13.7	17.8					0.0	47.4
Level of Service (LOS)		B			B	B						D
Approach Delay, s/veh / LOS	13.1		B	15.4		B	0.0			47.4		D
Intersection Delay, s/veh / LOS	15.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.9	A	1.7	A	3.5	C	3.2	C
Bicycle LOS Score / LOS	1.1	A	1.3	A			0.7	A

Appendix D. Summary of Existing Conditions

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BLAISDELL CENTER MASTER PLAN

EXISTING CONDITIONS REPORT - FINAL | MARCH 2018

AECOM

Gensler



WCITARCHITECTURE

Snøhetta



PREFACE

PURPOSE

Since 1964, the Neal S. Blaisdell Center “Center” has welcomed locals and visitors to the 22.4-acre campus with the Concert Hall, Arena, and Exhibition Hall. First built as state-of-the-art facilities, the 50+ year old campus is in significant need of facility, systems, and infrastructure upgrades and renovation. In order to succeed for the next 50 years, the Center will need to successfully balance mission vs. money, and focus on long term sustainability with plans for reinvestment.

Conceptual Design Plan Purpose and Objectives

Building on the Blaisdell Center Master Plan Feasibility Study and Conceptual Plan from June 2016, the Conceptual Design Report will further develop the building program and space needs to determine the scope of renovation and new construction, define a site configuration for the overall campus, and create a conceptual plan to illustrate the future vision for the Center. The conceptual plan will balance the need to address deferred maintenance and needed modernization, with the projected growth of the Center to provide additional facilities and public open space to serve the growing community. Significant renovations and additions to the existing Concert Hall and Arena along with the design of new facilities such as an Exhibit Hall, additional Performance Hall, Sports Hall, Practice and Rehearsal spaces, Offices, Meeting Rooms, Outdoor Performance Spaces and Parking Structure.

VISION STATEMENT

Springing from the 'aina, the source that has sustained generations, Blaisdell Center is Honolulu's iconic gathering place perpetuating community, entertainment, and culture and reflecting the resilience of the people of our island home.

Using the vision statement as a foundation, the following principles were developed for the Blaisdell Center Conceptual Plan:

- Curate a diverse collection of programming that engages all communities.
- Integrate the Center with the surrounding community as the focal point of a larger district.
- Activate and shape spaces focused on creating memorable experiences.
- Connect with the storied place of Kewalo Punawai to reflect the unique environment and cultural traditions of the site.
- Sustain the Center through the innovative use of resources.



PROCESS

The Blaisdell Center Master Plan Feasibility Study and Conceptual Plan from June 2016 is the basis for developing the next steps in the Blaisdell Master Planning Process. The Feasibility Study began with understanding existing conditions, followed by a site assessment, community outreach, market analysis, development of a vision statement and guiding principles, a study tour of similar facilities on the mainland (San Francisco, Seattle, and Kansas City), generation of alternatives, selection of a preferred alternative, and a financial analysis. A site assessment and market analysis were performed to examine the feasibility of redevelopment opportunities for all Blaisdell Center facilities and to determine if current venue sizes align with projected market demand. Usage trends, operating costs, revenue generation, historic capital costs, and deferred maintenance issues were reviewed for all three facilities.

Summary of previous Feasibility Study outcomes:

Public Feedback

- Activate site
- Additional venues and open space
- Utilize outdoor space

- Support local community and groups
- Sustainable and efficient design
- Showcase cultural and historical stories
- Accessibility and connectivity to the neighborhood

Market Analysis Findings

- Well utilized and provide venues not available elsewhere in Honolulu
- Generates revenue
- Aging structures with outdated facilities and technology below industry standards
- Venue conditions not the only barriers to increasing market share
- Municipal civic center's typically rely on public funding of capital improvements
- Market capacity for additional venues/events

Recommendations

- Additional Venues - Performance Hall, Rehearsal, Classrooms, Restaurant/Café, and Public open space
- Renovate - Concert Hall, Arena,
- Reconfigure and rebuild - Exhibition Hall and Parking Garage

See “Blaisdell Center Master Plan Feasibility Study and Conceptual Plan Report” for detailed description of analysis and recommendations.

Building off of this preferred land use scenario, information was gathered to review existing conditions and develop the future programmatic and spatial needs while working to understand how these elements might be configured on site

Assessment of Existing Facility Conditions

The design team observed the conditions of the existing facilities identified in the Feasibility Study. Through site walks, user group meetings, archival documents, and construction drawing review, an assessment of existing space assignment and use, existing department relationships, physical conditions, technical infrastructure, performance infrastructure, and acoustical characteristics were assessed. Refer to the Existing Facility Overview for a summary of existing facility conditions. Detailed documentation of the mechanical, electrical, and plumbing systems along with structural review of existing conditions can be found in the assessment reports produced as part of the project's Technical Studies.



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I. INTRODUCTION

At more than 22.4 acres, the Neal S. Blaisdell Center (Center) site sits within the heart of Urban Honolulu and presents a unique opportunity to redevelop a new signature urban space that extends the heritage of the existing campus and addresses the current limitations observed at existing facilities. In envisioning the future of the of the site, emphasis will be placed on simultaneously expanding the amount and diversity of program space while also increasing the quantity and quality of public space. Additionally, the conceptual plan will strive to better integrate the Center within the urban fabric of the larger district, improve connectivity, and activate the edges to generate increased daily usage by patrons and neighbors alike.

In order to support these objectives, the current facilities were reviewed to determine how both the physical and functional components could be preserved, modified, reconfigured, and/or added to in order to create a Center that will be able serve the community for another 50 years. With most facilities built more than 50 years ago, the campus' buildings have reached their expected life spans at conditions which continue to support the intended uses. However, the existing infrastructure, technology, configuration, capacity, and available programmatic areas fall significantly below current standards and patron expectations. Deferred maintenance of the aging buildings and deferred reinvestment in the Center as a public amenity limit the Center's draw, capacity to host events, and ability to operate sustainably. While repairing the physical conditions may address the needed building upgrades, more holistic reconfiguration of the site is necessary to support the growing community and re-establish the Center as signature venue on the world's stage.

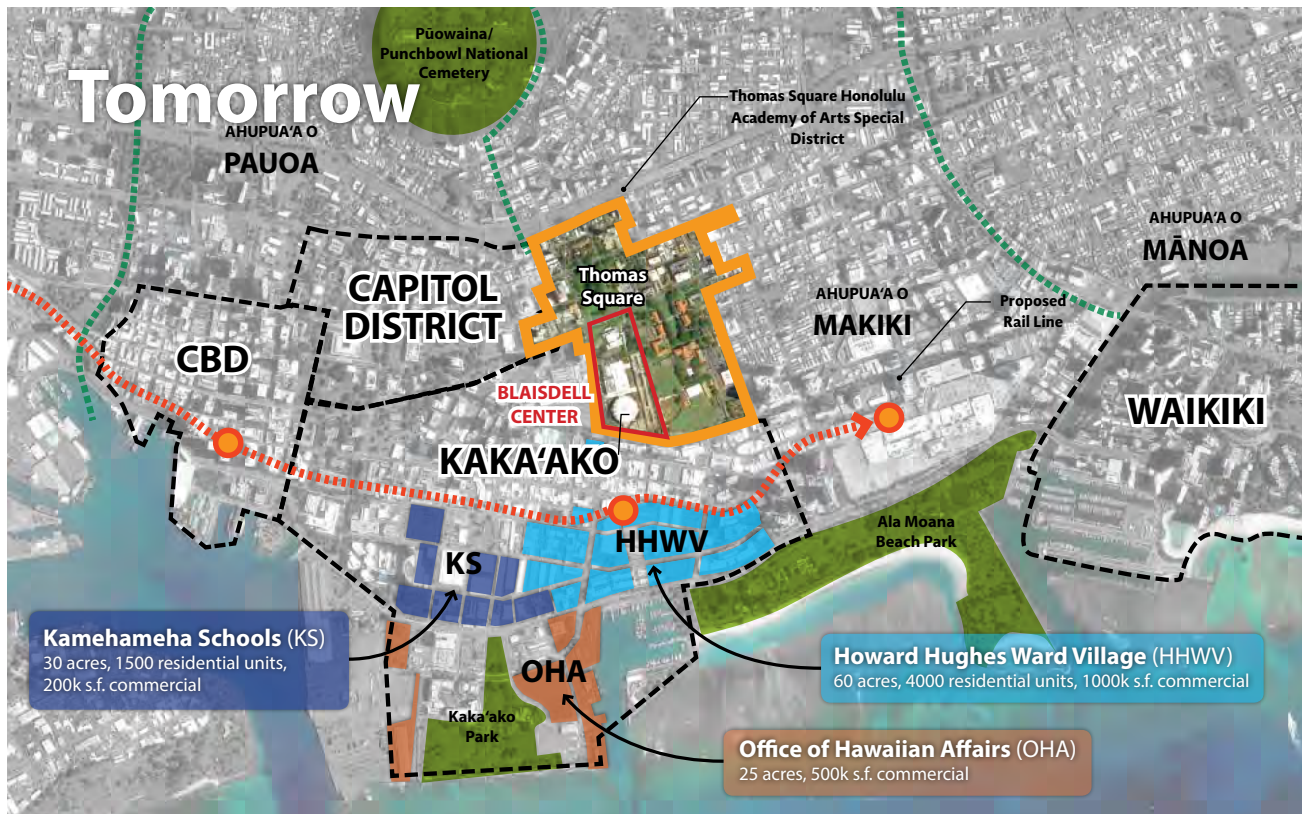




II. SITE DESCRIPTION

A. PROJECT LOCATION

Blaisdell Center is a 22.4 acre site located in the heart of Honolulu between the Capital District, downtown Honolulu, Kaka'ako and Makiki. The site is surrounded by some of Honolulu's important cultural and educational institutions including, McKinley High School, Honolulu Museum of Art, Linekona, and Thomas Square Park forming the foundation for a potential Arts District. Urban renewal and redevelopment in high rise residential and commercial development and planned rail station will bring more density within walking distance to the Center.



Downtown Honolulu to Waikiki Neighborhood / Land Owner Map



B. SITE HISTORY

- 1870: The mauka area of the Ward estate – current site of the Neal S. Blaisdell Center – was purchased by the Wards
- 1875: Six thousand coconut trees, kiawe for firewood, and forage grasses for their horses and cattle were planted. The fishpond and ‘auwai (connecting to the sea) were restored. A well was sunk to provide water to the home and irrigate the property by means of pumps “driven by windmills, there being an inexhaustible supply of water a few feet below the surface of the plains” (Pacific Commercial Advertiser, Sept 4, 1875).
- 1881: C.P. and Victoria Ward built their home, later referred to as Old Plantation, just south of Thomas Square
- 1923: McKinley High School was constructed to the east of the property.
- 1957: The City and County of Honolulu, long interested in Old Plantation as a site for a concert hall and sports arena, purchased the property. Thousands of people toured the estate during the Honolulu Academy of Arts open house following the City’s purchase. Soon thereafter, the City commenced construction for the Honolulu International Center, now known as the Neal S. Blaisdell Center.
- 1959: Merrill, Simms, & Roehrig submit plans for a 10,000-seat arena, 3,000-seat concert auditorium, and 600-seat theatre with a pedestrian mall over a lagoon feature at the center of the site.
- 1960: City hires new architect, Adrian Wilson, to provide plans for a Municipal Auditorium and convention facility on site.
- 1961: Backed by public support, a Concert Hall is added to planned auditorium and exhibition building planned for the site.

- 1962: Construction begins on the arena, exhibition hall, and concert hall.
- 1963: The City Council named the auditorium the Honolulu International Center or HIC. HIC was later renamed as the Neal S. Blaisdell Center after the mayor who oversaw construction.
- 1964: The HIC was completed at a cost of \$14.4 million and dedicated as a living memorial to all of Hawai'i's war heroes at the opening ceremony.
- 1966 Feasibility Study for additional parking and Warehouse Facilities.
- 1988 Phase 1 Parking Structure
- 1992 Exhibition Hall Expansion adds meeting rooms and Galleria
- 1994 Trades and Shops Maintenance Facility
- 2013 Arena dressing room addition

Thomas Square

Located directly to the north of the Center, Thomas Square is the site where Admiral Richard Dalton Thomas, a Local Representative of the British Commission (the government of the Provisional Cession), handed the islands back to King Kamehameha III on July 31, 1843. King Kamehameha III thereafter stated the now State motto, "Ua mau ke ea o ka 'āina i ka pono ("The sovereignty of the land is perpetuated in righteousness")". On July 31st of every year, La Hoi'oho'i 'Ea (Restoration Day) is celebrated at Thomas Square. The park was added to the State and National Register of Historic Places in 1972.

Honolulu Museum of Art

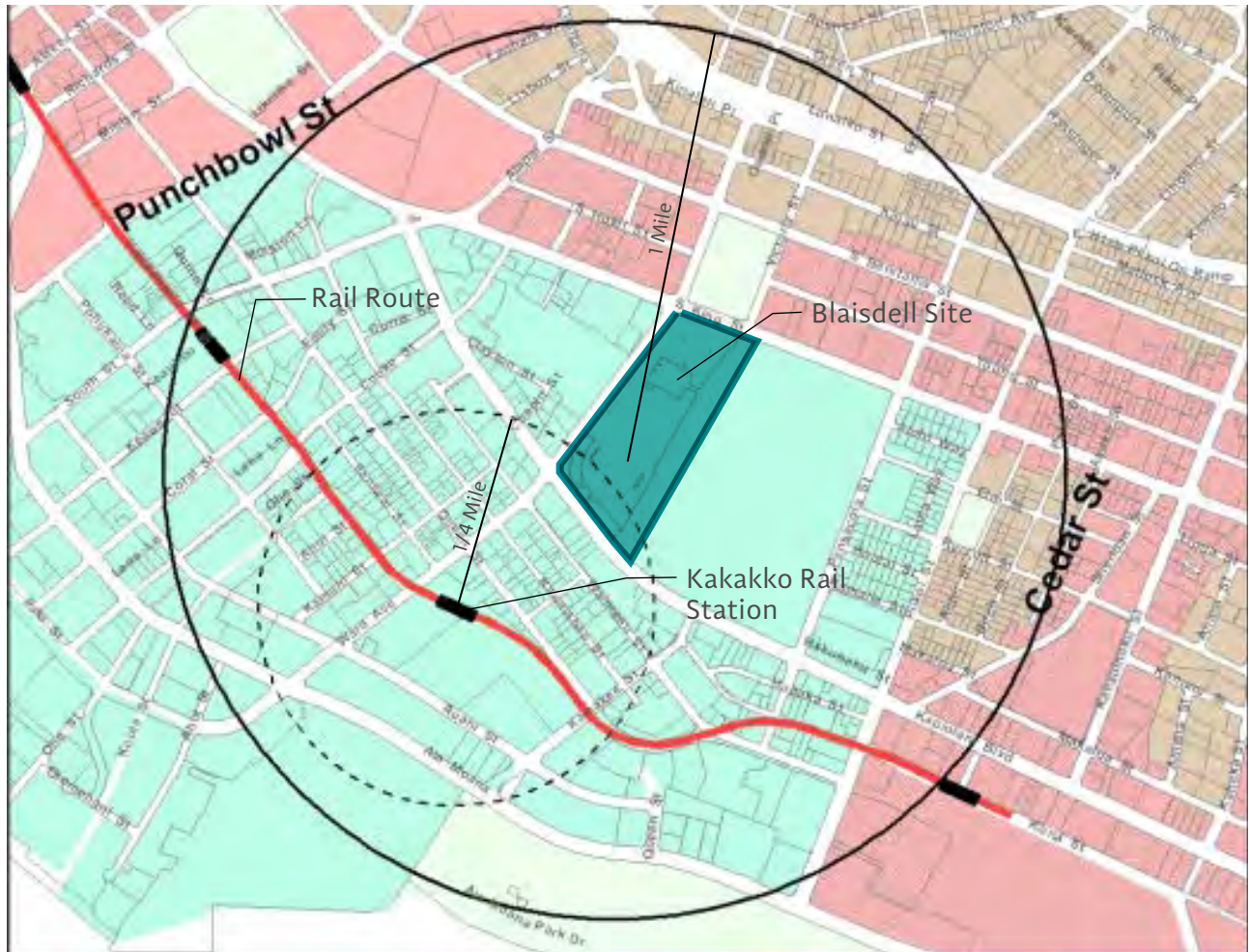
To the north of Thomas Square along the Ward corridor is the Honolulu Museum of Art, formerly known as the Honolulu Academy of Arts founded in 1922 by Anna Rice Cooke, has one of the largest collections of Asian and Pan-Pacific art in the United States. Its collections have grown to more than 50,000 works of art. It was added to the State and National Register of Historic Places in 1972. A block to the East and adjacent to Thomas Square is the Museum of Art School (formally Linekona School) opened in 1927. This area combined with Thomas Square and the Blaisdell Campus round out an Art District within Kakakko.



Thomas Square Park Fountain



Honolulu Museum of Art

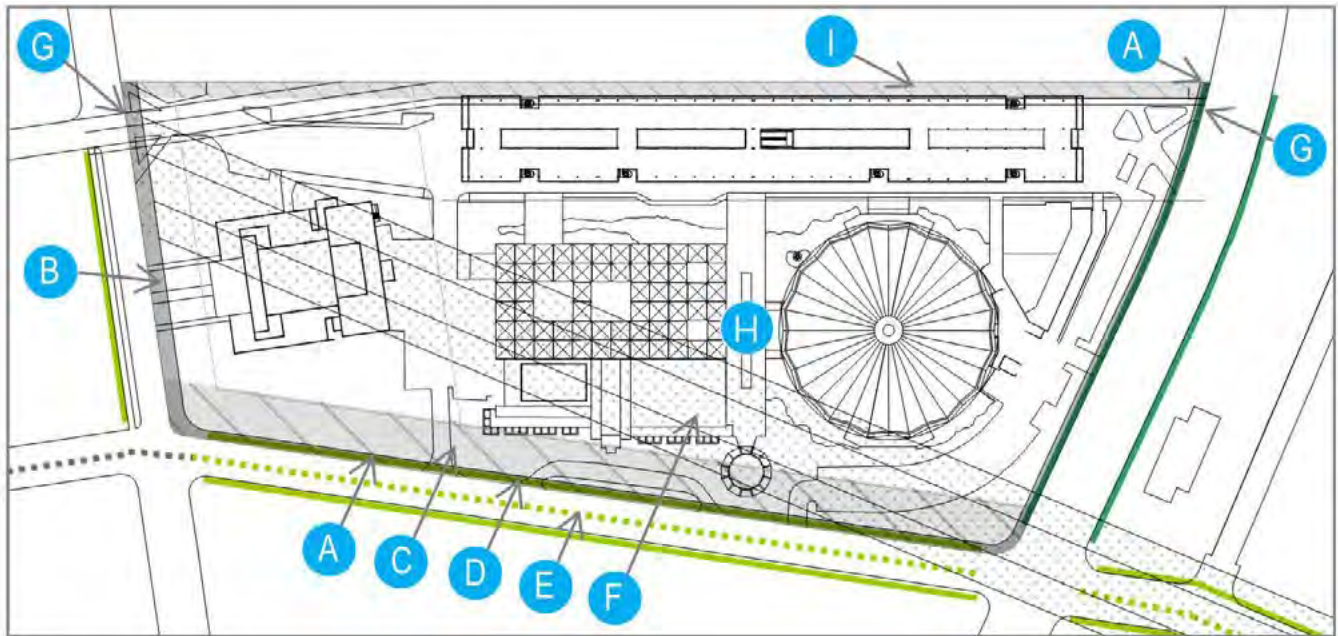


C. SITE ZONING

Hawaii Community Development Authority (HCDA) is the State agency responsible for creating and enforcing Hawaii Administrative Rule Chapter 217, called the “Mauka Area Rules” establishing long-term land use policy in the Kaka‘ako community development district. The Mauka portion of the Site also falls within the Thomas Square Special Design District boundary, but is superseded by HCDA Mauka Rules and therefore LUO does not apply.

In the map above dashed circle represents 1/4-mile radius from the Kaka‘ako rail station. Colors represent zoning: aqua is HCDA jurisdiction; pink is LUO business mixed-use (BMX-3); and brown is apartment medium density (A-2); white is preservation/park use.

Since the site is owned and operated by the City and County of Honolulu, strict compliance with the to Mauka Area Plan Regulations, HCDA permit, and Board approval are not required per HCDA Executive Director. A consultation process to show general conformance to the intent of the Mauka Rules will need to be completed, but specific procedures for consultation are not currently defined under the Mauka Rules.



HCDA MAUKA RULES:

- | | |
|--|---|
| <p>A - 10' BUILDING SETBACK</p> <p>B - 15' BUILDING SETBACK</p> <p>C - 50' BUILDING SETBACK AT 65' HIGH</p> <p>D - WARD AVENUE STREET TREES - RAINBOW SHOWER TREES @ 45' O.C.</p> <p>E - DESIGNATED MAUKA/MAKAI VIEW CORRIDOR & PROMENADE STREET COCONUT PALM CENTER MEDIAN</p> | <p>F - VIEW PRESERVATION ZONE</p> <p>G - 22' DRIVEWAY SETBACK FROM ADJACENT PROPERTY</p> <p>H - 400' BUILDING HEIGHT LIMIT</p> <p>I - LARGE LOT REQUIREMENT 26'-0" WIDE ALLEY, TO PROVIDE VEHICLE ACCESS, ACCESS TO LIGHT AND AIR FOR ADJACENT PARCEL</p> |
|--|---|

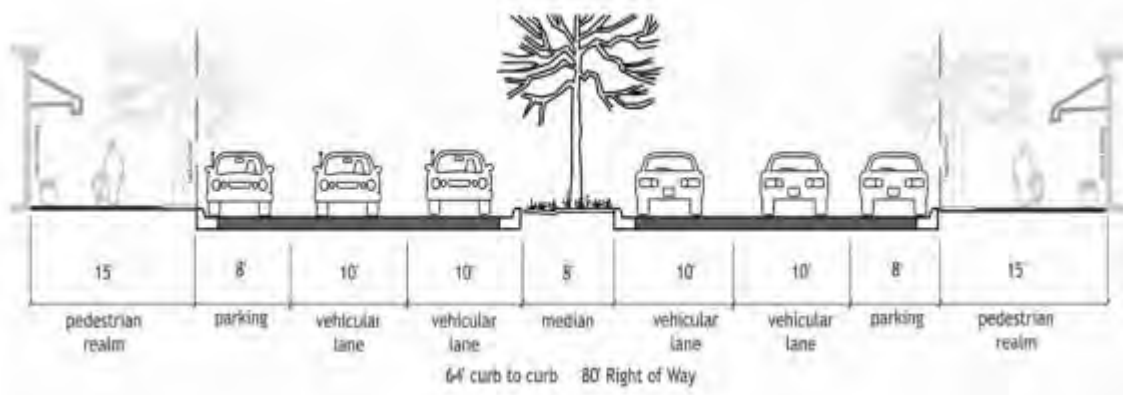
Pertinent Mauka Rules goals include:

- That ordinary activities of daily living occur within walking distance of most dwellings, allowing independence to those who do not drive;
- That civic, institutional, and commercial activity should be embedded in neighborhoods, not isolated in remote single-use complexes;
- That appropriate building densities and land uses be provided within walking distance of transit stops;
- That buildings and landscaping contribute to the physical definition of thoroughfares as civic places;
- That development adequately accommodates automobiles while respecting the pedestrian and the spatial form of public areas;
- That the design of streets and buildings reinforce safe environments, but not at the expense of accessibility;

- That architecture and landscape design grow from local climate, topography, history, and building practice;
- That buildings provide their inhabitants with a clear sense of geography and climate through energy efficient methods;
- That civic buildings and public gathering places be provided as locations that reinforce community identity and support self-government;
- That civic buildings be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the city; and
- That the preservation and renewal of historic buildings be facilitated to affirm the continuity and evolution of society.

Specific Mauka Regulations of note for the Blaisdell Site include but not limited to:

- Neighborhood Zone Thomas Square
- Performance and Entertainment Building will provide large setbacks with complementary mature landscaping
- Thoroughfare Plan – Promenade Street at Ward Ave meeting pedestrian zone requirements for fixtures, furnishings, street trees, & special paving
- 400’ Building Height limit
- View Corridor Street on Ward Ave requires 50’ building setback at 65’ height.
- Large Lot Development requirements of 140,000 sf –
 - Large lots shall incorporate mid-block pedestrian passageways and courtyards every 300’
 - 26’ alley required at adjacent lots to provide light, room, and air to neighboring parcels
- View Corridor Street on Ward Avenue to protect mauka to makai views
- Green Building Standards – required to qualify for base LEED certification criteria, and provide reporting compliance for at least one point in each of the following in stormwater design, quantity control; , and landscape water efficiency.



Mauka Area Plan - Ward Avenue Promenade

The Center's site is made up of (3) individual parcels, the main parcel plus two smaller parcels established to allow for licensing agreements with concessionaires, and totals 22.475 acres, see map below:

MAIN PROJECT SITE PROPERTIES

TMK PARCEL	LAND AREA (ACRES)	ZONING (HCDA)
230080010000	14.38	COMMERCIAL
230080020000	7.987	COMMERCIAL
230080030000	.109	COMMERCIAL
TOTAL	22.476	



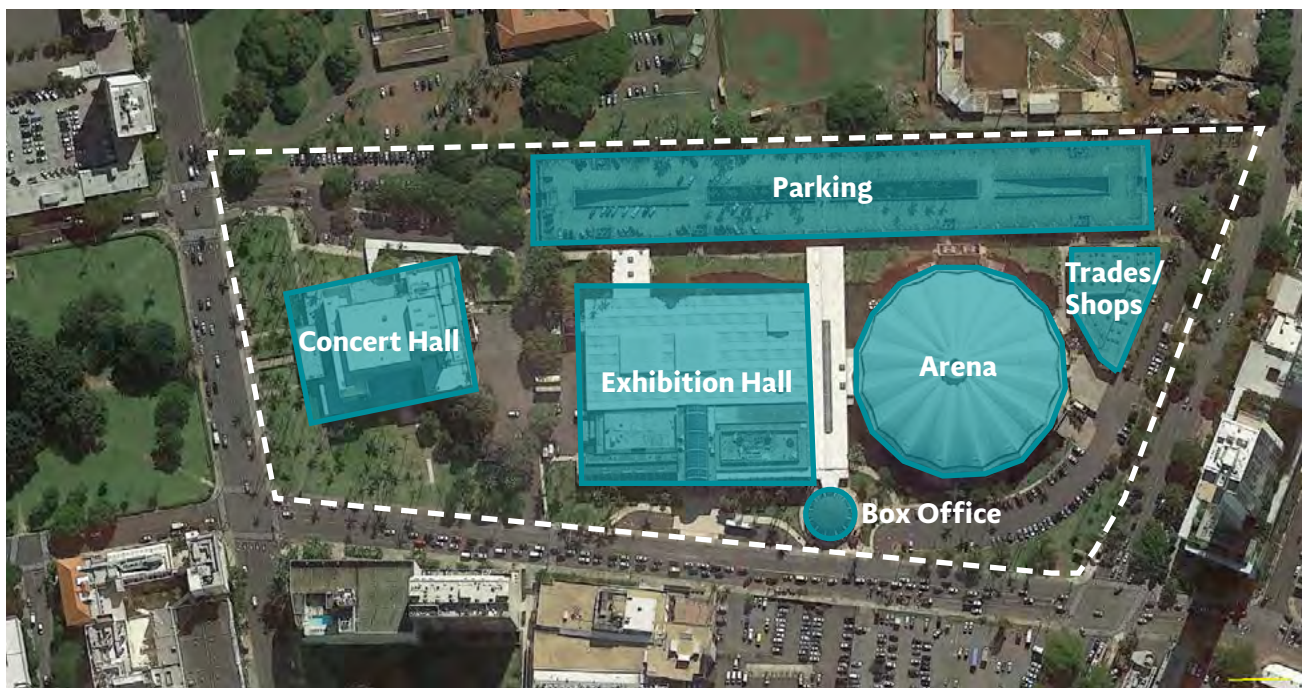


III. EXISTING FACILITIES OVERVIEW

A. OVERVIEW

Attracting over 800,000 visitors every year, the Center continues to serve as Honolulu's venue for arts and entertainment. Since construction of the original facilities in 1963, roughly 450 building permits have been filed for physical changes to the campus. However, there has been little significant renovation work or campus improvements since the addition to the exhibition hall in 1992 and construction of the trades building in 1994. The current campus includes:

- Concert Hall - 58,500sf venue with 2,153-seat hall
- Exhibition Hall - 114,00sf facility with 65,000sf exhibition floor, meeting/event rooms, and offices for the Department of Enterprise Services.
- Box Office - 2,000sf centralized ticketing pavilion
- Arena - 126,000sf arena with seating capacity between approximately 6,000 to 8,700 depending on stage/event configuration
- Trades/Shops Warehouse - 15,000sf facility with storage, workshops, and offices for maintenance and operations staff
- Parking Garage - 3-Level parking structure with 1,124 stalls to add to the 343 stalls within various surface lots on site to provide a total parking capacity of 1,467.



Current site plan

K I N G S T R E E T

545 Feet Front

Dry level land
(Seven and a half)
Acres

Fish-pond

Old Fish-pond

Old Fish-pond

Old Pond

Ward Avenue

Marsikana

Marsikana

Old Water-course

Old Water-course

Iron lining

Road ditch with wean

Chart of The Estate of Joseph Booth, situated on the inside of the road to Waikiki

Including Royal Patent 300, and also the Moody-French Lot, and the Fishoi lot

Containing in all 12 and 7/10 Acres

Drawn by C. C. Williams

From notes of surveys as given in Deeds

0 20 40 Meters

0 50 100 Feet



From "Victoria Ward and Her Family: Memories of Old Plantation " (2000)

B. ASSESSMENT FRAMEWORK




The design team assessed the general condition of site, each of the building structures, and existing programs used within and around the structures throughout the entire site. The collection of data from these assessments will be used to help inform and establish goals, needs and what the general direction the design should take.

1. SITE

The site of the Center is located in an area of storied water resources that have sustained life for generations of Hawaiians prior to the construction of the current campus of buildings. Although the presence of water continues in the form of the beloved fish filled ponds encircling the arena, the significance of the water and its expression on site extends centuries back into the site's history.

Several Hawaiian legends, such as those in reference to the Waters of Ha'o, describe springs in the general area of the Center's site. In contrast to the traditionally dusty plains characterizing the lands just mauka, the areas immediately around the site contained numerous ponds and lagoons fed by the artesian wells and other groundwater. The following map, which overlays historic maps and other archeological research completed for entitlement documentation from projects surrounding the Center, shows the abundance of fish and salt ponds signifying the importance of the site throughout Hawaiian history. The map on the left shows the site condition during the period of Joseph Booth estate and identifies a spring at the center of the property which likely fed the long fishpond surrounded by marshland. A drainage channel is also indicated at the makai end of the property near what is now Kapi'olani Boulevard which is consistent with the map overlay showing the channel ('auwai) extending all the way to the shoreline.



-  Historic Fishpond
-  Historic Salt Pan
-  "HIC" Channel

Historic Kaka'ako Water Feature Overlay Map

Beyond the surface water exposed on the site throughout history, an alluvial channel runs below portions of the site and the surrounding Kaka'ako neighborhood indicating the watercourse could be traced even further back in geological time. Based on the studies of Charles C Ferrall, a volcanic cinder sand filled channel eroded within the coral shelf existing just several feet below grade runs through in the makai portion of the Center's site . Discovered within the borings made during the construction of the Center, the channel was thus called the, "Honolulu International Center (HIC) Channel" which was the previous name of the Center.

The Center was developed in 1962 on the former property of the Ward Estate, which consisted of the "Old Plantation" house and several smaller structures. The main house was situated on

approximately seven and half acres of flat land toward the mauka end of the site and approached via a driveway off King Street. As part of the working plantation that extended from Kings St all the way to the shoreline makai of the site, the Ward's reshaped the existing fishpond into a long, walled lagoon on axis with the house and installed lo'i in place of the "old fishponds" of the Booth estate. Surrounding the lagoon, the plantation also included various varieties of fruit trees, pasture land, and 6,000 coconut palms all fed by windmill driven pumps distributing the plentiful groundwater just feet below the surface of the estate. Fish from the lagoon and makaloa harvested along its banks helped to support the plantation. Sources indicate that the Ward's artesian well provided running water up to the second floor of the home without the aid of a pump or windmill.

After purchasing the Ward Estate, the City's development of the Center further reconfigured the Ward lagoon, excavating the mire and trucking it to Sand Island for compost, then backfilling with coral. At the time of construction, the lagoon drained into a culvert below Kapi'olani Blvd that appears to roughly follow the location of the old 'auwai. Another drainage channel ran on the Diamond Head side of the site and tied into a separate culvert. Both of these drainage points still exist today.

Surrounding the Arena entry and the Diamond Head side of the Exhibition Hall, the concrete lined fish ponds provide a security barriers to the Arena and Exhibit Hall entries, while also offering a pleasant experience along the waters edge while cueing for events. Rather than a spring, a pump



From "Victoria Ward and Her Family: Memories of Old Plantation " (2000)

within a small "doghouse" located near the rear entry canopy of the Exhibition Hall pumps roughly one million gallons of water from a shallow well through the water feature each day. A second well on the Ward Ave side of the arena was originally installed but capped after it was determined the single pump provided adequate supply to support fish health. The pond were originally filled with brocade carp gifted to the City from the Mayor of Hiroshima in 1965. The brackish water currently feeding the ponds would not support koi, so it is has been inferred that the salinity of source water has increased over time. A aquatic survey was not completed as part of this report but improvement to the pond's depth, edge treatment, water quality, and biodiversity should be considered to support the biological environment. Roof drains from several of the venues are directed to the ponds without filtration.

An 8' wide rock drain was installed for the length of the existing fish pond and terminates into an existing box drain on Kapi'olani Blvd. DES monitors testing and performs pond maintenance in accordance with the existing the NPDES permit, but further review will be needed to verify how modifying the ponds as part of the Center's redevelopment will be impacted by new DOH and/or EPA requirements for water quality which might also limit use of the source water in exposed environments on site. Currently, the culverts leading from the site run below several privately owned parcels, including some within Ward Villages, and empty directly into Kewalo Harbor. Moving forward, connecting to the stormwater systems directed toward Ward Ave or Kamakee St should be reviewed further as these flow paths allow for easier maintenance of underground lines running below street right-of-ways.

The site topography ranges from an elevation of about 14' above sea level on the mauka side along S. King St to only 5' at Kapi'olani Blvd. With shallow groundwater only 5' to 11' below the adjacent grade, the water table will likely limit opportunities for foundations and other excavated areas associated with new development. Measured groundwater levels also fluctuated with tidal periods indicating a permeable subsoil condition which matches anecdotal observations that the arena event floor subtly raises/falls according to tidal levels.





The Ward Family had heavily planted the site with fruit trees, palms, as well as a dense coconut grove on the makai end of the property. It was believed that the Ward Property had the largest coconut grove in Honolulu at the time (SB 1963.02.20). The HIC development led to the deletion of many of the existing trees but, the City required the contractor to relocate some of the existing coconuts throughout the site, as well as plant many younger trees to help maintain the "Old Hawaii" character of the Ward Estate. The site today still maintains some of the original coconut trees from the Ward Estate and HIC development, but are now very tall and nearing the end of their lifespan.





The site beyond the Arena and Exhibit Hall was covered by surface parking and loading with landscaped areas primarily near the street edges. The corner of King and Ward maintained the largest landscaped open space with lawn under the Coconut trees, which is used for farmer's markets and other functions associated with some shows/events such as graduations.

Currently, only a small percentage of the site is allocated to landscape and/or pedestrian areas. Much of this is comprised of small islands and irregular fragments scattered across the site. The location and size of paved areas devoted to service and vehicular access further reduces the quality and functionality of the space. With the exception of the palm grove lawns adjacent the Concert Hall, few outdoor areas are frequently used or encourage visitation during non-event times. Although 56% of the site is not occupied by buildings/structures there is very little functional outdoor public open space limiting the ability for

Site Area Breakdown

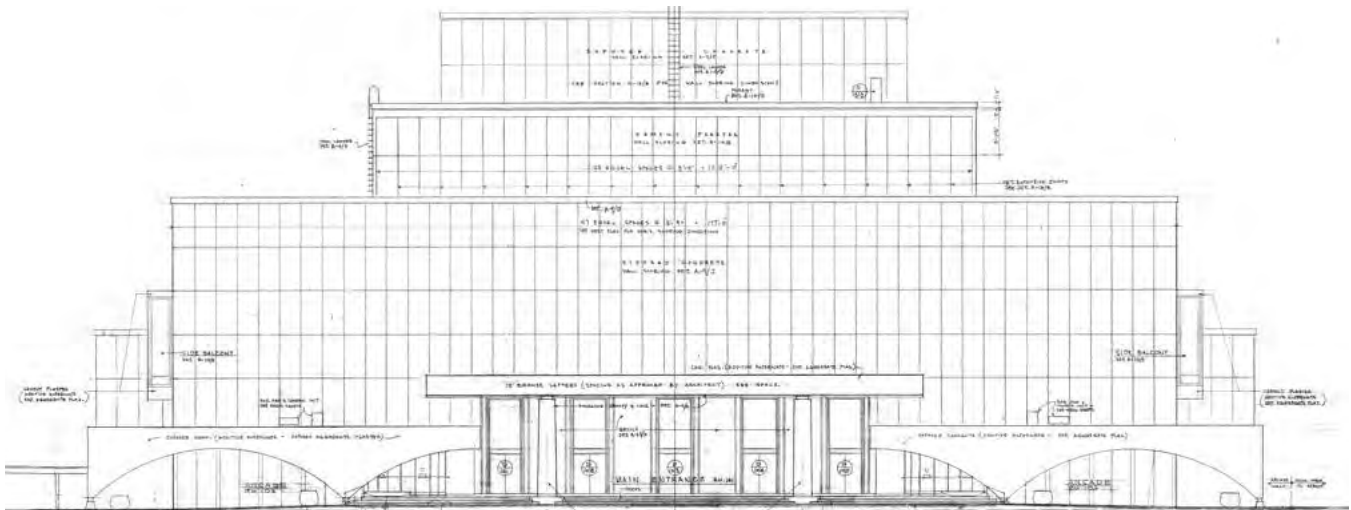
- 22% of site is paved
- 30% of site is landscaped/hardscape
- 4% water
- 44% building

Through the last 50 plus years the landscape is showing its age, many of the remaining trees are nearing their lifespan and others are struggling with pest infestations and no longer complement the architecture. A preliminary arborist evaluation has been completed as part of this master plan process but a complete arborist study will need to be conducted to fully evaluate which plants can be saved and/or relocated as part of the redevelopment.

In addition to the landscapes' age and health there are issues related to the current site design that should be improved upon as well as deferred maintenance. Below are some items to consider

- The current site circulation between patrons and service to all facilities are in conflict with one another causing bottle necks for both patrons and facilities. The service facilities are not centrally located, therefore requiring addition time and labor shuttling between venues.
- 22.4 acre site is situated directly adjacent to McKinley High School's 44 acre site creating a large super block in an otherwise dense neighborhood. This large super block with few buildings, presents problems with maintaining and active streetscape along it's three frontages on Kapiolani Blvd., King St., and Ward Ave.
- Exterior spaces broken into many small areas isolated from each other by numerous vehicular crossings, making it unusable for large events/functions and unattractive for informal activities.
- Lacks continuous circulation path and unified planting plan
- Contains few seating areas or other amenities to encourage gathering
- Added security guardrails around fishpond pools make entrance to venues less inviting
- Not enough shade trees or shading devices on site. Densest grove of shade trees is near Concert Hall in the makai parking lot and plumeria grove near Arena
- The campus lacks wayfinding or environmental graphic identity, signage monuments at King and Kapiolani Blvd primary signs
- Coconut Palms have grown extremely tall and no longer provide shade or sense of space
- Site parking spaces are inadequate for most events, Valet parking has become very utilized and now has inadequate space. These are both primary site revenue streams.
- Lacks Secure VIP loading/unloading
- In/out gates at both Kapiolani Blvd. and King St. are pay on entry and located too close to the road causing backups onto the streets.
- Site lighting is inconsistent and made up of many different fixtures type making maintenance difficult. Some lamps have been replaced with LED-type.
- Fish Ponds piping and infrastructure are at the end of their usable lifespan, lacks visibility, large amounts of outflow water goes untreated into storm drain, environment not great for fish
- Paving around Exhibit Hall is too rough of a finish for service vehicles and not wearing well





2. CONCERT HALL

The concert hall opened in 1963 as part of the original Honolulu International Center. Sited with formal entry facing King Street and Thomas Square, the architecture recalls the Ward's Old Plantation style house that preceded it, with large wrap around lanai and arches sitting amongst the coconut palms. A large entry canopy creates a covered informal gathering space and outdoor lobby similar to the front porch and approach to the plantation home. Open air arcades work in conjunction with interior lobby to provide pre-show, intermission, and post-show assembly space, as well as small concessions spaces, box office and will call.

The lobby originally envisioned as air conditioned, was value engineered to be designed as an open-air naturally ventilated space, capturing the tradewinds. A series of custom scalloped terra-cotta tile screen walls between the entry doors on each side of the lobby, provide an elegant facade feature while also ventilating the lobby. On hot/humid or rainy days the naturally ventilated lobby and lanai is less than ideal for assembling large groups of people. In addition, many of the glass infill tiles are missing and/or damaged. Plywood base boards have been installed to protect the screens from incidental damage and the lack of building enclosure creates moisture and pest concerns within the interior lobby spaces. Otherwise, the painted concrete building shell is in good conditions considering its age.





The existing unconditioned ground floor lobbies are narrow and serve adequately to circulate to the hall but do not provide enough room to accommodate the audience gathering pre/post show or during intermission. In addition to the limited square footage available, the long linear lobby spaces are not well configured to support programmatic functions for the current audience size. Similarly, the exterior arcades are also too narrow to support use as dining/assembly extensions to the main lobby. Given the area constraints, few seating or tables are provided within the interior lobby with only small concession areas on either side of the hall. Current concession areas are not at the main lobby level which reduces visibility and functionality. The lobby floor elevations step down to the various hall entry points creating barriers in accessibility to all lobby areas and hall seating. Temporary ramps from side lobbies and platforms in hall are used to get wheelchairs to limited seating areas.

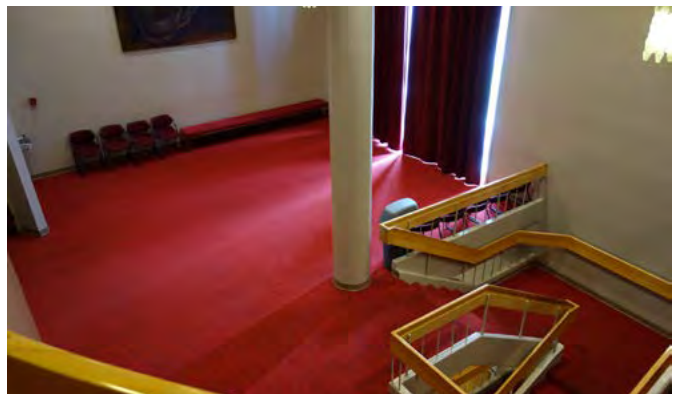
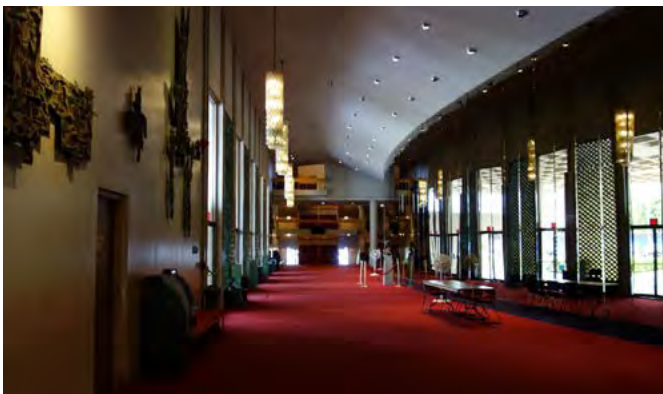
Two stairs on opposite sides of the hall lead up to the balcony seating, but no accessible route is currently provided. Guardrails on the stairs do not comply with current fall protection requirements. Each stair has an enlarged landing area serving as small lobbies for the balcony with overlooks to the lobby and Juliet balconies viewing the Center's grounds. The landings are limited in size relative the balcony seat count, do not contain restrooms or concessions, and are not connected at the balcony level. Elevators will need to be added to the balcony seating areas in order to address accessibility issues.

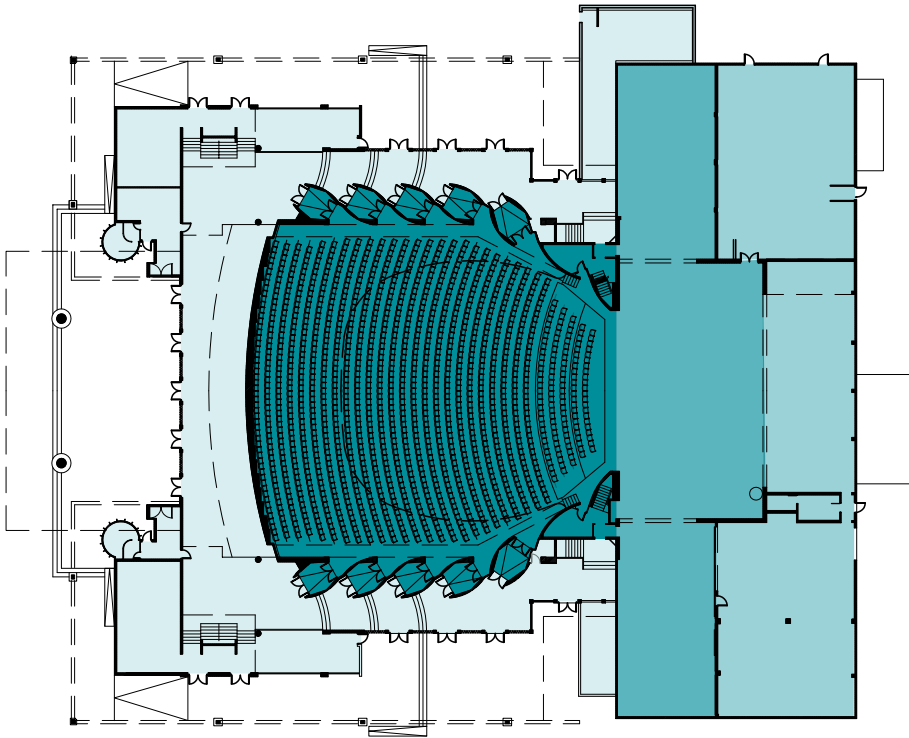
Despite the integration of arcades wrapping the ground floor lobbies, limited visual connectivity to the surrounding landscape is provided due to the large amount opaque concrete wall area,

textured glass screen elements, and solid wood doors along the side lobbies. Increasing the amount of glazed facade areas would allow for the lobby to feel more open and express the audience activity to adjoining streetscape. Sliding wood door panels prevent a weather tight enclosure and detract from the exterior appearance. Large windows punctuate exterior facades of the balcony landing as feature elements articulating the otherwise simple exterior massing of the upper levels of the building. However, jalousie sidelights and non-insulated glass lites create moisture and thermal concerns if the lobby is conditioned.

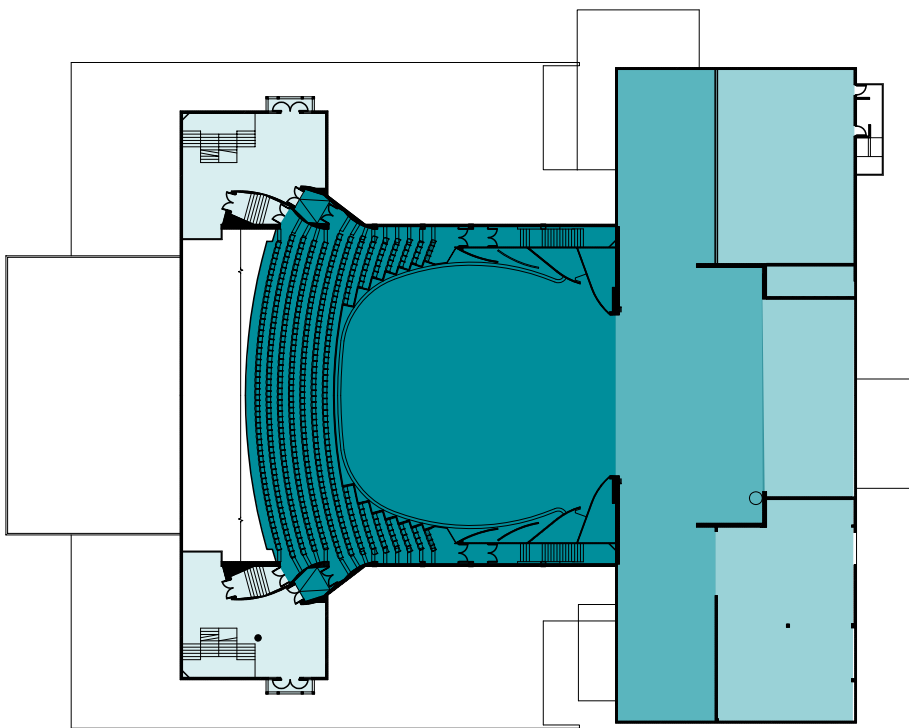
Interior finishes in the lobby have been altered over time, with mirrored glass wall panels at the rear wall of the hall being added decades after the original construction. Replacing the wall finish also displaced the cast wall mural by Bupei Akaji which was originally installed as a single grouping on the wall but has since been relocated to various other walls throughout lobby.

Alterations made in 1986, 1995, and 2001 installed additional patron restrooms adjacent to the stage wings and included renovations to the restrooms in the front of lobby which removed the distinctive powder room within the women's room of the original building. Neither restroom is accessible from the main entry lobby due to floor level changes and men's and women's facilities are located on opposite sides of the hall. Current fixture counts appear to meet code minimums but fall below recommended standards to efficiently serve the seat count. No patron rest rooms are provided at the balcony level.





Existing Concert Hall floor main auditorium plan



Existing Concert Hall balcony plan

- FRONT OF HOUSE
- AUDITORIUM
- STAGE
- BACK OF HOUSE

Smaller improvement projects over the years have also renovated dressing rooms, updated the technical systems including performance lighting and dimming and audio visual (AV). However, the Concert Hall itself remains largely unchanged. Although it appears to have been designed with the Symphony in mind with an orchestra shell ceiling and towers, and a large reverberant auditorium, it was clearly designed to support all types of musical and theatrical performances.

The Concert Hall has two main levels, an orchestra and a single balcony, with a total of 2,153 seats. There are 1447 seats on the orchestra level, including seats at the orchestra pit area, 706 seats in the balcony, and 50 standing room spaces at the rear balcony, making the total hall audience population 2203. The auditorium is entered from the side lobbies, through a series of sound and light locks at four different elevations, starting at the lobby elevation and descending to the front of the hall. The seats are laid out in very efficient “continental” format with long spacious rows, uninterrupted by interior aisles. Incorporating distributed accessible seating and routes will need to be addressed in conceptual plan and reviewed further to determine the impact on the overall seat count.

There is a full stage house with large right, rear, left and rear left stages, with a layout reminiscent of an opera house. The Concert Hall was originally created to be the performance center of Hawaii, a place for acts from around the world to perform and, bring a broad range of dance, drama, opera and music from overseas. It is also the home for the local ballet, opera and symphony, and a beacon for the performing arts in the community. As discussed in the *June 2016 Master Plan Feasibility Study and Conceptual Plan* the issue of scheduling around all these user groups, and in particular Broadway touring production that require consecutive weeks is problematic to schedule rehearsal time in the hall. A second, smaller-scale venue and rehearsal space would help offset the scheduling conflicts as well as support the local arts community while creating more market and revenue opportunity for the Center.

In order to continue to fulfill the Concert Hall's role into the next 50 years, significant upgrades and improvements will need to be made to the building program and systems. The primary improvements to be considered in the Conceptual Report can be broken down into the following categories:

Front of House

- Expanded, air conditioned lobbies that can handle the capacity of the entire house.
- Inadequate space for receptions /VIP/ autograph meeting places
- Interior accessible vertical circulation to all levels of auditorium seating including balcony is needed
- Current washroom layout is inefficient and under capacity for hall size. Washrooms that provide accessible access from all seats and capacity appropriate for the hall capacity is needed.



- Concessions are small and limited to ground floor exterior lanai's, providing additional interior concessions at ground floor and balcony are is needed
- Box Office layout should be based on future online ticketing trends
- Need for updated building infrastructure and maintenance including at a minimum, mechanical, lighting, life safety system including fire sprinklers, fire alarm

Auditorium

- Incorporate distributed wheelchair positions and review orchestra pit seating configuration
- Replace seats, incorporate cup holders, install contrast nosings, and add aisle lighting
- Permanent mix position
- Acoustic study

Back of House

- Dressing Rooms and Green Room program area, layout, and code compliance
- Stage Door with dedicated reception, security and weather protection
- Loading Dock with multiple bays and level load in/out
- Control Room window view too small
- Direct access between front and back of house

Stage Systems

- Rigging compliance with current safety standards and upgraded capacity
- Orchestra pit lift evaluation by hydraulic engineer
- Performance lighting and dimming upgrades
- Work light LED upgrades
- Performance sound and video digital upgrades

Refer to Concert Hall Assessment Report along with existing conditions reports for the building systems and structure for additional information on the programmatic capacity and other technical aspects of the venue.







3. EXHIBITION HALL

Although it was not included in the original plans for the center, the exhibition program was recommended after the Stanford feasibility study identified the market need for exhibitor areas to support the arena's capacity to host conventions desired by the City. The program was added to the scope of work despite concerns over cost and the Exhibition Hall opened in 1963 as part of the original Honolulu International Center. The Concert Hall on the mauka end of the site would be designed and built shortly after the completion of the Exhibition Hall. Designed and constructed at the same time as the Arena, the Exhibition Hall is located adjacent to the Arena and connected by a covered concourse which serves as the primary lobby and access point. The original Exhibition Hall was designed as an open air pavilion, with cast-in-place umbrella columns creating a roof canopy, with several openings to allow for tree planters within the space. The perimeter was surrounded by low breeze block masonry walls and ornamental grilles to provide an open, but secure space. It also included an Assembly Building (current Pikake Room) and meeting rooms.

In 1992, a major renovation replaced portions of the pavilion with a new expanded building and prominent colonnade that exists on site today. Roof openings were enclosed with clerestory windows, the perimeter walls were revised to vertical metal panels, the gap below the roof was infilled with a glazing system to mitigate wind and rain, and HVAC was added to condition the space. While maintaining the Pikake Room and Concourse, meeting rooms and other support spaces were demolished to expand the exhibit floor to the current 65,000sf area. The entry breezeway facing Ward Ave was enlarged to a two-story Galleria lobby and enclosed with an arched glass ceiling. A new cast-in-place concrete colonnade created a new facade along Ward

and provided multiple levels of meeting rooms, office space, and storage. The box office was relocated from within the pavilion footprint to the current position as a round free standing building terminating the concourse between the Arena and Exhibition Hall. Additional improvements to concourse canopy roofing and skylights were completed in 1995.

Some of the features Exhibition Hall include:

- A unique island venue providing affordable exhibit space for local businesses
- Ideal for community trade shows, consumer shows, large parties and fundraising events
- Average of 45 commercial exhibit shows/expos per year
- 65,000sf of air-conditioned exhibit space that can expand to +/-85,000sf with the use of the adjacent Arena event floor
- Hawaii Suites - a flexible 8,100sf meeting/event space with moveable acoustic partitions which can divide space into as many as 12 function rooms.
- Pikake Room - a flexible flat floor venue with raised stage with 240-700 seat capacity depending on the seating configuration.
- Meeting Rooms - (3) separate 2nd floor break out meeting rooms Kauai Room 925sf, Oahu Room 1075sf, & Maui Room 1200sf.

For more than 50 years the Exhibition Hall has served the community and provided adequate facilities for vendors and patrons alike, but the facility is approaching it's serviceable lifespan. The majority of the building remains from the original construction with the newest areas already 25 years old. Further renovations to remediate current conditions and address programmatic needs efficiently within the existing footprint would be challenged by the aging structure and previous renovations have significantly modified the historic character of the original pavilion.



Galleria added in 1992 renovation

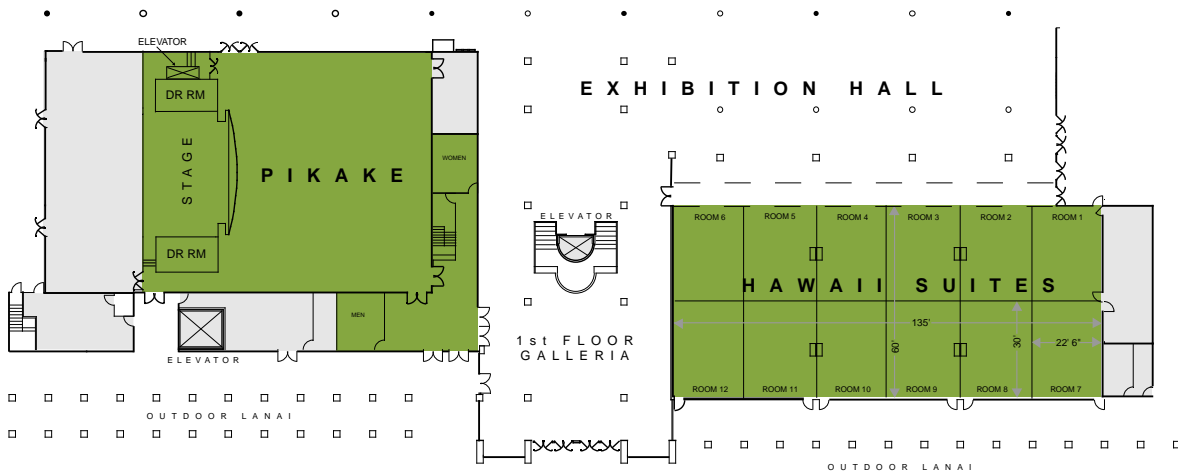




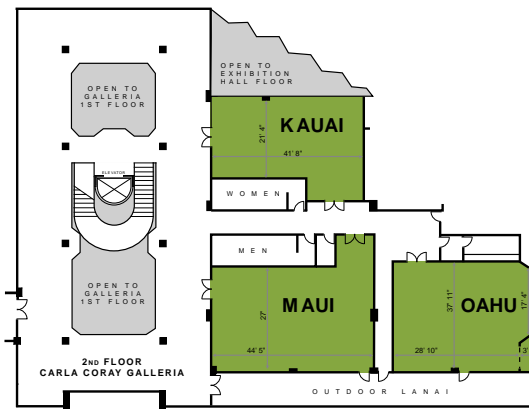
Existing Exhibition Hall ground floor plan

The original exhibit hall, kitchen and Pikaki Room suffer from roof leaks, cracked and uneven floors, rusting and deteriorating exterior envelope, while the newer Galleria and Meeting Rooms need major renovation to the mechanical system, aging mobile partitions and finishes. The building envelope, including large glass atrium and single pane clerestory glazing, prevents efficient conditioning the space. The heavily tinted glass storefront system along the Ward elevation of the colonnade addressed heat gain issues, but restricts visibility into the spaces which impacts wayfinding and prevents building activity from being expressed at street level. Rainwater downspouts run at the center of all umbrella columns raising concerns about concealed water damage within the concrete columns and below the slab on grade.

Beyond maintenance and service issues there are functional usage and constraints that either impede everyday maintenance, patron experience or ability to attract new shows and events. Consideration of the following issues should be addressed within the development of the conceptual plan.



Existing Exhibition Hall Ground floor plan



Existing Exhibition Hall Level 2 plan

Concourse & Galleria

With three possible entries into the hall, circulation and approach is confusing and challenging to secure. Despite the creation of the Galleria, the primary entry is typically off of the concourse due to the proximity to both the box office and circulation from parking. The concourse is frequently used for prefunction, check-in, or other event programming which creates potential conflict with the Arena's main entry and can be problematic during inclement weather. Planting areas along the Concourse are small, receive only diffuse daylight, rely on irrigation, and are challenging to maintain leading to poor plant health and limited visual benefit. Odors from the adjacent fishponds periodically detract from the patron arrival experience. The physical condition of the box office does not preclude its continued use. However, its round shape makes queuing and ticket window visibility a challenge and its separation from other venue creates operational concerns when addressing ticket issues and handling money.

The glass atrium in the Galleria is not shaded and allows excessive heat gain which makes cooling the space challenging for the predominately daytime events of the exhibition space. Additionally,



the Galleria is positioned to best serve the vehicular drop off at Ward Ave and its distance from both the box office and parking garage make other entry points more convenient to use. Although the Galleria provides direct access into the main exhibit floor, primary access to the Hawaii suites meeting rooms is from the exterior colonnade and a separate sub-lobby serves the Pikake room. The distributed entries leaves the Galleria infrequently used and displaces pre-function activities to the exterior colonnade where there is limited space and exposure to weather conditions. Another secondary service entry is also provided off of the colonnade at the rear of the Pikake room further complicating perceived access and limiting the functionality of the Galleria. Vertical circulation and upper balconies serve limited program and provide access to meeting room spaces only indirectly via a shared secondary corridor. Thus, there is little activity at the upper balconies which are infrequently used.

Exhibition Hall

Limited exhibit hall floor area of approximated 65,000sf requires overflow onto concourse and into the Arena for some events. The need for occupying multiple venues increases costs, causes operational issues to manage and secure, ties up calendar days for venues, and is less convenient for patrons. Some shows, like the popular Made in Hawaii events, are limited by the size of the spaces available and could expand if additional space was provided. The tight 30' column layout is acceptable for many vendors, but does not follow larger clear span industry standards which allow for larger event areas and more flexibility. The column

spacing and irregular roof form prevent subdivision of the exhibit floor into smaller spaces to accommodate a range of show sizes and simultaneous events.

The ceiling height within the hall varies between 17' and 21' due to the sloped roof shape and is too short for some exhibitors with tall features. Hall finishes are below industry standard with most surfaces consisting of painted concrete. The level of finish and exposed building systems are more consistent with storage/warehouse program than assembly spaces and should be updated. The highly reflective surfaces combined with the irregular roof shape create excessive reverberation and acoustic challenges for events especially with large crowds. Although the AV system was recently updated, amplified sound is not effectively deployed.

Artificial lighting has inadequate distribution and lacks controls. Daylight from roof monitors and clerestories also lack control and can be problematic for vendors. Power distribution/controls throughout exhibit floor are of inadequate capacity, are exposed view, and unsecured within the exhibition hall. Similar to all electrical, plumbing, and fire protection systems, the mechanical system is exposed and distributes air inconsistently throughout space creating uneven cooling across the Exhibition Hall.

When the hall was expanded in 1992, many support spaces were omitted to create additional exhibit areas. Secure storage space is limited for vendors and building services and all furnishings/equipment must be brought in from Maintenance & Storage building or provided by the vendors. No business center is provided for event-day use. Although a service corridor can be set up outside of the Hawaii Suites room with movable partitions, no dedicated services areas exist and all BoH functions are exposed to view and often need to circulate through patron spaces. Rolling carts over the stamped concrete walkways is problematic. The overhead service door into the hall is undersized for some uses. Restrooms are undersized and contain finishes and fixtures below industry standard, refer to plumbing assessment for additional information.

Outside of the hall, the shared loading area and parking lot is required to stage multiple container trucks for most shows. While the current space is adequate to accommodate current needs for 5-6 trailers, its shared function with the concert hall can lead to conflicts if both venues are hosting events. The building lacks secure loading dock for large truck deliveries and truck container storage. Waste management areas are undersized to handle large shows and the Center requires vendors to provide event specific dumpsters which are left in parking lots without the ability for DES staff to control delivery/pick-up.



Kitchen/Concessions

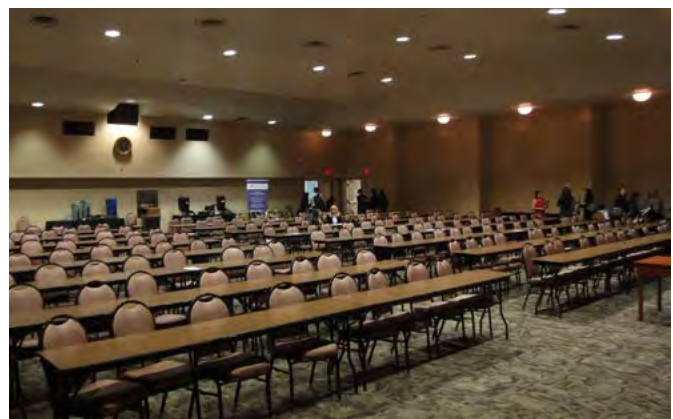
Concession areas are limited both in terms of point of sale counters and support areas for the food service provider. The main concession area is on the opposite of the primary entry and lacks visibility as well as seating areas. The kitchen predates the 1992 renovation and lacks appropriate equipment and infrastructure to function as a centralized kitchen for the Center. It will need upgrades to meet DOH requirements and the current food service provider uses an off-site kitchen for food production. The current status of the grease interceptor needs to be verified. A separate trailer in the parking/loading area outside of the Pikake Room is required to provide appropriate office space due to the limited concessionaire/staff areas included within the building.

Meeting Rooms

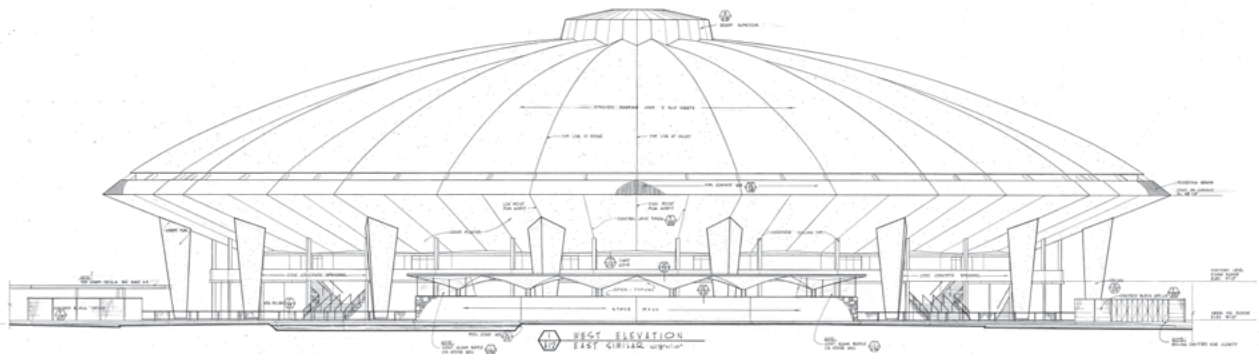
Similar to exhibition spaces, the meeting room finishes are generally worn, outdated, and below industry standard. For instance, finishes within the Pikake room remain from the original construction and wall panels were simply repainted during the 1992 renovation. AV and IT technology will need to be upgraded throughout as most rooms do not have in-place equipment or infrastructure. As noted previously, access and room configuration hampers functionality and visibility. Limited pre-function space is provided to support meeting room events.

DES Offices

Offices are aging and undersized to serve staff support an expanded Center. The floorplate is deep with some offices overlooking the exhibit floor with only indirect access to daylight and views. Other offices and meeting areas have no access to natural daylight. Much of the space consists of enclosed offices (private and shared) with limited collaborative space or areas for interaction. Department structure and staffing will need to be reviewed further to project future needs, determine space requirements, and create an improved office environment. Part-time and event staff do not currently have dedicated space on campus.





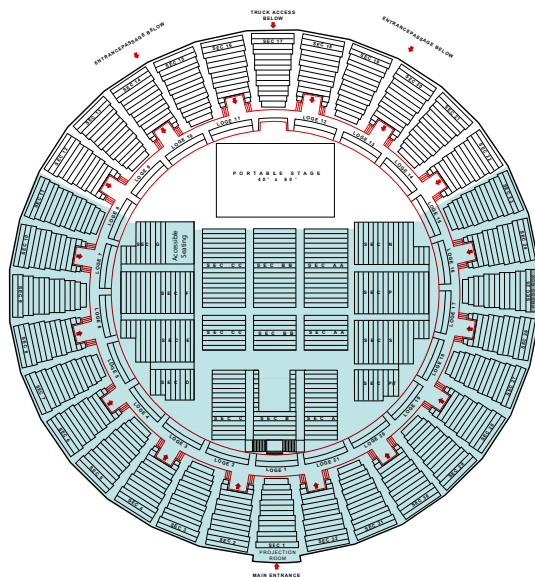


4. ARENA

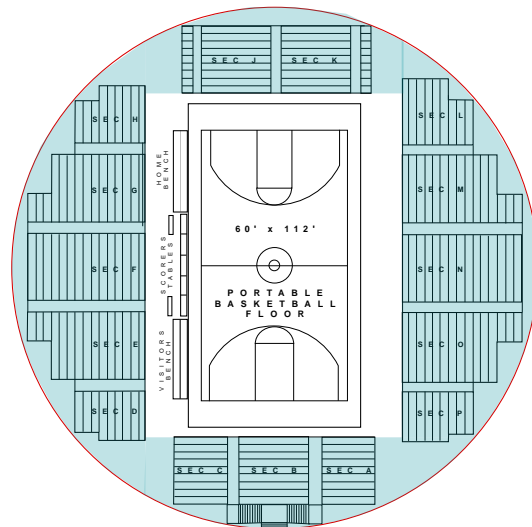
The Arena opened in 1963 as part of the original Honolulu International Center. The first of the three major structures to be built on site, the Auditorium is sited at the Kapiolani (makai) end of the site adjacent to the Exhibition Hall with a shared entry concourse. A circular performance venue (190 feet diameter) originally envisioned as suitable for basketball, tennis, roller derby, ice shows, water shows, horse shows, circuses, concerts, boxing, and wrestling matches, the uses have evolved over time, and the current Arena is primarily used for end-stage style concerts, graduations, and exhibitions.

Seating: 8,073 for stage shows; 7,397 for courtside events; catering/receptions 2,800 capacity

The Area has one entry point from the exterior shared concourses into an open air concourse surrounded by fish pond pools. Two free standing concession structures are located on the Ewa and Diamond head ends of the circular concourse. Restrooms are also located around the perimeter of the Arena off of the concourse. There is one primary access/exit point into the Arena and are two secondary access/entry points at grade level. The upper level seats are accessed from



Performance seating layout
 240 degree seating - 6,195 seats
 360 degree seating - 8,039 seats



Basketball/Volleyball
 240 degree seating - 7,397 seats



perimeter open staircases with no elevators or ramps. Accessible seating is only available on the ground floor with no available positions distributed in the main seating bowl.

Loading is through one door on the makai end of the Arena with an open air dock area adjacent to a parking lot. Dressing and Locker Rooms are located directly adjacent to loading dock and is where performers/teams enter. Additional Dressing rooms were in 2013, but are still undersized, inconveniently positioned, and lacking amenities. Beyond dressing and performer areas, space for the crew(s), staff, catering, staging/production, security, and other back of house services is not adequately provided for in the existing building and is frequently accommodated by temporary tents and/or trailers.

The structure is made up of a series of radial arched steel roof truss and W-section columns with gypsum sheathed roof. The distinctive trapezoidal columns encircling the Arena clad steel columns in contrast to their perceived bulk and appearance as cast-in-place concrete. The interior main floor and seating bowl structure are cast-in place concrete with CMU infill walls. The ceiling is a hung cement plaster finished structure concealing mechanical and a series of catwalks to access rigging, services and roof. The plaster ceiling was later sprayed with an acoustic insulation to help improve the acoustics.

Through the years there have been many renovations, additions, and upgrades to the Arena including, structural, fire sprinklers, fire alarm, restrooms, roofing, electrical, audio visual, lighting. Systems have been maintained through the years but are nearing their serviceable lifespan. Utility connections for the site run through the Arena, making localized interruptions and maintenance a campus-wide concern. Refer to technical assessment reports for information on outdated electrical systems and other existing infrastructure issues. Major components such as the chilled water mains are rusting out and are in need of replacement, as well as, corroded waste and storm water laterals, and roof



gutters. The roof leaks during heavy rainstorms dripping onto Arena event floor, and the perimeter metal roof fascia/gutter system is rusting through. The design of the gutter and fascia should be considered in the future, as water can cascade over the existing gutter channel and sheet off of the roof. In addition, the downspouts currently drain directly into the fishponds which does not meet current stormwater discharge requirements.

Although the painting color scheme has been modified since the original construction, much of the exterior finishes remain consistent. Exposed to the elements, the exterior concourse is prone to higher levels of deterioration and thus tends to be less refined than those typically provided at peer venues with enclosed concourses. Beyond maintenance and service issues there are functional usage and constraints that either impede everyday maintenance, patron experience or ability to attract new shows and events. The following issues should be considerations in the final Concept Plan:

- The Arena was primarily designed as a sports venue and occasional performance event, but currently and into the projected future it is being used primarily as performance venue. This reality makes for compromised experiences for the patrons, performers and service alike. The patrons experience suffers from less than ideal viewing angles, acoustics, and lighting, while the performers lack sufficient backstage facilities, direct stage access, security, and pre-function VIP spaces. The service staff who needs to ensure the patron and performer experience is seamless, is challenged by lack of secure covered loading dock, adequate event power, and staging, and support space. Seating levels do not make full use of the volume below the roof structure.
- The plaster ceiling and super-structure were not originally designed with the rigging required by many current shows in mind. Over the years the ceiling plaster



system has become fragile and falling apart as rigging points penetrations have turned it porous. In addition, some prominent events can't be held in the Arena due to the limited capacity of rigging on the existing structure. Loading capacity is reported to be 33,300lbs over the 40' x 60' end stage area, with maximum point loads limited to 4,000lbs. Cirque du Soleil requires loading capacity up to 90,000lbs for their productions.

- Arena seating layout is not efficient for stage performance events, as many seats are not usable as they are behind or along side the stage making the seat drop from 8,039 to 6,195. The floor seating configuration with retractable riser seating is not oriented toward the stage making for awkward viewing. The only accessible seating options are on the floor, which limits the stage size. The remainder of the Arena seating is not handicap accessible, as there are no elevators or ramps to get to the upper seating bowl. Most all of the balcony rails and stair railings meet current codes. There is currently no interior secure storage for the retractable seats and they are stored outside on the concourse.
- Concessions, Merchandise, and Restrooms are located outside the Arena envelope on the ground level concourse, far from upper seating sections and are problematic in the rain. The Concessions currently can only serve prepared food as they do not have a grease interceptor for dishwashing facilities. The open air Concession buildings also struggle with pest's, insects and rats and will need to be upgraded to meet current health codes.
- The ponds constrict egress routes and the usable area of the concourse leaving little room to accommodate gathering, dining areas, or other audience amenities. The

back of house area interrupts concourse circulation creating dead ends on either side.

- The fishpond layout is organized to provide only one entrance/exit to the arena causing long lines to enter/exit events.
- Back of house and artist/performer spaces are undersized and not well appointed to support the necessary functions. Limited area for storage leads to seating risers being stored in the concourse which further reduces the usable area, looks unsightly, and speeds deterioration.
- Reflective surfaces and circular shape of the arena negatively impact the acoustic performance of the venue which will need to be further analyzed to improve conditions for concerts.
- Restrooms are undersized and contain finishes and fixtures below industry standard, refer to plumbing assessment for additional information.
- Seismic upgrades to the existing structural system will require additional study for elements to be retained as part of the conceptual plan.
- Replace seats, incorporate cup holders, install contrast nosings, and add aisle lighting
- Fall protection and railings throughout the venue do not meet current requirements
- Doors and hardware will need to be replaced.







5. PARKING

Parking has been an issue with this Center from the day it opened in 1964. Discussions of an elevated parking at the conception of the project was dismissed as being cost prohibited. The HIC planned for 1,140 surface parking spaces, which for many years was inadequate and overflowed onto McKinley School and surrounding properties. It wasn't until 1989 that an elevated parking garage was planned constructed. The plan called for two phases, with the first phase adding an additional 689 on two elevated floors for a total of 1,713 spaces. Phase 2 would add two more floors and an additional 812 spaces for a total of 2,525 spaces, but was never implemented.

The current site parking capacity is 1,467 Spaces 29 of them ADA accessible and 12 ADA van accessible, spread across the campus in various surface parking lots and a two level parking garage. Although, convenient for access, surface parking has a significant visual and physical impact across the site maintaining nearly a 20% footprint, limiting usable outdoor public open space, and pedestrian connections with surrounding neighborhoods.

Site parking continues to be inadequate for most events at the campus. Any one of the three facilities will max out the parking with a single event let alone a concurrent event. Arena and large Exhibits can draw over 10,000 people. Relationships with neighboring parking facilities such as Linekoa School, Straub Hospital and McKinley High School which has 1,200 spaces, help relieve some of the parking constraints on large event days. Public transportation and ride sharing are also widely used, with Bus stops on S. King Street and Kapiolani Blvd and a future Kakaako rail station less than a 1/2 mile away



make for convenient car free arrivals. Arena valet parking and Concert Hall Golden Circle parking options are also available. Valet, serviced by a 3rd party vendor, has capacity for 100 spaces on the surface lots between venues, while the Golden Circle are designated priority parking spaces for 50 vehicles adjacent to the Concert Hall.

The existing parking garage suffers from age, with spalling concrete, leaking planters, bare rotted storm piping, while the surface parking lots are filled with pots holes and heaving pavement. The current entry sequence with parking fees being paid upon entry leads to major entry congestion along S. King Street on event days, as well as, the layout of the garage does not keep traffic moving efficiently.

The garage continues to be a large revenue stream for the campus and the popularity of VIP and valet



6. MAINTENANCE/STORAGE FACILITY

The maintenance and storage facility was constructed in 1995 to alleviate the shortage on site storage while also providing shop facilities, to service the campus as well as help service other City properties such as, the Waikiki Shell and Zoo. The 25,200 sf two story building is located on the makai end of the campus between the Arena and Kapiolani Blvd. Accessed off Kapiolani Blvd, with close proximity to the Arena loading area to support events. The facility storage portion is approximately 11,000 sf at the ground floor, with another 7,000 second floor storage area and Lunch Room. The storage houses a variety support items for the campus including banquet tables and chairs, stage platforms, seating risers, and various support vehicles. The remainder of the building is dedicated to maintenance shops to maintain the campus including, grounds maintenance, mechanical shop, welding shop, carpentry, painting, plumbing, electrical, audio, and stage lighting. The building also houses the campus two diesel generators with an exterior mounted fuel tank.

This being one of the newest buildings on campus, the facility is physically in good shape. Due to site constraints the building was located at one end of the campus, but ideally, this facility would serve the campus more efficiently, if it were located more centrally within the campus with direct access to each of the venues and easy access to the City streets



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Snøhetta



Appendix E. Blaisdell Center Master Plan
Phase 1: Feasibility Study and Conceptual Land Use Plan

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BLAISDELL CENTER MASTER PLAN

Phase 1: Feasibility Study and Conceptual Land Use Plan

Fall 2016



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Performing Arts/Media Facilities Planning and Design



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I

Introduction and Background

Introduction and Background

Since 1964, the Blaisdell Center has welcomed locals and visitors to the 22.4-acre campus with the Concert Hall, Arena, and Exhibition Hall. First built as state-of-the-art facilities, the 50+ year old campus is in significant need of facility, systems and infrastructure upgrades, and renovation.

Following a recommendation from the Urban Land Institute (ULI) Daniel Rose Center for Public Leadership in Land Use, Honolulu Mayor Kirk Caldwell endorsed a feasibility study as the first step in a master plan process to ensure that the Blaisdell Center can continue to meet the needs of the people of O’ahu and Hawai’i. The following chapters describe the feasibility study process and recommendations for this iconic landmark to continue to serve as Honolulu’s premier cultural and gathering place.



22.4 Acres of History at the Blaisdell Center: the Arena, Exhibition Hall, and Concert Hall
Source: AECOM

An aerial photograph of a city skyline, featuring several tall skyscrapers and a large stadium with a white, domed roof. In the foreground, there is a large, multi-story building with a flat roof and a curved glass facade. The image is overlaid with a teal color filter. The Roman numeral 'II' is prominently displayed in the upper left quadrant.

II

Planning Process

Planning Process

The planning process for the Blaisdell Center feasibility study began with understanding existing conditions, followed by a site assessment, community outreach, market analysis, development of a vision statement and guiding principles, a study tour of similar facilities on the mainland (San Francisco, Seattle, and Kansas City), generation of alternatives, selection of a preferred alternative, and a financial analysis.

Existing Conditions

In December 2014, kick-off meetings for the feasibility study began with key staff representing the Office of the Mayor, Department of Enterprise Services, Department of Planning and Permitting, and the consultant team comprised of AECOM, WCIT Architecture, Auerbach Pollack Friedlander, and Lincoln Center Global. The team gathered and analyzed existing conditions at Blaisdell Center and published a summary document on the project website.

Site Assessment / Interviews

In February 2015, the team began assessing the site and initiated interviews with the Department of Enterprise Services, staff, tourism industry leaders, major landowners, developers, local institutions, competing venue operators, and users of the Blaisdell Center, including anchor tenants and vendors, and the Mayor's Leadership Committee. Workshops with the Neighborhood Alliance explored the Blaisdell Center's strengths, weaknesses, opportunities, and threats.

Community Outreach

At the community workshop on February 10, 2015, approximately 170 participants articulated their past and current experiences at the Blaisdell Center, as well as their vision for its future. Participants recalled some of their best memories from graduations, concerts, basketball games, and Broadway shows. All three facilities (the Concert Hall, Arena, and Exhibition Hall) were identified as important for hosting events for both locals and visitors. Community input was also solicited on an interactive project website at www.blaisdellcenter.mindmixer.com.



Neighborhood Alliance Meeting
Source: AECOM



Community Workshop Discussing the Blaisdell Center's Past, Present, and Future
Source: AECOM

Planning Process

Market Analysis

Following the community workshop and site assessment, a market analysis was performed to examine the feasibility of redeveloping any or all of the Blaisdell Center facilities. Usage trends for all three facilities—user groups and attendance, operating revenues and costs, historic capital costs and improvements, and deferred maintenance issues—were reviewed. The consultant team met with the City to understand key objectives, discuss evaluation criteria for possible uses, and review planning or policy factors that may affect potential uses. In addition to performing industry research, key stakeholders were interviewed in Hawai'i and on the mainland. Relevant case studies were also reviewed for comparison.

Conceptual Alternatives

Based on the analysis of existing conditions, community input, and market research, three alternatives for the Blaisdell Center were created to review the range of potential development, from maintaining the current configuration of facilities to constructing all new venues with additional uses. The City then selected a preferred alternative for additional refinement based on public input, additional interviews, meetings with stakeholders, the Mayor, and community leaders.

A variety of land uses were considered and explored, including housing, mixed-use commercial and retail, and enhanced, parks, plazas, and people gathering places.

Conceptual Plan

The preferred alternative was refined and a high-level financial analysis was completed, including exploring various funding mechanisms to pay for improvements to the Blaisdell Center facilities. Following review of the financial analysis by the City and local business leaders, additional refinement to the conceptual plan occurred.



Case Study: Maui Arts and Cultural Center
Source: Google Images



Case Study: New World Symphony, Miami, Florida
Source: Lincoln Center Global

An aerial photograph of a city skyline, featuring several tall skyscrapers and a large stadium with a white, domed roof. In the foreground, there is a large, multi-story building with a flat roof and a curved glass facade. The image is overlaid with a teal color filter. The Roman numeral 'III' is prominently displayed in the upper left quadrant.

III

Vision and Principles

Vision and Principles



Vision Statement

Based on early community input, the following vision statement was developed to guide the master planning and redevelopment of the Blaisdell Center:

Springing from the 'aina, the source that has sustained generations, Blaisdell Center is Honolulu's iconic gathering place perpetuating community, entertainment, and culture and reflecting the resilience of the people of our island home.

Principles

Using the vision statement as a foundation, the following principles were developed for the Blaisdell Center Master Plan:

- **Curate** a diverse collection of programming that engages all communities.
- **Integrate** the Blaisdell Center with the surrounding community as the focal point of a larger district.
- **Activate** and shape spaces focused on creating memorable experiences.
- **Connect** with the storied place of Kewalo spring, or pūnāwai, to reflect the unique environment and cultural traditions of the site.
- **Sustain** the Blaisdell Center through the innovative use of resources.



Source: WCIT Architecture, Google Images

An aerial photograph of a city skyline, featuring several tall skyscrapers and a large stadium with a white, domed roof. In the foreground, there is a large, multi-story building with a flat roof and a glass-enclosed walkway. The entire image is overlaid with a semi-transparent teal color. The Roman numeral 'IV' is prominently displayed in white on the left side.

IV

History of Blaisdell Center

History of Blaisdell Center

Beyond a celebrated history of performances and events, the historic and cultural significance of the Blaisdell Center can be traced back for centuries through the enduring presence of water on site. The following description is a brief summary of the site's history.

Natural Features and Historic Uses

The site of what is now the Blaisdell Center is in the Kewalo ahupua'a. The location was the site of the Kewalo spring (pūnāwai). There were marshes and fishponds, as well as tall pili grass to gather. The site of the current Blaisdell Center shows the presence of an underlying stream, and it is believed that there was a sizable fishpond (loko i'a) and drainage channel ('auwai) that flowed to the sea. The fertile soil and the rich source of fresh water on the site were documented in *Victoria Ward and Her Family: Memories of Old Plantation*, written by Frank Ward Hustace III, the great-grandson of Curtis and Victoria Ward (2000).

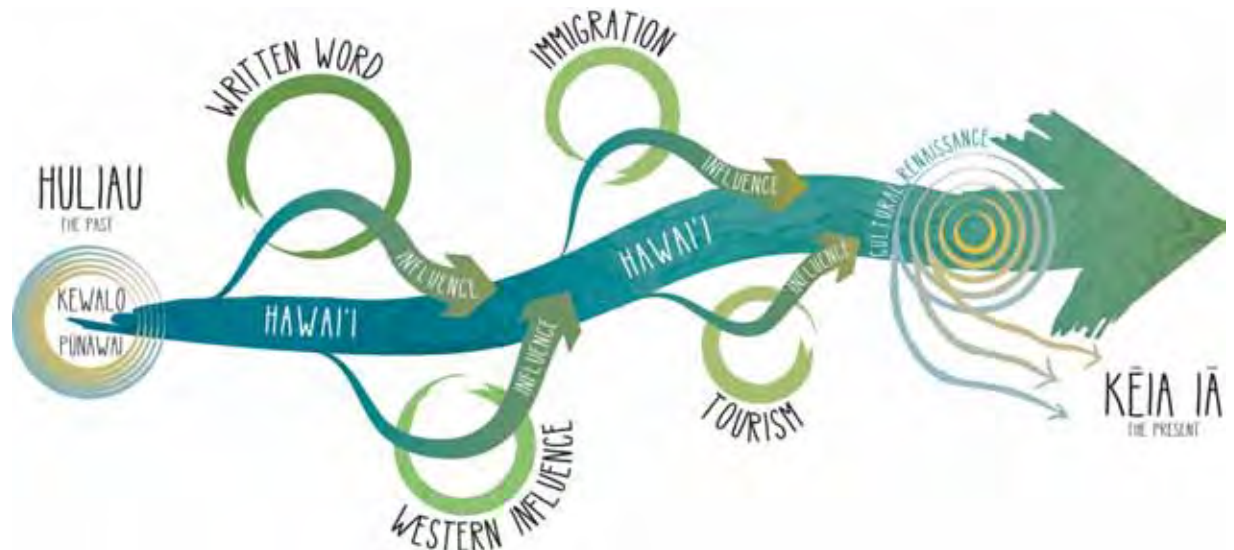
The diagram to the right uses the metaphor of the stream (kahawai) to describe the diverse influences that have shaped contemporary art and culture in Hawai'i over time.

"The land was exceptional, with deep soil, fresh water bubbling from a spring, and sufficient acreage for pasturing many horses. An 'auwai connected a large fishpond on the property to the ocean. Small fish from the inner reef swam up the 'auwai, and a mākāhā (gate) trapped them in the pond so they could be fattened for harvesting."

Source: *Victoria Ward and Her Family: Memories of Old Plantation*, 2000



Ahupua'a Painting
Source: Marilyn Kahalewai, 1993



Kahawai Diagram
Source: WCIT Architecture

History of Blaisdell Center

The Ward Estate

In 1870, Curtis and Victoria Ward purchased the land on which the Blaisdell Center now sits. Besides planting 6,000 coconut trees, kiawe for firewood, and grass for their horses and cattle, the Wards restored the fishponds and the 'auwai (irrigation channel). A well was dug to provide water to the property. In 1875, an additional 77 acres was purchased to extend the property to the makai boundary. The Wards built their home—Old Plantation, and later *Ku'u Home*—in 1881, just south of Thomas Square.

Urbanization crept up around the property. McKinley High School was constructed in 1923. Victoria Ward Limited was formed in 1930, five years before the passing of Victoria Ward, to manage the estate among the seven Ward daughters. The company owned and managed the lands, which came to be called Kukuluaeo. The City and County of Honolulu, long interested in Old Plantation as the site for a concert hall and sports arena, purchased the property in 1957. Thousands of people toured the estate during the Honolulu Academy of Arts open house following the City's purchase.



Fishpond Systems

Source: WCIT Architecture, Google Images



The Ward Estate

Source: Google Images

History of Blaisdell Center

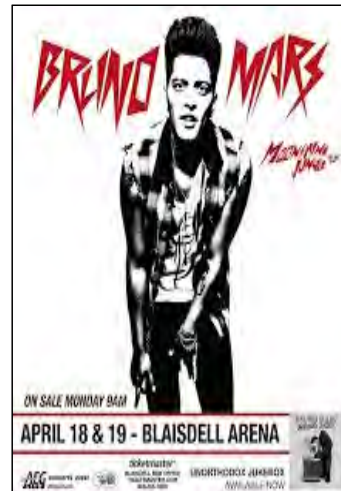
Blaisdell Center

Soon after the purchase of the Ward Estate property, the City began construction of the facilities. The City Council named the Arena the Honolulu International Center (or HIC) in 1963. It was later renamed as the Neal S. Blaisdell Center after the mayor who oversaw construction. The HIC was completed in 1964 at a cost of \$14.4 million and dedicated at the opening ceremony as a living memorial to all of Hawai'i's war heroes.

Over the last 50 or so years, the Blaisdell Center has served as Hawai'i's premier gathering place for all ages. The Arena, Concert Hall, and Exhibition Hall continues to draw a wide audience to an even wider offering of entertainment, events, and enjoyment.



The Blaisdell Center Arena after Construction
Source: Google Images



Past performances at the Blaisdell Center
Source: City and County of Honolulu



V

Existing Conditions

Existing Conditions



Overview

Blaisdell Center's 22.4-acre site is located in the heart of Honolulu. The campus includes the Arena, Exhibition Hall, Concert Hall, Pikake Room, meeting rooms on two levels, box office, trades / warehouse, building, parking structures, and parking lots. In 1994, the administration, offices, galleria, meeting rooms, and the box office were constructed. In 2015, the Arena dressing rooms were renovated.

Annually, over 800,000 visits are made to the Blaisdell Center. Parking makes up 60-70% of the concession revenue, and overflow parking is accommodated at McKinley High School. A prominent feature at Blaisdell Center are the ponds that surround the Arena.

The three major facilities at the Blaisdell Center—the Concert Hall, the Arena, and the Exhibition Hall, are described in more detail in the following pages.



Blaisdell Center's 22.4-Acre Campus
Source: AECOM

Existing Conditions



Regional Context

The Blaisdell Center is located in urban Honolulu within Kaka’ako Mauka. The site is surrounded by major arterial roads that include King Street, Ward Avenue, and Kapi’olani Boulevard.

As shown on Figure 1, the Blaisdell Center is surrounded by important cultural and educational venues, including McKinley High School, Honolulu Museum of Art, and Thomas Square Park.

Major landowners in the area include Howard Hughes and Kamehameha Schools—who own 60 and 40 acres, respectively. They are engaged in redevelopment efforts with a series of new high-rise, mixed-use residential-commercial developments. The Office of Hawaiian Affairs recently became a major landowner in Kaka’ako Makai in 2012 with the acquisition of 25 acres adjacent to Kewalo basin.

High-density mixed-use development is anticipated at the three planned Honolulu Rail Transit stations nearby: Civic Center Station (Halekauwila and South Streets), Kaka’ako Station (Halekauwila Street and Ward Avenue), and Ala Moana Center Station (Kona and Kona Iki Streets mauka of Ala Moana Center).



Figure 1. Regional Context Map
Source: AECOM

Existing Conditions



Concert Hall

The Concert Hall is the home of the Hawai'i Symphony, Hawai'i Opera Theatre, and Ballet Hawai'i. Besides local productions, Broadway shows are also hosted. The average number of rental days is approximately 125-200 per year. The Concert Hall has 2,174 seats, and features include live acoustics, large stage and wings, large sliding loading doors, lanai areas, and grand lawns.

Preliminary observations show that the Concert Hall structure is generally in an acceptable condition and size. Therefore, upgrading some of its features may be the most cost-effective option. Major constraints / issues at the Concert Hall include:

- Safety issues, such as limited lighting and fall protection
 - Americans with Disabilities Act (ADA) issues, such as accessible seating being limited to ends of aisles, temporary ramps used for wheelchairs, no wheelchair access to the balcony, platforms must be installed to accommodate disabled patrons, etc.
 - Acoustic issues
 - Maintenance challenges that include lighting and air conditioning, and replacement for decorative glass in lobby walls is not available
 - Inadequate infrastructure, such as storage, staging rooms, loading docks, rigging points, lighting, etc.
- Inadequate space for rehearsals, VIP / reception / autograph meeting places, and limited concession spaces
 - The lobby is not air conditioned



The Concert Hall
Source: AECOM

Existing Conditions



Arena

The multipurpose indoor Arena is a circular performance facility that measures 190 feet in diameter with unobstructed sightlines. The Arena is used for concerts, sporting events, large meetings, conventions, consumer shows, family shows, and other special events. The average number of rental days is approximately 100-130 per year. The Arena seats 8,800 for stage shows with seating in the round, and 7,700 for courtside events.

Preliminary observations show that the Arena structure is generally in an acceptable condition and size. Therefore, upgrading some of its features may be the most cost-effective option. Major constraints / issues at the Arena include:

- Safety issues, such as railings at balcony stairs, some stairs are outside and slippery when wet, no fall protection, etc.
- ADA issues and limited wheelchair access; no access to upper level seating
- Insufficient family and women's restrooms
- More floor space and production infrastructure needed:
 - Insufficient loading area outside and capacity inside
 - Insufficient support rooms
 - Insufficient storage (concourse / public spaces used for storage)
- Water feature and concourse configuration restrict service points causing congestion



The Arena
Source: AECOM

- Inadequate house sound system, house lighting, high-intensity discharge (HID) lights, rigging points, ceiling obstructs, etc.
- Antiquated power distribution systems
- Parking:
 - Insufficient parking capacity for patrons
 - Conflict between loading zone and parking lot
- Seating:
 - No vertical circulation from floor to upper fixed seating in the Arena
 - Retractable seating units are stored outside the Arena
 - Seating in balcony needs refurbishment
- Water damage and roof leaks:
 - Downspouts and roof gutter system corroded
 - Water laterals corroded
- Maintenance:
 - Difficult to maintain lighting / electrical systems
 - Wiring is approaching end of useful life
 - Lighting / dimmer system is outdated
- Concessions:
 - Limited in diversity and quality, difficult to serve, and isolated around concourse
 - Outdoor concourse problematic when it rains
 - Supplying food to the Exhibition Hall is difficult and intrudes on other events
 - Concessions only on ground level

Existing Conditions



Exhibition Hall

The Exhibition Hall is one of Honolulu’s main exhibition venues. Comprised of 65,000 square feet of exhibit space, which can be expanded to 85,000 square feet, the facility hosts community trade shows, consumer shows, large parties, and fundraising events. The facility can be configured into one room or multiple rooms. The Exhibition Hall averages 45 commercial exhibit shows / expos per year, with between 175-210 rental days per year. The 1994 renovation added offices / individual rooms and meeting rooms. Other facilities include box office / ticket booth, meeting rooms and structured parking.

Preliminary observations indicate that the Exhibition Hall needs substantial renovation to the extent to which demolition and new construction is recommended. Major constraints / issues at the Exhibition Hall include:

- Shared concourse with the Arena
- Columns: located every 30 feet and lack of HVAC supply between column bays
- Aging mobile walls need to be updated
- Ceiling height varies with pyramid roof shape and is too short
- Inadequate lighting controls
- Poor acoustics due to roof design
- Inadequate food and beverage space
- Storage space is limited (needed for banquets and Building Services)



- Need business center or lobby area and supply closets for event supplies
- Need ability to subdivide space to host more than one event at a time

The Exhibition Hall
Source: AECOM

An aerial photograph of a city skyline, featuring several tall skyscrapers and a large stadium with a white, domed roof. A multi-story building is under construction, with a crane visible. The foreground shows a large, modern building with a flat roof and a parking lot. The entire image is overlaid with a teal color filter.

VI

Operations and Market Analysis

Operations and Market Analysis

After the existing conditions analysis, site assessment, and community workshop, the team conducted a market analysis. Following are highlights from the market analysis.

- Public assembly facilities, such as those at the Blaisdell Center, have a unique business model that relies on a combination of earned revenues associated with events and public funding. On an operating basis, some public assembly facilities generate positive net income, many break even, and some require an ongoing operating subsidy. Almost all require public support or subsidy for initial capital costs and major capital improvements.
- The Blaisdell Center generally breaks even on an operating basis, and if administrative costs for the Department of Enterprise Services are allocated across all of its facilities (i.e., including golf courses, the zoo, etc.), the Blaisdell Center generates a modest amount of positive net revenue on an operating basis that reverts to the General Fund.
- However, it is important to note that the facilities are aged and face significant deferred maintenance issues due to inadequate resources. The revenue generated, as is typical with public assembly facilities, is not enough to cover major replacement or capital improvement costs for substantial renovation, systems upgrades, or rebuilding.

- The Blaisdell Center benefits from a position of market strength as one of the only options in the Honolulu market for major concerts, shows, and exhibitions. Figures 2 and 3 show that in 2014, there were nearly 500 rental days with approximately 650,000 attendees for the three major facilities.
- However, the facilities also face challenges attracting national concerts, events, and performers due to Honolulu’s isolated location relative to typical national concert and other event tour patterns.
- The Blaisdell Center has been able to attract a significant percentage of market share despite its antiquated facilities due to the limited supply of other comparable venues in the market and strong customer service and partnerships. Over time, however, a lack of reinvestment will likely lead to a decline in events, attendance, and revenue; a much impaired visitor experience; and life safety issues.

Blaisdell Center Attendance by Facility

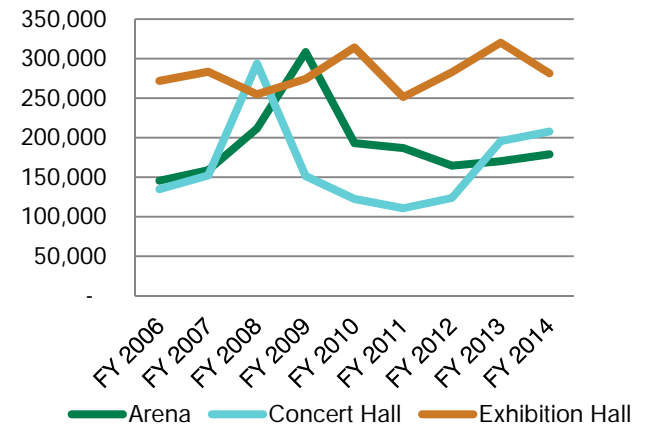


Figure 2. Blaisdell Center Attendance by Facility
Source: AECOM

Blaisdell Center Rental Days by Facility

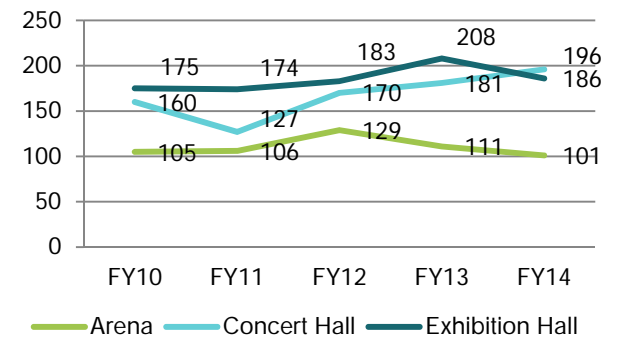


Figure 3. Blaisdell Center Rental Days by Facility
Source: AECOM

Operations and Market Analysis

Concert Hall Market Analysis

The following market analysis highlights apply specifically to the Concert Hall.

- National and international artists enjoy touring to the Blaisdell Center Concert Hall to perform, but cost, time, and the limited market size present challenges to growth.
- The Concert Hall currently averages approximately one Broadway show per year, generating relatively little demand from Broadway presenters, promoters, and tour operators. Broadway shows historically have attracted large attendance numbers and revenue for the Blaisdell Center. An opportunity exists to capture additional Broadway tours, as approximately 20-30 Broadway shows are on tour in the United States in a given season.
- There are significant barriers, as bringing a Broadway tour to Honolulu costs over 50% more than locations on the mainland due to transportation costs and time. Strategies to overcome this include strategic partnerships with hotels and airlines, subsidies, collaboration with outer island venues, and sponsorships.
- Solo artists may be more viable in the short term, as they can generally be more flexible to travel to different markets and have fewer costs.
- With strategic investments in both facility enhancements and programmatic and organizational changes, over time the Blaisdell Center could potentially increase demand from Broadway tours to more closely resemble comparably sized markets around the United States.
- The development of a mission-driven organization with the ability to present and produce, in addition to a private management model, needs to be considered to maximize market opportunities. Public agencies generally face challenges in this area due to government regulations and requirements.
- Currently, the state of the facilities is not a major decision factor for attracting Broadway and similar-scale tours. While the facility does need some physical improvements, they alone, without the implementation of other strategies, will not result in significantly increased market share.
- There has been a significant issue related to local performing arts organizations utilizing significant event days for rehearsals and performances, which has become a challenge for scheduling touring productions—particularly Broadway tours that require consecutive weeks. A second smaller-scale venue would help support the local arts community while creating more market and revenue opportunity for the Blaisdell Center.



Elton John in concert
Source: Google Images



Wicked, a Broadway Production
Source: Google Images

Operations and Market Analysis

Strategies for mitigating some of the Blaisdell Center Concert Hall challenges are shown below in Figure 4.

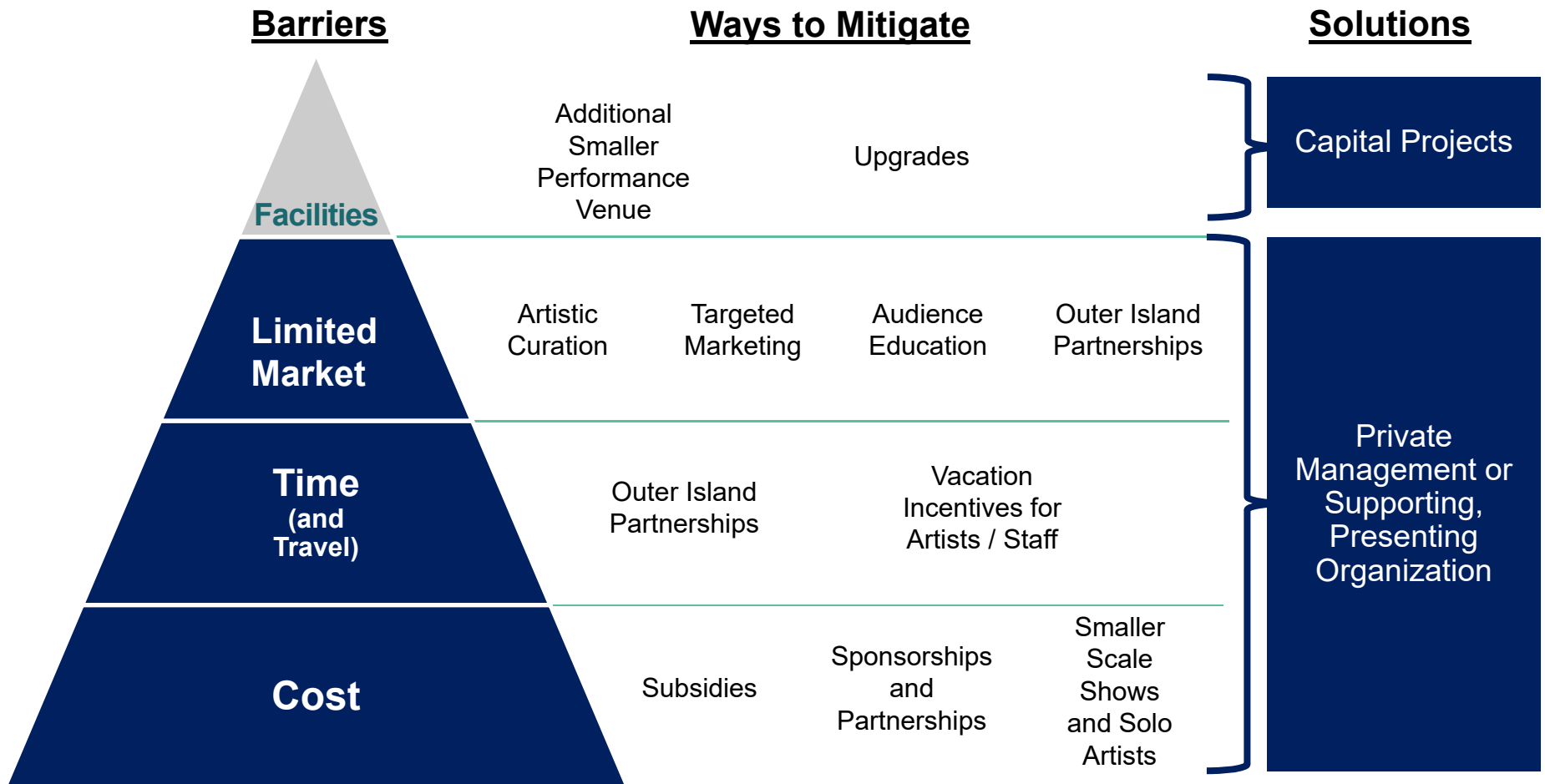


Figure 4. Blaisdell Center Barriers to Success
Source: AECOM

Operations and Market Analysis

Exhibition Hall Market Analysis

The following market analysis highlights apply specifically to the Exhibition Hall.

- The Exhibition Hall is the most widely used venue at the Blaisdell Center, attracting approximately 300,000 people annually, which accounts for the greatest percentage of the three major venues. It drives significant use days and revenue. Many events use the majority of the existing space and are growing in size.
- The facility is used for consumer shows, exhibitions, graduations, and a variety of community events. There is a strong community need and market demand for the Exhibition Hall with its central location.
- The Exhibition Hall's market position is as a large floor plate (area), low-cost facility, which is typical for the industry.
- The facility is dated and needs substantial improvements and upgrades. Out of the three facilities, it is likely the cheapest to rebuild.
- The Hawai'i Convention Center is the only other facility that can handle very large events, but it is not suitable for many events due to its higher price point, level of amenities that is more suitable for convention groups, and lack of parking.
- Other uses such as administration space and meeting rooms are well used and planned in the preferred alternative.



Exhibition Hall, Made In Hawai'i Festival
Source: Google images



Exhibition Hall. Senior's Valentine's Day Dance
Source: AECOM

Operations and Market Analysis

Arena Market Analysis

The following market analysis highlights apply specifically to the Arena.

- There are four major categories of arenas in the United States, and the Blaisdell Center Arena is considered a “civic arena.” Civic arenas are typically owned by a public body and can vary in size, from fewer than 5,000 seats to over 20,000. Virtually all have significant professional and / or major collegiate sports, tenants, although most are multipurpose facilities. Civic arenas can be managed publicly or privately, and can be profitable or lose money; they are not expected to cover full capital costs.
- Civic arenas typically rely heavily on public sources for capital and operating subsidies, including local taxes, visitor taxes, other public contributions, on-site taxes, district / tax increment financing (TIF) revenues, facility / ticket fees, and / or project partners.
- The Blaisdell Center was developed in one of the earlier waves of arena construction; subsequent arena development across the country was largely supported by the proliferation of minor league hockey teams. The Blaisdell Center differs from most civic arenas in its absence of a major sports tenant, which has implications for attendance and revenue.
- Overall, the number of concerts at the Blaisdell Center is within industry standards, but overall venue attendance and revenues are lower due to the absence of a major sports tenant. The Arena is used for a wide variety of events (approximately 20 events per year).
- The Arena facility is old, dated, and requires substantial renovation to address basic operational and visitor issues. However, a new or substantially renovated arena would not significantly increase market share without other changes. It is the only facility that has sufficient availability in Hawai‘i that can host arena concerts.
- Strategies for increasing market and revenue performance include partnerships to lower air / travel costs, investment in equipment, subsidies, and physical changes to enhance revenue.
- Private management should be strongly considered given the remote geographic location of Hawai‘i and the resources, relationships, and efficiencies a private manager could bring to the Blaisdell Center.



Kamehameha Song Contest
Source: Google Images



Bruno Mars in Concert
Source: Google Images

Operations and Market Analysis

VI

Key Findings and Recommendations

The three major venues at the Blaisdell Center are all important to meeting the needs of the community. Without these venues, many events would not be accommodated in the Honolulu market. It is committed staff that has allowed the facilities to perform so well despite extensive deferred maintenance and antiquated systems and amenities, but at some point the lack of reinvestment will affect the financial performance and future of the facilities.

After completing the market analysis, alternatives from minor renovation to substantial renovation, to demolishing and rebuilding were considered. Based on the market potential and existing conditions of each facility, a series of strategies were developed to address the future sustainability of the Blaisdell Center. As described earlier in this report, public assembly facilities such as performing arts venues, exhibition halls, and civic arenas can sometimes break even on an operating basis or generate a modest net income, but they are not expected to generate enough revenue to cover the cost of major reinvestment.

Therefore, the redevelopment strategies were developed with the goals of ensuring the future operating sustainability of the three

facilities, providing greater support to the local arts community, and developing mechanisms for funding regular public programming outside of the three major venues in the open space / plaza areas.

The Arena

- Currently the Arena is the only suitable venue for large, indoor concerts in the Honolulu market.
- It is currently about the right size – increasing the size would not enhance market share significantly.
- Preliminary studies indicate that the best strategy for the Arena is a substantial renovation, focusing on creating a visitor experience that is more in line with industry standards and on the development of revenue enhancing spaces. The consultant team does not believe it is necessary to tear down and rebuild the Arena. A new Arena would have a very high capital cost, and while we think there would be some modest potential for capturing additional concert tours, a new facility would not substantially increase market share.
- Private management by a facility operator, particularly if they have industry partnerships, could make a notable difference in expanding operating revenue and should be explored, particularly given the challenging geographic location of Hawai‘i.

The Concert Hall

- The Concert Hall is well utilized and is home to local performing arts “resident” organizations as well as the venue for the highly successful Broadway performances. Local groups use the Concert Hall for both rehearsals and performances, which often makes scheduling national touring Broadway productions challenging. This has created some scheduling tension as a result of the need to both support local arts organizations and to bring in national touring productions that provide financial support to the facilities. Therefore, a separate, multi-purpose venue to accommodate rehearsals is recommended.
- The physical condition of the Concert Hall is relatively good, particularly compared to other facilities, and is not currently a limiting factor in capturing national and international market share. A number of improvements and upgrades should be made related to life safety and visitor experience.
- The development of a second, smaller venue that can be used for rehearsals and smaller performances should be considered. This would alleviate the current scheduling challenges and allow for growth of touring productions in the future.

Exhibition Hall and Meeting Rooms

- The Exhibition Hall and meeting rooms are the most heavily utilized venues at the Blaisdell Center. It currently serves the market for very large, low-cost space, and does not need to have expensive amenities.
- However, of all the facilities at the Blaisdell Center, the Exhibition Hall is the one facility recommended to be demolished and rebuilt for three reasons. First, it occupies a large space in the center of the site. Relocating it with a more efficient layout could allow for the development of enhanced outdoor spaces and improved loading and access. Second, of the three venues, this type of space is the least expensive to rebuild. Finally, its current physical condition is very poor, and the level of improvements required likely warrant a new construction.



The Exhibition Hall and the Arena
Source: AECOM

An aerial photograph of a city skyline, featuring several tall skyscrapers and a large, white, dome-shaped stadium in the foreground. A construction crane is visible on the right side of the image. The entire image is overlaid with a semi-transparent teal color.

VII

Land Use Alternatives

Land Use Alternatives

Based on the existing conditions, analysis, public outreach, stakeholder interviews, market analysis, vision, and principles, three land use alternatives were developed for the future of the Blaisdell Center (as illustrated on the following pages).

Alternative 1

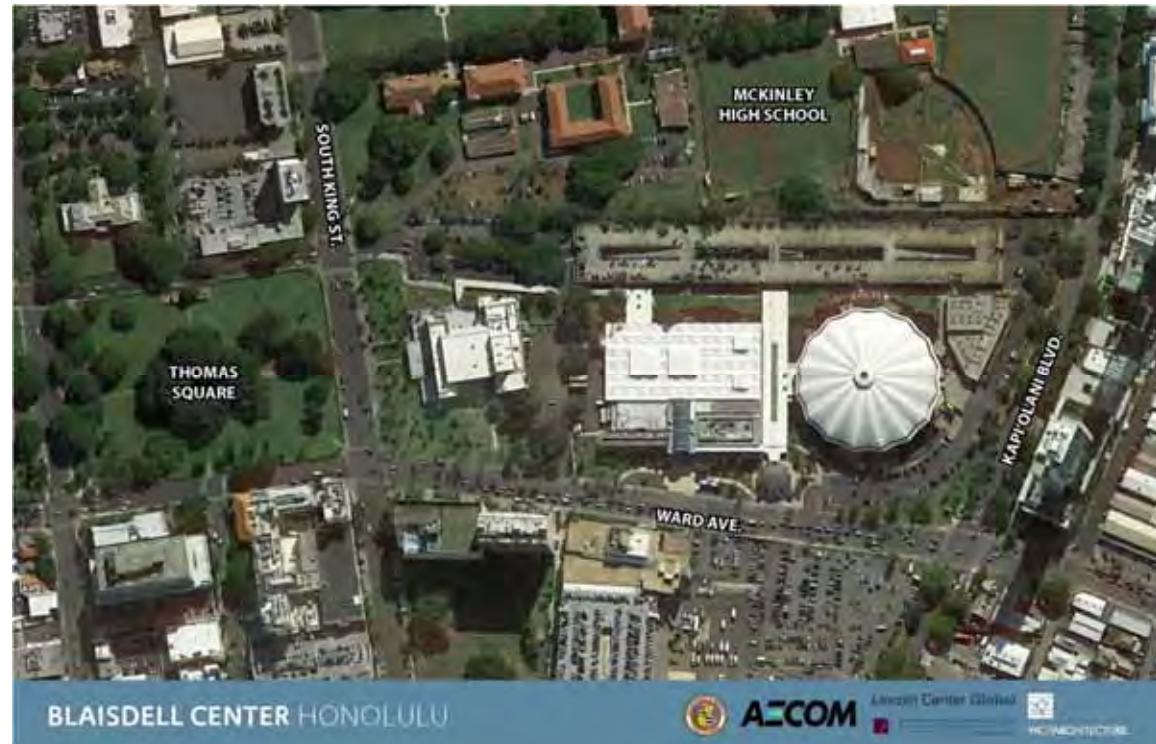
Alternative 1 is the “status quo” plan. It retains all three major buildings (with renovations) including the Concert Hall, Exhibition Hall, and Arena, as well as the parking structures in the current configuration.

Alternative 2

Alternative 2 retains the existing Concert Hall and Arena with renovations, and proposes a new Exhibition Hall with meeting rooms and a new parking structure (designed with more efficiency and truck access to all the facilities).

Alternative 3

Alternative 3 proposes the most change of all the alternatives. Alternative 3 retains the existing Concert Hall with renovations, but proposes the following new facilities: Exhibition Hall, Arena, and parking structure (designed with improved efficiency and truck access to all the facilities).



Blaisdell Center and Surroundings
Source: Google Images

Land Use Alternatives

Alternative 1 is the least aggressive alternative by retaining all major venues and structures including parking with renovation as seen below.



Figure 5. Alternative 1

Land Use Alternatives

Alternative 2 is the second most aggressive alternative by proposing a new Exhibition Hall, meeting rooms, and efficient parking structures. The Concert Hall and Arena are retained with renovation.



Figure 6. Alternative 2

Land Use Alternatives

Alternative 3 is the most aggressive alternative by proposing a new Exhibition Hall, meeting rooms, Arena, and efficient parking structures. The Concert Hall is retained with renovation.



Figure 7. Alternative 3

An aerial photograph of a city skyline, featuring several tall skyscrapers and a large stadium with a white, domed roof. In the foreground, there is a large, multi-story building with a flat roof and a curved glass facade. The image is overlaid with a teal color filter. The Roman numeral 'VIII' is prominently displayed in the upper left corner, and the text 'Preferred Land Use Plan' is centered in the lower half of the image.

VIII

Preferred Land Use Plan

Preferred Land Use Plan

Summary of Preferred Alternative

Land use Alternative 2 was identified as the preferred alternative for a number of reasons, as follows:

- Early input from the public, stakeholders, City staff, and market research indicated that all three venues are heavily used and needed.
- Market research and existing conditions analysis of the current Arena did not support the construction of a new facility. Renovation was the most cost effective approach to addressing current and future needs.
- Eligible historic status of both the Arena and Concert Hall contributed to the desire to preserve significant portions of the original structures.
- Exhibition Hall space has the lowest replacement cost and the largest potential to consolidate the building footprint by utilizing a stacking program, justifying the decision to rebuild this component.

Alternate 2 is further illustrated in the following diagrams.

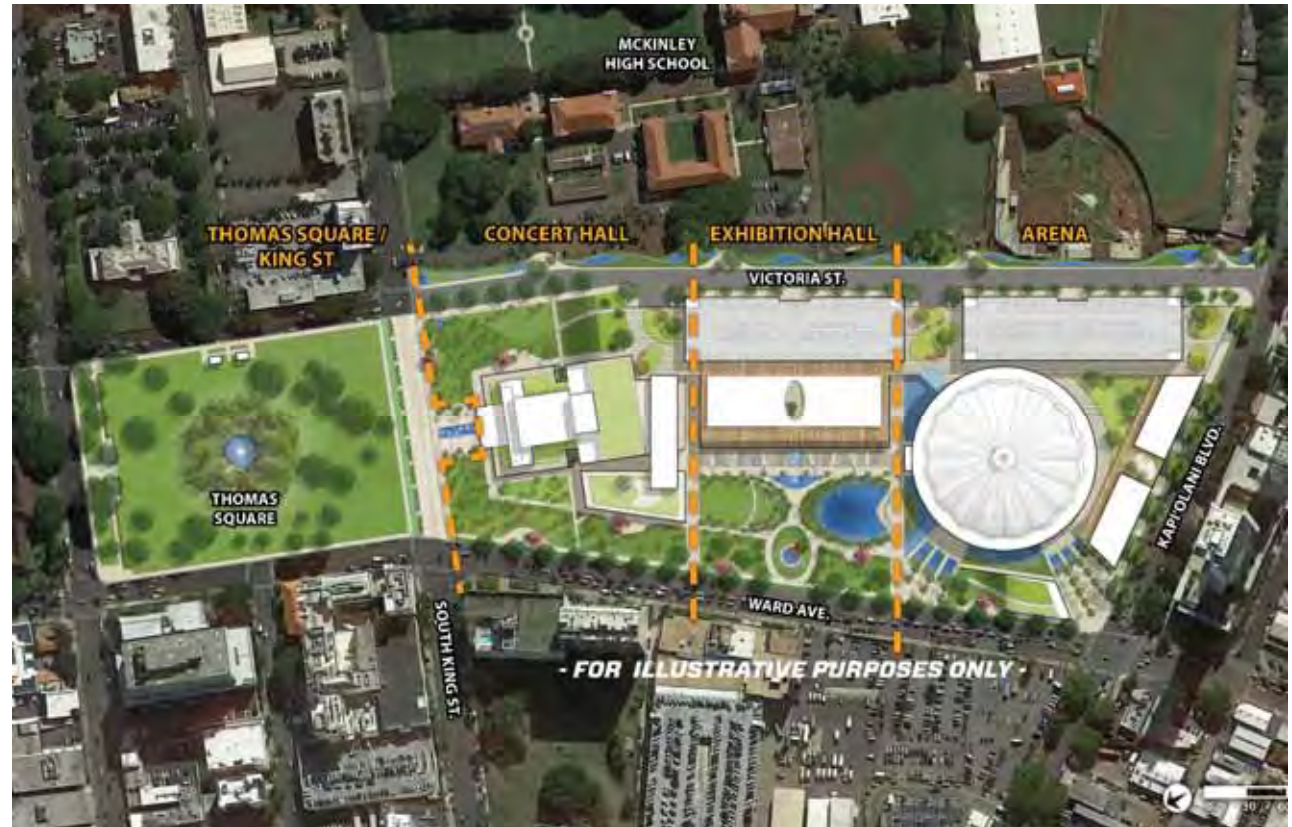


Figure 8. Preferred Land Use Plan

Preferred Land Use Plan

Diverse Land Use Program

Although market research indicates that each of the three core venues is well-used and contributes to the Blaisdell Center's ongoing success, studies also show potential benefits of providing additional program space on site. Beyond the economic benefit of additional rentable area, increasing the diversity of the Blaisdell Center's space offerings would welcome a broader range of audiences, encourage more daily activity, enable a greater variety of events, and enhance the overall patron experience.

A new multipurpose venue and education studios provide a mixture of practice and learning spaces to the existing performance hall. This allows greater scheduling flexibility for the Concert Hall, promotes more innovative types of events, and extends periods of active use.

Retail space along the front of the Exhibition Hall serves to activate the central open space and create an additional draw on non-performance days. Similarly, commercial / retail space extends along Kapi'olani Boulevard to not only activate the urban edge, but to also encourage longer patron visitation before and after events.

In addition, trades / warehouse and administration support space is needed in the meeting / event space facilities. Trash / recycling areas are also proposed in the reconfigured loading zones.

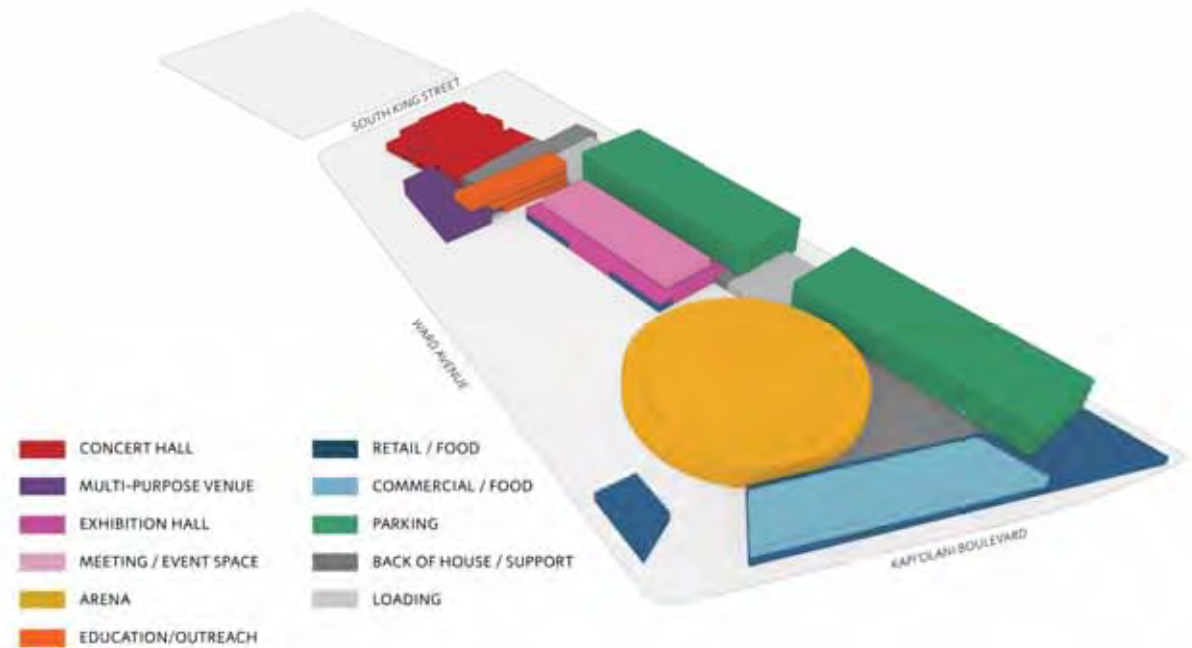


Figure 9. Land Use Program of the Preferred Land Use Plan

Preferred Land Use Plan

Open Space

Although the 22.4-acre Blaisdell Center campus contains a significant amount of ground floor open space, its current configuration limits potential use. To address existing issues and make better use of the available area, the overall land use plan incorporates the following strategies:

- Stacking programmatic uses to consolidate venues and limit building footprint while increasing usable area.
- Stacking the Exhibition Hall program in a two-story building to create a new open space at the heart of the Blaisdell Center and allow for a porous landscaped edge along Ward Avenue.
- Utilizing the roof area of expanded ground floor program to create a continuous terrace linking venues at the second floor and provide exterior courtyards to activate upper levels of the Center.
- Increasing efficiency and capacity of structured parking to reduce surface parking and allow for larger contiguous open space.
- Relocating service entries to Victoria Street to limit conflicts between vehicular and pedestrian circulation.



Figure 10. Open Space Diagram of the Preferred Land Use Plan

- Reconfiguring venue placement around a central open space as the identifiable focal point of the site.

Focusing on the design of the open spaces provides a cost-effective approach to transforming the Blaisdell Center into a park-like setting as a destination and neighborhood amenity, increases opportunity for public programming, and provides additional rentable area.

Preferred Land Use Plan

Connectivity

With its centralized location between downtown Honolulu, Kaka’ako, and Waikīkī, enhancing the connectivity of the Blaisdell Center is a key component in bolstering the Blaisdell Center’s role as the island’s center for arts, culture, and entertainment.

Improvements to the King Street crossing and planned enhancements to Thomas Square Park help to support increased activity and programming possibilities across both sites to strengthen the relationship of the Blaisdell Center and the surrounding neighborhood as a catalyst for further development of the district.

Additionally, reconfiguring the on-site structured parking would open up the potential to extend Victoria Street through to Kapi’olani Boulevard and to create the opportunity for improved connectivity with McKinley High School. A new plaza at the corner of Ward Avenue and Kapi’olani Boulevard expands the entry to the Arena in support of increased urban retail use and pedestrian flow expected from the Kaka’ako light rail station and Kaka’ako residences.

To support pedestrian circulation and increased daily use of the Blaisdell Center, street trees, engaging open space, and main venue entries have been consolidated along Ward Avenue.

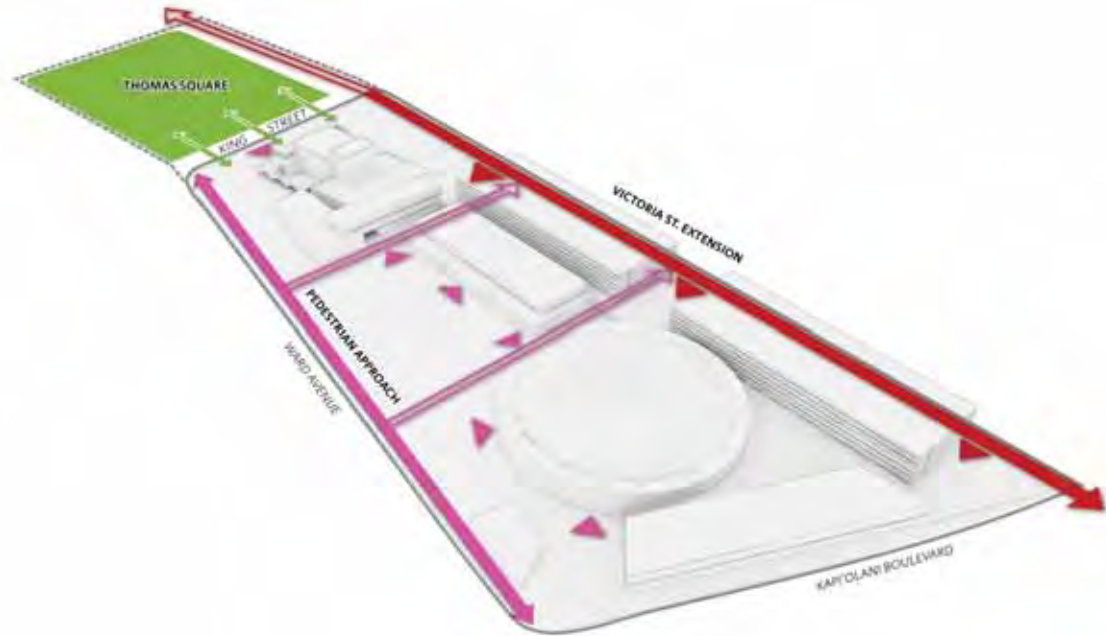


Figure 11. Circulation Diagram of the Preferred Land Use Plan

Building massing has been configured to allow for cross-site circulation between the major venue components between Ward Avenue and the Victoria Street extension.

The new parking structures will be more efficient (with approximately 2,000+ spaces), provide direct access to the Exhibition Hall and Arena, consolidate loading zones, and provide 500+ more parking spaces than is currently

configured on site. The reconfiguration of parking will improve queuing for events and improve walkability.

By relocating surface parking and re-organizing service access, the plan consolidates public open space into large, contiguous areas better suited for public programming and daily use. Additional off-site parking on other city-controlled property should also be considered.

Preferred Land Use Plan

The preferred Land Use Plan is broken down in a series of projects that could be built all at once or in a logical phasing sequence. Following are descriptions of each area of the Plan.

Thomas Square / King Street

Thomas Square is envisioned as being heavily programed with public events in the future. To further strengthen the connections between the Blaisdell Center, Thomas Square, and the surrounding community, improvements along King Street are suggested to address pedestrian crossing concerns and enhance the arrival experience.

Recommended actions include the incorporation of a block-wide crossing with coordinated signaling, upgraded treatment of the street surface, replacing parallel parking with planting areas / bioswales, relocation of bus shelters and conversion of the bus drop-off lane, and expansion or upgrade of the Concert Hall entry plaza.



Figure 12. Thomas Square / King Street Conceptual Plan

Preferred Land Use Plan

Arena

In reviewing the potential of the existing Arena structure, opportunities were explored that propose raising the concourse to the second level for direct access to the main seating bowl area. This approach allows for expansion of retail and support spaces on the ground floor without significantly increasing the building footprint.

Other recommended improvements to the Arena include enclosing the façade in glass, ADA and safety improvements, a moderate increase of food and beverage opportunities, mechanical upgrades and modernization, retail / commercial development, incorporating complete street elements along Kapi'olani Boulevard, the Victoria Street extension, a new café / ticketing building, and new and improved plazas / open space. Pedestrian connections occur at the ground level and the second level. Providing retail / commercial users and pre-show hangout opportunities on the ground floor strengthens the existing connection to Kapi'olani Boulevard, which has experienced new mixed-use development with residential, commercial, and retail uses on the makai side, as well as Kaka'ako.

Preliminary concepts and illustrative sketches for the Arena and surrounding open spaces are shown in Figures 13, 14, and 15.



Figure 13. Arena Conceptual Plan



Figure 14. Arena Sketch



Figure 15. Arena Rendering

Preferred Land Use Plan

Exhibition Hall

To minimize the overall footprint, meeting rooms and offices have been placed on top of ground-floor exhibition space. The overall mass of the building was relocated for direct connection to parking, as well as the ability to increase available open space. An entry and event plaza fronting the exhibit space provides the opportunity for exhibitions to spill outside and engage the landscape. This space is envisioned to be lined with active uses like coffee shops, galleries, and civic uses such as a satellite city hall.

Recommended improvements for the Exhibition Hall include developing a new Exhibition Hall, parking structures with approximately 500+ additional parking spaces and improved access, covered pre-function terraces, open space, and water features. Additionally, with new frontage along the Victoria Street extension, there is the potential for ground floor program space below the parking garage to further activate the streetscape. This street should be designed as a shared street between pedestrians, bicycles, and cars.

Preliminary concepts and illustrative sketches for the Exhibition Hall and surrounding open spaces are shown in Figures 16, 17, and 18.



Figure 16. Exhibition Hall Conceptual Plan



Figure 17. Victoria Street Extension Sketch



Figure 18. Exhibition Hall Imagery

Preferred Land Use Plan

Concert Hall

Although the physical condition of the Concert Hall necessitates less action than other venues and the facility is eligible for historic status, modifications to this facility do present the potential to reduce scheduling conflicts, increase revenue, bolster outreach and educational offerings, provide needed support space, and improve patron experience.

Recommended improvements to the Concert Hall include expanding and enclosing the lobby to provide air conditioned pre-function space, renovated bathrooms, and improved concessions. A new roof terrace at the balcony level was suggested as a unique indoor / outdoor experience and to reduce congestion during intermission. Renovations would also address ADA and safety concerns to provide access to the balcony and upper seating.

Adding a new flexible theater looking over an event lawn creates a dynamic performance space that embraces the landscape and offers new opportunity for public / patron engagement. New studios and classrooms will help extend the reach of the Blaisdell Center to further serve the community.

Preliminary concepts and illustrative sketches for the Concert Hall and surrounding open spaces are shown in Figures 19, 20, and 21.



Figure 19. Concert Hall Conceptual Plan



Figure 20. Concert Hall Sketch



Figure 21. Concert Hall Rendering



IX

Implementation Recommendations and Next Steps

Implementation Recommendations and Next Steps

Implementation Recommendations

Following this feasibility study and conceptual plan, the next steps in the master plan process include development of a detailed site plan and supporting studies. This plan should include the following components:

- Refined conceptual site plan with all open spaces, plazas, site amenities, water features, Victoria Street extension, etc.
- Conceptual architectural plans for the:
 - Concert Hall renovation
 - New rehearsal / performance facility
 - New Exhibition Hall with meeting rooms
 - New parking structure with truck access
 - Arena renovation
 - New commercial space along Kapi'olani Boulevard and the Victoria Street extension
 - New café / ticketing building
- Traffic analysis / road improvements
- Utility and geotechnical studies
- Structural analysis of retained facilities
- Phasing plans
- Cost estimates
- Sustainability plan
- Analysis of implications of potential private management alternative
- Financing mechanisms for construction and long term maintenance
- Supplemental environmental documentation

- Permitting requirements
- Public engagement

Under the current effort, a high-level cost estimate was prepared for the preferred alternative. The estimate includes geotechnical investigation, site preparation, on-site utilities, renovation of the Concert Hall and Arena, and construction of the new Exhibition Hall, Multi-purpose Venue, meeting rooms, Box Office/Café and parking structures. The approximate construction cost is \$300-\$400 million. This estimate will be updated in the master planning process.

Next Steps

Following completion of the master plan and associated scope of work items, construction documentation for on- and off-site utilities, site plans, architectural plans, and transit / road improvements should occur. Supporting program management / construction management for a project of this scale is also recommended. In addition, funding mechanisms will need to be executed in concert with the site preparation and detailed phasing plans.

The last 50 years of the Blaisdell Center has left a legacy for locals and visitors alike. The next 50 years of the Blaisdell Center will only be possible with significant reinvestment in the existing facilities and construction of new facilities. This reinvestment will ensure that future generations of locals and visitors will continue to enjoy the Blaisdell Center as a true gathering place.



Jake Shimabukuro
Source: Google Images



Figure 22. New Rehearsal / Performance Facility Rendering



Appendix B

Existing Conditions Report





BLAISDELL CENTER MASTER PLAN

EXISTING CONDITIONS REPORT - FINAL | MARCH 2018

AECOM

Gensler



WCITARCHITECTURE

Snøhetta

PREFACE

PURPOSE

Since 1964, the Neal S. Blaisdell Center “Center” has welcomed locals and visitors to the 22.4-acre campus with the Concert Hall, Arena, and Exhibition Hall. First built as state-of-the-art facilities, the 50+ year old campus is in significant need of facility, systems, and infrastructure upgrades and renovation. In order to succeed for the next 50 years, the Center will need to successfully balance mission vs. money, and focus on long term sustainability with plans for reinvestment.

Conceptual Design Plan Purpose and Objectives

Building on the Blaisdell Center Master Plan Feasibility Study and Conceptual Plan from June 2016, the Conceptual Design Report will further develop the building program and space needs to determine the scope of renovation and new construction, define a site configuration for the overall campus, and create a conceptual plan to illustrate the future vision for the Center. The conceptual plan will balance the need to address deferred maintenance and needed modernization, with the projected growth of the Center to provide additional facilities and public open space to serve the growing community. Significant renovations and additions to the existing Concert Hall and Arena along with the design of new facilities such as an Exhibit Hall, additional Performance Hall, Sports Hall, Practice and Rehearsal spaces, Offices, Meeting Rooms, Outdoor Performance Spaces and Parking Structure.

VISION STATEMENT

Springing from the 'aina, the source that has sustained generations, Blaisdell Center is Honolulu's iconic gathering place perpetuating community, entertainment, and culture and reflecting the resilience of the people of our island home.

Using the vision statement as a foundation, the following principles were developed for the Blaisdell Center Conceptual Plan:

- Curate a diverse collection of programming that engages all communities.
- Integrate the Center with the surrounding community as the focal point of a larger district.
- Activate and shape spaces focused on creating memorable experiences.
- Connect with the storied place of Kewalo Punawai to reflect the unique environment and cultural traditions of the site.
- Sustain the Center through the innovative use of resources.



PROCESS

The Blaisdell Center Master Plan Feasibility Study and Conceptual Plan from June 2016 is the basis for developing the next steps in the Blaisdell Master Planning Process. The Feasibility Study began with understanding existing conditions, followed by a site assessment, community outreach, market analysis, development of a vision statement and guiding principles, a study tour of similar facilities on the mainland (San Francisco, Seattle, and Kansas City), generation of alternatives, selection of a preferred alternative, and a financial analysis. A site assessment and market analysis were performed to examine the feasibility of redevelopment opportunities for all Blaisdell Center facilities and to determine if current venue sizes align with projected market demand. Usage trends, operating costs, revenue generation, historic capital costs, and deferred maintenance issues were reviewed for all three facilities.

Summary of previous Feasibility Study outcomes:

Public Feedback

- Activate site
- Additional venues and open space
- Utilize outdoor space

- Support local community and groups
- Sustainable and efficient design
- Showcase cultural and historical stories
- Accessibility and connectivity to the neighborhood

Market Analysis Findings

- Well utilized and provide venues not available elsewhere in Honolulu
- Generates revenue
- Aging structures with outdated facilities and technology below industry standards
- Venue conditions not the only barriers to increasing market share
- Municipal civic center's typically rely on public funding of capital improvements
- Market capacity for additional venues/events

Recommendations

- Additional Venues - Performance Hall, Rehearsal, Classrooms, Restaurant/Café, and Public open space
- Renovate - Concert Hall, Arena,
- Reconfigure and rebuild - Exhibition Hall and Parking Garage

See “Blaisdell Center Master Plan Feasibility Study and Conceptual Plan Report” for detailed description of analysis and recommendations.

Building off of this preferred land use scenario, information was gathered to review existing conditions and develop the future programmatic and spatial needs while working to understand how these elements might be configured on site

Assessment of Existing Facility Conditions

The design team observed the conditions of the existing facilities identified in the Feasibility Study. Through site walks, user group meetings, archival documents, and construction drawing review, an assessment of existing space assignment and use, existing department relationships, physical conditions, technical infrastructure, performance infrastructure, and acoustical characteristics were assessed. Refer to the Existing Facility Overview for a summary of existing facility conditions. Detailed documentation of the mechanical, electrical, and plumbing systems along with structural review of existing conditions can be found in the assessment reports produced as part of the project's Technical Studies.



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I. INTRODUCTION

At more than 22.4 acres, the Neal S. Blaisdell Center (Center) site sits within the heart of Urban Honolulu and presents a unique opportunity to redevelop a new signature urban space that extends the heritage of the existing campus and addresses the current limitations observed at existing facilities. In envisioning the future of the of the site, emphasis will be placed on simultaneously expanding the amount and diversity of program space while also increasing the quantity and quality of public space. Additionally, the conceptual plan will strive to better integrate the Center within the urban fabric of the larger district, improve connectivity, and activate the edges to generate increased daily usage by patrons and neighbors alike.

In order to support these objectives, the current facilities were reviewed to determine how both the physical and functional components could be preserved, modified, reconfigured, and/or added to in order to create a Center that will be able serve the community for another 50 years. With most facilities built more than 50 years ago, the campus' buildings have reached their expected life spans at conditions which continue to support the intended uses. However, the existing infrastructure, technology, configuration, capacity, and available programmatic areas fall significantly below current standards and patron expectations. Deferred maintenance of the aging buildings and deferred reinvestment in the Center as a public amenity limit the Center's draw, capacity to host events, and ability to operate sustainably. While repairing the physical conditions may address the needed building upgrades, more holistic reconfiguration of the site is necessary to support the growing community and re-establish the Center as signature venue on the world's stage.

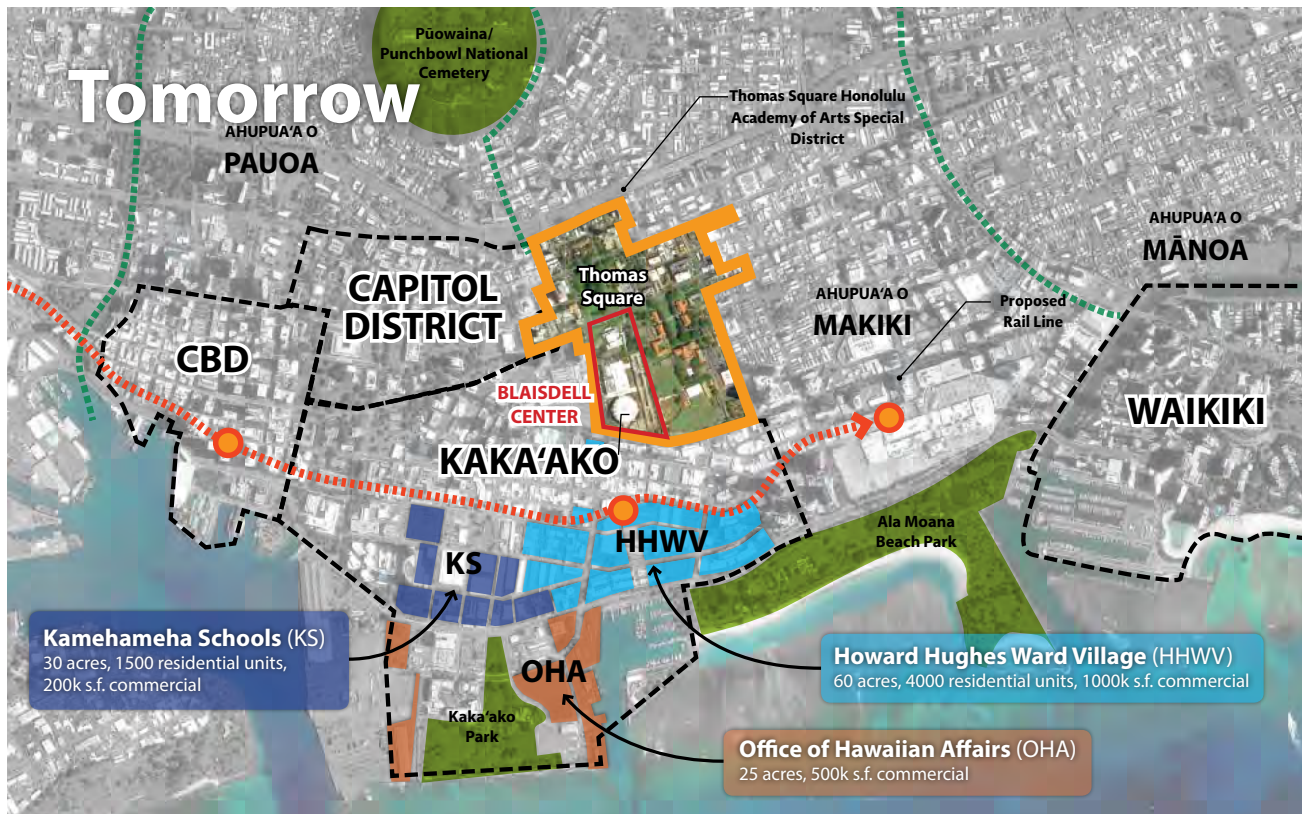




II. SITE DESCRIPTION

A. PROJECT LOCATION

Blaisdell Center is a 22.4 acre site located in the heart of Honolulu between the Capital District, downtown Honolulu, Kaka'ako and Makiki. The site is surrounded by some of Honolulu's important cultural and educational institutions including, McKinley High School, Honolulu Museum of Art, Linekona, and Thomas Square Park forming the foundation for a potential Arts District. Urban renewal and redevelopment in high rise residential and commercial development and planned rail station will bring more density within walking distance to the Center.



Downtown Honolulu to Waikiki Neighborhood / Land Owner Map



B. SITE HISTORY

- 1870: The mauka area of the Ward estate – current site of the Neal S. Blaisdell Center – was purchased by the Wards
- 1875: Six thousand coconut trees, kiawe for firewood, and forage grasses for their horses and cattle were planted. The fishpond and ‘auwai (connecting to the sea) were restored. A well was sunk to provide water to the home and irrigate the property by means of pumps “driven by windmills, there being an inexhaustible supply of water a few feet below the surface of the plains” (Pacific Commercial Advertiser, Sept 4, 1875).
- 1881: C.P. and Victoria Ward built their home, later referred to as Old Plantation, just south of Thomas Square
- 1923: McKinley High School was constructed to the east of the property.
- 1957: The City and County of Honolulu, long interested in Old Plantation as a site for a concert hall and sports arena, purchased the property. Thousands of people toured the estate during the Honolulu Academy of Arts open house following the City’s purchase. Soon thereafter, the City commenced construction for the Honolulu International Center, now known as the Neal S. Blaisdell Center.
- 1959: Merrill, Simms, & Roehrig submit plans for a 10,000-seat arena, 3,000-seat concert auditorium, and 600-seat theatre with a pedestrian mall over a lagoon feature at the center of the site.
- 1960: City hires new architect, Adrian Wilson, to provide plans for a Municipal Auditorium and convention facility on site.
- 1961: Backed by public support, a Concert Hall is added to planned auditorium and exhibition building planned for the site.

- 1962: Construction begins on the arena, exhibition hall, and concert hall.
- 1963: The City Council named the auditorium the Honolulu International Center or HIC. HIC was later renamed as the Neal S. Blaisdell Center after the mayor who oversaw construction.
- 1964: The HIC was completed at a cost of \$14.4 million and dedicated as a living memorial to all of Hawai'i's war heroes at the opening ceremony.
- 1966 Feasibility Study for additional parking and Warehouse Facilities.
- 1988 Phase 1 Parking Structure
- 1992 Exhibition Hall Expansion adds meeting rooms and Galleria
- 1994 Trades and Shops Maintenance Facility
- 2013 Arena dressing room addition

Thomas Square

Located directly to the north of the Center, Thomas Square is the site where Admiral Richard Dalton Thomas, a Local Representative of the British Commission (the government of the Provisional Cession), handed the islands back to King Kamehameha III on July 31, 1843. King Kamehameha III thereafter stated the now State motto, "Ua mau ke ea o ka 'āina i ka pono ("The sovereignty of the land is perpetuated in righteousness")". On July 31st of every year, La Hoi'oho'i 'Ea (Restoration Day) is celebrated at Thomas Square. The park was added to the State and National Register of Historic Places in 1972.

Honolulu Museum of Art

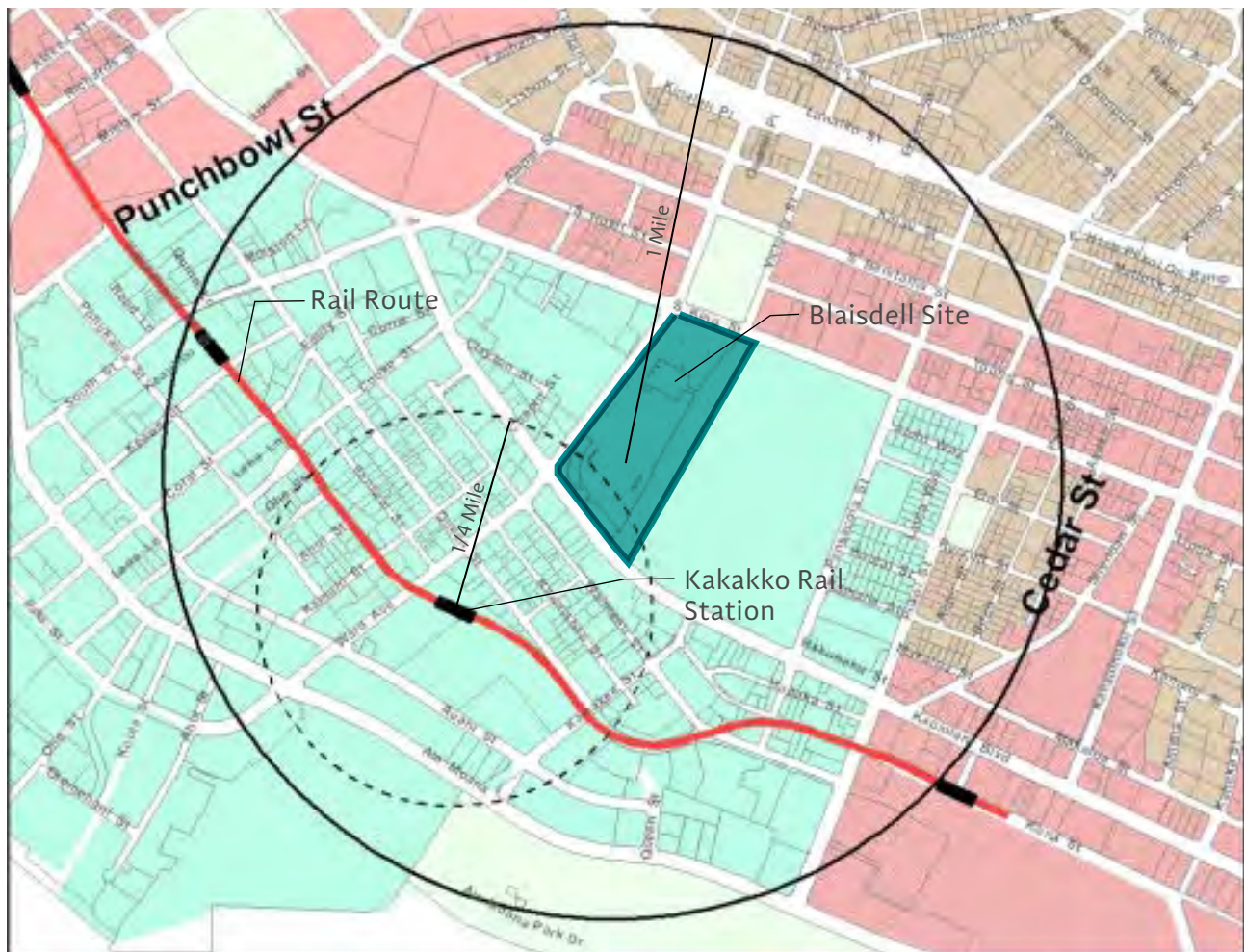
To the north of Thomas Square along the Ward corridor is the Honolulu Museum of Art, formerly known as the Honolulu Academy of Arts founded in 1922 by Anna Rice Cooke, has one of the largest collections of Asian and Pan-Pacific art in the United States. Its collections have grown to more than 50,000 works of art. It was added to the State and National Register of Historic Places in 1972. A block to the East and adjacent to Thomas Square is the Museum of Art School (formally Linekona School) opened in 1927. This area combined with Thomas Square and the Blaisdell Campus round out an Art District within Kakakko.



Thomas Square Park Fountain



Honolulu Museum of Art

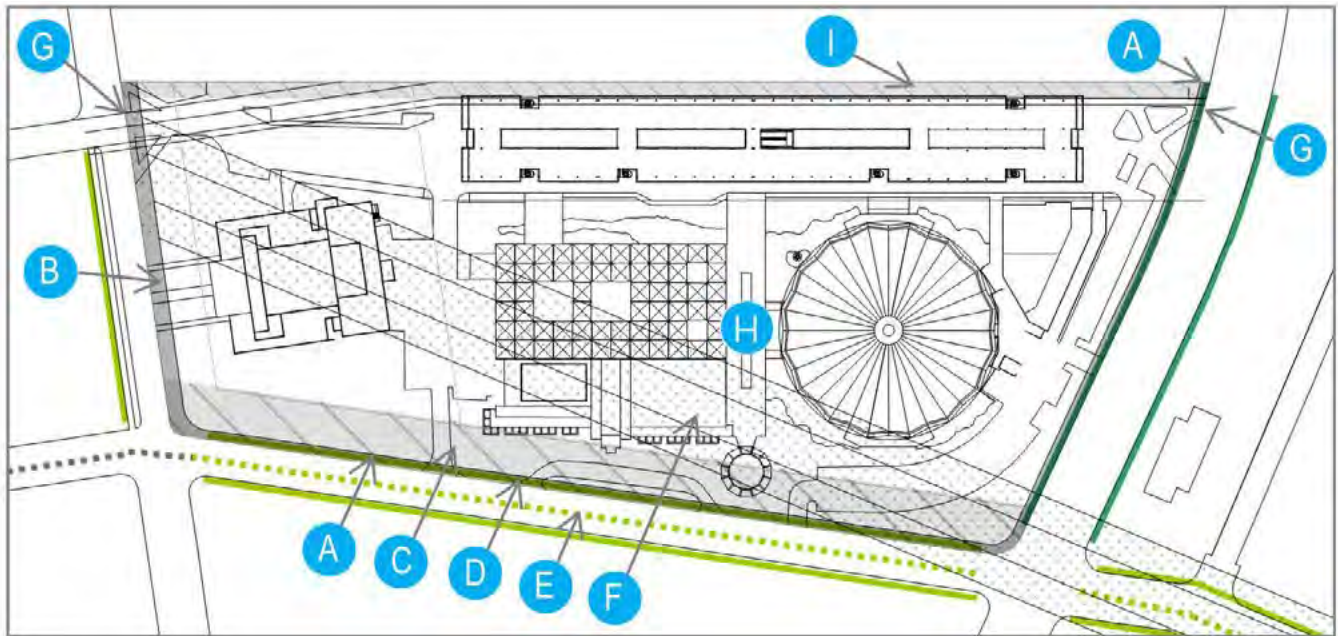


C. SITE ZONING

Hawaii Community Development Authority (HCDA) is the State agency responsible for creating and enforcing Hawaii Administrative Rule Chapter 217, called the “Mauka Area Rules” establishing long-term land use policy in the Kaka‘ako community development district. The Mauka portion of the Site also falls within the Thomas Square Special Design District boundary, but is superseded by HCDA Mauka Rules and therefore LUO does not apply.

In the map above dashed circle represents 1/4-mile radius from the Kaka‘ako rail station. Colors represent zoning: aqua is HCDA jurisdiction; pink is LUO business mixed-use (BMX-3); and brown is apartment medium density (A-2); white is preservation/park use.

Since the site is owned and operated by the City and County of Honolulu, strict compliance with the to Mauka Area Plan Regulations, HCDA permit, and Board approval are not required per HCDA Executive Director. A consultation process to show general conformance to the intent of the Mauka Rules will need to be completed, but specific procedures for consultation are not currently defined under the Mauka Rules.



HCDA MAUKA RULES:

- | | |
|---|--|
| <ul style="list-style-type: none"> A - 10' BUILDING SETBACK B - 15' BUILDING SETBACK C - 50' BUILDING SETBACK AT 65' HIGH D - WARD AVENUE STREET TREES - RAINBOW SHOWER TREES @ 45' O.C. E - DESIGNATED MAUKA/MAKAI VIEW CORRIDOR & PROMENADE STREET COCONUT PALM CENTER MEDIAN | <ul style="list-style-type: none"> F - VIEW PRESERVATION ZONE G - 22' DRIVEWAY SETBACK FROM ADJACENT PROPERTY H - 400' BUILDING HEIGHT LIMIT I - LARGE LOT REQUIREMENT 26'-0" WIDE ALLEY, TO PROVIDE VEHICLE ACCESS, ACCESS TO LIGHT AND AIR FOR ADJACENT PARCEL |
|---|--|

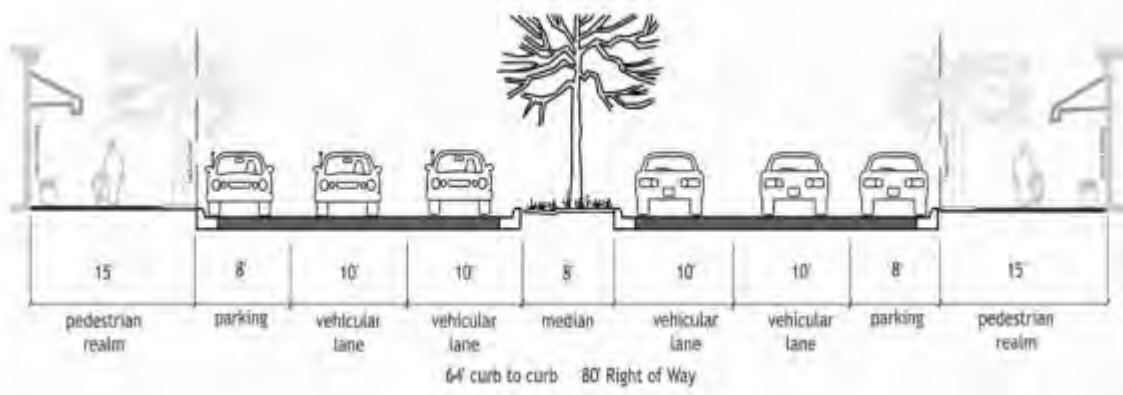
Pertinent Mauka Rules goals include:

- That ordinary activities of daily living occur within walking distance of most dwellings, allowing independence to those who do not drive;
- That civic, institutional, and commercial activity should be embedded in neighborhoods, not isolated in remote single-use complexes;
- That appropriate building densities and land uses be provided within walking distance of transit stops;
- That buildings and landscaping contribute to the physical definition of thoroughfares as civic places;
- That development adequately accommodates automobiles while respecting the pedestrian and the spatial form of public areas;
- That the design of streets and buildings reinforce safe environments, but not at the expense of accessibility;

- That architecture and landscape design grow from local climate, topography, history, and building practice;
- That buildings provide their inhabitants with a clear sense of geography and climate through energy efficient methods;
- That civic buildings and public gathering places be provided as locations that reinforce community identity and support self-government;
- That civic buildings be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the city; and
- That the preservation and renewal of historic buildings be facilitated to affirm the continuity and evolution of society.

Specific Mauka Regulations of note for the Blaisdell Site include but not limited to:

- Neighborhood Zone Thomas Square
- Performance and Entertainment Building will provide large setbacks with complementary mature landscaping
- Thoroughfare Plan – Promenade Street at Ward Ave meeting pedestrian zone requirements for fixtures, furnishings, street trees, & special paving
- 400’ Building Height limit
- View Corridor Street on Ward Ave requires 50’ building setback at 65’ height.
- Large Lot Development requirements of 140,000 sf –
 - Large lots shall incorporate mid-block pedestrian passageways and courtyards every 300’
 - 26’ alley required at adjacent lots to provide light, room, and air to neighboring parcels
- View Corridor Street on Ward Avenue to protect mauka to makai views
- Green Building Standards – required to qualify for base LEED certification criteria, and provide reporting compliance for at least one point in each of the following in stormwater design, quantity control; , and landscape water efficiency.



Mauka Area Plan - Ward Avenue Promenade

The Center's site is made up of (3) individual parcels, the main parcel plus two smaller parcels established to allow for licensing agreements with concessionaires, and totals 22.475 acres, see map below:

MAIN PROJECT SITE PROPERTIES

TMK PARCEL	LAND AREA (ACRES)	ZONING (HCDA)
230080010000	14.38	COMMERCIAL
230080020000	7.987	COMMERCIAL
230080030000	.109	COMMERCIAL
TOTAL	22.476	



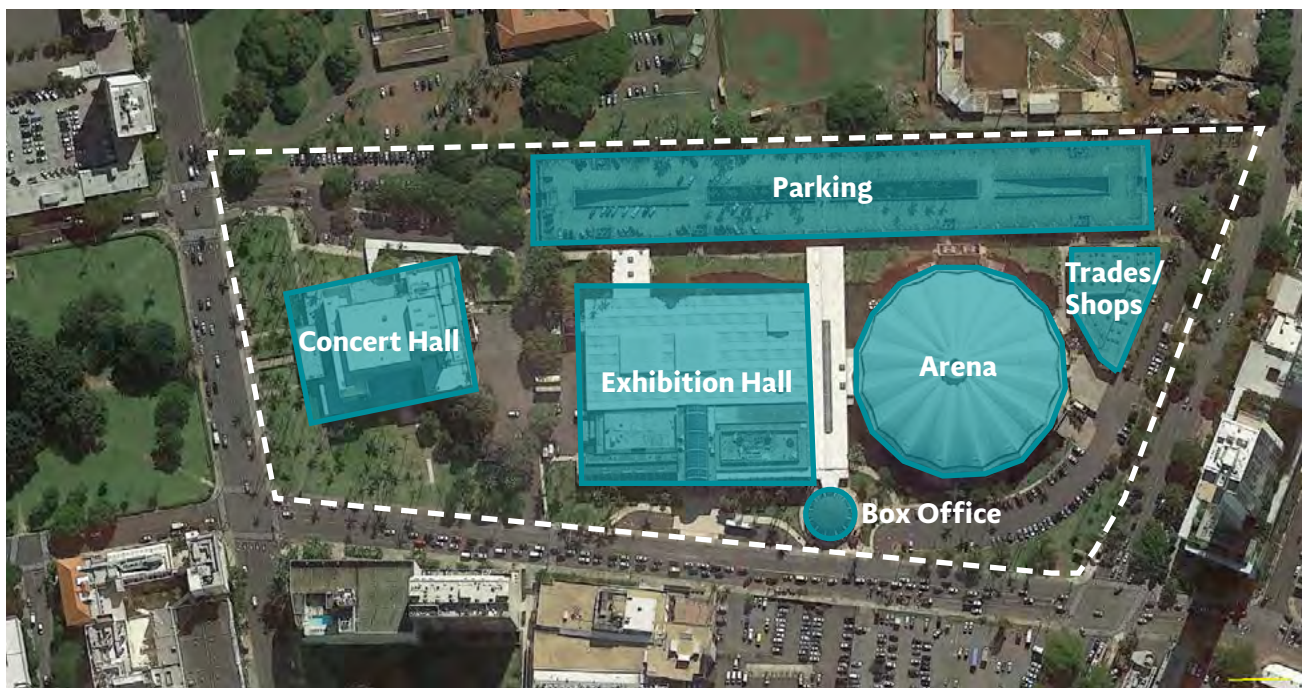


III. EXISTING FACILITIES OVERVIEW

A. OVERVIEW

Attracting over 800,000 visitors every year, the Center continues to serve as Honolulu's venue for arts and entertainment. Since construction of the original facilities in 1963, roughly 450 building permits have been filed for physical changes to the campus. However, there has been little significant renovation work or campus improvements since the addition to the exhibition hall in 1992 and construction of the trades building in 1994. The current campus includes:

- Concert Hall - 58,500sf venue with 2,153-seat hall
- Exhibition Hall - 114,000sf facility with 65,000sf exhibition floor, meeting/event rooms, and offices for the Department of Enterprise Services.
- Box Office - 2,000sf centralized ticketing pavilion
- Arena - 126,000sf arena with seating capacity between approximately 6,000 to 8,700 depending on stage/event configuration
- Trades/Shops Warehouse - 15,000sf facility with storage, workshops, and offices for maintenance and operations staff
- Parking Garage - 3-Level parking structure with 1,124 stalls to add to the 343 stalls within various surface lots on site to provide a total parking capacity of 1,467.



Current site plan

K I N G S T R E E T

545 Feet Front

Dry level land
(Seven and a half)
Acres

Fish-pond

Old Fish-pond

Old
Fish-pond

Old Pond

Ward Avenue

Marsikana

Marsikana

Old Water-course

Old Pond

Old Water-course

Road ditch with wean

Chart of The Estate of Joseph Booth, situated on the inside of the road to Waikiki

Including Royal Patent 300, and also the Moody-French Lot, and the Fishoi lot

Containing in all 12 and 7/10 Acres

Drawn by C. C. Williams

From notes of surveys as given in Deeds

0 20 40 Meters

0 50 100 Feet



From "Victoria Ward and Her Family: Memories of Old Plantation " (2000)

B. ASSESSMENT FRAMEWORK

The design team assessed the general condition of site, each of the building structures, and existing programs used within and around the structures throughout the entire site. The collection of data from these assessments will be used to help inform and establish goals, needs and what the general direction the design should take.

1. SITE

The site of the Center is located in an area of storied water resources that have sustained life for generations of Hawaiians prior to the construction of the current campus of buildings. Although the presence of water continues in the form of the beloved fish filled ponds encircling the arena, the significance of the water and its expression on site extends centuries back into the site's history.

Several Hawaiian legends, such as those in reference to the Waters of Ha'o, describe springs in the general area of the Center's site. In contrast to the traditionally dusty plains characterizing the lands just mauka, the areas immediately around the site contained numerous ponds and lagoons fed by the artesian wells and other groundwater. The following map, which overlays historic maps and other archeological research completed for entitlement documentation from projects surrounding the Center, shows the abundance of fish and salt ponds signifying the importance of the site throughout Hawaiian history. The map on the left shows the site condition during the period of Joseph Booth estate and identifies a spring at the center of the property which likely fed the long fishpond surrounded by marshland. A drainage channel is also indicated at the makai end of the property near what is now Kapi'olani Boulevard which is consistent with the map overlay showing the channel ('auwai) extending all the way to the shoreline.



- Historic Fishpond
- Historic Salt Pan
- "HIC" Channel

Historic Kaka'ako Water Feature Overlay Map

Beyond the surface water exposed on the site throughout history, an alluvial channel runs below portions of the site and the surrounding Kaka'ako neighborhood indicating the watercourse could be traced even further back in geological time. Based on the studies of Charles C Ferrall, a volcanic cinder sand filled channel eroded within the coral shelf existing just several feet below grade runs through in the makai portion of the Center's site . Discovered within the borings made during the construction of the Center, the channel was thus called the, "Honolulu International Center (HIC) Channel" which was the previous name of the Center.

The Center was developed in 1962 on the former property of the Ward Estate, which consisted of the "Old Plantation" house and several smaller structures. The main house was situated on

approximately seven and half acres of flat land toward the mauka end of the site and approached via a driveway off King Street. As part of the working plantation that extended from Kings St all the way to the shoreline makai of the site, the Ward's reshaped the existing fishpond into a long, walled lagoon on axis with the house and installed lo'i in place of the "old fishponds" of the Booth estate. Surrounding the lagoon, the plantation also included various varieties of fruit trees, pasture land, and 6,000 coconut palms all fed by windmill driven pumps distributing the plentiful groundwater just feet below the surface of the estate. Fish from the lagoon and makaloa harvested along its banks helped to support the plantation. Sources indicate that the Ward's artesian well provided running water up to the second floor of the home without the aid of a pump or windmill.

After purchasing the Ward Estate, the City's development of the Center further reconfigured the Ward lagoon, excavating the mire and trucking it to Sand Island for compost, then backfilling with coral. At the time of construction, the lagoon drained into a culvert below Kapi'olani Blvd that appears to roughly follow the location of the old 'auwai. Another drainage channel ran on the Diamond Head side of the site and tied into a separate culvert. Both of these drainage points still exist today.

Surrounding the Arena entry and the Diamond Head side of the Exhibition Hall, the concrete lined fish ponds provide a security barriers to the Arena and Exhibit Hall entries, while also offering a pleasant experience along the waters edge while cueing for events. Rather than a spring, a pump



From "Victoria Ward and Her Family: Memories of Old Plantation " (2000)

within a small "doghouse" located near the rear entry canopy of the Exhibition Hall pumps roughly one million gallons of water from a shallow well through the water feature each day. A second well on the Ward Ave side of the arena was originally installed but capped after it was determined the single pump provided adequate supply to support fish health. The pond were originally filled with brocade carp gifted to the City from the Mayor of Hiroshima in 1965. The brackish water currently feeding the ponds would not support koi, so it is has been inferred that the salinity of source water has increased over time. A aquatic survey was not completed as part of this report but improvement to the pond's depth, edge treatment, water quality, and biodiversity should be considered to support the biological environment. Roof drains from several of the venues are directed to the ponds without filtration.

An 8' wide rock drain was installed for the length of the existing fish pond and terminates into an existing box drain on Kapi'olani Blvd. DES monitors testing and performs pond maintenance in accordance with the existing the NPDES permit, but further review will be needed to verify how modifying the ponds as part of the Center's redevelopment will be impacted by new DOH and/or EPA requirements for water quality which might also limit use of the source water in exposed environments on site. Currently, the culverts leading from the site run below several privately owned parcels, including some within Ward Villages, and empty directly into Kewalo Harbor. Moving forward, connecting to the stormwater systems directed toward Ward Ave or Kamakee St should be reviewed further as these flow paths allow for easier maintenance of underground lines running below street right-of-ways.

The site topography ranges from an elevation of about 14' above sea level on the mauka side along S. King St to only 5' at Kapi'olani Blvd. With shallow groundwater only 5' to 11' below the adjacent grade, the water table will likely limit opportunities for foundations and other excavated areas associated with new development. Measured groundwater levels also fluctuated with tidal periods indicating a permeable subsoil condition which matches anecdotal observations that the arena event floor subtly raises/falls according to tidal levels.





The Ward Family had heavily planted the site with fruit trees, palms, as well as a dense coconut grove on the makai end of the property. It was believed that the Ward Property had the largest coconut grove in Honolulu at the time (SB 1963.02.20). The HIC development led to the deletion of many of the existing trees but, the City required the contractor to relocate some of the existing coconuts throughout the site, as well as plant many younger trees to help maintain the "Old Hawaii" character of the Ward Estate. The site today still maintains some of the original coconut trees from the Ward Estate and HIC development, but are now very tall and nearing the end of their lifespan.





The site beyond the Arena and Exhibit Hall was covered by surface parking and loading with landscaped areas primarily near the street edges. The corner of King and Ward maintained the largest landscaped open space with lawn under the Coconut trees, which is used for farmer's markets and other functions associated with some shows/events such as graduations.

Currently, only a small percentage of the site is allocated to landscape and/or pedestrian areas. Much of this is comprised of small islands and irregular fragments scattered across the site. The location and size of paved areas devoted to service and vehicular access further reduces the quality and functionality of the space. With the exception of the palm grove lawns adjacent the Concert Hall, few outdoor areas are frequently used or encourage visitation during non-event times. Although 56% of the site is not occupied by buildings/structures there is very little functional outdoor public open space limiting the ability for

Site Area Breakdown

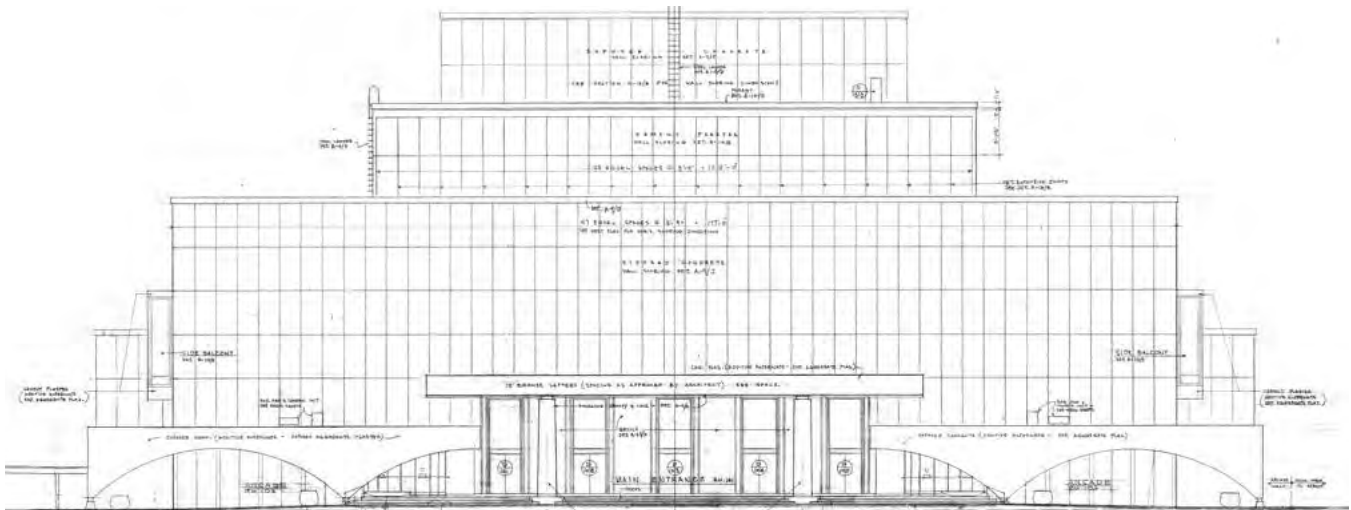
- 22% of site is paved
- 30% of site is landscaped/hardscape
- 4% water
- 44% building

Through the last 50 plus years the landscape is showing its age, many of the remaining trees are nearing their lifespan and others are struggling with pest infestations and no longer complement the architecture. A preliminary arborist evaluation has been completed as part of this master plan process but a complete arborist study will need to be conducted to fully evaluate which plants can be saved and/or relocated as part of the redevelopment.

In addition to the landscapes' age and health there are issues related to the current site design that should be improved upon as well as deferred maintenance. Below are some items to consider

- The current site circulation between patrons and service to all facilities are in conflict with one another causing bottle necks for both patrons and facilities. The service facilities are not centrally located, therefore requiring addition time and labor shuttling between venues.
- 22.4 acre site is situated directly adjacent to McKinley High School's 44 acre site creating a large super block in an otherwise dense neighborhood. This large super block with few buildings, presents problems with maintaining and active streetscape along it's three frontages on Kapiolani Blvd., King St., and Ward Ave.
- Exterior spaces broken into many small areas isolated from each other by numerous vehicular crossings, making it unusable for large events/functions and unattractive for informal activities.
- Lacks continuous circulation path and unified planting plan
- Contains few seating areas or other amenities to encourage gathering
- Added security guardrails around fishpond pools make entrance to venues less inviting
- Not enough shade trees or shading devices on site. Densest grove of shade trees is near Concert Hall in the makai parking lot and plumeria grove near Arena
- The campus lacks wayfinding or environmental graphic identity, signage monuments at King and Kapiolani Blvd primary signs
- Coconut Palms have grown extremely tall and no longer provide shade or sense of space
- Site parking spaces are inadequate for most events, Valet parking has become very utilized and now has inadequate space. These are both primary site revenue streams.
- Lacks Secure VIP loading/unloading
- In/out gates at both Kapiolani Blvd. and King St. are pay on entry and located too close to the road causing backups onto the streets.
- Site lighting is inconsistent and made up of many different fixtures type making maintenance difficult. Some lamps have been replaced with LED-type.
- Fish Ponds piping and infrastructure are at the end of their usable lifespan, lacks visibility, large amounts of outflow water goes untreated into storm drain, environment not great for fish
- Paving around Exhibit Hall is too rough of a finish for service vehicles and not wearing well





2. CONCERT HALL

The concert hall opened in 1963 as part of the original Honolulu International Center. Sited with formal entry facing King Street and Thomas Square, the architecture recalls the Ward's Old Plantation style house that preceded it, with large wrap around lanai and arches sitting amongst the coconut palms. A large entry canopy creates a covered informal gathering space and outdoor lobby similar to the front porch and approach to the plantation home. Open air arcades work in conjunction with interior lobby to provide pre-show, intermission, and post-show assembly space, as well as small concessions spaces, box office and will call.

The lobby originally envisioned as air conditioned, was value engineered to be designed as an open-air naturally ventilated space, capturing the tradewinds. A series of custom scalloped terra-cotta tile screen walls between the entry doors on each side of the lobby, provide an elegant facade feature while also ventilating the lobby. On hot/humid or rainy days the naturally ventilated lobby and lanai is less than ideal for assembling large groups of people. In addition, many of the glass infill tiles are missing and/or damaged. Plywood base boards have been installed to protect the screens from incidental damage and the lack of building enclosure creates moisture and pest concerns within the interior lobby spaces. Otherwise, the painted concrete building shell is in good conditions considering its age.





The existing unconditioned ground floor lobbies are narrow and serve adequately to circulate to the hall but do not provide enough room to accommodate the audience gathering pre/post show or during intermission. In addition to the limited square footage available, the long linear lobby spaces are not well configured to support programmatic functions for the current audience size. Similarly, the exterior arcades are also too narrow to support use as dining/assembly extensions to the main lobby. Given the area constraints, few seating or tables are provided within the interior lobby with only small concession areas on either side of the hall. Current concession areas are not at the main lobby level which reduces visibility and functionality. The lobby floor elevations step down to the various hall entry points creating barriers in accessibility to all lobby areas and hall seating. Temporary ramps from side lobbies and platforms in hall are used to get wheelchairs to limited seating areas.

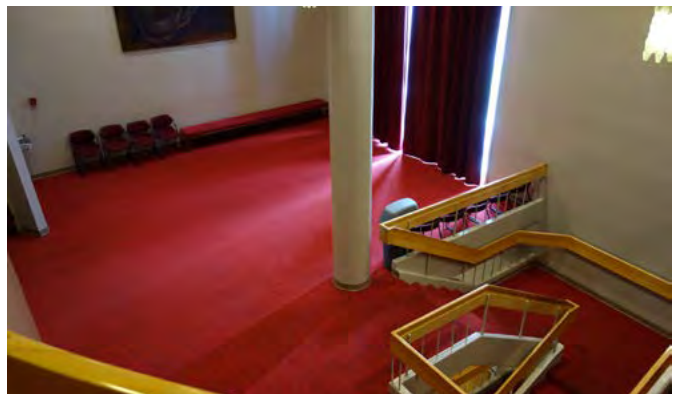
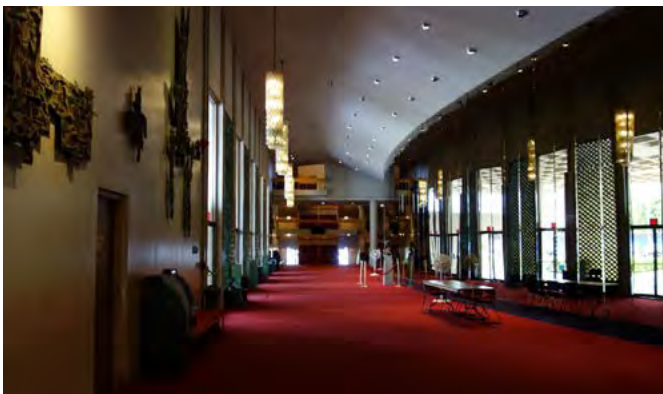
Two stairs on opposite sides of the hall lead up to the balcony seating, but no accessible route is currently provided. Guardrails on the stairs do not comply with current fall protection requirements. Each stair has an enlarged landing area serving as small lobbies for the balcony with overlooks to the lobby and Juliet balconies viewing the Center's grounds. The landings are limited in size relative the balcony seat count, do not contain restrooms or concessions, and are not connected at the balcony level. Elevators will need to be added to the balcony seating areas in order to address accessibility issues.

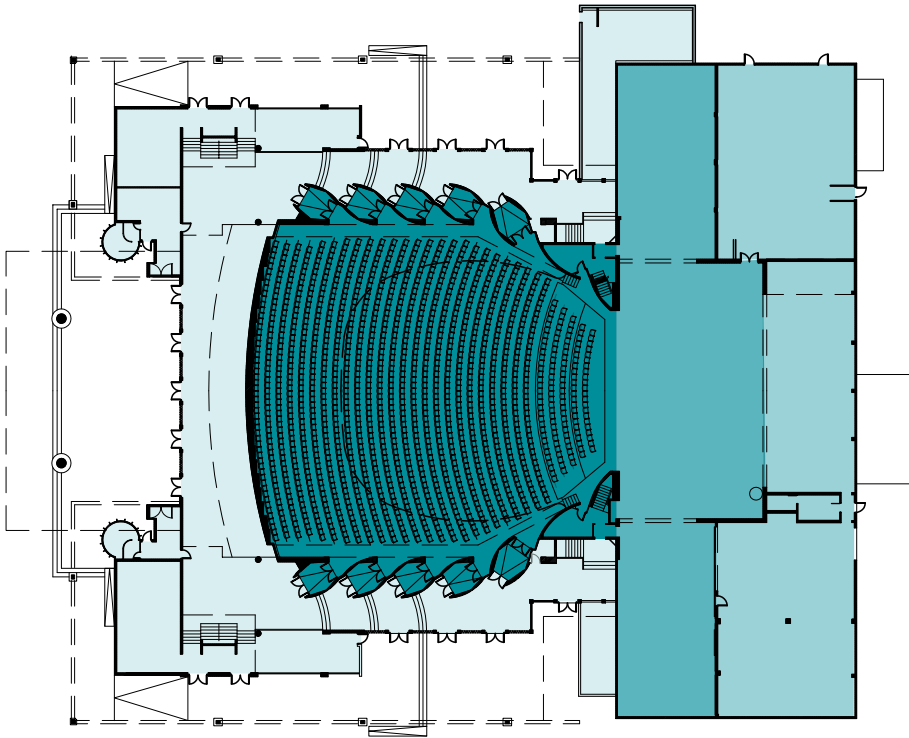
Despite the integration of arcades wrapping the ground floor lobbies, limited visual connectivity to the surrounding landscape is provided due to the large amount opaque concrete wall area,

textured glass screen elements, and solid wood doors along the side lobbies. Increasing the amount of glazed facade areas would allow for the lobby to feel more open and express the audience activity to adjoining streetscape. Sliding wood door panels prevent a weather tight enclosure and detract from the exterior appearance. Large windows punctuate exterior facades of the balcony landing as feature elements articulating the otherwise simple exterior massing of the upper levels of the building. However, jalousie sidelights and non-insulated glass lites create moisture and thermal concerns if the lobby is conditioned.

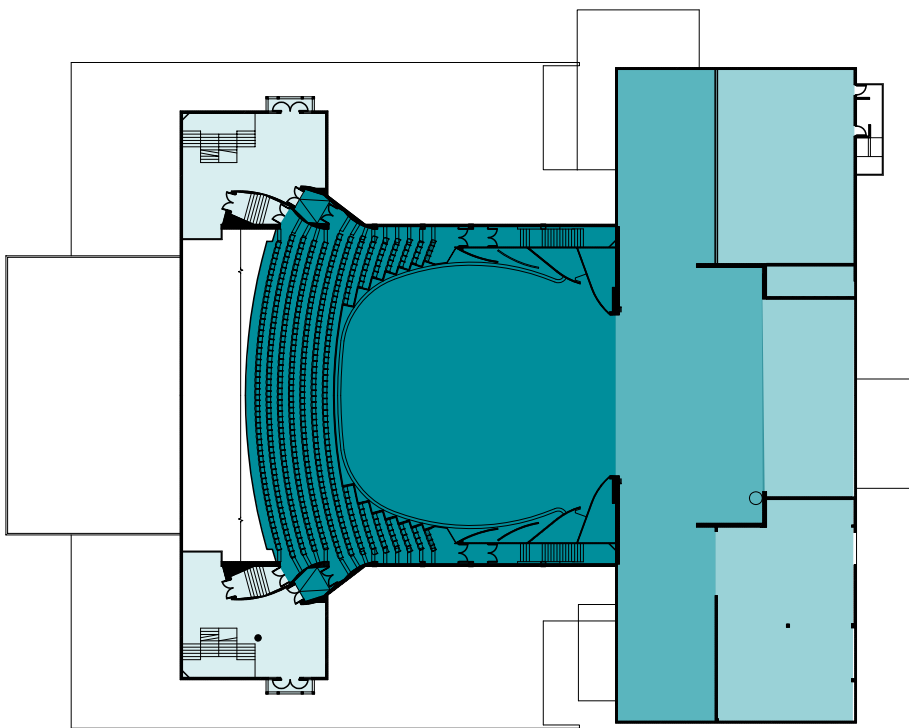
Interior finishes in the lobby have been altered over time, with mirrored glass wall panels at the rear wall of the hall being added decades after the original construction. Replacing the wall finish also displaced the cast wall mural by Bupei Akaji which was originally installed as a single grouping on the wall but has since been relocated to various other walls throughout lobby.

Alterations made in 1986, 1995, and 2001 installed additional patron restrooms adjacent to the stage wings and included renovations to the restrooms in the front of lobby which removed the distinctive powder room within the women's room of the original building. Neither restroom is accessible from the main entry lobby due to floor level changes and men's and women's facilities are located on opposite sides of the hall. Current fixture counts appear to meet code minimums but fall below recommended standards to efficiently serve the seat count. No patron rest rooms are provided at the balcony level.





Existing Concert Hall floor main auditorium plan



Existing Concert Hall balcony plan

- FRONT OF HOUSE
- AUDITORIUM
- STAGE
- BACK OF HOUSE

Smaller improvement projects over the years have also renovated dressing rooms, updated the technical systems including performance lighting and dimming and audio visual (AV). However, the Concert Hall itself remains largely unchanged. Although it appears to have been designed with the Symphony in mind with an orchestra shell ceiling and towers, and a large reverberant auditorium, it was clearly designed to support all types of musical and theatrical performances.

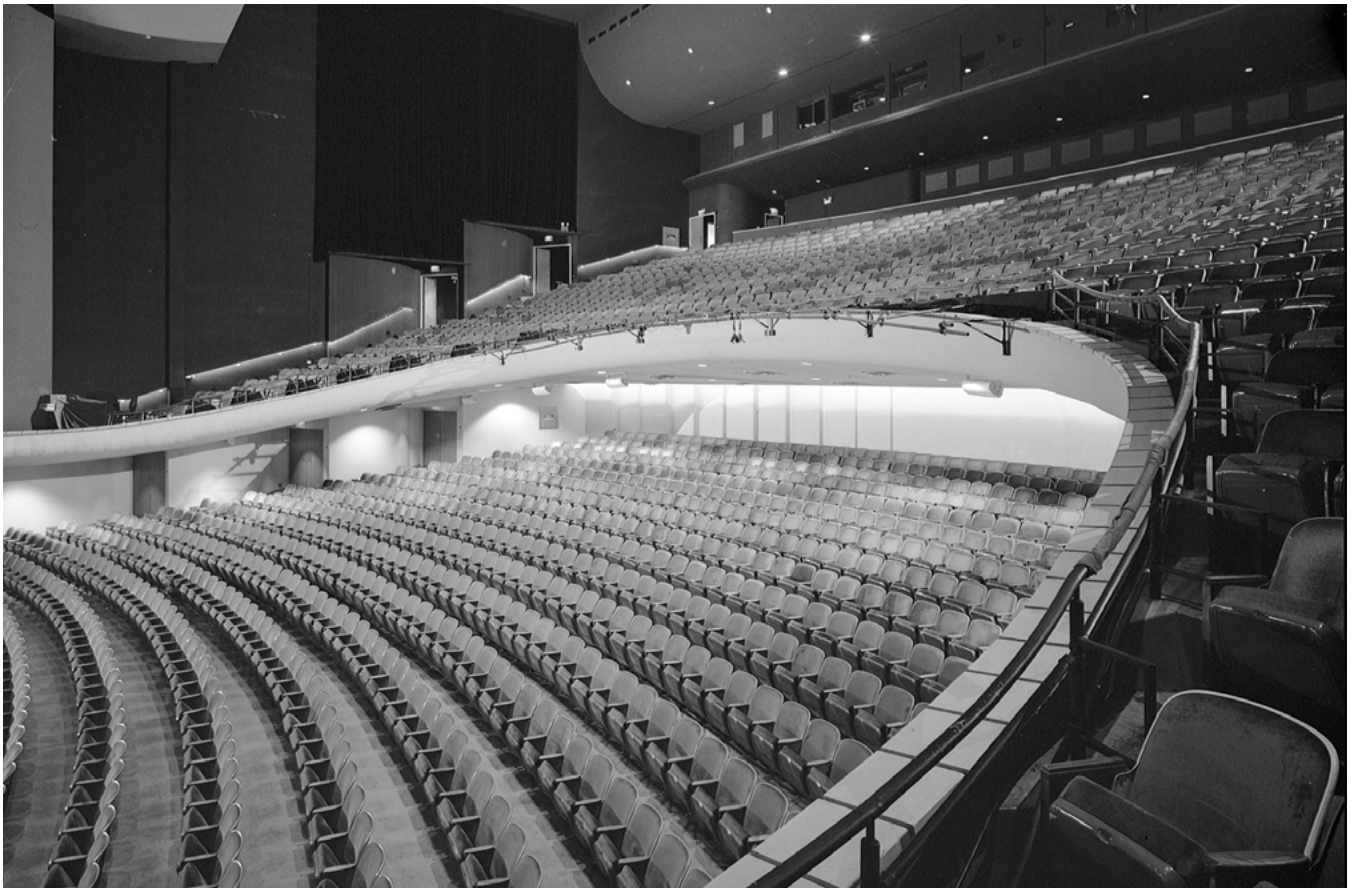
The Concert Hall has two main levels, an orchestra and a single balcony, with a total of 2,153 seats. There are 1447 seats on the orchestra level, including seats at the orchestra pit area, 706 seats in the balcony, and 50 standing room spaces at the rear balcony, making the total hall audience population 2203. The auditorium is entered from the side lobbies, through a series of sound and light locks at four different elevations, starting at the lobby elevation and descending to the front of the hall. The seats are laid out in very efficient “continental” format with long spacious rows, uninterrupted by interior aisles. Incorporating distributed accessible seating and routes will need to be addressed in conceptual plan and reviewed further to determine the impact on the overall seat count.

There is a full stage house with large right, rear, left and rear left stages, with a layout reminiscent of an opera house. The Concert Hall was originally created to be the performance center of Hawaii, a place for acts from around the world to perform and, bring a broad range of dance, drama, opera and music from overseas. It is also the home for the local ballet, opera and symphony, and a beacon for the performing arts in the community. As discussed in the *June 2016 Master Plan Feasibility Study and Conceptual Plan* the issue of scheduling around all these user groups, and in particular Broadway touring production that require consecutive weeks is problematic to schedule rehearsal time in the hall. A second, smaller-scale venue and rehearsal space would help offset the scheduling conflicts as well as support the local arts community while creating more market and revenue opportunity for the Center.

In order to continue to fulfill the Concert Hall's role into the next 50 years, significant upgrades and improvements will need to be made to the building program and systems. The primary improvements to be considered in the Conceptual Report can be broken down into the following categories:

Front of House

- Expanded, air conditioned lobbies that can handle the capacity of the entire house.
- Inadequate space for receptions /VIP/ autograph meeting places
- Interior accessible vertical circulation to all levels of auditorium seating including balcony is needed
- Current washroom layout is inefficient and under capacity for hall size. Washrooms that provide accessible access from all seats and capacity appropriate for the hall capacity is needed.



- Concessions are small and limited to ground floor exterior lanai's, providing additional interior concessions at ground floor and balcony are is needed
- Box Office layout should be based on future online ticketing trends
- Need for updated building infrastructure and maintenance including at a minimum, mechanical, lighting, life safety system including fire sprinklers, fire alarm

Auditorium

- Incorporate distributed wheelchair positions and review orchestra pit seating configuration
- Replace seats, incorporate cup holders, install contrast nosings, and add aisle lighting
- Permanent mix position
- Acoustic study

Back of House

- Dressing Rooms and Green Room program area, layout, and code compliance
- Stage Door with dedicated reception, security and weather protection
- Loading Dock with multiple bays and level load in/out
- Control Room window view too small
- Direct access between front and back of house

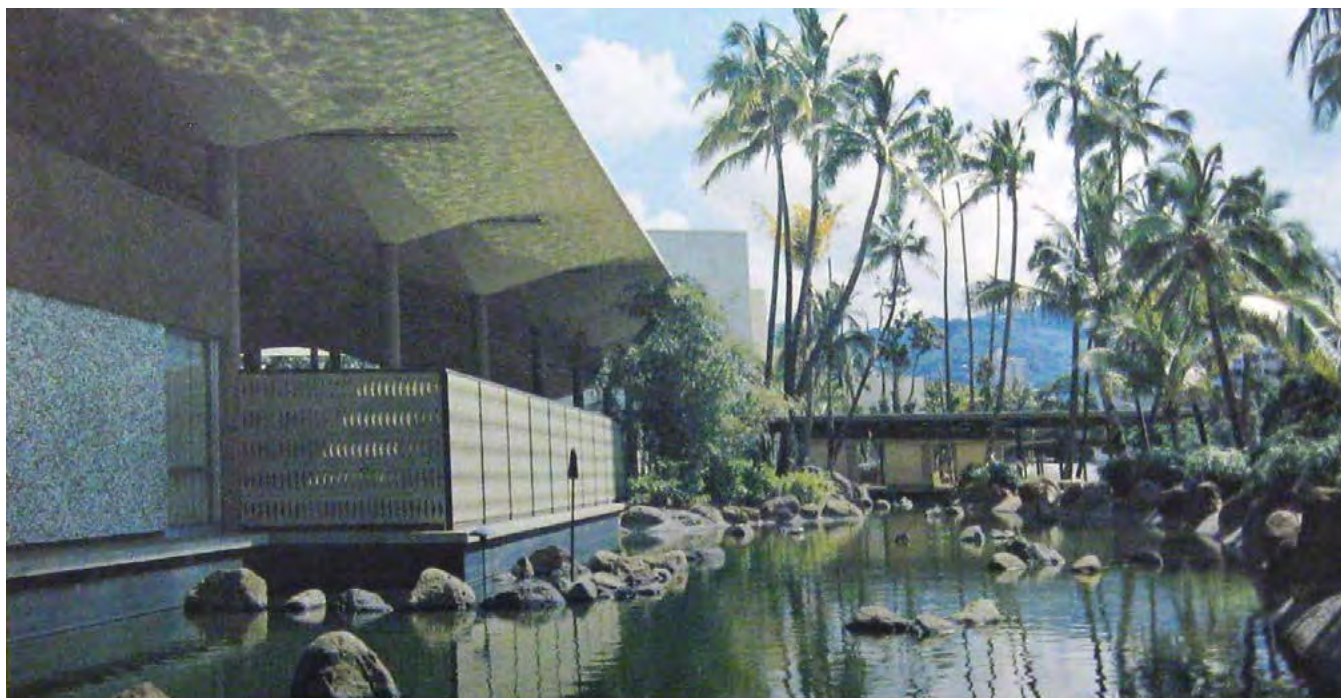
Stage Systems

- Rigging compliance with current safety standards and upgraded capacity
- Orchestra pit lift evaluation by hydraulic engineer
- Performance lighting and dimming upgrades
- Work light LED upgrades
- Performance sound and video digital upgrades

Refer to Concert Hall Assessment Report along with existing conditions reports for the building systems and structure for additional information on the programmatic capacity and other technical aspects of the venue.







3. EXHIBITION HALL

Although it was not included in the original plans for the center, the exhibition program was recommended after the Stanford feasibility study identified the market need for exhibitor areas to support the arena's capacity to host conventions desired by the City. The program was added to the scope of work despite concerns over cost and the Exhibition Hall opened in 1963 as part of the original Honolulu International Center. The Concert Hall on the mauka end of the site would be designed and built shortly after the completion of the Exhibition Hall. Designed and constructed at the same time as the Arena, the Exhibition Hall is located adjacent to the Arena and connected by a covered concourse which serves as the primary lobby and access point. The original Exhibition Hall was designed as an open air pavilion, with cast-in-place umbrella columns creating a roof canopy, with several openings to allow for tree planters within the space. The perimeter was surrounded by low breeze block masonry walls and ornamental grilles to provide an open, but secure space. It also included an Assembly Building (current Pikake Room) and meeting rooms.

In 1992, a major renovation replaced portions of the pavilion with a new expanded building and prominent colonnade that exists on site today. Roof openings were enclosed with clerestory windows, the perimeter walls were revised to vertical metal panels, the gap below the roof was infilled with a glazing system to mitigate wind and rain, and HVAC was added to condition the space. While maintaining the Pikake Room and Concourse, meeting rooms and other support spaces were demolished to expand the exhibit floor to the current 65,000sf area. The entry breezeway facing Ward Ave was enlarged to a two-story Galleria lobby and enclosed with an arched glass ceiling. A new cast-in-place concrete colonnade created a new facade along Ward

and provided multiple levels of meeting rooms, office space, and storage. The box office was relocated from within the pavilion footprint to the current position as a round free standing building terminating the concourse between the Arena and Exhibition Hall. Additional improvements to concourse canopy roofing and skylights were completed in 1995.

Some of the features Exhibition Hall include:

- A unique island venue providing affordable exhibit space for local businesses
- Ideal for community trade shows, consumer shows, large parties and fundraising events
- Average of 45 commercial exhibit shows/expos per year
- 65,000sf of air-conditioned exhibit space that can expand to +/-85,000sf with the use of the adjacent Arena event floor
- Hawaii Suites - a flexible 8,100sf meeting/event space with moveable acoustic partitions which can divide space into as many as 12 function rooms.
- Pikake Room - a flexible flat floor venue with raised stage with 240-700 seat capacity depending on the seating configuration.
- Meeting Rooms - (3) separate 2nd floor break out meeting rooms Kauai Room 925sf, Oahu Room 1075sf, & Maui Room 1200sf.

For more than 50 years the Exhibition Hall has served the community and provided adequate facilities for vendors and patrons alike, but the facility is approaching it's serviceable lifespan. The majority of the building remains from the original construction with the newest areas already 25 years old. Further renovations to remediate current conditions and address programmatic needs efficiently within the existing footprint would be challenged by the aging structure and previous renovations have significantly modified the historic character of the original pavilion.



Galleria added in 1992 renovation

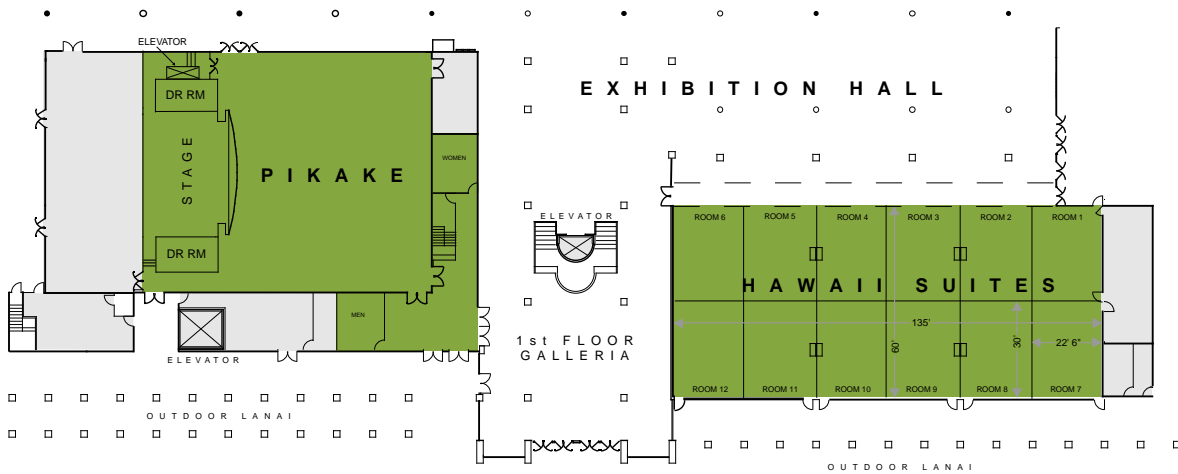




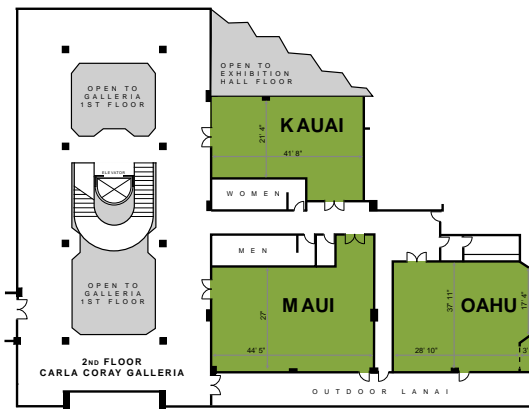
Existing Exhibition Hall ground floor plan

The original exhibit hall, kitchen and Pikaki Room suffer from roof leaks, cracked and uneven floors, rusting and deteriorating exterior envelope, while the newer Galleria and Meeting Rooms need major renovation to the mechanical system, aging mobile partitions and finishes. The building envelope, including large glass atrium and single pane clerestory glazing, prevents efficient conditioning the space. The heavily tinted glass storefront system along the Ward elevation of the colonnade addressed heat gain issues, but restricts visibility into the spaces which impacts wayfinding and prevents building activity from being expressed at street level. Rainwater downspouts run at the center of all umbrella columns raising concerns about concealed water damage within the concrete columns and below the slab on grade.

Beyond maintenance and service issues there are functional usage and constraints that either impede everyday maintenance, patron experience or ability to attract new shows and events. Consideration of the following issues should be addressed within the development of the conceptual plan.



Existing Exhibition Hall Ground floor plan



Existing Exhibition Hall Level 2 plan

Concourse & Galleria

With three possible entries into the hall, circulation and approach is confusing and challenging to secure. Despite the creation of the Galleria, the primary entry is typically off of the concourse due to the proximity to both the box office and circulation from parking. The concourse is frequently used for prefunction, check-in, or other event programming which creates potential conflict with the Arena's main entry and can be problematic during inclement weather. Planting areas along the Concourse are small, receive only diffuse daylight, rely on irrigation, and are challenging to maintain leading to poor plant health and limited visual benefit. Odors from the adjacent fishponds periodically detract from the patron arrival experience. The physical condition of the box office does not preclude its continued use. However, its round shape makes queuing and ticket window visibility a challenge and its separation from other venue creates operational concerns when addressing ticket issues and handling money.

The glass atrium in the Galleria is not shaded and allows excessive heat gain which makes cooling the space challenging for the predominately daytime events of the exhibition space. Additionally,



the Galleria is positioned to best serve the vehicular drop off at Ward Ave and its distance from both the box office and parking garage make other entry points more convenient to use. Although the Galleria provides direct access into the main exhibit floor, primary access to the Hawaii suites meeting rooms is from the exterior colonnade and a separate sub-lobby serves the Pikake room. The distributed entries leaves the Galleria infrequently used and displaces pre-function activities to the exterior colonnade where there is limited space and exposure to weather conditions. Another secondary service entry is also provided off of the colonnade at the rear of the Pikake room further complicating perceived access and limiting the functionality of the Galleria. Vertical circulation and upper balconies serve limited program and provide access to meeting room spaces only indirectly via a shared secondary corridor. Thus, there is little activity at the upper balconies which are infrequently used.

Exhibition Hall

Limited exhibit hall floor area of approximated 65,000sf requires overflow onto concourse and into the Arena for some events. The need for occupying multiple venues increases costs, causes operational issues to manage and secure, ties up calendar days for venues, and is less convenient for patrons. Some shows, like the popular Made in Hawaii events, are limited by the size of the spaces available and could expand if additional space was provided. The tight 30' column layout is acceptable for many vendors, but does not follow larger clear span industry standards which allow for larger event areas and more flexibility. The column

spacing and irregular roof form prevent subdivision of the exhibit floor into smaller spaces to accommodate a range of show sizes and simultaneous events.

The ceiling height within the hall varies between 17' and 21' due to the sloped roof shape and is too short for some exhibitors with tall features. Hall finishes are below industry standard with most surfaces consisting of painted concrete. The level of finish and exposed building systems are more consistent with storage/warehouse program than assembly spaces and should be updated. The highly reflective surfaces combined with the irregular roof shape create excessive reverberation and acoustic challenges for events especially with large crowds. Although the AV system was recently updated, amplified sound is not effectively deployed.

Artificial lighting has inadequate distribution and lacks controls. Daylight from roof monitors and clerestories also lack control and can be problematic for vendors. Power distribution/controls throughout exhibit floor are of inadequate capacity, are exposed view, and unsecured within the exhibition hall. Similar to all electrical, plumbing, and fire protection systems, the mechanical system is exposed and distributes air inconsistently throughout space creating uneven cooling across the Exhibition Hall.

When the hall was expanded in 1992, many support spaces were omitted to create additional exhibit areas. Secure storage space is limited for vendors and building services and all furnishings/equipment must be brought in from Maintenance & Storage building or provided by the vendors. No business center is provided for event-day use. Although a service corridor can be set up outside of the Hawaii Suites room with movable partitions, no dedicated services areas exist and all BoH functions are exposed to view and often need to circulate through patron spaces. Rolling carts over the stamped concrete walkways is problematic. The overhead service door into the hall is undersized for some uses. Restrooms are undersized and contain finishes and fixtures below industry standard, refer to plumbing assessment for additional information.

Outside of the hall, the shared loading area and parking lot is required to stage multiple container trucks for most shows. While the current space is adequate to accommodate current needs for 5-6 trailers, its shared function with the concert hall can lead to conflicts if both venues are hosting events. The building lacks secure loading dock for large truck deliveries and truck container storage. Waste management areas are undersized to handle large shows and the Center requires vendors to provide event specific dumpsters which are left in parking lots without the ability for DES staff to control delivery/pick-up.



Kitchen/Concessions

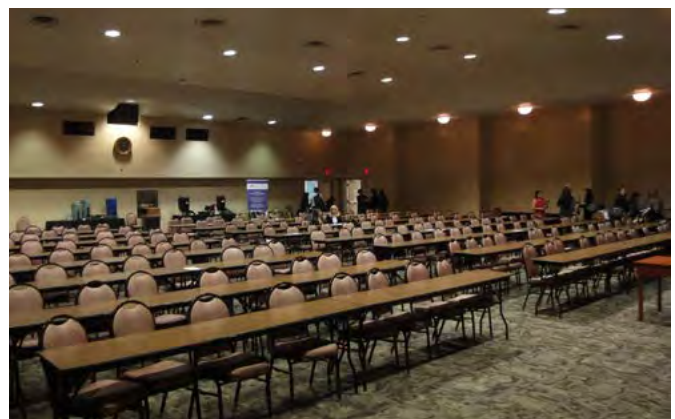
Concession areas are limited both in terms of point of sale counters and support areas for the food service provider. The main concession area is on the opposite of the primary entry and lacks visibility as well as seating areas. The kitchen predates the 1992 renovation and lacks appropriate equipment and infrastructure to function as a centralized kitchen for the Center. It will need upgrades to meet DOH requirements and the current food service provider uses an off-site kitchen for food production. The current status of the grease interceptor needs to be verified. A separate trailer in the parking/loading area outside of the Pikake Room is required to provide appropriate office space due to the limited concessionaire/staff areas included within the building.

Meeting Rooms

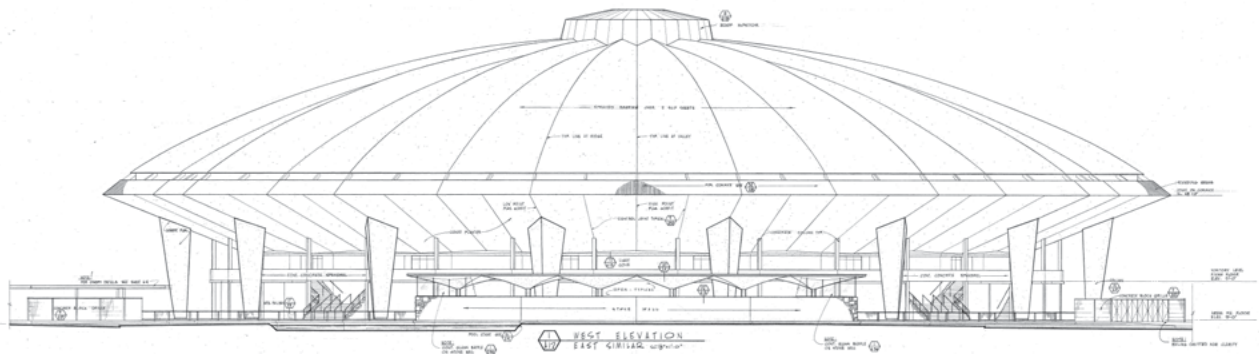
Similar to exhibition spaces, the meeting room finishes are generally worn, outdated, and below industry standard. For instance, finishes within the Pikake room remain from the original construction and wall panels were simply repainted during the 1992 renovation. AV and IT technology will need to be upgraded throughout as most rooms do not have in-place equipment or infrastructure. As noted previously, access and room configuration hampers functionality and visibility. Limited pre-function space is provided to support meeting room events.

DES Offices

Offices are aging and undersized to serve staff support an expanded Center. The floorplate is deep with some offices overlooking the exhibit floor with only indirect access to daylight and views. Other offices and meeting areas have no access to natural daylight. Much of the space consists of enclosed offices (private and shared) with limited collaborative space or areas for interaction. Department structure and staffing will need to be reviewed further to project future needs, determine space requirements, and create an improved office environment. Part-time and event staff do not currently have dedicated space on campus.





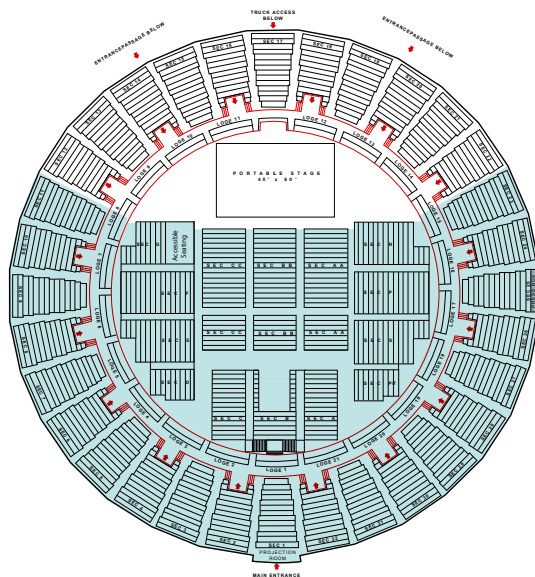


4. ARENA

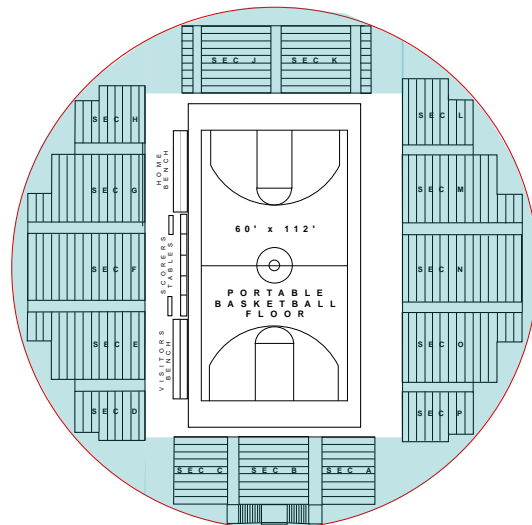
The Arena opened in 1963 as part of the original Honolulu International Center. The first of the three major structures to be built on site, the Auditorium is sited at the Kapiolani (makai) end of the site adjacent to the Exhibition Hall with a shared entry concourse. A circular performance venue (190 feet diameter) originally envisioned as suitable for basketball, tennis, roller derby, ice shows, water shows, horse shows, circuses, concerts, boxing, and wrestling matches, the uses have evolved over time, and the current Arena is primarily used for end-stage style concerts, graduations, and exhibitions.

Seating: 8,073 for stage shows; 7,397 for courtside events; catering/receptions 2,800 capacity

The Area has one entry point from the exterior shared concourses into an open air concourse surrounded by fish pond pools. Two free standing concession structures are located on the Ewa and Diamond head ends of the circular concourse. Restrooms are also located around the perimeter of the Arena off of the concourse. There is one primary access/exit point into the Arena and are two secondary access/entry points at grade level. The upper level seats are accessed from



Performance seating layout
 240 degree seating - 6,195 seats
 360 degree seating - 8,039 seats



Basketball/Volleyball
 240 degree seating - 7,397 seats



perimeter open staircases with no elevators or ramps. Accessible seating is only available on the ground floor with no available positions distributed in the main seating bowl.

Loading is through one door on the makai end of the Arena with an open air dock area adjacent to a parking lot. Dressing and Locker Rooms are located directly adjacent to loading dock and is where performers/teams enter. Additional Dressing rooms were in 2013, but are still undersized, inconveniently positioned, and lacking amenities. Beyond dressing and performer areas, space for the crew(s), staff, catering, staging/production, security, and other back of house services is not adequately provided for in the existing building and is frequently accommodated by temporary tents and/or trailers.

The structure is made up of a series of radial arched steel roof truss and W-section columns with gypsum sheathed roof. The distinctive trapezoidal columns encircling the Arena clad steel columns in contrast to their perceived bulk and appearance as cast-in-place concrete. The interior main floor and seating bowl structure are cast-in place concrete with CMU infill walls. The ceiling is a hung cement plaster finished structure concealing mechanical and a series of catwalks to access rigging, services and roof. The plaster ceiling was later sprayed with an acoustic insulation to help improve the acoustics.

Through the years there have been many renovations, additions, and upgrades to the Arena including, structural, fire sprinklers, fire alarm, restrooms, roofing, electrical, audio visual, lighting. Systems have been maintained through the years but are nearing their serviceable lifespan. Utility connections for the site run through the Arena, making localized interruptions and maintenance a campus-wide concern. Refer to technical assessment reports for information on outdated electrical systems and other existing infrastructure issues. Major components such as the chilled water mains are rusting out and are in need of replacement, as well as, corroded waste and storm water laterals, and roof



gutters. The roof leaks during heavy rainstorms dripping onto Arena event floor, and the perimeter metal roof fascia/gutter system is rusting through. The design of the gutter and fascia should be considered in the future, as water can cascade over the existing gutter channel and sheet off of the roof. In addition, the downspouts currently drain directly into the fishponds which does not meet current stormwater discharge requirements.

Although the painting color scheme has been modified since the original construction, much of the exterior finishes remain consistent. Exposed to the elements, the exterior concourse is prone to higher levels of deterioration and thus tends to be less refined than those typically provided at peer venues with enclosed concourses. Beyond maintenance and service issues there are functional usage and constraints that either impede everyday maintenance, patron experience or ability to attract new shows and events. The following issues should be considerations in the final Concept Plan:

- The Arena was primarily designed as a sports venue and occasional performance event, but currently and into the projected future it is being used primarily as performance venue. This reality makes for compromised experiences for the patrons, performers and service alike. The patrons experience suffers from less than ideal viewing angles, acoustics, and lighting, while the performers lack sufficient backstage facilities, direct stage access, security, and pre-function VIP spaces. The service staff who needs to ensure the patron and performer experience is seamless, is challenged by lack of secure covered loading dock, adequate event power, and staging, and support space. Seating levels do not make full use of the volume below the roof structure.
- The plaster ceiling and super-structure were not originally designed with the rigging required by many current shows in mind. Over the years the ceiling plaster



system has become fragile and falling apart as rigging points penetrations have turned it porous. In addition, some prominent events can't be held in the Arena due to the limited capacity of rigging on the existing structure. Loading capacity is reported to be 33,300lbs over the 40' x 60' end stage area, with maximum point loads limited to 4,000lbs. Cirque du Soleil requires loading capacity up to 90,000lbs for their productions.

- Arena seating layout is not efficient for stage performance events, as many seats are not usable as they are behind or along side the stage making the seat drop from 8,039 to 6,195. The floor seating configuration with retractable riser seating is not oriented toward the stage making for awkward viewing. The only accessible seating options are on the floor, which limits the stage size. The remainder of the Arena seating is not handicap accessible, as there are no elevators or ramps to get to the upper seating bowl. Most all of the balcony rails and stair railings meet current codes. There is currently no interior secure storage for the retractable seats and they are stored outside on the concourse.
- Concessions, Merchandise, and Restrooms are located outside the Arena envelope on the ground level concourse, far from upper seating sections and are problematic in the rain. The Concessions currently can only serve prepared food as they do not have a grease interceptor for dishwashing facilities. The open air Concession buildings also struggle with pest's, insects and rats and will need to be upgraded to meet current health codes.
- The ponds constrict egress routes and the usable area of the concourse leaving little room to accommodate gathering, dining areas, or other audience amenities. The

back of house area interrupts concourse circulation creating dead ends on either side.

- The fishpond layout is organized to provide only one entrance/exit to the arena causing long lines to enter/exit events.
- Back of house and artist/performer spaces are undersized and not well appointed to support the necessary functions. Limited area for storage leads to seating risers being stored in the concourse which further reduces the usable area, looks unsightly, and speeds deterioration.
- Reflective surfaces and circular shape of the arena negatively impact the acoustic performance of the venue which will need to be further analyzed to improve conditions for concerts.
- Restrooms are undersized and contain finishes and fixtures below industry standard, refer to plumbing assessment for additional information.
- Seismic upgrades to the existing structural system will require additional study for elements to be retained as part of the conceptual plan.
- Replace seats, incorporate cup holders, install contrast nosings, and add aisle lighting
- Fall protection and railings throughout the venue do not meet current requirements
- Doors and hardware will need to be replaced.







5. PARKING

Parking has been an issue with this Center from the day it opened in 1964. Discussions of an elevated parking at the conception of the project was dismissed as being cost prohibited. The HIC planned for 1,140 surface parking spaces, which for many years was inadequate and overflowed onto McKinley School and surrounding properties. It wasn't until 1989 that an elevated parking garage was planned constructed. The plan called for two phases, with the first phase adding an additional 689 on two elevated floors for a total of 1,713 spaces. Phase 2 would add two more floors and an additional 812 spaces for a total of 2,525 spaces, but was never implemented.

The current site parking capacity is 1,467 Spaces 29 of them ADA accessible and 12 ADA van accessible, spread across the campus in various surface parking lots and a two level parking garage. Although, convenient for access, surface parking has a significant visual and physical impact across the site maintaining nearly a 20% footprint, limiting usable outdoor public open space, and pedestrian connections with surrounding neighborhoods.

Site parking continues to be inadequate for most events at the campus. Any one of the three facilities will max out the parking with a single event let alone a concurrent event. Arena and large Exhibits can draw over 10,000 people. Relationships with neighboring parking facilities such as Linekoa School, Straub Hospital and McKinley High School which has 1,200 spaces, help relieve some of the parking constraints on large event days. Public transportation and ride sharing are also widely used, with Bus stops on S. King Street and Kapiolani Blvd and a future Kakaako rail station less than a 1/2 mile away



make for convenient car free arrivals. Arena valet parking and Concert Hall Golden Circle parking options are also available. Valet, serviced by a 3rd party vendor, has capacity for 100 spaces on the surface lots between venues, while the Golden Circle are designated priority parking spaces for 50 vehicles adjacent to the Concert Hall.

The existing parking garage suffers from age, with spalling concrete, leaking planters, bare rotted storm piping, while the surface parking lots are filled with pots holes and heaving pavement. The current entry sequence with parking fees being paid upon entry leads to major entry congestion along S. King Street on event days, as well as, the layout of the garage does not keep traffic moving efficiently.

The garage continues to be a large revenue stream for the campus and the popularity of VIP and valet



6. MAINTENANCE/STORAGE FACILITY

The maintenance and storage facility was constructed in 1995 to alleviate the shortage on site storage while also providing shop facilities, to service the campus as well as help service other City properties such as, the Waikiki Shell and Zoo. The 25,200 sf two story building is located on the makai end of the campus between the Arena and Kapiolani Blvd. Accessed off Kapiolani Blvd, with close proximity to the Arena loading area to support events. The facility storage portion is approximately 11,000 sf at the ground floor, with another 7,000 second floor storage area and Lunch Room. The storage houses a variety support items for the campus including banquet tables and chairs, stage platforms, seating risers, and various support vehicles. The remainder of the building is dedicated to maintenance shops to maintain the campus including, grounds maintenance, mechanical shop, welding shop, carpentry, painting, plumbing, electrical, audio, and stage lighting. The building also houses the campus two diesel generators with an exterior mounted fuel tank.

This being one of the newest buildings on campus, the facility is physically in good shape. Due to site constraints the building was located at one end of the campus, but ideally, this facility would serve the campus more efficiently, if it were located more centrally within the campus with direct access to each of the venues and easy access to the City streets



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