

Mahana

WARD VILLAGE

APPENDICES

LAND BLOCK 1, PROJECT 6

HCDA PLANNED DEVELOPMENT PERMIT APPLICATION

MAY 2023



WARD VILLAGE.

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Appendix A

LEED CHECKLIST

| Yes | ? | No |
|-----|----|----|
| 65 | 23 | 38 |

Summary

| Category | Credit | Credit Name | Yes | ? | No | Status | Responsibility |
|-------------------------------------|--------|--|-----|---|----|---------------|----------------|
| Integrative Process | C | Integrative Process | | | 1 | Not Attempted | SCB/MEP |
| Location and Transportation | C | LEED-ND Location | 16 | | | Targeted | - |
| | C | Sensitive Land Protection | | | 1 | Not Attempted | SCB |
| | C | High Priority Site | | | 2 | Not Attempted | SCB |
| | C | Surrounding Density & Diverse Uses | | | 5 | Not Attempted | SCB |
| | C | Access to Quality Transit | | | 5 | Not Attempted | SCB |
| | C | Bicycle Facilities | | | 1 | Not Attempted | SCB/Owner |
| | C | Reduced Parking Footprint | | | 1 | Not Attempted | SCB/Owner |
| | C | Green Vehicles | | | 1 | Not Attempted | SCB/Owner |
| Sustainable Sites | P | Construction Activity Pollution Prevention | Y | | | Required | Contractor |
| | C | Site Assessment | 1 | | | Targeted | SCB |
| | C | Site Development - Protect or Restore Habitat | 2 | | | Targeted | Landscape |
| | C | Open Space | 1 | | | Targeted | Landscape |
| | C | Rainwater Management | | 3 | | Targeted | Civil |
| | C | Heat Island Reduction | 2 | | | Targeted | SCB |
| | C | Light Pollution Reduction | 1 | | | Targeted | Lighting |
| Water Efficiency | P | Outdoor Water Use Reduction | Y | | | Required | Landscape |
| | P | Indoor Water Use Reduction | Y | | | Required | SCB/Owner |
| | P | Building-Level Water Metering | Y | | | Required | MEP |
| | C | Outdoor Water Use Reduction | 1 | | 1 | Targeted | Landscape |
| | C | Indoor Water Use Reduction | 3 | | 3 | Targeted | SCB |
| | D | Cooling Tower Water Use | 1 | | 1 | Targeted | MEP |
| | C | Water Metering | 1 | | | Targeted | MEP |
| Energy and Atmosphere | P | Fundamental Commissioning and Verification | Y | | | Required | Cx |
| | P | Minimum Energy Performance | Y | | | Required | MEP |
| | P | Building-Level Energy Metering | Y | | | Required | MEP |
| | P | Fundamental Refrigerant Management | Y | | | Required | MEP |
| | C | Enhanced Commissioning | 3 | 3 | | Targeted | Cx |
| | C | Optimize Energy Performance | 10 | | 8 | Targeted | MEP |
| | C | Advanced Energy Metering | 1 | | | Targeted | MEP |
| | C | Demand Response | | | 2 | Deferred | Owner |
| | C | Renewable Energy Production | | 1 | 2 | Deferred | MEP |
| | C | Enhanced Refrigerant Management | 1 | | | Targeted | MEP |
| | C | Green Power and Carbon Offsets | | 2 | | Deferred | Owner |
| Materials and Resources | P | Storage and Collection of Recyclables | Y | | | Required | SCB/Owner |
| | P | CDWM Planning | Y | | | Required | Contractor |
| | C | Building Life-Cycle Impact Reduction | 1 | 2 | 2 | Deferred | Contractor |
| | C | BPDO - Environmental Product Declarations | 1 | 1 | | Targeted | Contractor |
| | C | BPDO - Sourcing of Raw Materials | 1 | 1 | | Targeted | Contractor |
| | C | BPDO - Material Ingredients | 1 | 1 | | Targeted | Contractor |
| | C | C&D Waste Management | | 1 | 1 | Targeted | Contractor |
| Indoor Environmental Quality | P | Minimum IAQ Performance | Y | | | Required | MEP |
| | P | Environmental Tobacco Smoke Control | Y | | | Required | Owner |
| | C | Enhanced IAQ Strategies | 1 | 1 | | Targeted | MEP |
| | C | Low-Emitting Materials | 3 | | | Targeted | Contractor |
| | C | Construction IAQ Management Plan | 1 | | | Targeted | Contractor |
| | C | Indoor Air Quality Assessment | | 2 | | Targeted | Contractor |
| | C | Thermal Comfort | 1 | | | Targeted | MEP |
| | C | Interior Lighting | 1 | 1 | | Targeted | Lighting |
| | C | Daylight | | 3 | | Deferred | SCB |
| | C | Quality Views | 1 | | | Targeted | SCB |
| | C | Acoustic Performance | 1 | | | Targeted | SCB |
| Innovation | C | Innovation in Design: UHI | 1 | | | Targeted | - |
| | C | Innovation in Design: Quality Views | 1 | | | Targeted | - |
| | C | Innovation in Design: Biophilic Design | 1 | | | Targeted | - |
| | C | Innovation in Design: Purchasing - lamps | 1 | | | Targeted | - |
| | C | Innovation in Design: Green Building Education | 1 | | | Targeted | - |
| | C | LEED Accredited Professional | 1 | | | Targeted | - |
| Regional Priority | C | C&D Waste Management | | 1 | | Targeted | - |
| | C | Indoor Water Use Reduction | 1 | | | Targeted | - |
| | C | Renewable Energy Production | | | 1 | Deferred | - |
| | C | Optimize Energy Performance | 1 | | | Targeted | - |


Appendix B

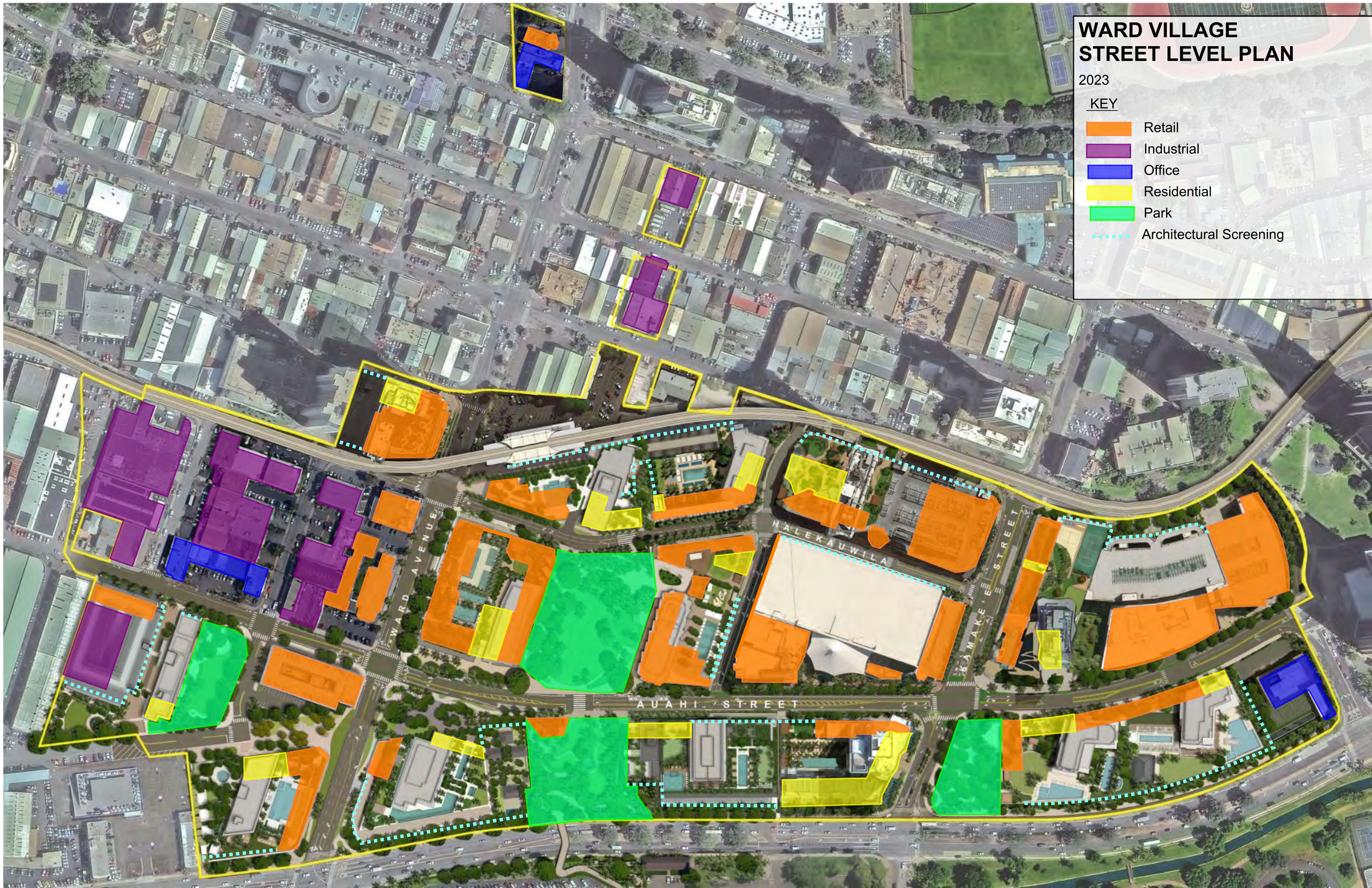
WARD VILLAGE STREET LEVEL PLAN

WARD VILLAGE STREET LEVEL PLAN

2023

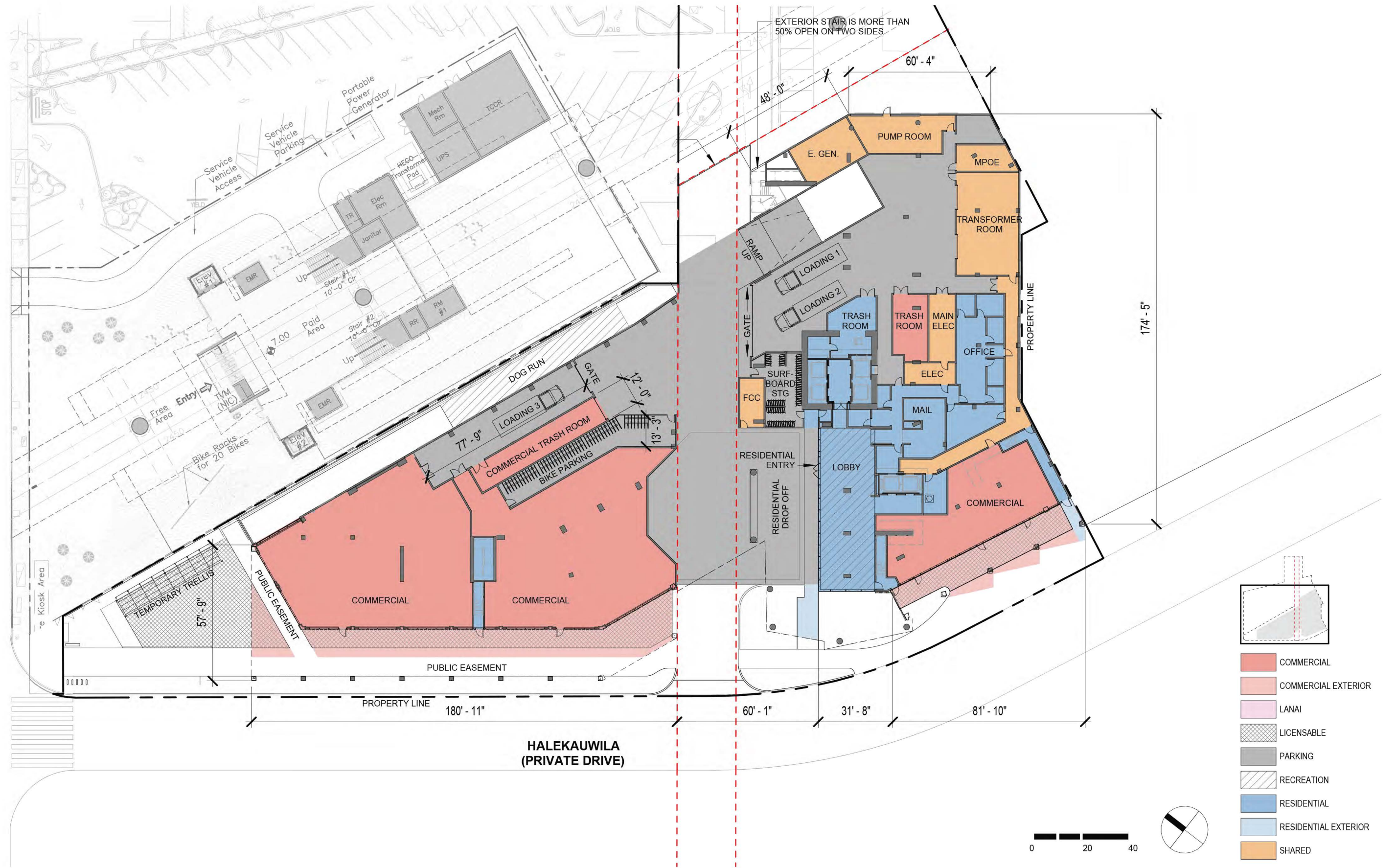
KEY

-  Retail
-  Industrial
-  Office
-  Residential
-  Park
-  Architectural Screening



Appendix C

SITE PLAN AND ELEVATIONS WITH
HART STATION



PROJECT NAME: WARD VILLAGE BLOCK NW
PROJECT NO: 2018028 **DTL./SHT. REF.:** _____
DRAWING TITLE: FLOOR PLAN - LEVEL 01
DRAWING SCALE: 1" = 40'-0"

DATE: _____
REV.: _____
SHEET _____ **of** _____



PROPERTY LINE

WARD AVE. VIEW CORRIDOR SETBACK

PROPERTY LINE

*HCDA RULE 15-22-77: NO BUILDING SHALL CONTAIN A REFLECTIVE SURFACE FOR MORE THAN 30% OF THAT WALL'S SURFACE AREA

ELEV. OVERRUN ROOF
EL: 365.75

T.O.S. ROOF
EL: 347.75

18'-0"
347'-9"
365'-0"

T.O. STAIR ENCLOSURE
EL: 97.00
EWA GUARDRAIL
EL: 78.50
T.O.S. LEVEL 08
EL: 75.00

T.O.S. LEVEL 02
EL: 18.00

T.O.S. LEVEL 01
EL: 0.00

SEA LEVEL
EL: -7.25

FUTURE HART TRACK

WARD AVE

75'-0" TOWER
VIEW CORRIDOR SETBACK
40'-0" UPPER PODIUM
15'-0" SETBACK

25' SEWER EASEMENT

A

B

SECTIONS SHOWN ON EXHIBIT 23



PROPERTY LINE



PROPERTY LINE

ELEV OVERRUN ROOF
EL: 365.75

T.O.S. ROOF
EL: 347.75

347'-9"
365'-0"

*HCDA RULE 15-22-62: MEASURED FROM THE STRUCTURAL SLAB, UTILITARIAN FEATURES INCLUDING STAIRWELLS MAY EXCEED THE HEIGHT LIMIT BY NOT MORE THAN 12'-0".

*HCDA RULE 15-22-77: NO BUILDING SHALL CONTAIN A REFLECTIVE SURFACE FOR MORE THAN 30% OF THAT WALL'S SURFACE AREA.

EWA GUARDRAIL
EL: 78.50

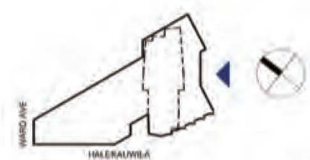
T.O.S. LEVEL 08
EL: 75.00

FUTURE HART
GUIDEWAY

T.O.S. LEVEL 02
EL: 18.00

T.O.S. LEVEL 01
EL: 0.00

SEA LEVEL
EL: -7.25



HALEKAUWILA
(PRIVATE DRIVE)

OUTLINE OF
ADJACENT
BUILDING
(A'ALI'I)



PROPERTY LINE



STAIR ENCLOSURE 50% OPEN

STAIR ENCLOSURE 50% OPEN

*HCDA RULE 15-22-62: MEASURED FROM THE STRUCTURAL SLAB, UTILITARIAN FEATURES INCLUDING STAIRWELLS MAY EXCEED THE HEIGHT LIMIT BY NOT MORE THAN 12'-0".

*HCDA RULE 15-22-77: NO BUILDING SHALL CONTAIN A REFLECTIVE SURFACE FOR MORE THAN 30% OF THAT WALL'S SURFACE AREA.

MESH "GREEN SCREEN" > 50% OPEN

MESH SCREEN TO PROTECT FUTURE HART LINE FROM OBJECTS BEING THROWN ON TRACKS, TYP.

WARD AVE. VIEW CORRIDOR SET BACK

PROPERTY LINE

ELEV. OVERRUN ROOF EL: 365.75

T.O.S. ROOF EL: 347.75

18'-0"
347'-9"

FUTURE HART GUIDEWAY

25' SEWER EASEMENT

OPERABLE ACCESS GATE

75'-0" TOWER VIEW CORRIDOR SETBACK

40'-0" UPPER PODIUM

15'-0" SETBACK

T.O. STAIR ENCLOSURE EL: 87.00

EWA GUARDRAIL EL: 78.50

T.O.S. LEVEL 08 EL: 75.00

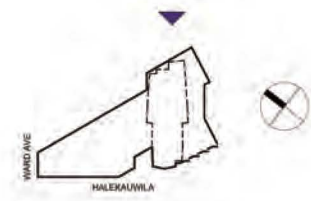
WARD AVE

T.O.S. LEVEL 02 EL: 16.00

T.O.S. LEVEL 01 EL: 0.00

WARD AVE. (TC) -3'-0"

SEA LEVEL EL: -7.25



PROPERTY LINE

STAIR ENCLOSURE 50% OPEN

STAIR ENCLOSURE 50% OPEN

FUTURE HART GUIDEWAY



PROPERTY LINE

ELEV OVERRUN ROOF
EL: 365.75

T.O.S. ROOF
EL: 347.75

347'-9"
365'-5"

*HCDA RULE 15-22-62: MEASURED FROM THE STRUCTURAL SLAB, UTILITARIAN FEATURES INCLUDING STAIRWELLS MAY EXCEED THE HEIGHT LIMIT BY NOT MORE THAN 12'-0".

*HCDA RULE 15-22-77: NO BUILDING SHALL CONTAIN A REFLECTIVE SURFACE FOR MORE THAN 30% OF THAT WALL'S SURFACE AREA.

T.O. STAIR ENCLOSURE
EL: 87.00

EWA GUARDRAIL
EL: 78.50

T.O.S. LEVEL 09
EL: 75.00

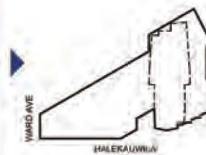
HALEKAUWILA
(PRIVATE DRIVE)

T.O.S. LEVEL 02
EL: 18.00

T.O.S. LEVEL 01
EL: 0.00

HALEKAUWILA
EL: -3.90

SEA LEVEL
EL: -7.25



Appendix D

SHPD LETTER

JOSH GREEN, M.D.
GOVERNOR | HE IGA'AINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'INIWA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

DAWN N.S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
LAURA H.E. KAAKUA
FIRST DEPUTY
M. KALEO MANUEL
DEPUTY DIRECTOR - WATER
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

Mr. Nakamoto and Ms. Dawn Takeuchi-Apuna

May 9, 2023

Page 2

2. DPP commits to stipulate as a permit condition on all project DPP permits involving ground disturbing work that project initiation may not proceed prior to receipt by HCDA, DPP, and VWL/HHC of SHPD's letter documenting completion of Steps 1 through 5; and
3. VWL/HHC commits to no initiation of project ground disturbing work requiring a DPP permit prior to receipt of SHPD's letter documenting completion of Steps 1 through 5.

VWL/HHC has submitted draft documents to SHPD for review in support of HAR §13-284-3(b) Steps 1-5. At this time, SHPD has not completed review of the project documents. The project's current draft archaeological inventory survey (AIS) report, prepared by Cultural Survey's Hawai'i, Inc. (CSH) will be revised to include additional AIS testing locations and results due to recent changes in the project description and project area boundaries. The additional AIS fieldwork will be incorporated into a revised AIS report which will be submitted to SHPD for review and acceptance prior to project initiation. SHPD looks forward to receiving the revised documents when completed. The Attachment provides a brief project summary.

SHPD requests HCDA, DDP, and VWL/HHC each provide a written commitment to the requested stipulations to SHPD to HICRIS Project No. 2019PR30462 using the Project Supplement option.

SHPD will notify HCDA, DDP, and VWL/HHC when our office has completed review and approval of all documents submitted in support of HAR §13-284-3(b) Steps 1-5, and the DPP permitting process may continue.

Please contact Susan A. Lebo, Archaeology Branch Chief, at Susan.A.Lebo@hawaii.gov for any questions or concerns regarding this letter.

Aloha,

Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: Ka'iulani Sodaro (HHC): kaiulani.sodaro@howardhughes.com
Matt McDermott (CSH): mmcdermott@culturalsurveys.com

Attachment: Brief Project Summary

The Block N West Makai project (HICRIS Project No. 2019PR30462) is within the central portion of the current Ward Gateway Center. It is bounded to the northwest by Ward Avenue, to the southwest by the Block H project area (the Park at Ward Village residential tower, construction ongoing), to the southeast by the Block N East project area (the 'A'ali'i residential tower), and the northeast by the planned Honolulu Rail Transit Project (H RTP) City Center corridor (the current Ward Gateway Center).

The Block N West Makai project is a discrete project within VWL's 60.5-acre (24.5-hectare) Ward Neighborhood Master Plan, a long-range development plan of 20-plus years expected to evolve over time to fulfill the needs of the community. It follows guidelines set forth in the Mauka Area Plan of the HCDA.

As HHC's Ward Neighborhood development proceeds, planning moves from the general ideas of the master plan to the specifics of individual development projects. Redesign of certain development block boundaries and their proposed build-outs are sometimes needed to better suit the actual development landscape based on the results of post-master plan studies and new information.

May 9, 2023

Craig K. Nakamoto, Executive Director
Hawai'i Community Development Authority
547 Queen Street
Honolulu, Hawai'i 96817
craig.k.nakamoto@hawaii.gov

Ms. Dawn Takeuchi-Apuna, Director
Department of Planning and Permitting
City and County of Honolulu
Frank F. Fasi Municipal Building
650 S. King Street, 7th Floor
Honolulu, Hawai'i 96813
c/o Clint Young
clint.young@honolulu.gov

IN REPLY REFER TO:
Project No. 2019PR30462
Doc. No. 2305SCH05
Archaeology

Dear Mr. Nakamoto and Ms. Dawn Takeuchi-Apuna:

**SUBJECT: Chapter 6E-42 Historic Preservation Review
Request to Support HCDA Proceeding with Permitting Process
Victoria Ward Limited (VWL) Block N West Makai Project
Honolulu Ahupua'a, Honolulu (Kona) District, Island of O'ahu
TMK: (1) 2-3-002:116 por.**

This letter provides the State Historic Preservation Division's (SHPD's) review regarding the Hawaii Community Development Authority's (HCDA's) planned development permitting process for the Victoria Ward, Ltd. (VWL) and The Howard Hughes Corporation (HHC) project titled Victoria Ward Limited (VWL) Block N West Makai Project. This private project is subject to permitting under HCDA's 2005 Mauka Area Rules, and with permitting by the City and County of Honolulu, Department of Planning and Permitting (DPP).

SHPD has no objection to the HCDA proceeding with their permitting process for the Victoria Ward Limited (VWL) Block N West Makai Project, with the following stipulations:

1. HRS §6E-42 Historic Preservation Review Steps 1 through 5, as outlined in HAR §13-284-3(b), shall be completed and SHPD shall provide a letter documenting said completion to HCDA, DPP, and VWL/HCC indicating that the DPP permit process may continue;

The Block N West Makai project was originally designated the Block N West project. Redesign of the Block N West project area subsequently added approximately 1.07 acres to the northeast of the original project area, separated from the original project area by the Honolulu Rapid Transit Project (HRTTP) Section 4 (City Center) project corridor. The original Block N West project area, located on the *makai* (seaward) side of the HRTTP corridor, was renamed the Block N West Makai project, and the new 1.07-acre *mauka* (inland) portion was named the Block N West Mauka project.

SHPD accepted the draft archaeological inventory survey plan (AISP) titled *Archaeological Inventory Survey Plan for the Block N West Project, Kaka'ako Ahupua'a, Honolulu (Kona) District, O'ahu TMK (1) 2-3-002:00559 (portion)* (Burke et al. 2015) May 29, 2015 (Log No. 2015.01594, Doc. No. 1505GC03). The AISP encompassed the original Block N West project area. SHPD received the draft AIS report titled *Archaeological Inventory Survey Report for the Block N West Makai Project, Kaka'ako, Honolulu Ahupua'a, Honolulu (Kona) District, O'ahu, TMK: [1] 2-3-002:059 (por.)* (Farley et al. 2019) to the SHPD on 23 May 2019 (Log No. 2019.01201, HICRIS Project No. 2019PR30462). This draft AIS report for the original Block N West Makai project area remains under SHPD review.

Subsequent to SHPD's receipt of the draft AIS report for the Block N West Makai Project, the project area has been redefined and expanded from 0.5 to 1.84 acres, to satisfy the Board of Water Supply requirements for water service to the proposed development. The Block N West Makai project area now includes portions of the adjacent Honolulu Rapid Transit Project (HRTTP) Section 4 (City Center) project area, the Block I project area, Block N East project area, Block H project area, and Block N West Mauka project area (Table 1 and Figure 1).

At this time, CSH is revising the Block N West Makai AIS reporting, which will include the new project area, result of all prior AIS investigations with the new project area, as well as additional AIS testing.

Table 1. Project areas within the revised Block N West Makai project area

| Project Name | Study Type | SHPD Report Acceptance Date |
|--|-----------------------|-----------------------------|
| HRTTP Section 4 | AIS, Supplemental AIS | 8/26/2013; 4/1/2015 |
| Block I | AIS | 6/12/2015 |
| Block N East | AIS | 9/6/2016 |
| Block H | AIS | 1/19/2018 |
| Block N West Mauka | AIS | N/A; submitted 11/16/2017 |
| Block N West Makai (original project area) | AIS | N/A; submitted 5/23/2019 |

Based on extensive AIS testing during previous studies and the original Block N West Makai AIS, the revised Block N West Makai project area contains four historic properties (Figure 2):

- SIHP 50-80-14-07249 consists of pre- to post-Contact cultural deposits including numerous features (fire pits, post-holes, pit features of indeterminate function, and human burials). It is assessed as significant under Criterion d and e pursuant to HAR §13-284-6.
- SIHP 50-80-14-07655 consists of historic salt pan remnants. It is assessed as significant under Criterion c, d, and e pursuant to HAR §13-284-6.
- SIHP 50-80-14-07659 consists of the concretized Ward Estate *'auwai*. It is assessed as significant under Criterion d pursuant to HAR §13-284-6.
- SIHP 50-80-14-07686 consists of Twentieth century infrastructure remnants including a culturally enriched crushed coral reclamation fill A horizon, oil-rolled surfaces, trash pits, and foundation remnants. It is assessed as significant under Criterion d pursuant to HAR §13-284-6.

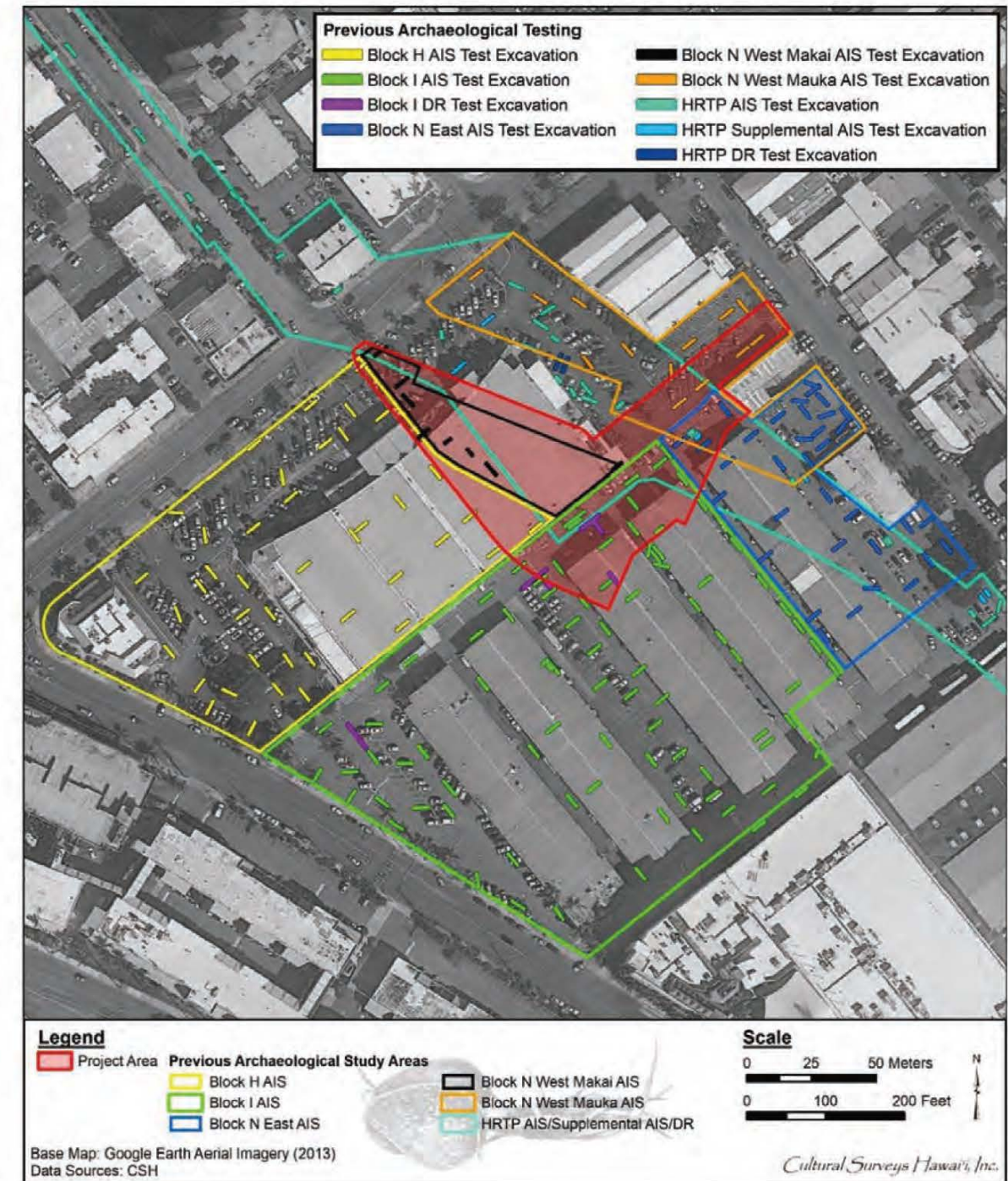


Figure 1. Aerial photograph (Google Earth 2013) showing completed AIS test excavations in the project area vicinity, the redesigned Block N West Makai project area (red), and original Block N West Makai project area (black), as well as the Block H, Block I, Block N East, Block N West Mauka, and HRTTP Section 4 project areas, which are partially within the redesigned Block N West Makai project area.

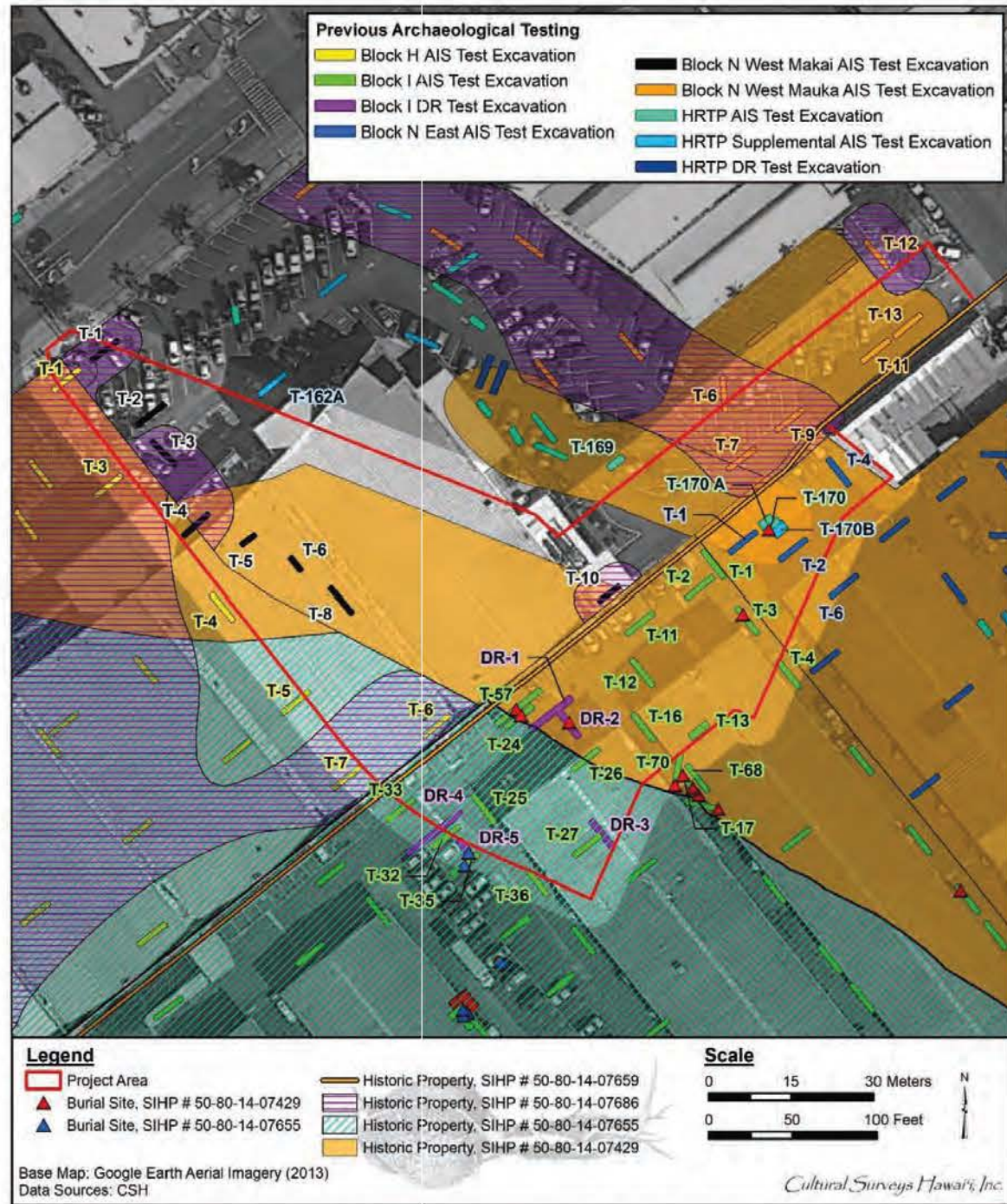


Figure 2. Aerial photograph (Google Earth 2013) showing the historic properties identified within, and in the immediate vicinity of the project area; SIHP 50-80-14-07659, the concretized Ward Estate 'auwai; SIHP 50-80-14-07686, subsurface infrastructure remnants; SIHP 50-80-40-07655, historic salt pan remnants; and SIHP 50-80-14-07429, subsurface cultural deposits.

Appendix E

TRAFFIC IMPACT REPORT

Traffic Impact Report

Block N West



Prepared for:
Victoria Ward, Ltd.

Prepared by:
Wilson Okamoto Corporation

March 2023

TRAFFIC IMPACT REPORT

FOR

BLOCK N WEST

Prepared for:

Victoria Ward Limited
1240 Ala Moana Blvd., Suite 200
Honolulu, HI 96814

Prepared by:

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96826
WOC Ref #8206-81

March 2023

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I. INTRODUCTION

A. Purpose of Study

The purpose of this study is to identify and assess the potential traffic impacts resulting from the Block N West development of the Ward Village Master Plan in Kakaako on the island of Oahu. A previous assessment including the Block N West development was included in the “Transportation Master Plan and Assessment for the Ward Village Master Plan” (hereafter referred to as the “Ward Village TMP”) originally dated October 2020 and updated in October 2022. This report is a supplemental study to specifically address the Block N West development and incorporate the most recent development plans which include residential, commercial, and restaurant uses.

B. Scope of Study

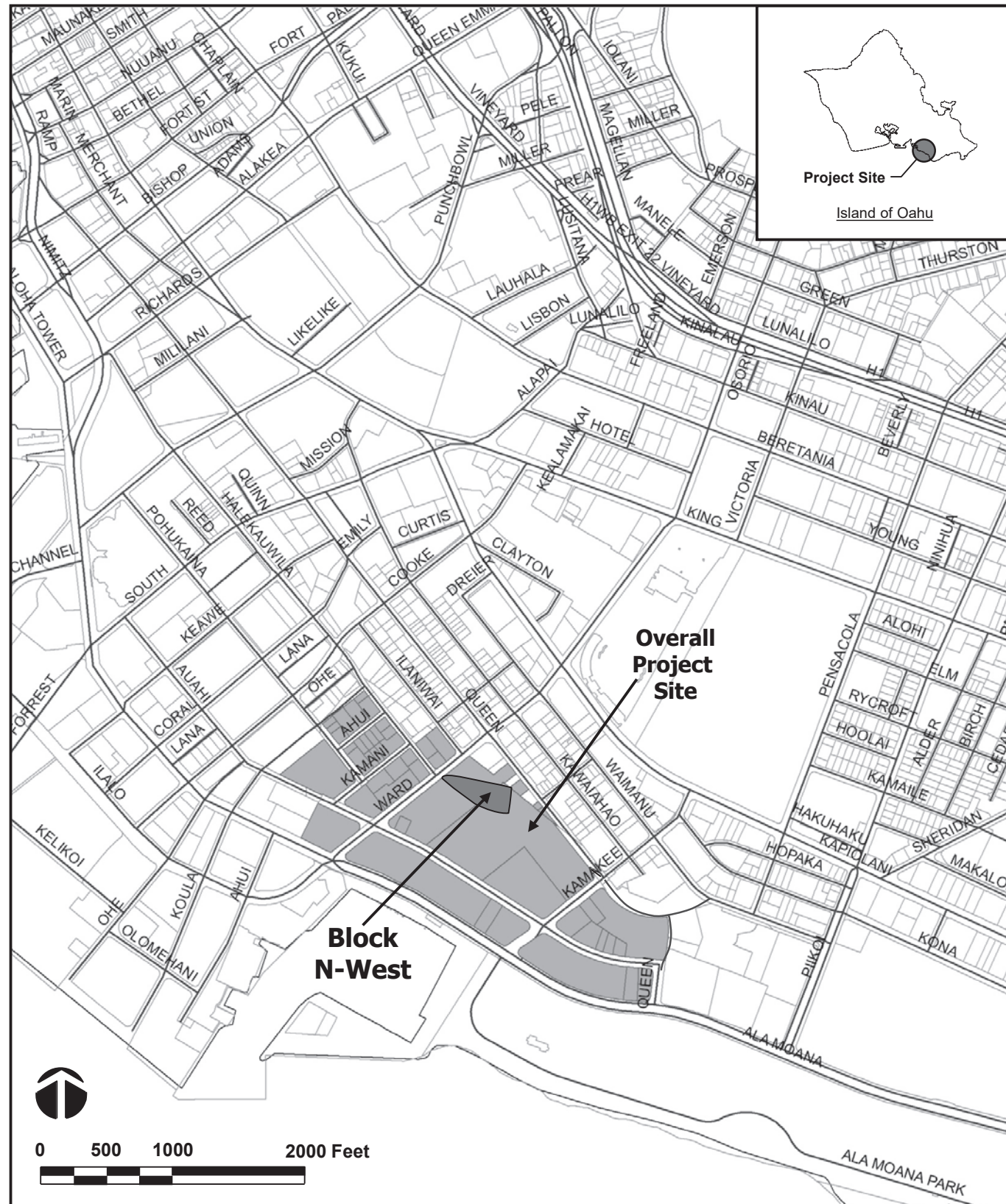
This report presents the findings and conclusions of the traffic study, the scope of which includes:


1. Description of the proposed project.
2. Evaluation of existing roadway and traffic operations in the vicinity.
3. Analysis of future roadway and traffic conditions without the proposed project.
4. Analysis and development of trip generation characteristics for the proposed project.
5. Superimposition of site-generated traffic over future traffic conditions.
6. The identification and analysis of traffic impacts resulting from the proposed project.
7. Recommendations of improvements, if appropriate, that would mitigate the traffic impacts resulting from the proposed project.

II. PROJECT DESCRIPTION

A. Location

The project site for the proposed Block N West development encompasses a portion of the former Ohana Hale Marketplace and will be located adjacent to the Halekauwila Extension in Kakaako on the island of Oahu (see Figure 1). The project site is bounded by Ward Avenue to the west, the Aalii development to the east, the future Kakaako Station site to the north and a private driveway to the south (referred



| | | |
|---|---------------------------|--------------------|
|  | BLOCK N WEST | FIGURE 1 |
| | LOCATION AND VICINITY MAP | |

to as the “Halekauwila Extension”). It is further identified as Tax Map Key (TMK): 2-3-002:116. Access to the proposed project is expected to be provided via a new two-way driveway off the Halekauwila Extension.

B. Project Characteristics

The overall Ward Village Master Plan entails the redevelopment of most of the existing commercial, office, and industrial spaces implemented in five (5) phases over a span of 10-15 years. At the time of this report, Phase 1 which includes Blocks C (Waiea), K (Anaha), M (Aeo), and O (Kilohana), as well as the first development under Phase 2 referred to as Block N-East (Aalii), have been fully completed and occupied. The two remaining developments under Phase 2 are Blocks I (Koula) and C-West (Victoria Place). Construction for Block I was recently completed in the latter part of 2022, while work for Block C-West is ongoing and is expected to be completed by Year 2024. The development plans for the Phase 3 projects, which include Blocks H (The Park Ward Village), F (Ulana), and B (Kalae), have been accepted by the Honolulu Community Development Authority (HCDA) with Blocks H and F also currently under construction. Phase 3 is expected to be completed by Year 2026. Phase 4 is expected to include three additional block developments, Blocks A, D, and E, all of which are expected to be completed by Year 2027. These are currently under design with Traffic Impact Reports prepared separately for these developments.

Block N West follows the Block D and Block E developments and makes up the first of two developments under Phase 5 of the overall Ward Village Master Plan. The proposed project entails development of approximately 350 residential units, 20,000 square feet (sf) of retail uses, and 5,000 sf of restaurant uses. Access to the proposed project is expected to be provided via a new driveway off the Halekauwila Extension. As discussed in the Ward Village TMP, the existing private driveway that intersects Kamae Street between Auahi and Queen Streets is expected to be extended westward to intersect with Ward Avenue forming a 4-way intersection with Halekauwila Street at an earlier phase (Phase 3) in conjunction with the development of the Park Ward Village. Parking for the residential uses are expected to be accommodated on site while parking for the commercial uses are expected to be

accommodated within the commercial parking area in the Park Ward Village development. The Block N West is anticipated to be completed by Year 2028. See Figure 2 for the project site plan.

III. BASELINE TRAFFIC CONDITIONS

A. Area Roadway System

East-west traffic flow through the Kakaako area is served by a number of existing major roadways which include Ala Moana Boulevard, Queen Street, and Kapiolani Boulevard that provide continuous east-west mobility through the project vicinity. These major roadways are supported by a network of connector roadways including Auahi Street, Pohukaina Street, and Halekauwila Street that provide alternate east-west routes through the surrounding areas. North-south traffic through the Kakaako area is served by a number of existing major roadways including Ward Avenue and Piikoi Street that support either one-way or two-way travel through the project vicinity. These major roadways are supported by a network of connector roadways including Cooke Street and Kamakee Street that provide alternate north-south routes through the surrounding areas.

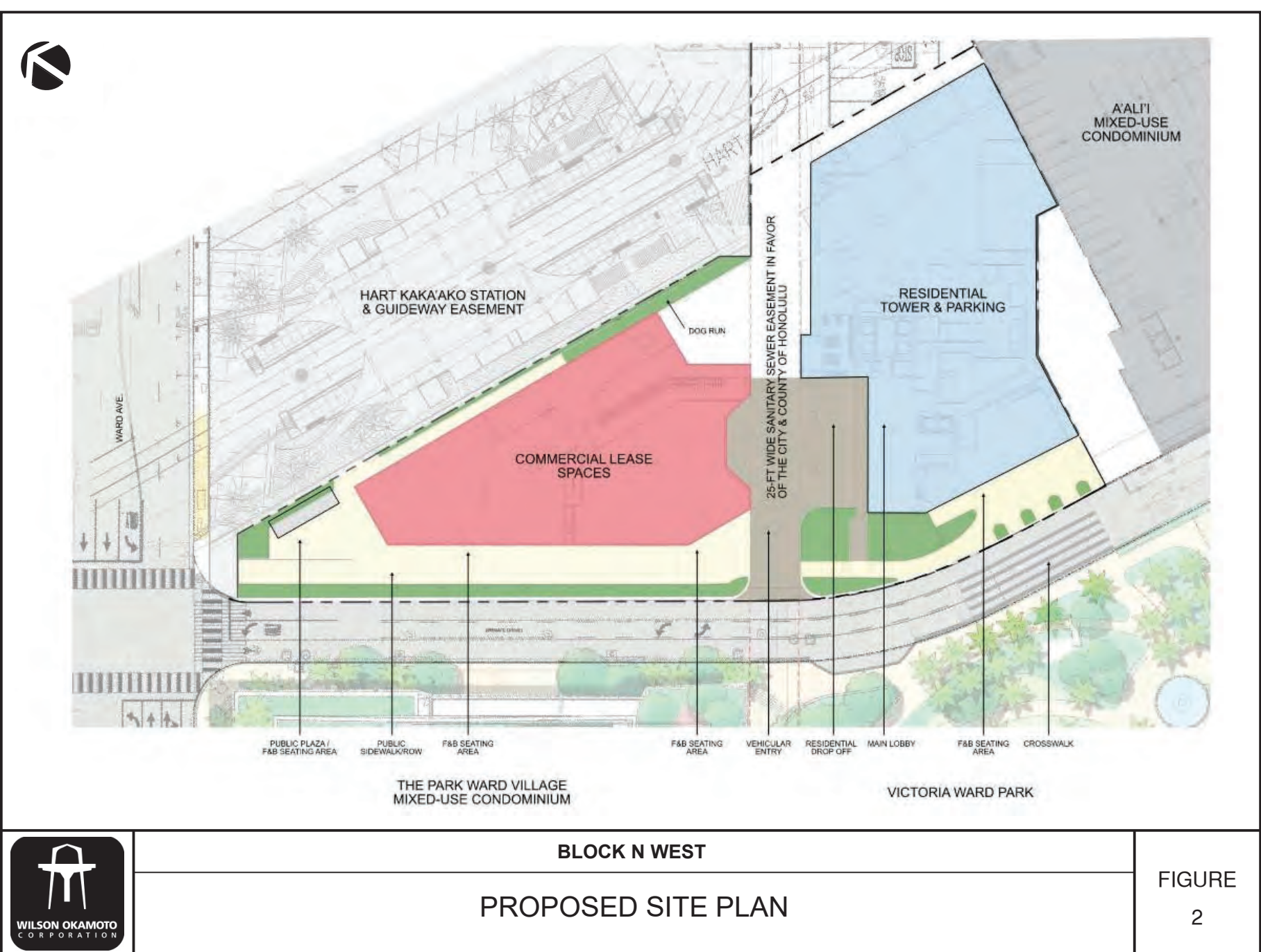
B. Traffic Volumes and Conditions

1. General

a. Field Investigation

The traffic count data utilized for this study consisted of turning movement count surveys at 22 locations during the weekday morning peak hours of 6:00 AM and 9:00 AM and afternoon peak hours of 3:00 PM and 6:00 PM. The surveys were conducted during 2018 and supplemented during 2019 at the intersections along the following roadways:

- Along Kapiolani Boulevard at the intersections with Cooke Street, Ward Avenue, Kamakee Street, Queen Street, and Piikoi Street
- Along Auahi Street at the intersections with Cooke Street, Ward Avenue, Kamakee Street, and Queen Street and Queen Lane
- Along Halekauwila Street at the intersections with Cooke Street, Ward Avenue, and Kamakee Street
- Along Queen Street at the intersections with Cooke Street, Ward Avenue, Kamakee Street, and Queen Lane



- Along Ala Moana Boulevard at the intersections with Cooke Street, Ward Avenue, Kamakee Street, and Piikoi Street
- Pohukaina Street and Cooke Street
- Waimanu Street and Piikoi Street

Starting in 2020, the ongoing COVID-19 pandemic resulted in fluctuations in traffic volumes and shifts in travel patterns that limited the ability to collect updated traffic data. Since the end of 2021, traffic volumes and patterns have slowly been normalizing and as such, additional supplemental traffic data was collected in August 2022 at key intersection in the vicinity to incorporate these noted changes. The resulting baseline traffic volumes used for this study reflect the incorporation of these considerations and are considered to be representative of Year 2022 existing conditions. As previously noted, the developments associated with Phase 1 and Block N East of Phase 2 have been completed and occupied. As such, the trips associated with these blocks were assumed to be captured within the surveyed traffic volumes. In addition, during the supplemental counts, the sites for Blocks H, F, B, A, and N West had been cleared of their existing uses, while Block C West was still under construction. Appendix A includes the traffic count data.

b. Capacity Analysis Methodology

The highway capacity analysis performed in this study is based upon procedures presented in the “Highway Capacity Manual”, Transportation Research Board, 2000, and the “Synchro” software, developed by Trafficware. It should be noted that the HCM 2010 and 2016 methodologies are available with the Synchro software; however, as previously discussed in the Ward Villages Master Plan, analysis conducted using that methodology is unable to accommodate all of the exclusive and shared-use lane configurations in the study area. As such, for the purpose of this report, the HCM 2000 methodology output was used for consistency with the overall traffic study. The

analysis is based on the concept of Level of Service (LOS) to identify the traffic impacts associated with traffic demands during the peak periods of traffic.

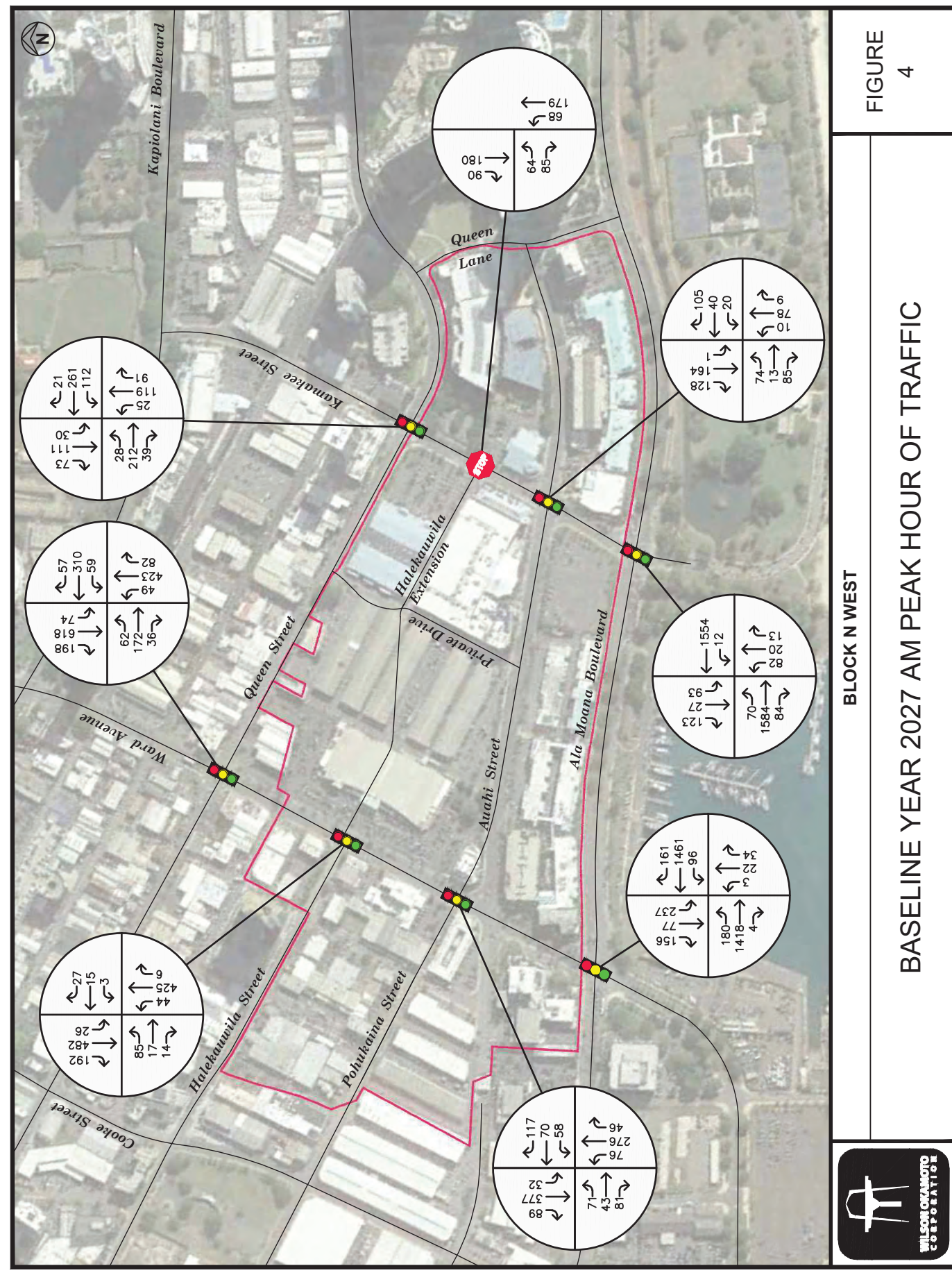
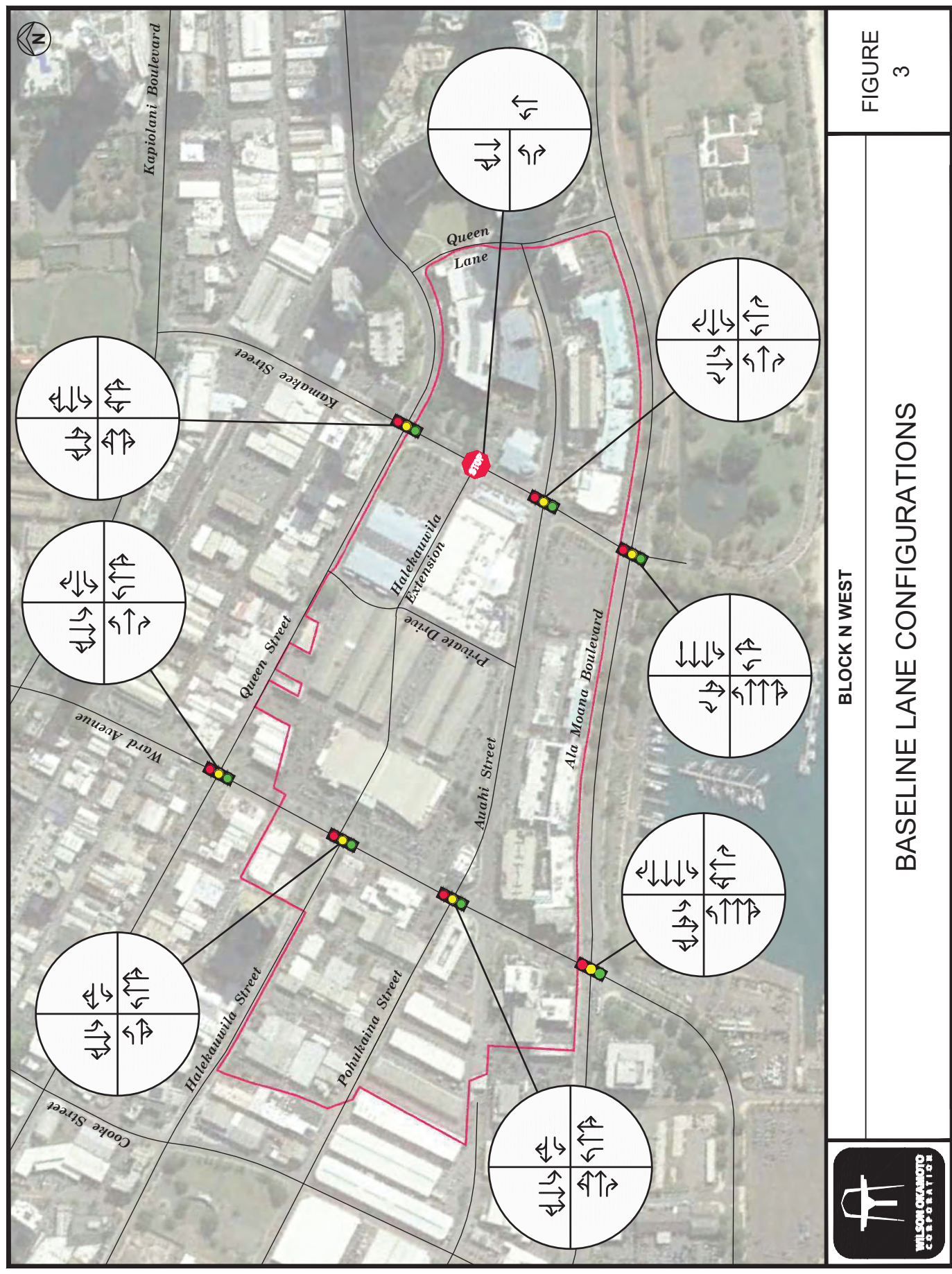
LOS is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS “A” through “F”; LOS “A” representing ideal or free-flow traffic operating conditions and LOS “F” unacceptable or potentially congested traffic operating conditions.

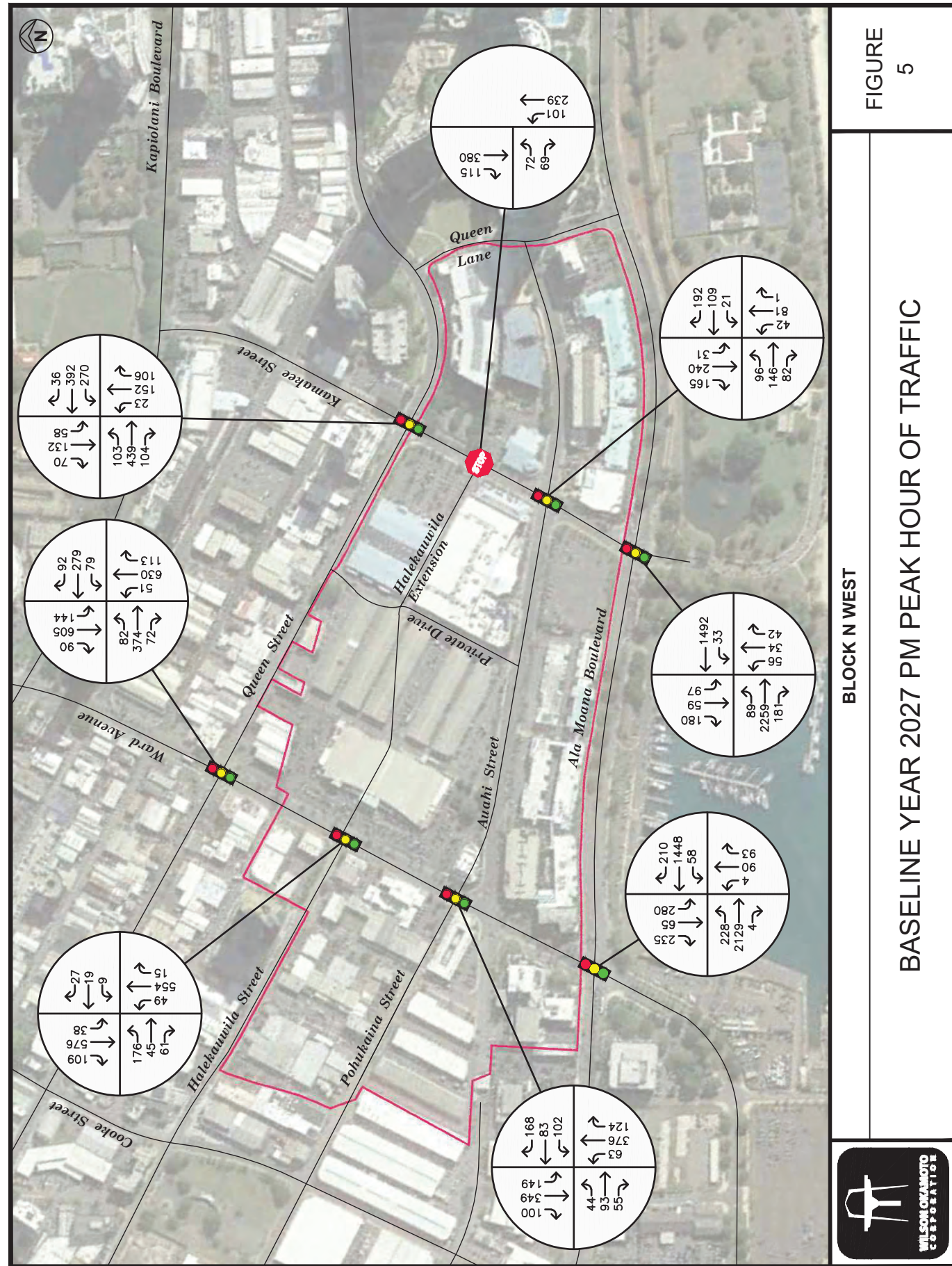
“Volume-to-Capacity” (v/c) ratio is another measure indicating the relative traffic demand to the road carrying capacity. A v/c ratio of one (1.00) indicates that the roadway is operating at or near capacity. A v/c ratio of greater than 1.00 indicates that the traffic demand exceeds the road’s carrying capacity. The LOS definitions are included in Appendix B.

2. Baseline Peak Hour Traffic

a. General

Figures 3-5 show the baseline Year 2027 lane configurations and AM and PM peak hour traffic volumes at key locations within the study area which includes the development of other projects in the vicinity, as well as Phases 1 to 4 of the Ward Village Master Plan which are expected to be completed prior to the proposed project. The baseline traffic conditions are based on the projected Year 2027 conditions included in the “Traffic Impact Report For Block D and Block E Developments” dated March 2023 (hereafter referred to as the “Block D and Block E TIAR”). The AM peak hour of traffic generally occurs between 7:30 AM and 8:30 AM while the PM peak hour of traffic generally occurs between 4:30 PM and 5:30 PM. Although the peak hours of traffic generally occur around the same time periods at each of the study intersections, the absolute commuter peak hour time periods for each intersection may differ slightly. The analysis is based on these absolute commuter peak hour time periods to identify the





traffic impacts resulting from the proposed project. LOS calculations for the study intersections are included in Appendix C.

As previously discussed in the Ward Village TMP, improvements to the surrounding roadways are planned in conjunction with the overall Ward Village Master Plan. These improvements include the realignment of Auahi Street east of Ward Avenue that will connect Auahi Street to Pohukaina Street and the completion of the Halekauwila Extension from Robinson Lane to Ward Avenue. Both of these roadway projects are expected to be completed by Year 2026 and were included in the baseline conditions. The baseline conditions also included the following other considerations discussed in the Block D and Block E TIAR:

- Ala Moana Pedestrian Bridge
- Ala Moana Boulevard and Kamakee Street Lane Use Modifications
- Kakaako Mauka Master Plan (KKMP) Blocks I (Alia) and Block G developments
- Right-Turn on Red Restrictions at Select Intersections along Ala Moana Boulevard

b. Ward Avenue and Queen Street

At the intersection with Queen Street, Ward Avenue carries 554 vehicles northbound and 890 vehicles southbound during the AM peak hour of traffic. During the PM peak period, the overall traffic volume is higher with 794 vehicles traveling northbound and 839 vehicles traveling southbound. The northbound approach operates at LOS “B” and LOS “C” during the AM and PM peak periods, respectively, while the southbound approach of the intersection operates at LOS “B” during both peak periods.

The Queen Street approaches of the intersection carry 270 vehicles eastbound and 426 vehicles westbound during the AM peak hour of traffic. During the PM peak period, traffic volumes are higher with 528 vehicles traveling eastbound and 450 vehicles traveling

westbound. The eastbound approach operates at LOS “B” and LOS “C” during the AM and PM peak periods, respectively, while the westbound approach of the intersection operates at LOS “C” during both peak periods.

c. Queen Street and Kamakee Street

At the intersection with Kamakee Street, Queen Street carries 279 vehicles eastbound and 394 vehicles westbound during the AM peak hour of traffic. During the PM peak period, traffic volumes are higher with 646 vehicles traveling eastbound and 698 vehicles traveling westbound. The eastbound approach operates at LOS “B” and LOS “C” during the AM and PM peak periods, respectively, while the westbound approach operates at LOS “A” and LOS “B” during the AM and PM peak periods, respectively.

The Kamakee Street approaches carry 235 vehicles northbound and 214 vehicles southbound during the AM peak hour of traffic. During the PM peak period, the overall traffic volume is similar with 281 vehicles traveling northbound and 260 vehicles traveling southbound. Both approaches of Kamakee Street operate at LOS “B” during the AM peak period and LOS “C” during the PM peak period.

d. Ward Avenue and Halekauwila Street

At the intersection with Halekauwila Street, Ward Avenue carries 475 vehicles northbound and 700 vehicles southbound during the AM peak hour of traffic. During the PM peak period, traffic volumes are higher with 618 vehicles traveling northbound and 723 vehicles traveling southbound. Both approaches of Ward Avenue operate at LOS “A” during the AM peak period and LOS “B” during the PM peak period.

The Halekauwila Street approach of the intersection carries 116 vehicles eastbound and 45 vehicles westbound during the AM peak period. During the PM peak period, traffic volumes are higher with 282 vehicles traveling eastbound and 55 vehicles traveling westbound.

The eastbound approach operates at LOS “B” during both peak periods, while the westbound approach operates at LOS “B” and LOS “A” during the AM and PM peak periods, respectively.

e. Kamakee Street and Halekauwila Extension

At the intersection with Halekauwila Extension, Kamakee Street carries 247 vehicles northbound and 270 vehicles southbound during the AM peak period. During the PM peak period, the traffic volumes are higher with 340 vehicles traveling northbound and 495 vehicles traveling southbound. The northbound approach on Kamakee Street operate at LOS “A” during both peak periods.

Halekauwila Extension carries 149 vehicles eastbound during the AM peak period. During the PM peak period, traffic volume is lower with 141 vehicles traveling eastbound. The eastbound approach on Halekauwila Extension operates at LOS “B” and LOS “C” during the AM and PM peak periods, respectively.

f. Ward Avenue, Auahi Street, and Pohukaina Street

At the intersection with Auahi Street, Ward Avenue carries 398 vehicles northbound and 498 vehicles southbound during the AM peak period. During the PM peak period, traffic volumes are higher with 563 vehicles traveling northbound and 598 vehicles traveling southbound. During the AM peak period both approaches of Ward Avenue operates at LOS “A” while both approaches operate at LOS “B” during the PM peak period.

The Auahi Street approach of the intersection carries 245 vehicles westbound during the AM peak period and 353 vehicles during the PM peak period. The Auahi Street approach operates at LOS “B” during both peak periods. The Pohukaina Street approach of the intersection carries 195 eastbound vehicles during the AM peak period and 192 vehicles during the PM peak period and also operates at LOS “B” during both peak periods.

g. Kamakee Street and Auahi Street

At the intersection with Auahi Street, Kamakee Street carries 97 vehicles northbound and 293 vehicles southbound during the AM peak period. During the PM peak period, the traffic volumes are higher with 124 vehicles traveling northbound and 436 vehicles traveling southbound. Both approaches on Kamakee Street operate at LOS “B” during both peak periods.

Auahi Street carries 172 vehicles eastbound and 165 vehicles westbound during the AM peak period. During the PM peak period, traffic volumes are higher with 324 vehicles traveling eastbound and 322 vehicles traveling westbound. Both approaches on Auahi Street operate at LOS “B” during both peak periods.

h. Ala Moana Boulevard and Ward Avenue

At the intersection with Ward Avenue, Ala Moana Boulevard carries 1,602 vehicles eastbound and 1,718 vehicles westbound during the AM peak period. During the PM peak period, the overall traffic volume is similar with 2,361 vehicles traveling eastbound and 1,716 vehicles traveling westbound. Both approaches on Ala Moana Boulevard operate at LOS “D” and LOS “E” during the AM and PM peak periods, respectively. Traffic operations at this intersection are influenced by the high volume of conflicting traffic at this intersection and split phasing of the northbound and southbound approaches.

The Ward Avenue approaches of the intersection carry 59 vehicles northbound and 470 vehicles southbound during the AM peak period. During the PM peak period, traffic volumes are higher with 187 vehicles traveling northbound and 580 vehicles traveling southbound. The northbound approach operates at LOS “D” during both peak periods while the southbound approach operates at LOS “D” and LOS “E” during the AM and PM peak periods, respectively. As previously discussed, the low levels of service at this intersection are influenced by the high volume of conflicting traffic at this intersection.

i. Ala Moana Boulevard, Kamakee Street, and Ala Moana Park Drive

At the intersection with Kamakee Street, Ala Moana Boulevard carries 1,738 vehicles eastbound and 1,566 vehicles westbound during the AM peak period. During the PM peak period, the overall traffic volume is higher with 2,529 vehicles traveling eastbound and 1,525 vehicles traveling westbound. The eastbound approach operates at LOS “B” and LOS “C” during the AM and PM peak periods, respectively, while the westbound approach operates at LOS “B” during both peak periods.

The Kamakee Street approach of the intersection carries 243 vehicles southbound during the AM peak period and 336 vehicles during the PM peak period. The Kamakee Street approach operates at LOS “C” and LOS “D” during the AM and PM periods, respectively. The northbound approach is comprised of Ala Moana Park Drive which carries 115 vehicles during the AM peak period and 132 vehicles during the PM peak period. The Ala Moana Park Drive operates at LOS “C” and LOS “D” during the AM and PM peak periods, respectively.

IV. PROJECTED TRAFFIC CONDITIONS

A. Site-Generated Traffic

1. Trip Generation Methodology

The trip generation methodology used in this study is based upon generally accepted techniques developed by the Institute of Transportation Engineers (ITE) and published in “Trip Generation, 10th Edition,” 2017. The ITE trip generation rates are developed empirically by correlating the vehicle trip generation data with various land use characteristics such as the number of vehicle trips generated per dwelling unit or 1,000 sf of development. It should be noted that a more recent edition of the Trip Generation was recently published at the end of 2021. Although average trip generation rates for some residential land uses have remained generally similar, the retail land uses have

been updated to provide additional land use types. However, trip generation data for some of these uses are still limited. As such, for the purpose of this assessment, the 2017 edition was used. Tables 1 summarize the proposed trip generation characteristics for the Block N West development.

Table 1: Proposed Peak Hour Trip Generation

| MULTIFAMILY HOUSING (HIGH-RISE) | | |
|--|-------|---------------------|
| INDEPENDENT VARIABLE: Dwelling Units = 350 | | |
| | | PROJECTED TRIP ENDS |
| AM PEAK | ENTER | 26 |
| | EXIT | 83 |
| | TOTAL | 109 |
| PM PEAK | ENTER | 77 |
| | EXIT | 49 |
| | TOTAL | 126 |
| RESTAURANT (HIGH-TURNOVER SIT-DOWN) | | |
| INDEPENDENT VARIABLE: 1,000 sf of development = 5 | | |
| | | PROJECTED TRIP ENDS |
| AM PEAK | ENTER | 27 |
| | EXIT | 23 |
| | TOTAL | 50 |
| PM PEAK | ENTER | 30 |
| | EXIT | 19 |
| | TOTAL | 49 |
| SHOPPING CENTER | | |
| INDEPENDENT VARIABLE: 1,000 sf of development = 20 | | |
| | | PROJECTED TRIP ENDS |
| AM PEAK | ENTER | 12 |
| | EXIT | 7 |
| | TOTAL | 19 |
| PM PEAK | ENTER | 19 |
| | EXIT | 30 |
| | TOTAL | 49 |
| TOTALS | | |
| | | PROJECTED TRIP ENDS |
| AM PEAK | ENTER | 65 |
| | EXIT | 113 |
| | TOTAL | 178 |
| PM PEAK | ENTER | 144 |
| | EXIT | 107 |
| | TOTAL | 251 |

The trip generation methodology developed by ITE also includes provisions for multi-modal trips. Multi-modal trips are trips made utilizing

non-motorized modes of travel such as walking and biking, as well as trips made using transit. The project site is currently served by established, convenient transit routes that may reduce the number of vehicular trips added to the surrounding major roadways. The trip generation characteristics for the proposed project were adjusted to account for trips made using alternative modes of transportation. Table 2 summarizes the adjusted trip generation characteristics for the Block N West development. Appendix D includes a detailed trip generation worksheet for the Block N West development.

Table 2: Adjusted Peak Hour Trip Generation

| TOTALS | | |
|---------------|-------|---------------------|
| | | PROJECTED TRIP ENDS |
| AM PEAK | ENTER | 50 |
| | EXIT | 103 |
| | TOTAL | 153 |
| PM PEAK | ENTER | 109 |
| | EXIT | 75 |
| | TOTAL | 184 |

2. Trip Distribution and Through Traffic Forecasting Methodology

The directional distribution of site-generated trips was based on the relative distribution of traffic along the regional roadways in the vicinity of the project. These percentages are generally consistent with the regional forecasting model developed by the Oahu Metropolitan Planning Organization (OMPO) since the project is located within a developed, well-established area in Honolulu. The OMPO model provides a macro level forecast of the anticipated overall travel demand for the island of Oahu utilizing Socio-Economic Data (SED) representing population distribution within a multitude of traffic analysis zones to forecast individual vehicle trips between destinations within the model. The model by OMPO provides a general framework of travel demand, however a more finite, micro-level approach was utilized to complete the specific distribution of site-generated trips at the study intersections based on their assumed origin/destination, allowed turning movements, and the relative convenience of the available routes. In addition, taking into the account the project’s location within a well-developed area and

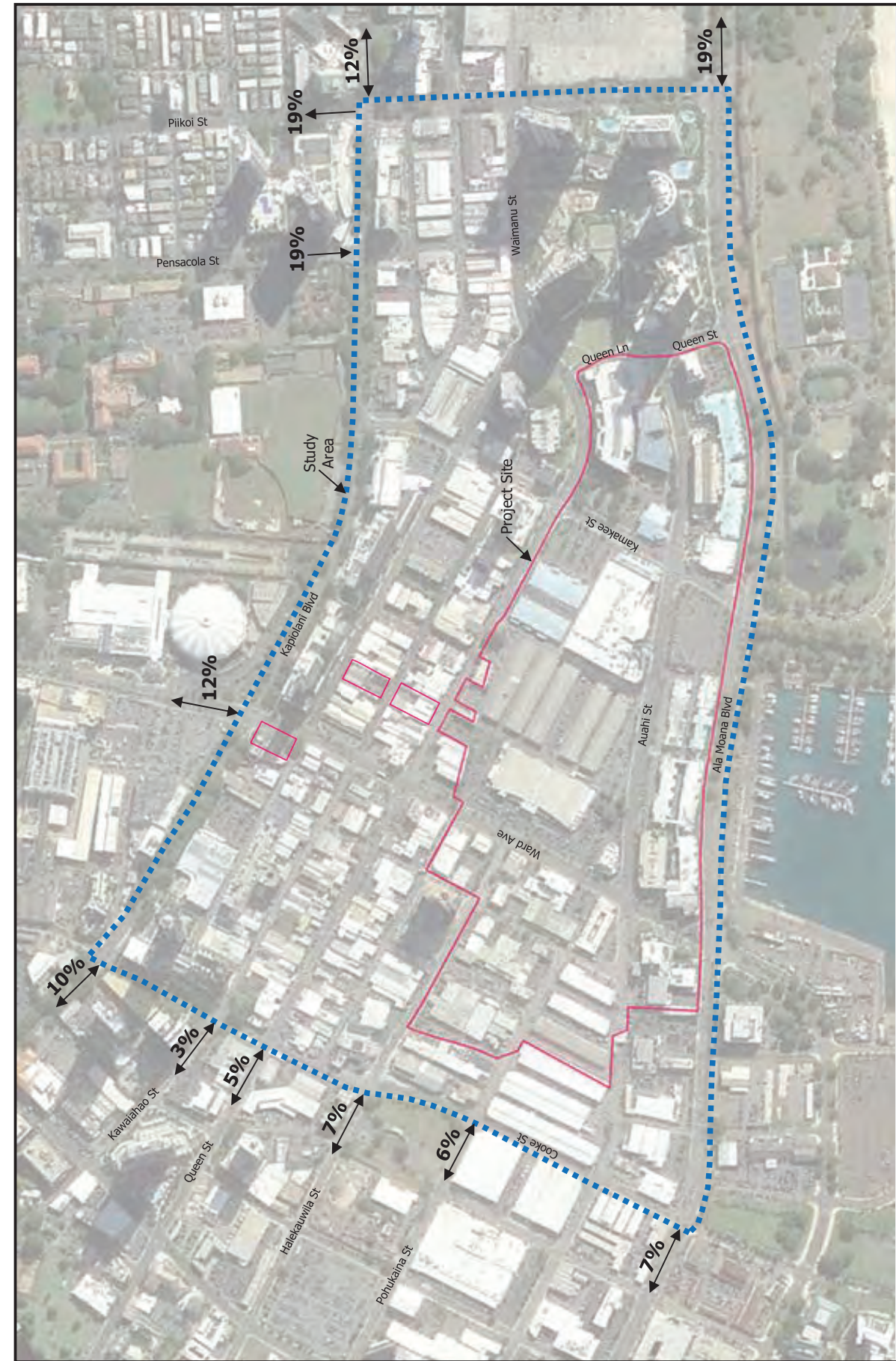
anticipated development in the vicinity of the project, a growth rate of approximately 1.5% growth rate per year was assumed in the vicinity of the project. This is generally in line with OMPO’s forecasting model which estimates population growth to be relatively linear to the Year 2035. As such, a growth factor was determined for Year 2028 and applied to the baseline through traffic demands along the regional roadways in the project vicinity. Figures 6 to 8 show the trip distribution percentages and the distribution of site-generated traffic during the AM and PM peak periods based on the OMPO model. The trips associated with the proposed project were distributed at the study intersections based on their assumed origin/destination, allowed turning movements, and the relative convenience of the available routes.

B. Other Considerations

The City and County of Honolulu is currently developing a fixed guideway transit system that is planned to extend from Kapolei to the central Honolulu area thereby providing an alternate mode of travel through the Kakaako area. The proposed Honolulu High-Capacity Transit Corridor Project is intended to increase east-west mobility on Oahu’s most heavily congested corridor. In the vicinity of the Ward Village development, the guideway alignment is expected to run along Halekauwila Street, cross over to Queen Street, and then follow that roadway to Waimanu Street. However, on September 30, 2022, the Honolulu Authority for Rapid Transit (HART) announced the Federal Transit Administration (FTA) approved HART’s 2022 Recovery Plan, which proposed a truncated project scope with an interim terminus at the Civic Center, located at the intersection of Halekauwila Street and South Street. HART further announced that it remains committed to completing the full scope of the project to the Ala Moana Transit Center in a subsequent phase. Because the timing of the subsequent phase was not announced, the rail project was not incorporated into baseline or projected conditions.

C. Total Traffic Volumes Without Project

The projected Year 2028 AM and PM peak period traffic volumes and operating conditions without the Block N West development are shown in Figures 9 and 10 and summarized in Table 3. The analysis incorporates the trips associated

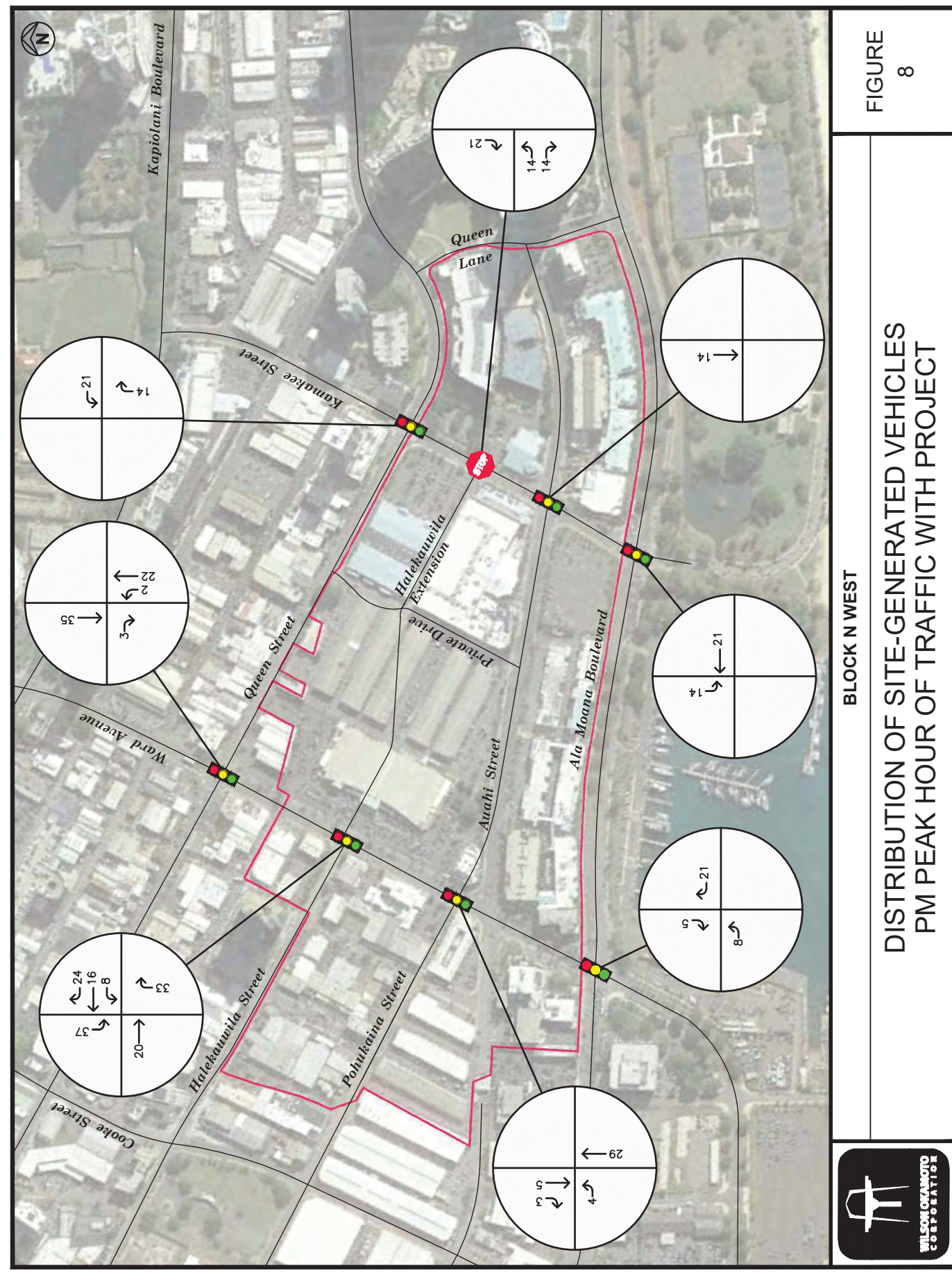
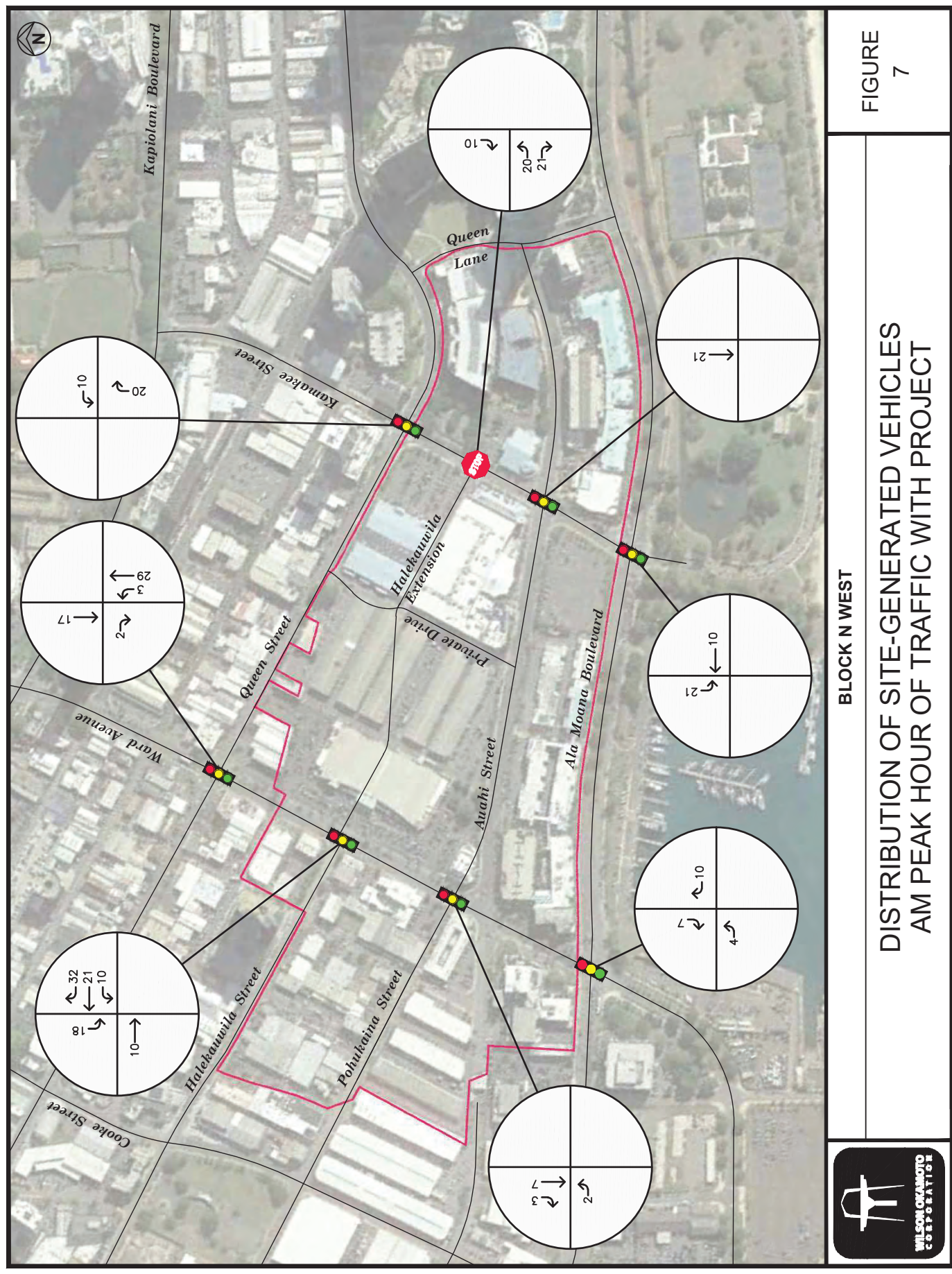


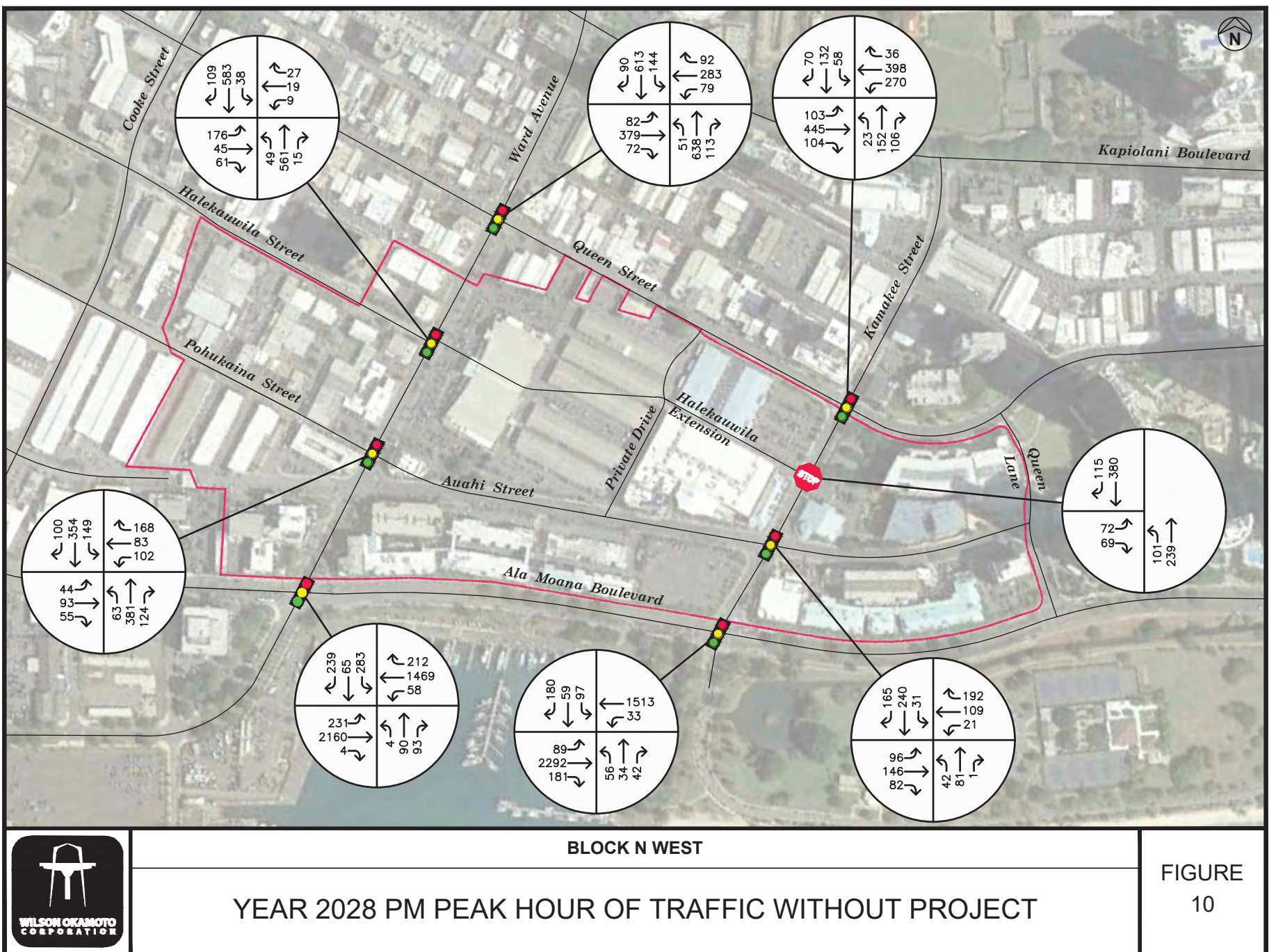
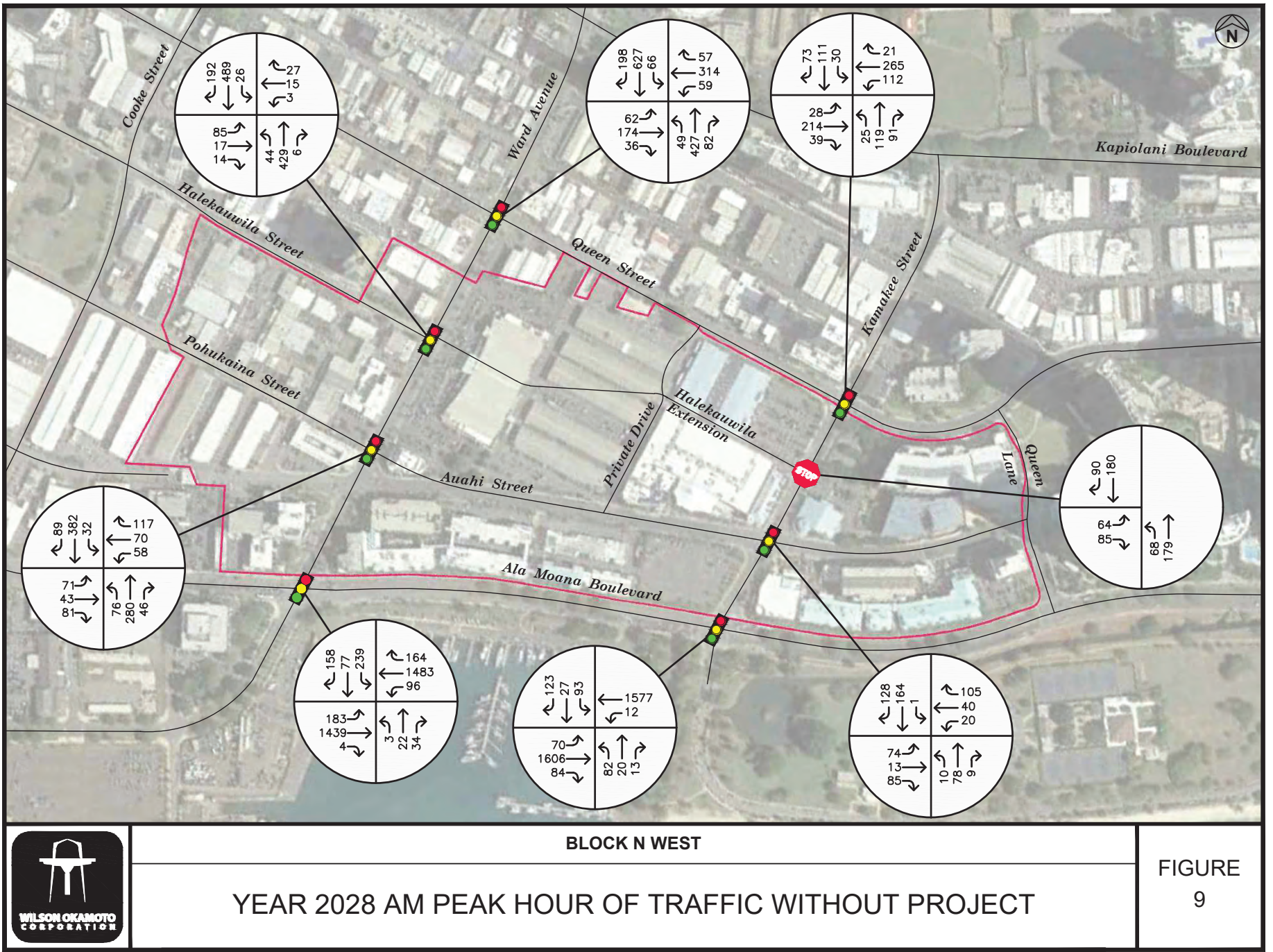
BLOCK N WEST

DISTRIBUTION OF EXTERNAL SITE-GENERATED TRIPS

FIGURE 6







with the development of other projects in the area including Phases 1 to 4 of the Ward Villages Master Plan, Blocks I and G of the KKMP, and the anticipated ambient growth in traffic in the vicinity. In addition, the analysis also incorporates the aforementioned roadway improvements along Auahi Street and Halekauwila Street. The baseline levels of service are provided for comparison purposes. LOS calculations are included in Appendix E.

Table 3: Baseline and Projected Year 2028 (Without Project) LOS Traffic Operating Conditions

| Intersection | Approach/ Critical Movement | AM | | PM | |
|--|--------------------------------|------------|----------------------|------------|----------------------|
| | | Base-line* | Year 2028 w/out Proj | Base-line* | Year 2028 w/out Proj |
| Ward Ave/ Queen St | Eastbound | B | B | C | C |
| | Westbound | C | C | C | C |
| | Northbound | B | B | C | C |
| | Southbound | B | B | B | B |
| Queen St/ Kamakee St | Eastbound | B | B | C | C |
| | Westbound | A | A | B | B |
| | Northbound | B | B | C | C |
| | Southbound | B | B | C | C |
| Ward Ave/ Halekauwila St | Eastbound | B | B | B | B |
| | Westbound | B | B | A | A |
| | Northbound | A | A | B | B |
| | Southbound | A | A | B | B |
| Kamakee St/ Halekauwila Ext | Eastbound | B | B | C | C |
| Ward Ave/ Auahi St/ Pohukaina St | Eastbound | B | B | B | B |
| | Westbound | B | B | B | B |
| | Northbound | A | A | B | B |
| | Southbound | A | A | B | B |
| Kamakee St/ Auahi St | Eastbound | B | B | C | C |
| | Westbound | B | B | B | B |
| | Northbound | B | B | B | B |
| | Southbound | B | B | B | B |

*Year 2027 conditions which incorporate the completion of Phases 1 to 4 of the Ward Villages Master Plan.

Table 3: Baseline and Projected Year 2028 (Without Project) LOS Traffic Operating Conditions (Cont'd)

| Intersection | Approach/ Critical Movement | AM | | PM | |
|-------------------------------|--------------------------------|------------|----------------------|------------|----------------------|
| | | Base-line* | Year 2028 w/out Proj | Base-line* | Year 2028 w/out Proj |
| Ala Moana Blvd/ Ward Ave | Eastbound | D | D | E | E |
| | Westbound | D | D | E | E |
| | Northbound | D | D | D | D |
| | Southbound | D | D | E | E |
| Ala Moana Blvd/ Kamakee St | Eastbound | B | B | C | C |
| | Westbound | B | B | B | B |
| | Northbound | C | C | D | D |
| | Southbound | C | C | D | D |

*Year 2027 conditions which incorporate the completion of Phases 1 to 4 of the Ward Villages Master Plan.

Traffic operations under Year 2028 without project conditions are generally expected to remain similar to baseline conditions. Along Ward Avenue, traffic operations at Queen Street are expected to continue operating at LOS “C” or better during both peak periods, whereas those at Ala Moana Boulevard are expected to continue operating at LOS “D” and LOS “E” or better during the AM and PM peak periods, respectively. As previously discussed, the high volume of conflicting traffic and the split phasing of the northbound and southbound approaches influence the low levels of service at this intersection. Along Kamakee Street, the approaches at the intersection with Queen Street are anticipated to continue operating at LOS “B” and LOS “C” or better during the AM and PM peak periods, respectively, while those at Ala Moana Boulevard are expected to continue operating at LOS “C” or better and LOS “D” or better during the AM and PM peak periods, respectively. The remaining study intersections are also expected to continue operating similar to baseline conditions.

D. Total Traffic Volumes With Project

Figures 11 and 12 show the Year 2028 cumulative AM and PM peak hour traffic conditions resulting from the completion of the Block N West development. The cumulative volumes consist of site-generated traffic superimposed over Year

2028 projected traffic demands. The traffic impacts resulting from the proposed project are addressed in the following section.

V. TRAFFIC IMPACT ANALYSIS

The Year 2028 cumulative AM and PM peak hour traffic conditions with the completion of the Block N West development are shown on Figures 11 and 12 and summarized in Table 4. The projected Year 2028 (Without Project) operating conditions are provided for comparison purposes. LOS calculations are included in Appendix G.

Table 4: Projected Year 2028 (Without and With Project) LOS Traffic Operating Conditions

| Intersection | Approach/ Critical Movement | AM | | PM | |
|--|--------------------------------|------------|---------|------------|---------|
| | | Year 2028 | | Year 2028 | |
| | | w/out Proj | w/ Proj | w/out Proj | w/ Proj |
| Ward Ave/ Queen St | Eastbound | B | B | C | C |
| | Westbound | C | C | C | C |
| | Northbound | B | B | C | C |
| | Southbound | B | B | B | B |
| Queen St/ Kamakee St | Eastbound | B | B | C | C |
| | Westbound | A | B | B | B |
| | Northbound | B | B | C | C |
| | Southbound | B | B | C | C |
| Ward Ave/ Halekauwila St | Eastbound | B | B | B | B |
| | Westbound | B | B | A | A |
| | Northbound | A | A | B | B |
| | Southbound | A | A | B | B |
| Kamakee St/ Halekauwila Ext | Eastbound | B | B | C | D |
| Ward Ave/ Auahi St/ Pohukaina St | Eastbound | B | B | B | B |
| | Westbound | B | B | B | B |
| | Northbound | A | A | B | B |
| | Southbound | A | A | B | B |
| Kamakee St/ Auahi St | Eastbound | B | B | C | C |
| | Westbound | B | B | B | B |
| | Northbound | B | B | B | B |
| | Southbound | B | B | B | C |

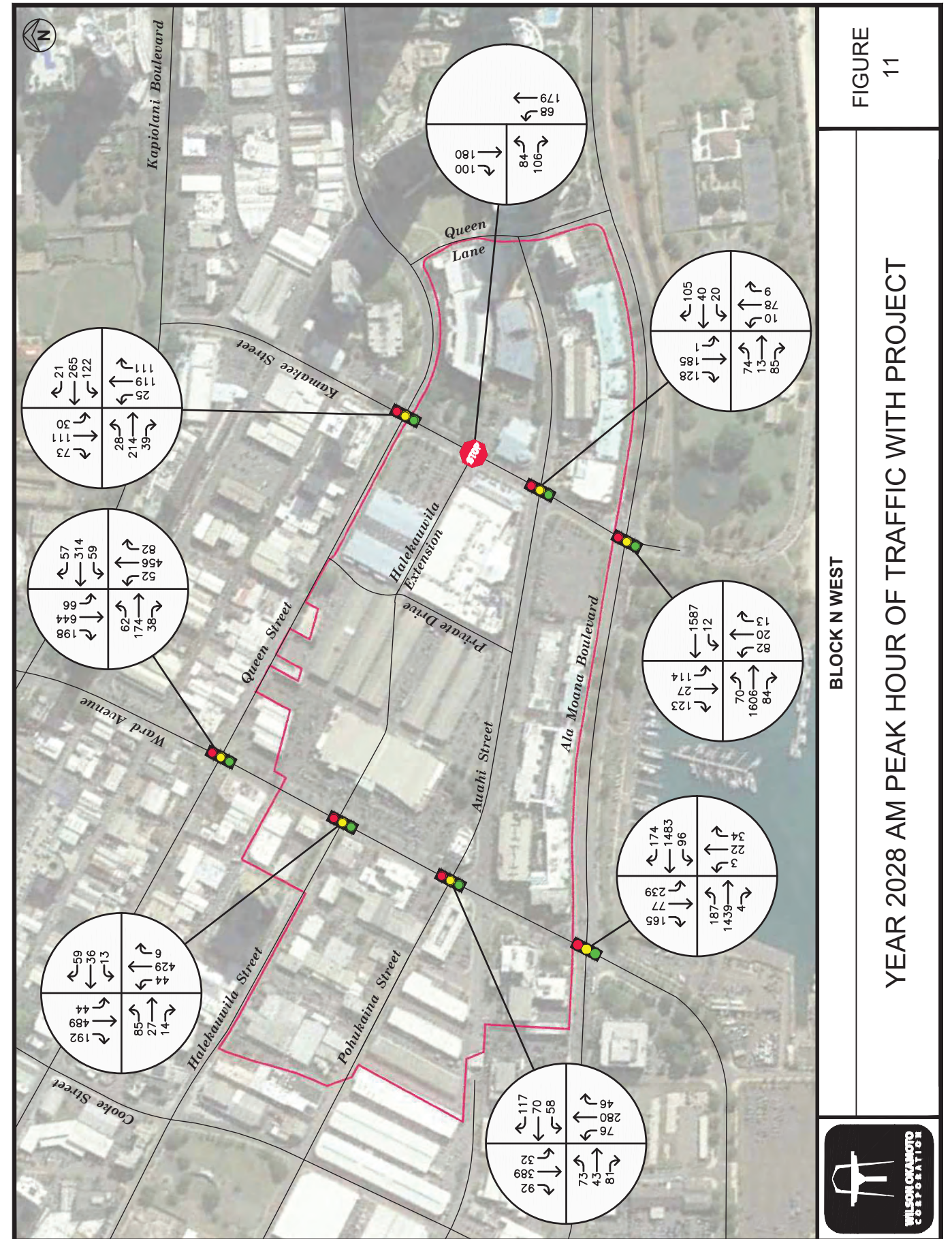


FIGURE 11

YEAR 2028 AM PEAK HOUR OF TRAFFIC WITH PROJECT

BLOCK N WEST



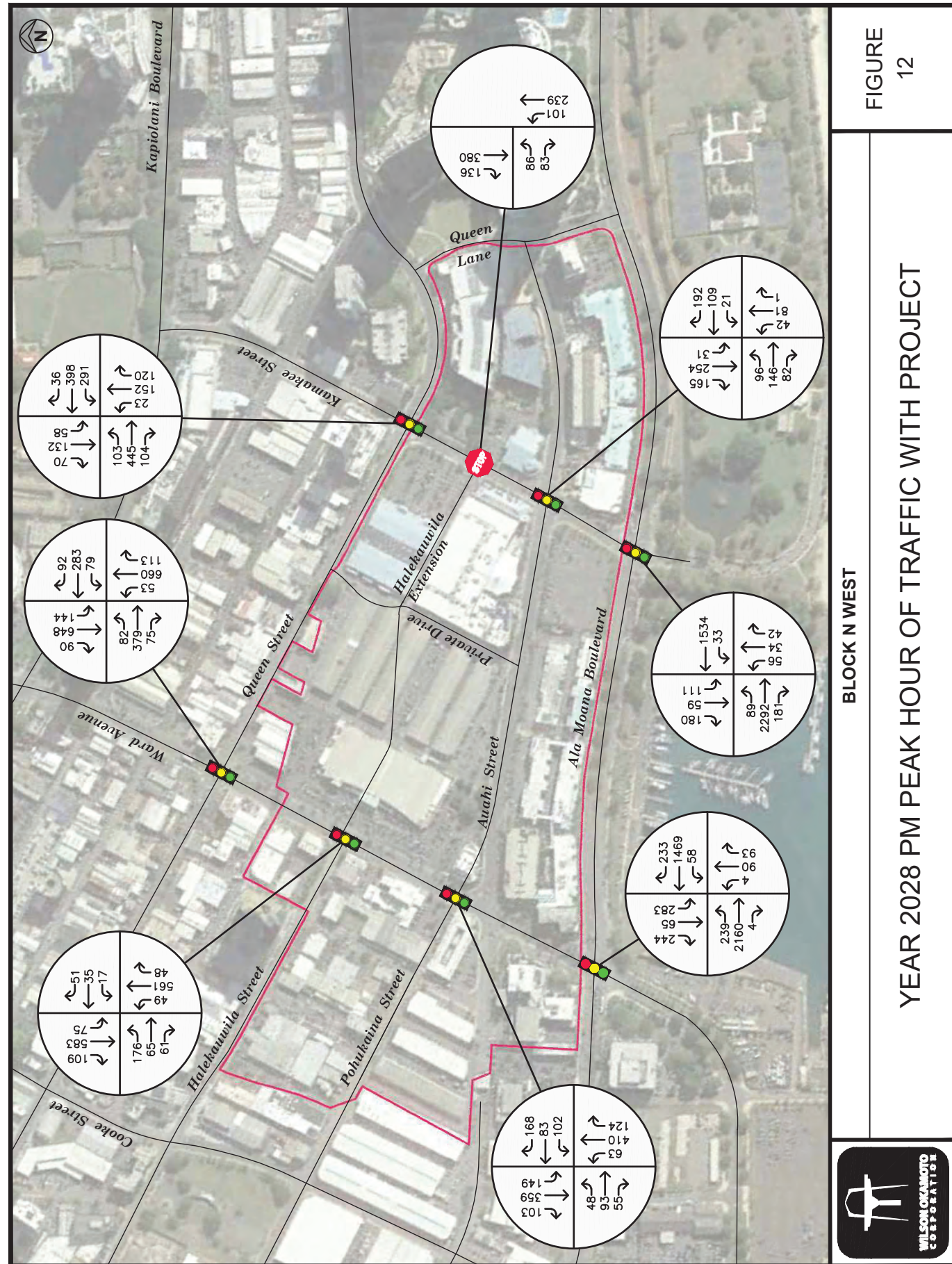


Table 4: Projected Year 2028 (Without and With Project) LOS Traffic Operating Conditions (Cont'd)

| Intersection | Approach/ Critical Movement | AM | | PM | |
|-------------------------------|--------------------------------|---------------|------------|---------------|------------|
| | | Year 2028 | | Year 2028 | |
| | | w/out Proj | w/ Proj | w/out Proj | w/ Proj |
| Ala Moana Blvd/ Ward Ave | Eastbound | D | D | E | E |
| | Westbound | D | D | E | E |
| | Northbound | D | D | D | D |
| | Southbound | D | D | E | E |
| Ala Moana Blvd/ Kamakee St | Eastbound | B | B | C | C |
| | Westbound | B | B | B | B |
| | Northbound | C | C | D | D |
| | Southbound | C | C | D | D |

Traffic operations under Year 2028 with project conditions are generally expected to remain similar to without project conditions despite the addition of site-generated vehicles to the surrounding roadways. Along Queen Street, traffic operations at the intersection with Ward Avenue are expected to continue operating at LOS “C” or better during both peak periods, while those at the intersection with Kamakee Street are expected to continue operating at LOS “B” during the AM peak period and LOS “C” or better during the PM peak period. Along Auahi Street, traffic operations at the intersection with Ward Ave are expected to continue operating at LOS “B” during both peak periods, while those at the intersection with Kamakee Street are expected to continue operating at LOS “B” during the AM peak period and LOS “C” or better during the PM peak period. Traffic operations at the remaining study intersections are also anticipated to continue operating at levels of service similar to without project conditions.

VI. MULTIMODAL FACILITIES

A. Pedestrian Facilities

1. Existing Conditions

Improved pedestrian facilities such as sidewalks and crosswalks are currently provided along the roadways adjacent to the project site including Ward Avenue and Halekauwila Street, as well as further east and south along Kamakee Street and Auahi Street. It should be noted that a rectangular rapid

flashing beacon (RRFB) was also previously installed at the intersection of Kamakee Street with the Halekauwila Extension to facilitate pedestrian crossings at this midblock location. Pedestrian facilities north of the project site along Queen Street are, however, currently limited with sidewalks only provided on the south side of the roadway east of Cummins Street. The shoulder areas west of Cummins Street are generally unimproved with pedestrians observed to occasionally utilize the vehicle travel way due to the presence of perpendicular on-street parking along this roadway.

2. Projected Conditions

Existing pedestrian facilities along the adjacent roadways are generally expected to be improved/maintained with the proposed project. The project frontage along Halekauwila Extension is expected to incorporate sidewalks and landscaping treatments consistent with the already constructed segments of the Halekauwila Extension east of Ward Avenue. In addition, the proposed project is also located in close proximity to the Victoria Ward Mauka/Makai Parks, which will include a north-south pedestrian route extending from Halekauwila Street to Ala Moana Boulevard and the future Ala Moana Pedestrian Bridge.

B. Bicycle Facilities

1. Existing Facilities

A number of bicycle parking areas are currently provided throughout Ward Village. In addition, the proposed Block N West development is located within close proximity to a number of BIKI bikeshare facilities, which are operated by Bikeshare Hawaii. The nearest BIKI station to the project site is located near the intersection of Ward Avenue and Halekauwila Street with additional bike share stations located near the intersections of Halekauwila Extension with Robinson Lane and Kamakee Street with Queen Street.

Bicycle facilities, which generally consist of shared-use paths, bike lanes, protected bike lanes, or shared roadways with pavement markings called sharrows, are also provided in the vicinity of the project. Existing bike

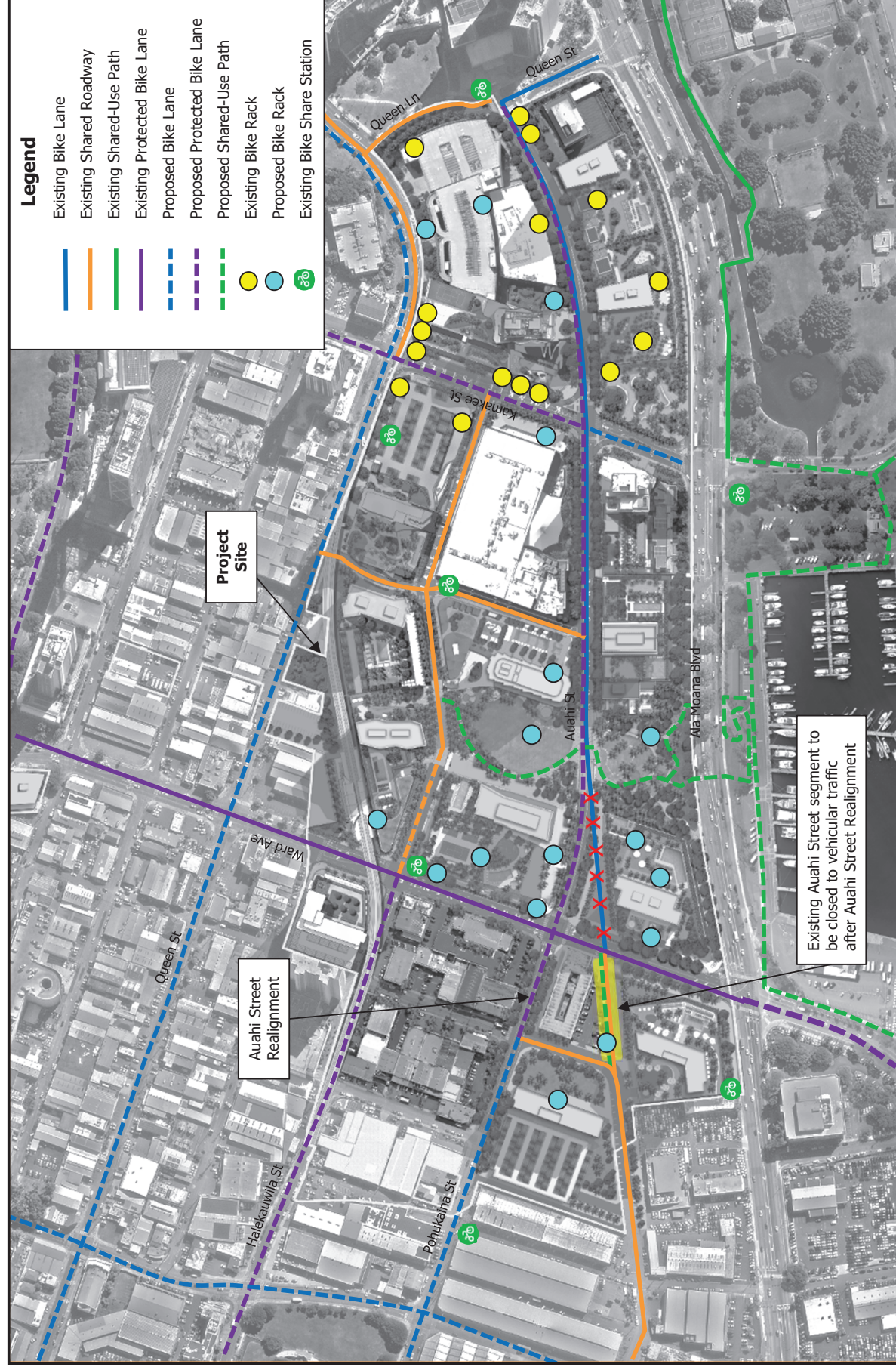
facilities currently include designated bike lanes along Auahi Street between Ward Avenue and Queen Street (one lane on each side of the roadway), a bike route along Queen Street east of Kamakee Street, and buffered bike lanes along Ward Avenue between Ala Moana Boulevard and South King Street. Figure 13 depicts the existing bicycle facilities in the vicinity of the proposed project.

2. Bicycle Level of Traffic Stress

Bicycle Level of Traffic Stress (LTS) is a metric developed by the Mineta Transportation Institute used to classify a roadway segment or intersection. The LTS ranking system is based on the amount of traffic stress imposed on cyclists based on variables such as street width, prevailing vehicle speed, and average daily traffic volumes. The Level of Traffic Stress ranges from 1 to 4 and can be assessed for a given segment or intersection via six tables provided by the Mineta Transportation Institute. The general descriptions of the LTS levels are as follows:

- LTS 1: Characterized by strong separation from all except low speed, low volume traffic. Simple crossings. Suitable for children.
- LTS 2: Except in low speed/low volume traffic situations, cyclists have their own place to ride that keeps them from having to interact with traffic except at formal crossings. There is a physical separation from higher speed and multilane traffic. Crossings are easy for an adult to navigate. This refers to a level of traffic stress that most adults can tolerate, particularly those sometimes classified as interested but concerned.
- LTS 3: Involves interaction with moderate speed or multilane traffic, or close proximity to higher speed traffic. Refers to a level of traffic stress acceptable to those classified as enthused and confident.
- LTS 4: Involves interaction with higher speed traffic or close proximity to high speed traffic. Refers to a level of stress acceptable only to those classified as strong and fearless.

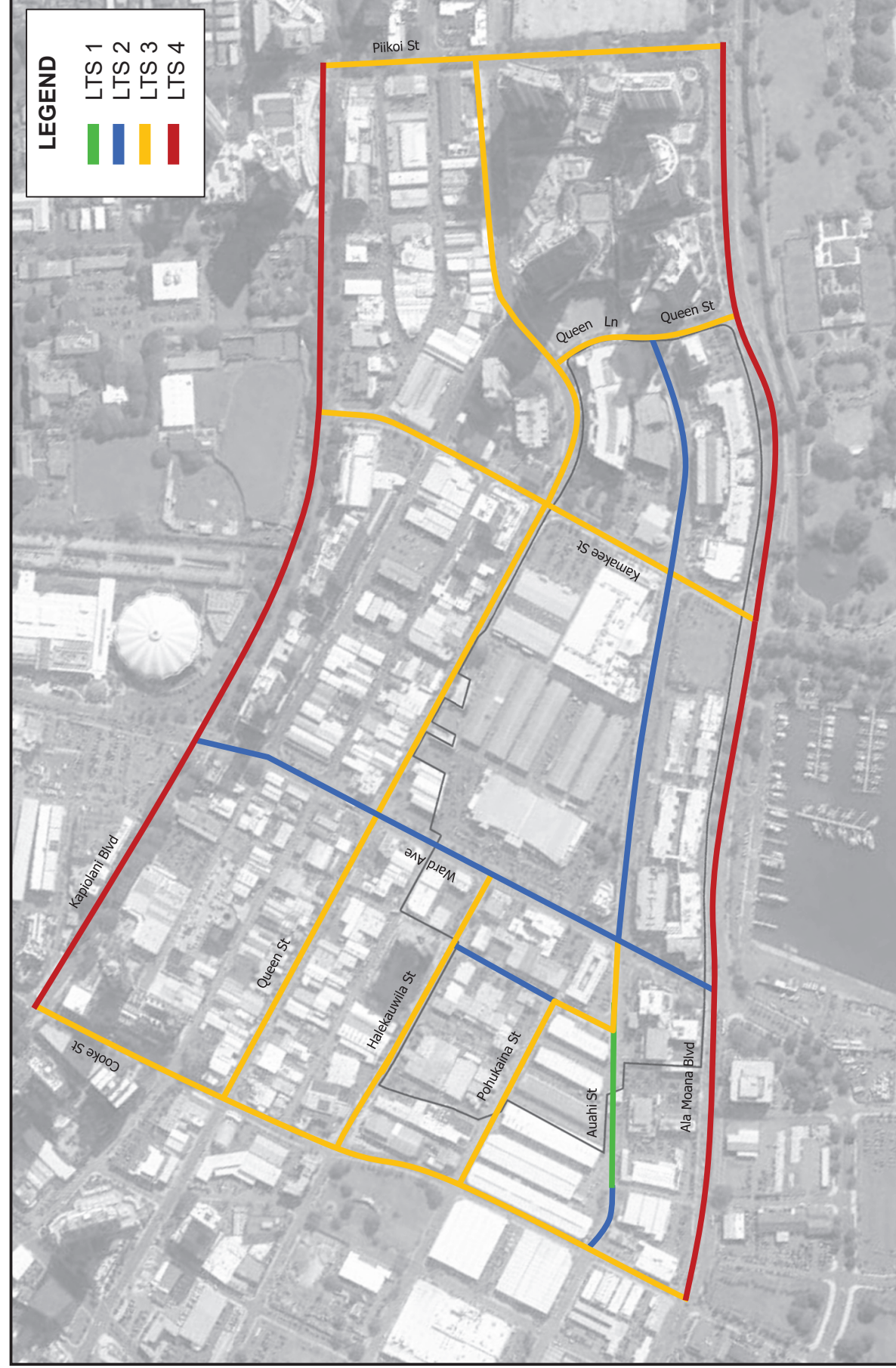
It should be noted that current LTS methodology assumes no traffic stress is imposed on cyclists at signalized intersections. Guidance provided by the Mineta Transportation Institute includes categorizing signalized intersections as LTS 2. The LTS of the roadways in the vicinity of the proposed Block A development are depicted in Figure 14. As shown in



BLOCK N WEST

EXISTING AND PROPOSED BIKE FACILITIES

FIGURE 13



BLOCK N WEST

EXISTING BICYCLE LEVEL OF TRAFFIC STRESS

FIGURE 14

Figure 14, Ward Avenue is rated at LTS 2 due to the provision of buffered bike lanes along this roadway while Auahi Street is currently rated LTS 3. Based on the LTS ranking system, the level of traffic stress for bikes in mixed traffic increases with traffic speed and the number of lanes. Although the prevailing speeds along this roadway is within 5 miles of the posted speed limit of 25 miles per hour (mph), Auahi Street is currently comprised of 2 lanes or more with average daily traffic volumes that are greater than 3,000 vehicles per day, and as such, rated LTS 3.

3. Projected Conditions

The proposed project is expected to provide bicycle facilities on-site. These facilities are expected to include short- and long-term facilities for residents, guests, and employees to encourage the use of alternate modes of transportation. In addition, there are also future bike improvements planned as part of the overall Ward Village Master Plan to enhance bicycle connectivity within the area as well to the surrounding uses. In conjunction with the Auahi Street Promenade project, the roadway is expected to be converted to a 2-lane roadway to accommodate enhanced multimodal facilities with additional pavement striping installed to provide buffered bike lanes resulting in additional separation between bicyclists and vehicles. This project is expected to be completed by Year 2026.

There are also other bicycle improvements planned by the City and County of Honolulu Department Transportation Services (CCH-DTS) in the vicinity of the project as included in the Oahu Bike Plan (Updated 2019).

These include the following:

- Bike lanes along Ala Moana Boulevard between Nimitz Highway and Kalakaua Avenue
- Bike lanes along Kamakee Street between Auahi Street and Ala Moana Boulevard
- Protected bike lanes along Halekauwila Street between Ala Moana Boulevard and Ward Avenue

Figure 13 depicts the future bicycle facilities in the vicinity of the project. The addition of the aforementioned bicycle facilities are expected to improve

the level of traffic stress along the roadways in the project vicinity and increase bicycle connectivity; however, the time for these improvements are not known at this time.

C. Transit Facilities

1. Existing Conditions

Public transportation services in the vicinity of the project are provided by the City and County of Honolulu. These services currently consist of fixed route bus services, as well as door-to-door services for people who have difficulty accessing the fixed route services (HandiVan). The fixed route bus services in the project vicinity consist of regional routes along Ala Moana Boulevard and Kapiolani Boulevard and supplemented by local routes along Auahi Street and Queen Street. There are approximately 11 transit stops that are served by 15 bus routes within a quarter mile radius of the proposed project (see Figure 15). In addition to fixed bus routes, the project vicinity is also served by a number of trolley companies including Waikiki Trolley.

2. Transit Capacity and Quality of Service Manual (TCQSM)

Transit Capacity and Quality of Service is a metric used to measure transit availability, comfort, and convenience from both the passenger and transit service provider's points of view. The framework for this metric is outlined in the Transit Cooperative Research Program (TCRP) Report 165: Transit Capacity and Quality of Service Manual, 3rd Edition (TCQSM) published in 2013 which provides research-based guidance on public transit capacity and quality of service. The quality of service concepts and methods contained in the TCQSM address real-world transit operations, comprehensive planning, and design needs.

The research for and development of the TCQSM has also directly supported the development of the Multimodal Level of Service (LOS) analysis methodologies introduced in the Highway Capacity Manual (HCM) 2010 and subsequently refined in HCM 6. Multimodal LOS analyzes a roadway corridor comprised of street segments which are defined as a length of street between intersections where traffic may have to stop due to traffic control.

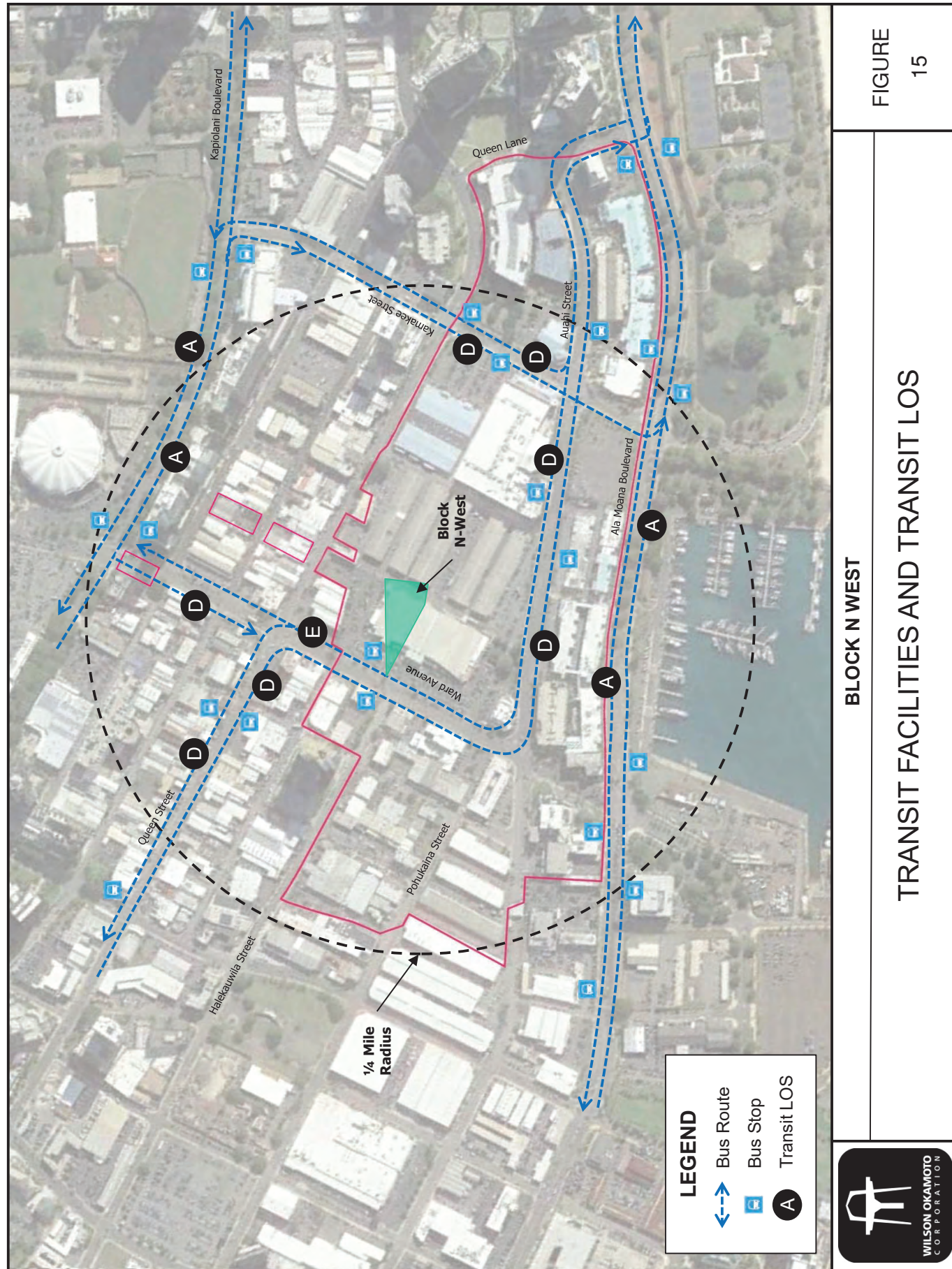


FIGURE 15

BLOCK N WEST
TRANSIT FACILITIES AND TRANSIT LOS

Transit LOS can be directly compared to other transportation modes with LOS “A” representing the best quality of service and the letter “F” used to represent the worst quality of service. The assessment evaluates the quality of transit operations incorporating factors that bear all aspect of a transit trip including the pedestrian environment along the street, service frequency and reliability, and the availability of transit amenities at those stop locations.

3. Transit Level of Service

Figure 15 summarizes the existing transit LOS for the transit facilities within a quarter-mile radius of the project site. Transit LOS calculations are included in Appendix G. In general, there is good transit quality of service in the project vicinity. The project vicinity is served by a number of transit facilities that provide connections to local and regional bus routes with headways of 1 hour or less. Pedestrian facilities such as sidewalks and crosswalks facilitate access to and from these bus stop locations.

4. Projected Conditions

Modifications to the existing bus stops in the vicinity of Block N West are expected under projected conditions. In conjunction with the planned improvements along Auahi Street, the existing bus stops will be relocated to facilitate access to future planned developments within the Ward Village with additional bus stops provided to further enhance convenient access to transit. West of Kamakee Street, the existing bus stops north and south of the roadway near the Ward Entertainment Center are expected to be relocated further west near the Park Ward Village development and the Victoria Ward Mauka and Makai Parks. All bus and trolley stops along Auahi Street will be modified to include bus/trolley pull-in areas to facilitate through traffic along the roadway. Along Ward Avenue, the existing bus stop at Halekaiwila Street on the east side of the roadway is also expected to be relocated slightly south near the future the Park Ward Village development.

In addition, the City and County of Honolulu is currently developing a fixed guideway transit system that will extend from Kapolei to the central Honolulu area thereby providing an alternate mode of travel through the

Kakaako area. In the vicinity of the project, the guideway alignment was originally expected to run along Halekauwila Street, cross over to Queen Street, and then follow that roadway to Waimanu Street. However, based on recent discussions about the project, a truncated project scope is now expected with an interim terminus at the Civic Center west of the Ward Village development. It should be noted that HART remains committed to completing the full scope of the project to the Ala Moana Transit Center in a subsequent phase, but the timing of the subsequent phase is unknown at this time. As such, this project was not incorporated into projected conditions.

VII. RECOMMENDATIONS

Based on the analysis of the traffic data, the following are the recommendations of this study to be incorporated in the project design.

1. Provide sufficient sight distance for motorists to safely enter and exit the project driveway to ensure visibility between pedestrians, bicyclists, motorists, or other users at these conflict points. It should be noted that there is a planned pullout along the opposite side of Halekauwila Street offset from the proposed residential driveway for Block N West, as well as a marked pedestrian crossing slightly east of the project site.
2. Provide adequate on-site loading and off-loading service areas to accommodate all anticipated vehicle types and prohibit off-site loading operations.
3. Provide adequate turn-around areas for service, delivery, and refuse collection vehicles to maneuver on-site and prohibit vehicle-reversing maneuvers onto public roadways.
4. Provide sufficient turning radii at all project driveways to avoid or minimize vehicle encroachments to oncoming traffic lanes.
5. If access at the entrances to the parking areas are controlled, provide sufficient storage for entering vehicles at the parking area access controls (i.e. automatic gate, etc.) to ensure that queues do not extend onto the adjacent roadway. The layout and dimensions shall be determined during the design phase.
6. Provide bicycle facilities within the project boundaries including designated and secured bicycle parking to encourage the use of this alternative mode of transportation. Access to these facilities should be safe, convenient, and clearly delineated, especially within the designated parking areas where conflicts with vehicular traffic are expected.

7. Update the study should development phasing, land use intensity, or land use mix change.
8. Continue to develop and/or enhance bicycle and pedestrian facilities, as well as public transportation services in the project vicinity as described in the "Transportation Master Plan and Assessment for the Ward Village Master Plan," dated October 2022.
9. Coordinate the management of Block N West with those discussed in the Ward Village TMP including the overall Transportation Demand Management (TDM) Plan.

VIII. CONCLUSION

The overall Ward Village Master Plan is expected to be implemented in five (5) phases over a span of 10-15 years and entail the redevelopment of most of the existing commercial, office, and industrial spaces. Block N West is a part of Phase 5 of the master plan which is expected to include residential, retail, and restaurant uses. With the implementation of the aforementioned recommendations, traffic operations with the Block N West development are generally expected to remain similar to without project conditions. In addition, Victoria Ward Limited continues to work with the City and County of Honolulu to incorporate bicycle and enhanced pedestrian facilities into the development plans for the Ward Villages project to encourage alternative modes of travel and further minimize the impact of the proposed project to the surrounding roadways. However, since the Ward Village Master Plan is expected to be developed in phases over a period of 10+ years, it is recommended that Traffic Impact Analysis Reports (TIARs) continue to be prepared for each phase of the project to verify future conditions and ensure necessary mitigation measures are implemented.

APPENDIX A
TRAFFIC COUNT DATA

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By: AH, GH
Counters: D4-3889, D4-5674
Weather: CLEAR

File Name : WAR QUE AM
Site Code : 00000001
Start Date : 3/7/2018
Page No : 1

Groups Printed- Unshifted

| Start Time | Ward Avenue Southbound | | | | | Queen Street Westbound | | | | | Ward Avenue Northbound | | | | | Queen Street Eastbound | | | | | Int. Total |
|--------------------|------------------------|-------------|-------------|------------|-------------|------------------------|-------------|------------|-------------|-------------|------------------------|-------------|------------|------------|-------------|------------------------|-------------|-------------|-------------|-------------|-------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 06:00 AM | 4 | 131 | 18 | 0 | 153 | 1 | 14 | 1 | 6 | 22 | 5 | 21 | 3 | 1 | 30 | 5 | 9 | 10 | 6 | 30 | 235 |
| 06:15 AM | 7 | 141 | 21 | 3 | 172 | 1 | 9 | 5 | 6 | 21 | 4 | 37 | 2 | 1 | 44 | 6 | 10 | 9 | 4 | 29 | 266 |
| 06:30 AM | 3 | 132 | 28 | 0 | 163 | 7 | 25 | 2 | 6 | 40 | 10 | 39 | 6 | 1 | 56 | 8 | 19 | 15 | 6 | 48 | 307 |
| 06:45 AM | 8 | 157 | 31 | 3 | 199 | 8 | 25 | 4 | 1 | 38 | 10 | 65 | 2 | 2 | 79 | 8 | 22 | 9 | 5 | 44 | 360 |
| Total | 22 | 561 | 98 | 6 | 687 | 17 | 73 | 12 | 19 | 121 | 29 | 162 | 13 | 5 | 209 | 27 | 60 | 43 | 21 | 151 | 1168 |
| 07:00 AM | 7 | 138 | 47 | 5 | 197 | 7 | 37 | 9 | 11 | 64 | 7 | 81 | 11 | 0 | 99 | 19 | 17 | 7 | 12 | 55 | 415 |
| 07:15 AM | 9 | 142 | 66 | 2 | 219 | 10 | 52 | 3 | 11 | 76 | 17 | 94 | 5 | 1 | 117 | 10 | 24 | 13 | 7 | 54 | 466 |
| 07:30 AM | 4 | 171 | 56 | 4 | 235 | 17 | 63 | 0 | 13 | 93 | 11 | 97 | 4 | 8 | 120 | 9 | 24 | 15 | 11 | 59 | 507 |
| 07:45 AM | 11 | 166 | 50 | 1 | 228 | 13 | 80 | 8 | 11 | 112 | 16 | 97 | 11 | 2 | 126 | 17 | 29 | 18 | 6 | 70 | 536 |
| Total | 31 | 617 | 219 | 12 | 879 | 47 | 232 | 20 | 46 | 345 | 51 | 369 | 31 | 11 | 462 | 55 | 94 | 53 | 36 | 238 | 1924 |
| 08:00 AM | 7 | 166 | 73 | 5 | 251 | 12 | 70 | 8 | 8 | 98 | 11 | 86 | 7 | 2 | 106 | 14 | 30 | 11 | 8 | 63 | 518 |
| 08:15 AM | 11 | 150 | 50 | 5 | 216 | 7 | 63 | 12 | 8 | 90 | 9 | 108 | 14 | 3 | 134 | 10 | 42 | 14 | 5 | 71 | 511 |
| 08:30 AM | 7 | 138 | 34 | 1 | 180 | 9 | 36 | 9 | 2 | 56 | 21 | 97 | 7 | 4 | 129 | 18 | 33 | 22 | 4 | 77 | 442 |
| 08:45 AM | 11 | 170 | 58 | 2 | 241 | 7 | 34 | 5 | 10 | 56 | 9 | 103 | 8 | 5 | 125 | 26 | 32 | 19 | 9 | 86 | 508 |
| Total | 36 | 624 | 215 | 13 | 888 | 35 | 203 | 34 | 28 | 300 | 50 | 394 | 36 | 14 | 494 | 68 | 137 | 66 | 26 | 297 | 1979 |
| Grand Total | 89 | 1802 | 532 | 31 | 2454 | 99 | 508 | 66 | 93 | 766 | 130 | 925 | 80 | 30 | 1165 | 150 | 291 | 162 | 83 | 686 | 5071 |
| Apprch % | 3.6 | 73.4 | 21.7 | 1.3 | | 12.9 | 66.3 | 8.6 | 12.1 | | 11.2 | 79.4 | 6.9 | 2.6 | | 21.9 | 42.4 | 23.6 | 12.1 | | |
| Total % | 1.8 | 35.5 | 10.5 | 0.6 | 48.4 | 2 | 10 | 1.3 | 1.8 | 15.1 | 2.6 | 18.2 | 1.6 | 0.6 | 23 | 3 | 5.7 | 3.2 | 1.6 | 13.5 | |

| Start Time | Ward Avenue Southbound | | | | Queen Street Westbound | | | | Ward Avenue Northbound | | | | Queen Street Eastbound | | | | Int. Total |
|--|------------------------|-------------|-------------|-------------|------------------------|-------------|-------------|-------------|------------------------|-------------|-------------|-------------|------------------------|-------------|-------------|-------------|-------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | |
| 07:30 AM | 4 | 171 | 56 | 231 | 17 | 63 | 0 | 80 | 11 | 97 | 4 | 112 | 9 | 24 | 15 | 48 | 471 |
| 07:45 AM | 11 | 166 | 50 | 227 | 13 | 80 | 8 | 101 | 16 | 97 | 11 | 124 | 17 | 29 | 18 | 64 | 516 |
| 08:00 AM | 7 | 166 | 73 | 246 | 12 | 70 | 8 | 90 | 11 | 86 | 7 | 104 | 14 | 30 | 11 | 55 | 495 |
| 08:15 AM | 11 | 150 | 50 | 211 | 7 | 63 | 12 | 82 | 9 | 108 | 14 | 131 | 10 | 42 | 14 | 66 | 490 |
| Total Volume | 33 | 653 | 229 | 915 | 49 | 276 | 28 | 353 | 47 | 388 | 36 | 471 | 50 | 125 | 58 | 233 | 1972 |
| % App. Total | 3.6 | 71.4 | 25 | | 13.9 | 78.2 | 7.9 | | 10 | 82.4 | 7.6 | | 21.5 | 53.6 | 24.9 | | |
| PHF | .750 | .955 | .784 | .930 | .721 | .863 | .583 | .874 | .734 | .898 | .643 | .899 | .735 | .744 | .806 | .883 | .955 |

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By: DY, HM
Counters: D4-3890, D4-5671
Weather: CLEAR

File Name : ALA WAR PM
Site Code : 00000004
Start Date : 3/7/2018
Page No : 1

Groups Printed- Unshifted

Table with columns for Start Time, Ward Avenue Southbound, Ala Moana Boulevard Westbound, Ward Avenue Northbound, Ala Moana Boulevard Eastbound, and Int. Total. Rows include time intervals from 03:00 PM to 05:45 PM and a Grand Total row.

Table with columns for Start Time, Ward Avenue Southbound, Ala Moana Boulevard Westbound, Ward Avenue Northbound, Ala Moana Boulevard Eastbound, and Int. Total. Includes Peak Hour Analysis from 03:00 PM to 05:45 PM and PHF values.

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By: FS, GH
Counters: D4-5672, D4-5674
Weather: CLEAR

File Name : KAM AUA AM
Site Code : 00000001
Start Date : 3/13/2018
Page No : 1

Groups Printed- Unshifted

Table with columns for Start Time, Kamakee Street Southbound, Auahi Street Westbound, Kamakee Street Northbound, Auahi Street Eastbound, and Int. Total. Rows include time intervals from 06:00 AM to 08:45 AM and a Grand Total row.

Table with columns for Start Time, Kamakee Street Southbound, Auahi Street Westbound, Kamakee Street Northbound, Auahi Street Eastbound, and Int. Total. Includes Peak Hour Analysis from 06:00 AM to 08:45 AM and PHF values.

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By: LF
Counters: D4-5673
Weather: CLEAR

File Name : KAM MID PM
Site Code : 00000002
Start Date : 3/13/2018
Page No : 1

Groups Printed- Unshifted

| Start Time | Kamakee Street Southbound | | | | Kamakee Street Northbound | | | | Halekauwila Street Eastbound | | | | Int. Total |
|--------------------|---------------------------|------------|-----------|-------------|---------------------------|------------|-----------|------------|------------------------------|-----------|-----------|------------|-------------|
| | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Left | Right | Peds | App. Total | |
| 03:00 PM | 81 | 14 | 2 | 97 | 3 | 34 | 6 | 43 | 12 | 2 | 7 | 21 | 161 |
| 03:15 PM | 72 | 8 | 7 | 87 | 2 | 47 | 1 | 50 | 8 | 6 | 12 | 26 | 163 |
| 03:30 PM | 56 | 18 | 4 | 78 | 2 | 42 | 0 | 44 | 3 | 7 | 6 | 16 | 138 |
| 03:45 PM | 43 | 13 | 3 | 59 | 4 | 34 | 0 | 38 | 7 | 2 | 2 | 11 | 108 |
| Total | 252 | 53 | 16 | 321 | 11 | 157 | 7 | 175 | 30 | 17 | 27 | 74 | 570 |
| 04:00 PM | 58 | 14 | 9 | 81 | 4 | 40 | 0 | 44 | 9 | 5 | 8 | 22 | 147 |
| 04:15 PM | 60 | 9 | 6 | 75 | 1 | 31 | 1 | 33 | 11 | 3 | 4 | 18 | 126 |
| 04:30 PM | 72 | 11 | 5 | 88 | 4 | 29 | 1 | 34 | 9 | 7 | 4 | 20 | 142 |
| 04:45 PM | 60 | 22 | 7 | 89 | 7 | 38 | 2 | 47 | 8 | 10 | 8 | 26 | 162 |
| Total | 250 | 56 | 27 | 333 | 16 | 138 | 4 | 158 | 37 | 25 | 24 | 86 | 577 |
| 05:00 PM | 60 | 12 | 7 | 79 | 2 | 35 | 7 | 44 | 8 | 1 | 4 | 13 | 136 |
| 05:15 PM | 67 | 15 | 2 | 84 | 5 | 36 | 2 | 43 | 6 | 4 | 6 | 16 | 143 |
| 05:30 PM | 60 | 21 | 2 | 83 | 5 | 29 | 3 | 37 | 8 | 3 | 6 | 17 | 137 |
| 05:45 PM | 74 | 18 | 10 | 102 | 10 | 29 | 0 | 39 | 6 | 10 | 7 | 23 | 164 |
| Total | 261 | 66 | 21 | 348 | 22 | 129 | 12 | 163 | 28 | 18 | 23 | 69 | 580 |
| Grand Total | 763 | 175 | 64 | 1002 | 49 | 424 | 23 | 496 | 95 | 60 | 74 | 229 | 1727 |
| Apprch % | 76.1 | 17.5 | 6.4 | | 9.9 | 85.5 | 4.6 | | 41.5 | 26.2 | 32.3 | | |
| Total % | 44.2 | 10.1 | 3.7 | 58 | 2.8 | 24.6 | 1.3 | 28.7 | 5.5 | 3.5 | 4.3 | 13.3 | |

| Start Time | Kamakee Street Southbound | | | Kamakee Street Northbound | | | Halekauwila Street Eastbound | | | Int. Total |
|--|---------------------------|-------------|-------------|---------------------------|-------------|-------------|------------------------------|-------------|-------------|-------------|
| | Thru | Right | App. Total | Left | Thru | App. Total | Left | Right | App. Total | |
| Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | |
| 04:30 PM | 72 | 11 | 83 | 4 | 29 | 33 | 9 | 7 | 16 | 132 |
| 04:45 PM | 60 | 22 | 82 | 7 | 38 | 45 | 8 | 10 | 18 | 145 |
| 05:00 PM | 60 | 12 | 72 | 2 | 35 | 37 | 8 | 1 | 9 | 118 |
| 05:15 PM | 67 | 15 | 82 | 5 | 36 | 41 | 6 | 4 | 10 | 133 |
| Total Volume | 259 | 60 | 319 | 18 | 138 | 156 | 31 | 22 | 53 | 528 |
| % App. Total | 81.2 | 18.8 | | 11.5 | 88.5 | | 58.5 | 41.5 | | |
| PHF | .899 | .682 | .961 | .643 | .908 | .867 | .861 | .550 | .736 | .910 |

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu HI, 96826

Counted By: SH
Counters: D4-5675
Weather: CLEAR

File Name : KAM HAL AM
Site Code : 00000001
Start Date : 8/14/2018
Page No : 1

Groups Printed- Unshifted

| Start Time | Kamakee St Southbound | | | | Kamakee St Northbound | | | | Halekauwila St Eastbound | | | | Int. Total |
|--------------------|-----------------------|-----------|-----------|------------|-----------------------|------------|-----------|------------|--------------------------|-----------|-----------|------------|------------|
| | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Left | Right | Peds | App. Total | |
| 07:30 AM | 55 | 11 | 2 | 68 | 4 | 28 | 1 | 33 | 3 | 4 | 10 | 17 | 118 |
| 07:45 AM | 50 | 15 | 5 | 70 | 12 | 35 | 2 | 49 | 5 | 17 | 15 | 37 | 156 |
| Total | 105 | 26 | 7 | 138 | 16 | 63 | 3 | 82 | 8 | 21 | 25 | 54 | 274 |
| 08:00 AM | 52 | 16 | 3 | 71 | 7 | 35 | 4 | 46 | 6 | 7 | 6 | 19 | 136 |
| 08:15 AM | 49 | 9 | 7 | 65 | 4 | 36 | 3 | 43 | 9 | 17 | 5 | 31 | 139 |
| Grand Total | 206 | 51 | 17 | 274 | 27 | 134 | 10 | 171 | 23 | 45 | 36 | 104 | 549 |
| Apprch % | 75.2 | 18.6 | 6.2 | | 15.8 | 78.4 | 5.8 | | 22.1 | 43.3 | 34.6 | | |
| Total % | 37.5 | 9.3 | 3.1 | 49.9 | 4.9 | 24.4 | 1.8 | 31.1 | 4.2 | 8.2 | 6.6 | 18.9 | |

| Start Time | Kamakee St Southbound | | | Kamakee St Northbound | | | Halekauwila St Eastbound | | | Int. Total |
|--|-----------------------|-------------|-------------|-----------------------|-------------|-------------|--------------------------|-------------|-------------|-------------|
| | Thru | Right | App. Total | Left | Thru | App. Total | Left | Right | App. Total | |
| Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | |
| 07:30 AM | 55 | 11 | 66 | 4 | 28 | 32 | 3 | 4 | 7 | 105 |
| 07:45 AM | 50 | 15 | 65 | 12 | 35 | 47 | 5 | 17 | 22 | 134 |
| 08:00 AM | 52 | 16 | 68 | 7 | 35 | 42 | 6 | 7 | 13 | 123 |
| 08:15 AM | 49 | 9 | 58 | 4 | 36 | 40 | 9 | 17 | 26 | 124 |
| Total Volume | 206 | 51 | 257 | 27 | 134 | 161 | 23 | 45 | 68 | 486 |
| % App. Total | 80.2 | 19.8 | | 16.8 | 83.2 | | 33.8 | 66.2 | | |
| PHF | .936 | .797 | .945 | .563 | .931 | .856 | .639 | .662 | .654 | .907 |

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By: FS, GH
Counters: D4-5677, D4-5673
Weather: CLEAR

File Name : ALA KAM PM
Site Code : 00000001
Start Date : 3/14/2018
Page No : 1

Groups Printed- Unshifted

| Start Time | Kamakee Street Southbound | | | | | Ala Moana Boulevard Westbound | | | | | Ala Moana Park Drive Northbound | | | | | Ala Moana Boulevard Eastbound | | | | Int. Total |
|--------------------|---------------------------|------------|------------|------------|------------|-------------------------------|-------------|------------|------------|-------------|---------------------------------|-----------|------------|------------|------------|-------------------------------|-------------|------------|-------------|--------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | App. Total | |
| 03:00 PM | 17 | 12 | 26 | 12 | 67 | 7 | 318 | 14 | 30 | 369 | 12 | 5 | 5 | 9 | 31 | 22 | 405 | 29 | 456 | 923 |
| 03:15 PM | 11 | 5 | 45 | 3 | 64 | 15 | 330 | 10 | 8 | 363 | 20 | 1 | 11 | 13 | 45 | 13 | 496 | 33 | 542 | 1014 |
| 03:30 PM | 10 | 13 | 35 | 14 | 72 | 6 | 317 | 13 | 22 | 358 | 21 | 9 | 4 | 12 | 46 | 21 | 456 | 43 | 520 | 996 |
| 03:45 PM | 12 | 10 | 30 | 14 | 66 | 7 | 317 | 17 | 13 | 354 | 21 | 7 | 9 | 11 | 48 | 12 | 486 | 45 | 543 | 1011 |
| Total | 50 | 40 | 136 | 43 | 269 | 35 | 1282 | 54 | 73 | 1444 | 74 | 22 | 29 | 45 | 170 | 68 | 1843 | 150 | 2061 | 3944 |
| 04:00 PM | 5 | 9 | 32 | 9 | 55 | 9 | 344 | 11 | 14 | 378 | 12 | 0 | 11 | 11 | 34 | 16 | 508 | 43 | 567 | 1034 |
| 04:15 PM | 9 | 16 | 30 | 13 | 68 | 7 | 388 | 14 | 14 | 423 | 10 | 5 | 9 | 4 | 28 | 5 | 477 | 40 | 522 | 1041 |
| 04:30 PM | 6 | 13 | 41 | 10 | 70 | 8 | 347 | 24 | 26 | 405 | 18 | 9 | 7 | 11 | 45 | 13 | 528 | 49 | 590 | 1110 |
| 04:45 PM | 17 | 13 | 28 | 3 | 61 | 9 | 333 | 19 | 11 | 372 | 16 | 5 | 15 | 7 | 43 | 13 | 544 | 49 | 606 | 1082 |
| Total | 37 | 51 | 131 | 35 | 254 | 33 | 1412 | 68 | 65 | 1578 | 56 | 19 | 42 | 33 | 150 | 47 | 2057 | 181 | 2285 | 4267 |
| 05:00 PM | 14 | 8 | 43 | 8 | 73 | 7 | 279 | 11 | 13 | 310 | 26 | 11 | 7 | 10 | 54 | 20 | 516 | 42 | 578 | 1015 |
| 05:15 PM | 9 | 11 | 35 | 11 | 66 | 5 | 330 | 18 | 18 | 371 | 11 | 8 | 7 | 9 | 35 | 14 | 532 | 39 | 585 | 1057 |
| 05:30 PM | 8 | 10 | 33 | 9 | 60 | 2 | 322 | 14 | 19 | 357 | 20 | 10 | 10 | 15 | 55 | 18 | 523 | 38 | 579 | 1051 |
| 05:45 PM | 8 | 8 | 43 | 2 | 61 | 5 | 290 | 21 | 29 | 345 | 28 | 8 | 9 | 7 | 52 | 19 | 485 | 26 | 530 | 988 |
| Total | 39 | 37 | 154 | 30 | 260 | 19 | 1221 | 64 | 79 | 1383 | 85 | 37 | 33 | 41 | 196 | 71 | 2056 | 145 | 2272 | 4111 |
| Grand Total | 126 | 128 | 421 | 108 | 783 | 87 | 3915 | 186 | 217 | 4405 | 215 | 78 | 104 | 119 | 516 | 186 | 5956 | 476 | 6618 | 12322 |
| Apprch % | 16.1 | 16.3 | 53.8 | 13.8 | | 2 | 88.9 | 4.2 | 4.9 | | 41.7 | 15.1 | 20.2 | 23.1 | | 2.8 | 90 | 7.2 | | |
| Total % | 1 | 1 | 3.4 | 0.9 | 6.4 | 0.7 | 31.8 | 1.5 | 1.8 | 35.7 | 1.7 | 0.6 | 0.8 | 1 | 4.2 | 1.5 | 48.3 | 3.9 | 53.7 | |

| Start Time | Kamakee Street Southbound | | | | Ala Moana Boulevard Westbound | | | | Ala Moana Park Drive Northbound | | | | Ala Moana Boulevard Eastbound | | | | Int. Total |
|--|---------------------------|-----------|------------|------------|-------------------------------|-------------|-----------|-------------|---------------------------------|-----------|-----------|------------|-------------------------------|-------------|------------|-------------|-------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | | | | | | | | |
| 04:00 PM | 5 | 9 | 32 | 46 | 9 | 344 | 11 | 364 | 12 | 0 | 11 | 23 | 16 | 508 | 43 | 567 | 1000 |
| 04:15 PM | 9 | 16 | 30 | 55 | 7 | 388 | 14 | 409 | 10 | 5 | 9 | 24 | 5 | 477 | 40 | 522 | 1010 |
| 04:30 PM | 6 | 13 | 41 | 60 | 8 | 347 | 24 | 379 | 18 | 9 | 7 | 34 | 13 | 528 | 49 | 590 | 1063 |
| 04:45 PM | 17 | 13 | 28 | 58 | 9 | 333 | 19 | 361 | 16 | 5 | 15 | 36 | 13 | 544 | 49 | 606 | 1061 |
| Total Volume | 37 | 51 | 131 | 219 | 33 | 1412 | 68 | 1513 | 56 | 19 | 42 | 117 | 47 | 2057 | 181 | 2285 | 4134 |
| % App. Total | 16.9 | 23.3 | 59.8 | | 2.2 | 93.3 | 4.5 | | 47.9 | 16.2 | 35.9 | | 2.1 | 90 | 7.9 | | |
| PHF | .544 | .797 | .799 | .913 | .917 | .910 | .708 | .925 | .778 | .528 | .700 | .813 | .734 | .945 | .923 | .943 | .972 |

APPENDIX B
LEVEL OF SERVICE DEFINITIONS

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. Specifically, level-of-service (LOS) criteria are stated in terms of the average control delay per vehicle, typically a 15-min analysis period. The criteria are given in the following table.

Table 1: Level-of-Service Criteria for Signalized Intersections

| Level of Service | Control Delay per Vehicle (sec/veh) |
|------------------|--|
| A | ≤10.0 |
| B | >10.0 and ≤20.0 |
| C | >20.0 and ≤35.0 |
| D | >35.0 and ≤55.0 |
| E | >55.0 and ≤80.0 |
| F | >80.0 |

Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group.

Level of Service A describes operations with low control delay, up to 10 sec per vehicle. This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.

Level of Service B describes operations with control delay greater than 10 and up to 20 sec per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.

Level of Service C describes operations with control delay greater than 20 and up to 35 sec per vehicle. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.

Level of Service D describes operations with control delay greater than 35 and up to 55 sec per vehicle. At level of service D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level of Service E describes operation with control delay greater than 55 and up to 80 sec per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.

Level of Service F describes operations with control delay in excess of 80 sec per vehicle. This level, considered to be unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level of Service (LOS) criteria are given in Table 1. As used here, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue to the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position, including deceleration of vehicles from free-flow speed to the speed of vehicles in the queue.

The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. If the degree of saturation is greater than about 0.9, average control delay is significantly affected by the length of the analysis period.

**Table 1: Level-of-Service Criteria for
Unsignalized Intersections**













| Level of Service | Average Control Delay (Sec/Veh) |
|------------------|------------------------------------|
| A | ≤10.0 |
| B | >10.0 and ≤15.0 |
| C | >15.0 and ≤25.0 |
| D | >25.0 and ≤35.0 |
| E | >35.0 and ≤50.0 |
| F | >50.0 |

APPENDIX C

CAPACITY ANALYSIS CALCULATIONS BASELINE PEAK PERIOD TRAFFIC ANALYSIS













HCM Unsignalized Intersection Capacity Analysis
47: Kamakee St & Halekauwilia St

02/10/2023

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 64 | 85 | 68 | 179 | 180 | 90 |
| Future Volume (Veh/h) | 64 | 85 | 68 | 179 | 180 | 90 |
| Sign Control | Stop | | | Free | | |
| Grade | 0% | | | 0% | | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 67 | 89 | 72 | 188 | 189 | 95 |
| Pedestrians | 99 | | | 30 | | |
| Lane Width (ft) | 12.0 | | | 12.0 | | 12.0 |
| Walking Speed (ft/s) | 4.0 | | | 4.0 | | 4.0 |
| Percent Blockage | 8 | | | 3 | | 6 |
| Right turn flare (veh) | 3 | | | | | |
| Median type | | | | None | | None |
| Median storage (veh) | | | | 334 | | 243 |
| Upstream signal (ft) | | | | 334 | | 243 |
| pX, platoon unblocked | | | | 334 | | 243 |
| vC, conflicting volume | 742 | 271 | 383 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 742 | 271 | 383 | | | |
| tC, single (s) | *5.8 | *5.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | *3.0 | *3.0 | 2.2 | | | |
| p0 queue free % | 83 | 88 | 93 | | | |
| cM capacity (veh/h) | 391 | 769 | 1075 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 156 | 72 | 188 | 126 | 158 | |
| Volume Left | 67 | 72 | 0 | 0 | 0 | |
| Volume Right | 89 | 0 | 0 | 0 | 95 | |
| cSH | 911 | 1075 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.17 | 0.07 | 0.11 | 0.07 | 0.09 | |
| Queue Length 95th (ft) | 15 | 5 | 0 | 0 | 0 | |
| Control Delay (s) | 12.8 | 8.6 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | B | A | | | | |
| Approach Delay (s) | 12.8 | 2.4 | | 0.0 | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 3.7 | | | |
| Intersection Capacity Utilization | | | 36.7% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |
| * User Entered Value | | | | | | |

HCM Unsignalized Intersection Capacity Analysis
47: Kamakee St & Halekauwilia St

03/09/2023

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 72 | 69 | 101 | 239 | 380 | 115 |
| Future Volume (Veh/h) | 72 | 69 | 101 | 239 | 380 | 115 |
| Sign Control | Stop | | | Free | | |
| Grade | 0% | | | 0% | | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 79 | 76 | 111 | 263 | 418 | 126 |
| Pedestrians | 143 | | | 12 | | |
| Lane Width (ft) | 12.0 | | | 12.0 | | 12.0 |
| Walking Speed (ft/s) | 4.0 | | | 4.0 | | 4.0 |
| Percent Blockage | 12 | | | 1 | | 6 |
| Right turn flare (veh) | 3 | | | | | |
| Median type | | | | None | | None |
| Median storage (veh) | | | | 342 | | 236 |
| Upstream signal (ft) | | | | 342 | | 236 |
| pX, platoon unblocked | | | | 342 | | 236 |
| vC, conflicting volume | 1180 | 427 | 687 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1180 | 427 | 687 | | | |
| tC, single (s) | *5.8 | *5.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | *3.0 | *3.0 | 2.2 | | | |
| p0 queue free % | 61 | 88 | 86 | | | |
| cM capacity (veh/h) | 201 | 618 | 795 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 155 | 111 | 263 | 279 | 265 | |
| Volume Left | 79 | 111 | 0 | 0 | 0 | |
| Volume Right | 76 | 0 | 0 | 0 | 126 | |
| cSH | 394 | 795 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.39 | 0.14 | 0.15 | 0.16 | 0.16 | |
| Queue Length 95th (ft) | 46 | 12 | 0 | 0 | 0 | |
| Control Delay (s) | 23.1 | 10.3 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | C | B | | | | |
| Approach Delay (s) | 23.1 | 3.0 | | 0.0 | | |
| Approach LOS | C | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 4.4 | | | |
| Intersection Capacity Utilization | | | 38.5% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |
| * User Entered Value | | | | | | |

APPENDIX D
TRIP GENERATIONS CALCULATIONS

| Trip Generation | | 10th Edition | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|-------|-----------------|--|--------------------|-------------|--------------------|------------|-----------|--------------------|-----------|-----------|--------------------|------------|-----------|------------|----|------|------------|----|------|-----------|----|
| Number of Units | Units | Land Use Number | Land Use No./Type | Weekday | | | AM PEAK | | | PM PEAK | | | | | | | | | | | | |
| | | | | Trip Rate per Unit | Total Trips | Trip Rate per Unit | In Trips | Out Trips | Trip Rate per Unit | In Trips | Out Trips | Trip Rate per Unit | In Trips | Out Trips | | | | | | | | |
| Block N West - Phase 5 | | | | | | | | | | | | | | | | | | | | | | |
| Proposed | | | | | | | | | | | | | | | | | | | | | | |
| 350 | units | 222 | High-Rise Apartment | 4.45 | 1558 | 0.31 | 109 | 24 | 0.07 | 26 | 76 | 0.24 | 83 | 0.36 | 126 | 61 | 0.22 | 77 | 39 | 0.14 | 49 | |
| 20 | ksf | 820 | Shopping Center | 37.75 | 755 | 0.94 | 19 | 62 | 0.58 | 12 | 38 | 0.36 | 7 | 3.81 | 76 | 48 | 1.83 | 37 | 52 | 1.98 | 39 | |
| 5 | ksf | 932 | High-Turnover (Sit-Down) Restaurant (formerly #8) | 112.18 | 561 | 9.94 | 50 | 55 | 5.47 | 27 | 45 | 4.47 | 23 | 9.77 | 49 | 62 | 6.06 | 30 | 38 | 3.71 | 19 | |
| | ksf | 110 | General Light Industrial | 6.97 | 0 | 0 | 0 | 0 | 0.88 | 0.81 | 0 | 0.12 | 0.11 | 0 | 0.97 | 0 | 0.12 | 0.116 | 0 | 0.88 | 0.854 | 0 |
| | | | Block N West - Residential Alt Mode Trip Reduction | | -238 | | -23 | | | -5 | | | -18 | | -19 | | | -12 | | | | -7 |
| | | | Block N West Residential | | 1320 | | 86 | | | 21 | | | 65 | | 107 | | | 65 | | | 42 | |
| | | | Retail SubTotal (no reductions) | | 1316 | | 69 | | | 39 | | | 30 | | 125 | | | 67 | | | 58 | |
| | | | Block N West - Trip Reduction | | -713 | | -25 | | | -15 | | | -10 | | -67 | | | -35 | | | -32 | |
| | | | Block N West - | | -475 | | -2 | | | -10 | | | 8 | | -48 | | | -23 | | | -25 | |
| | | | Block N West Retail (to Block H | | 841 | | 67 | | | 29 | | | 38 | | 77 | | | 44 | | | 33 | |
| | | | Block N West Total | | 2161 | | 153 | | | 50 | | | 103 | | 184 | | | 109 | | | 75 | |

APPENDIX E
CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2027 PEAK PERIOD TRAFFIC
ANALYSIS WITHOUT PROJECT

HCM Signalized Intersection Capacity Analysis
15: Ward Ave & Queen St

02/10/2023

| | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|------|------|-------|------|-------|------|------|------|------|-------|-------|-----------------------------|
| Movement | | | | | | | | | | | | |
| Lane Configurations | ↖ | ↗ | ↘ | ↖ | ↗ | ↘ | ↖ | ↗ | | ↖ | ↗ | |
| Traffic Volume (vph) | 62 | 174 | 36 | 59 | 314 | 57 | 49 | 427 | 82 | 66 | 627 | 198 |
| Future Volume (vph) | 62 | 174 | 36 | 59 | 314 | 57 | 49 | 427 | 82 | 66 | 627 | 198 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frb, ped/bikes | 1.00 | 1.00 | 0.89 | 1.00 | 1.00 | 0.98 | 1.00 | 0.97 | | 1.00 | 0.99 | |
| Flpb, ped/bikes | 0.99 | 1.00 | 1.00 | 0.92 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.98 | | 1.00 | 0.96 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1759 | 1863 | 1406 | 1630 | 1863 | 1548 | 1770 | 3357 | | 1770 | 3369 | |
| Flt Permitted | 0.40 | 1.00 | 1.00 | 0.63 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 749 | 1863 | 1406 | 1089 | 1863 | 1548 | 1770 | 3357 | | 1770 | 3369 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 65 | 183 | 38 | 62 | 331 | 60 | 52 | 449 | 86 | 69 | 660 | 208 |
| RTOR Reduction (vph) | 0 | 0 | 27 | 0 | 0 | 42 | 0 | 18 | 0 | 0 | 33 | 0 |
| Lane Group Flow (vph) | 65 | 183 | 11 | 62 | 331 | 18 | 52 | 517 | 0 | 69 | 835 | 0 |
| Confl. Peds. (#/hr) | 15 | | 146 | 146 | | 15 | | | 144 | | | 30 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | Prot | NA | | Prot | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 19.3 | 19.3 | 19.3 | 19.3 | 19.3 | 19.3 | 3.4 | 25.1 | | 6.0 | 27.7 | |
| Effective Green, g (s) | 19.3 | 19.3 | 19.3 | 19.3 | 19.3 | 19.3 | 3.4 | 25.1 | | 6.0 | 27.7 | |
| Actuated g/C Ratio | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 | 0.05 | 0.38 | | 0.09 | 0.42 | |
| Clearance Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 221 | 549 | 414 | 321 | 549 | 456 | 92 | 1288 | | 162 | 1426 | |
| v/s Ratio Prot | | 0.10 | | | c0.18 | | 0.03 | 0.15 | | c0.04 | c0.25 | |
| v/s Ratio Perm | 0.09 | | 0.01 | 0.06 | | 0.01 | | | | | | |
| v/c Ratio | 0.29 | 0.33 | 0.03 | 0.19 | 0.60 | 0.04 | 0.57 | 0.40 | | 0.43 | 0.59 | |
| Uniform Delay, d1 | 17.8 | 18.0 | 16.4 | 17.2 | 19.8 | 16.4 | 30.3 | 14.7 | | 28.1 | 14.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.7 | 0.4 | 0.0 | 0.3 | 1.9 | 0.0 | 7.7 | 0.2 | | 1.8 | 0.6 | |
| Delay (s) | 18.5 | 18.4 | 16.4 | 17.5 | 21.6 | 16.5 | 38.0 | 14.9 | | 29.9 | 15.1 | |
| Level of Service | B | B | B | B | C | B | D | B | | C | B | |
| Approach Delay (s) | | 18.2 | | | 20.4 | | | 16.9 | | | 16.2 | |
| Approach LOS | | B | | | C | | | B | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 17.5 | | | | | | | | | HCM 2000 Level of Service B |
| HCM 2000 Volume to Capacity ratio | | | 0.60 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 65.4 | | | | | | | 15.0 | | |
| Intersection Capacity Utilization | | | 71.8% | | | | | | | | | ICU Level of Service C |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis
47: Kamakee St & Halekauwilia St

03/09/2023

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------|------|------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 72 | 69 | 101 | 239 | 380 | 115 |
| Future Volume (Veh/h) | 72 | 69 | 101 | 239 | 380 | 115 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 79 | 76 | 111 | 263 | 418 | 126 |
| Pedestrians | 143 | | | 12 | 71 | |
| Lane Width (ft) | 12.0 | | | 12.0 | 12.0 | |
| Walking Speed (ft/s) | 4.0 | | | 4.0 | 4.0 | |
| Percent Blockage | 12 | | | 1 | 6 | |
| Right turn flare (veh) | 3 | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | 342 | 236 | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1180 | 427 | 687 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1180 | 427 | 687 | | | |
| tC, single (s) | *5.8 | *5.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | *3.0 | *3.0 | 2.2 | | | |
| p0 queue free % | 61 | 88 | 86 | | | |
| cM capacity (veh/h) | 201 | 618 | 795 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 155 | 111 | 263 | 279 | 265 | |
| Volume Left | 79 | 111 | 0 | 0 | 0 | |
| Volume Right | 76 | 0 | 0 | 0 | 126 | |
| cSH | 394 | 795 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.39 | 0.14 | 0.15 | 0.16 | 0.16 | |
| Queue Length 95th (ft) | 46 | 12 | 0 | 0 | 0 | |
| Control Delay (s) | 23.1 | 10.3 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | C | B | | | | |
| Approach Delay (s) | 23.1 | 3.0 | | 0.0 | | |
| Approach LOS | C | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | 4.4 | | | | | |
| Intersection Capacity Utilization | 38.5% | | | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | | | |
| * User Entered Value | | | | | | |

APPENDIX F
CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2027 PEAK PERIOD TRAFFIC
ANALYSIS WITH PROJECT

HCM Unsignalized Intersection Capacity Analysis
47: Kamakee St & Halekauwilia St

02/10/2023

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------|------|------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 84 | 106 | 68 | 179 | 180 | 100 |
| Future Volume (Veh/h) | 84 | 106 | 68 | 179 | 180 | 100 |
| Sign Control | Stop | | | Free | | |
| Grade | 0% | | | 0% | | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 88 | 112 | 72 | 188 | 189 | 105 |
| Pedestrians | 99 | | | 30 | | |
| Lane Width (ft) | 12.0 | | | 12.0 | | 12.0 |
| Walking Speed (ft/s) | 4.0 | | | 4.0 | | 4.0 |
| Percent Blockage | 8 | | | 3 | | 6 |
| Right turn flare (veh) | 3 | | | | | |
| Median type | | | | None | | None |
| Median storage (veh) | | | | 334 | | 243 |
| Upstream signal (ft) | | | | 334 | | 243 |
| pX, platoon unblocked | | | | 334 | | 243 |
| vC, conflicting volume | 746 | 276 | 393 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 746 | 276 | 393 | | | |
| tC, single (s) | *5.8 | *5.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | *3.0 | *3.0 | 2.2 | | | |
| p0 queue free % | 77 | 85 | 93 | | | |
| cM capacity (veh/h) | 389 | 764 | 1066 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 200 | 72 | 188 | 126 | 168 | |
| Volume Left | 88 | 72 | 0 | 0 | 0 | |
| Volume Right | 112 | 0 | 0 | 0 | 105 | |
| cSH | 883 | 1066 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.23 | 0.07 | 0.11 | 0.07 | 0.10 | |
| Queue Length 95th (ft) | 22 | 5 | 0 | 0 | 0 | |
| Control Delay (s) | 13.3 | 8.6 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | B | A | | | | |
| Approach Delay (s) | 13.3 | 2.4 | | 0.0 | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | 4.4 | | | | | |
| Intersection Capacity Utilization | 37.1% | | | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | | | |
| * User Entered Value | | | | | | |

HCM Unsignalized Intersection Capacity Analysis
47: Kamakee St & Halekauwilia St

02/10/2023

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------|------|------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 86 | 83 | 101 | 239 | 380 | 136 |
| Future Volume (Veh/h) | 86 | 83 | 101 | 239 | 380 | 136 |
| Sign Control | Stop | | | Free | | |
| Grade | 0% | | | 0% | | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 95 | 91 | 111 | 263 | 418 | 149 |
| Pedestrians | 143 | | | 12 | | |
| Lane Width (ft) | 12.0 | | | 12.0 | | 12.0 |
| Walking Speed (ft/s) | 4.0 | | | 4.0 | | 4.0 |
| Percent Blockage | 12 | | | 1 | | 6 |
| Right turn flare (veh) | 3 | | | | | |
| Median type | | | | None | | None |
| Median storage (veh) | | | | 342 | | 236 |
| Upstream signal (ft) | | | | 342 | | 236 |
| pX, platoon unblocked | | | | 342 | | 236 |
| vC, conflicting volume | 1192 | 438 | 710 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1192 | 438 | 710 | | | |
| tC, single (s) | *5.8 | *5.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | *3.0 | *3.0 | 2.2 | | | |
| p0 queue free % | 52 | 85 | 86 | | | |
| cM capacity (veh/h) | 197 | 609 | 780 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 186 | 111 | 263 | 279 | 288 | |
| Volume Left | 95 | 111 | 0 | 0 | 0 | |
| Volume Right | 91 | 0 | 0 | 0 | 149 | |
| cSH | 386 | 780 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.48 | 0.14 | 0.15 | 0.16 | 0.17 | |
| Queue Length 95th (ft) | 63 | 12 | 0 | 0 | 0 | |
| Control Delay (s) | 25.8 | 10.4 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | D | B | | | | |
| Approach Delay (s) | 25.8 | 3.1 | | 0.0 | | |
| Approach LOS | D | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | 5.3 | | | | | |
| Intersection Capacity Utilization | 39.9% | | | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | | | |
| * User Entered Value | | | | | | |

APPENDIX G TRANSIT LOS CALCULATIONS

| Multimodal Transit LOS Calculation | | | | | | | | | | | | | | |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------|-------------|----------------|----------------|-------------|----------------|------------|
| From | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| To | Ala Moana Blvd WB | Ala Moana Blvd WB | Kapiolani Blvd WB | Kapiolani Blvd WB | Kapiolani Blvd WB | Kapiolani Blvd WB | Kapiolani Blvd WB | Auahi St EB | Ward Ave NB | Halekauwila St | Ward Ave SB | Queen St EB | Queen St WB | Kamaeek St |
| Inputs | Queen St | Ward Ave | Kamaeek St | Ward Ave | Kamaeek St | Pikoit St | Kamaeek St | Ward Ave | Kamaeek St | Halekauwila St | Kapiolani Blvd | Kamaeek St | Kapiolani Blvd | Auahi St |
| Number of local buses on street segment per hour (bus/h) | 28 | 24 | 32 | 32 | 32 | 12 | 16 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Number of express buses stopping in segment per hour (bus/h) | 2 | 1 | 8 | 8 | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Average excess wait time (min) | 4.5 | 2.4 | 4.9 | 3.0 | 3.3 | 3.4 | 3.0 | 4.2 | 3.6 | 3.3 | 3.5 | 3.3 | 3.3 | 3.5 |
| Average passenger load factor (p/seat) | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.7 | 0.5 | 0.3 | 0.4 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 |
| Average transit travel speed (mi/h) | 14.2 | 10.9 | 12.2 | 13.0 | 12.6 | 10.5 | 11.4 | 20.0 | 7.9 | 11.5 | 13.3 | 7.9 | 12.0 | 12.0 |
| Average passenger trip length (mi) | 7.0 | 7.2 | 4.1 | 4.2 | 4.2 | 2.2 | 3.8 | 1.7 | 2.0 | 1.7 | 1.7 | 2.0 | 4.6 | 4.6 |
| Is the segment in the CBD of a metro area of 5 million or more? | No | No | No | No | No | No | No | No | No | No | No | No | No | No |
| Percent stops in segment with a shelter | 100% | 100% | 100% | 100% | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Percent stops in segment with a bench | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| PEDESTRIAN ENVIRONMENT DATA | | | | | | | | | | | | | | |
| W _A Sidewalk width (ft) (Enter 0 if no sidewalk) | 8.0 | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| W _{sid} Buffer width from sidewalk to street (ft) | 0.0 | 0.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Does a continuous barrier exist between the street and sidewalk? | No | No | Yes | Yes | Yes | Yes | Yes | No | No | No | No | No | No | No |
| Is the street divided? | Yes | Yes | No | No | No | No | No | No | No | No | No | No | No | No |
| Are parking spaces striped? | No | No | No | No | No | No | No | No | No | No | No | No | No | No |
| Are parking spaces striped? | No | No | No | No | No | No | No | No | No | No | No | No | No | No |
| P _{ok} Proportion of on-street parking occupied | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| W _{bi} Bicycle lane width (ft) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 7.0 | 7.0 | 7.0 | 0.0 | 0.0 | 0.0 |
| W _{sh} Shoulder/parking lane width (ft) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 | 10.0 | 10.0 |
| W _{ol} Outside travel lane (closest to sidewalk) width (ft) | 10.0 | 10.0 | 10.0 | 10.0 | 12.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| V _{ol} Outside line demand flow rate at midsegment (veh/h) | 600 | 600 | 600 | 400 | 400 | 400 | 400 | 150 | 300 | 300 | 300 | 400 | 400 | 200 |
| S _h Average vehicle running speed, including intersection delay (mi/h) | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| Calculations | | | | | | | | | | | | | | |
| f _t Transit frequency (bus/h) | 30 | 25 | 40 | 40 | 40 | 12 | 24 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| f _h Headway factor | 3.81 | 3.78 | 3.86 | 3.86 | 3.86 | 3.55 | 3.77 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 |
| f _{pl} Passenger load weighting factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| T _{wt} Perceived amenity time rate (min/mi) | 0.2 | 0.2 | 0.4 | 0.4 | 0.4 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| T _{ex} Excess wait time rate due to late arrivals (min/mi) | 0.6 | 0.3 | 1.2 | 1.2 | 0.7 | 1.5 | 0.9 | 1.8 | 2.1 | 1.8 | 1.9 | 2.1 | 1.7 | 0.8 |
| T _{tr} Perceived travel time rate (min/mi) | 5.3 | 6.0 | 6.9 | 6.9 | 5.7 | 7.7 | 7.5 | 8.7 | 7.1 | 11.1 | 9.0 | 8.5 | 10.8 | 6.5 |
| T _{br} Base travel time rate (min/mi) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| T _{tr} Perceived travel time factor | 0.89 | 0.85 | 0.81 | 0.81 | 0.87 | 0.78 | 0.78 | 0.74 | 0.80 | 0.68 | 0.73 | 0.75 | 0.69 | 0.83 |
| f _t Transit wait-time score | 3.41 | 3.23 | 3.11 | 3.11 | 3.36 | 2.76 | 2.96 | 1.45 | 1.34 | 1.43 | 1.46 | 1.46 | 1.93 | 1.61 |
| S _{pr} Motorized vehicle speed adjustment factor | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| f _v Motorized vehicle volume adjustment factor | 1.37 | 1.37 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.34 | 0.34 | 0.34 | 0.68 | 0.91 | 0.91 | 0.46 |
| W _{sa} Adjusted available sidewalk width (ft) | 8.0 | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| f _{sc} Sidewalk width coefficient | 3.60 | 3.60 | 3.30 | 3.30 | 3.30 | 3.30 | 3.30 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 |
| W _b Buffer area coefficient | 1.00 | 1.00 | 5.37 | 5.37 | 5.37 | 5.37 | 5.37 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| W _t Total width of outside lane, bike lane, and parking lane/shoulder (ft) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 12.0 | 10.0 | 15.0 | 17.0 | 17.0 | 17.0 | 17.0 | 10.0 | 10.0 |
| W _e Effective total width as a function of traffic volume (ft) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 12.0 | 10.0 | 18.8 | 17.0 | 17.0 | 17.0 | 17.0 | 10.0 | 10.0 |
| W _c Effective width of combined bike lane and shoulder (ft) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 7.0 | 7.0 | 7.0 | 7.0 | 0.0 | 0.0 |
| f _w Cross-section adjustment factor | -4.49 | -4.49 | -5.34 | -5.34 | -5.34 | -5.37 | -5.34 | -4.80 | -4.79 | -4.79 | -4.79 | -5.57 | -5.57 | -4.49 |
| f _p Pedestrian environment score | 3.41 | 3.41 | 2.11 | 2.11 | 2.11 | 2.08 | 2.11 | 1.83 | 1.83 | 2.19 | 2.19 | 1.63 | 1.63 | 2.26 |
| T _t Transit LOS score | 1.40 | 1.67 | 1.65 | 1.65 | 1.28 | 2.18 | 1.88 | 4.10 | 4.33 | 4.18 | 4.05 | 3.35 | 3.35 | 3.92 |
| Output | A | A | A | A | A | B | A | D | D | D | D | D | C | D |
| Transit LOS | | | | | | | | | | | | | | |

From: Ikwatanabe <Ikwatanabe@honolulu.gov>
Sent: Tuesday, May 2, 2023 7:15 AM
To: Jennylyn Tapat Morrill
Cc: kandrade1
Subject: Block N West

Jenny – TRB has no comments and has accepted the TIR dated March 2023.

I will try my best to get you our comments for Block D & E by the end of the week.

Thanks,
Lance

Appendix F

INFRASTRUCTURE AVAILABILITY REPORT

**Block N West
Infrastructure Availability Report**

**Honolulu, Oahu, Hawaii
Tax Map Key: 2-3-002:116**

Prepared for
Victoria Ward, Ltd.
1240 Ala Moana Boulevard, Suite 200
Honolulu, HI 96814

Prepared by
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, HI 96826

May 2023

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| Figure 2-2 | Existing Water System | 2-4 |
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LIST OF APPENDICES**APPENDIX A**

- City and County of Honolulu - Department of Planning and Permitting, Wastewater Branch: Sewer Connection Application Letter and Approved Sewer Connection Application
- Honolulu Board of Water Supply: Request Letter and Adequacy Letter
- Honolulu Fire Department: HFD Requirements and Email Correspondence
- City and County of Honolulu – Department of Planning and Permitting, Civil Engineering Branch: LID Correspondence with Keith Miyashiro
- Hawaiian Electric Company: Request Letter and Will Serve Letter
- Hawaiian Telcom: Request Letter and Assessment Letter
- Spectrum (Formerly Oceanic and Charter Communications): Utility Assessment Request Letter and Email Correspondence
- Hawaii Gas – Email Correspondence and Adequacy Letter
- Traffic Review Branch: Email Correspondence

1 INTRODUCTION**1.1 Purpose**

The purpose of this report is to confirm the availability of infrastructure utilities to accommodate the demands proposed by the project. The utilities researched include water, sanitary sewer, drainage, electrical, communication, cable, and gas.

1.2 Proposed Project Location and Description

The Victoria Ward Limited (VWL) proposes the development of a 350-unit high-rise condominium tower and commercial building on the island of Oahu (see Figures 1-1 and 1-2). The project site is approximately 1.69 acres, generally located at TMK: 2-3-002:116. The project site will be bounded by Ward Avenue to the west, proposed Halekauwila Street to the south and A’ali’i to the east.

1.3 Existing Topography

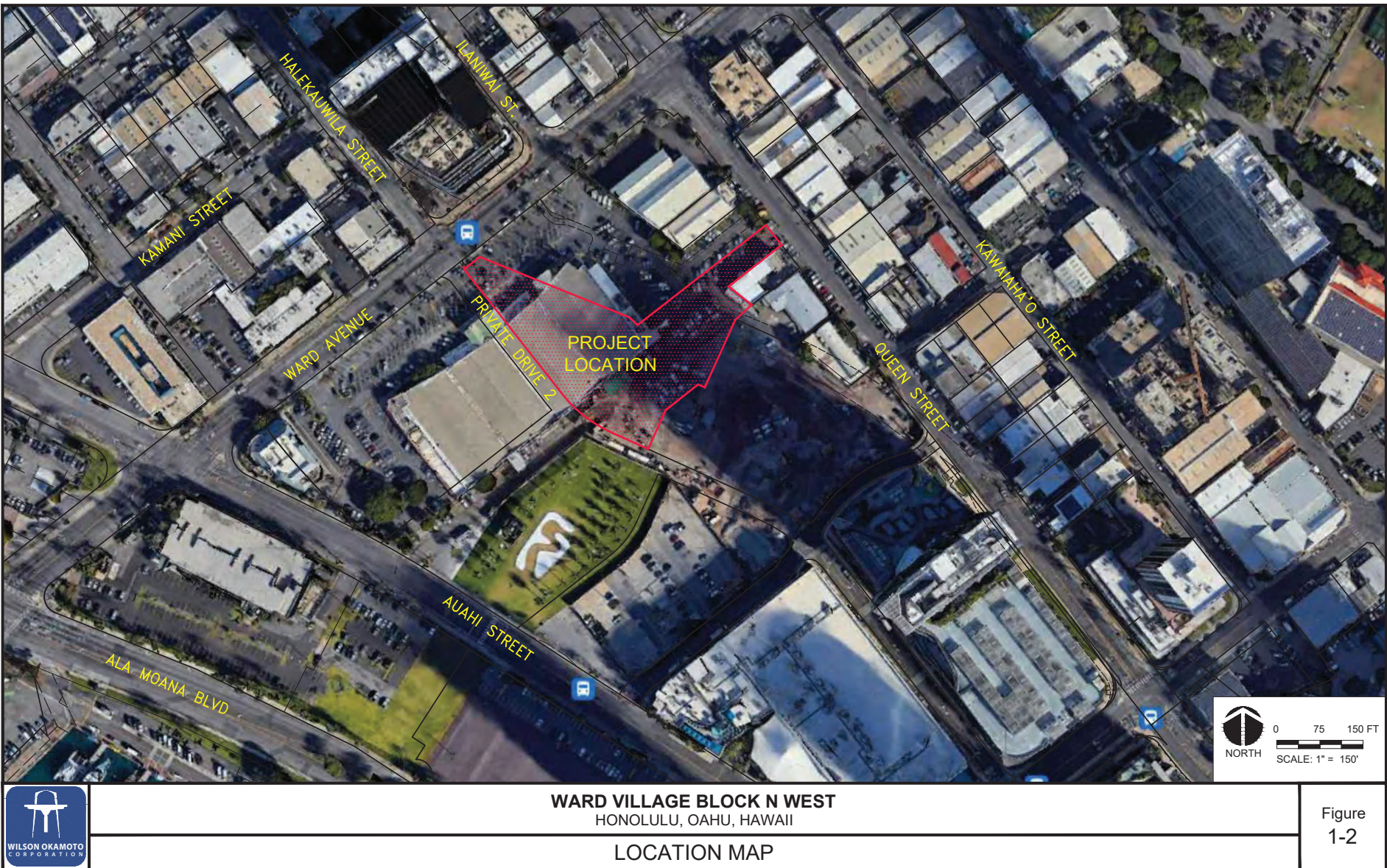
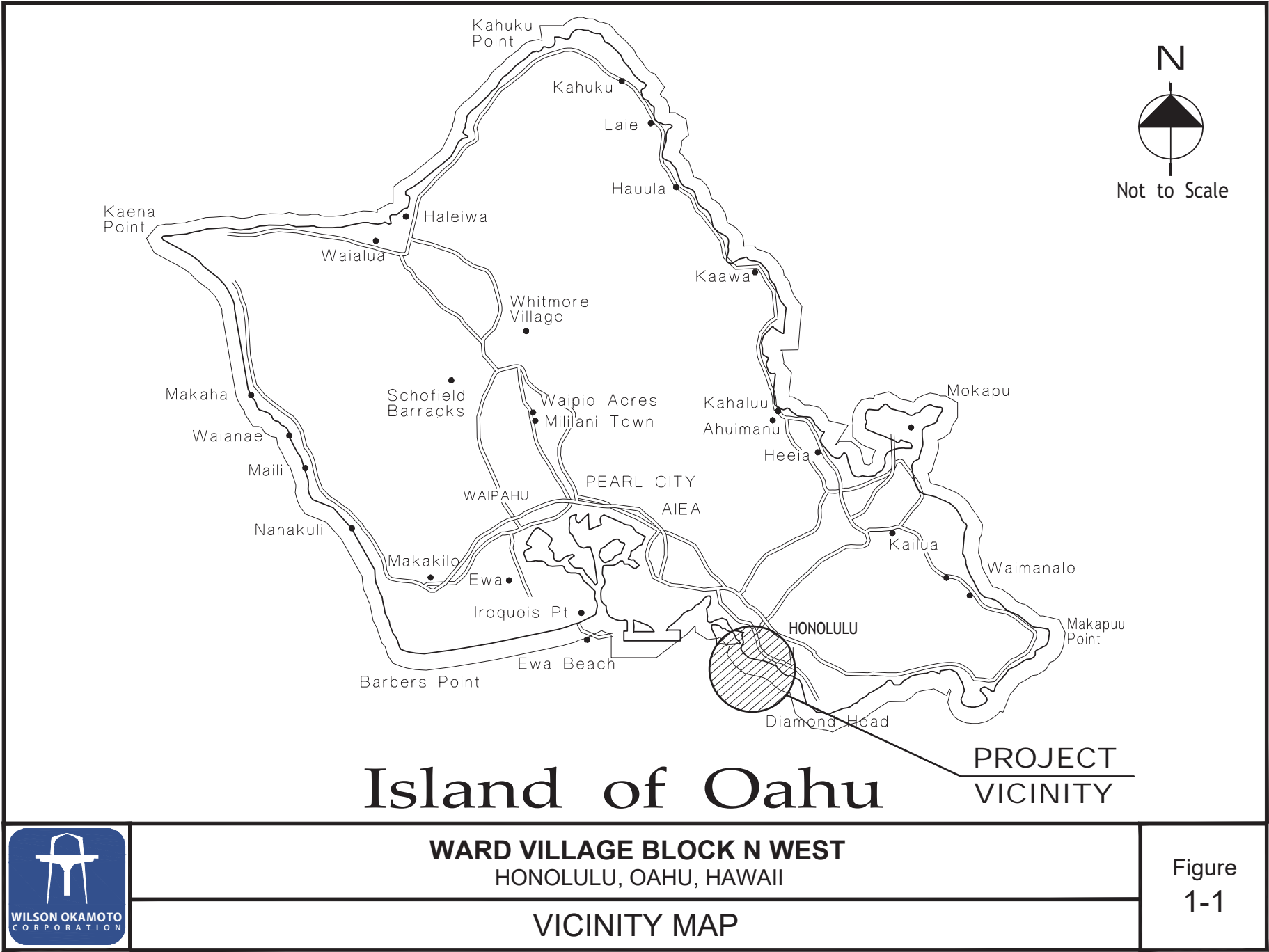
The project site is currently occupied by an AC parking lot and demolished commercial/retail building. Sewer manholes are located in a Private Drive (Private Drive 2), and along the sewer easement that runs within the property. Drain inlets, trench drain, and catch basin are observed within the property. See Figure 1-3 for topographic survey prepared June 29, 2020 by Control Point Surveying Inc.

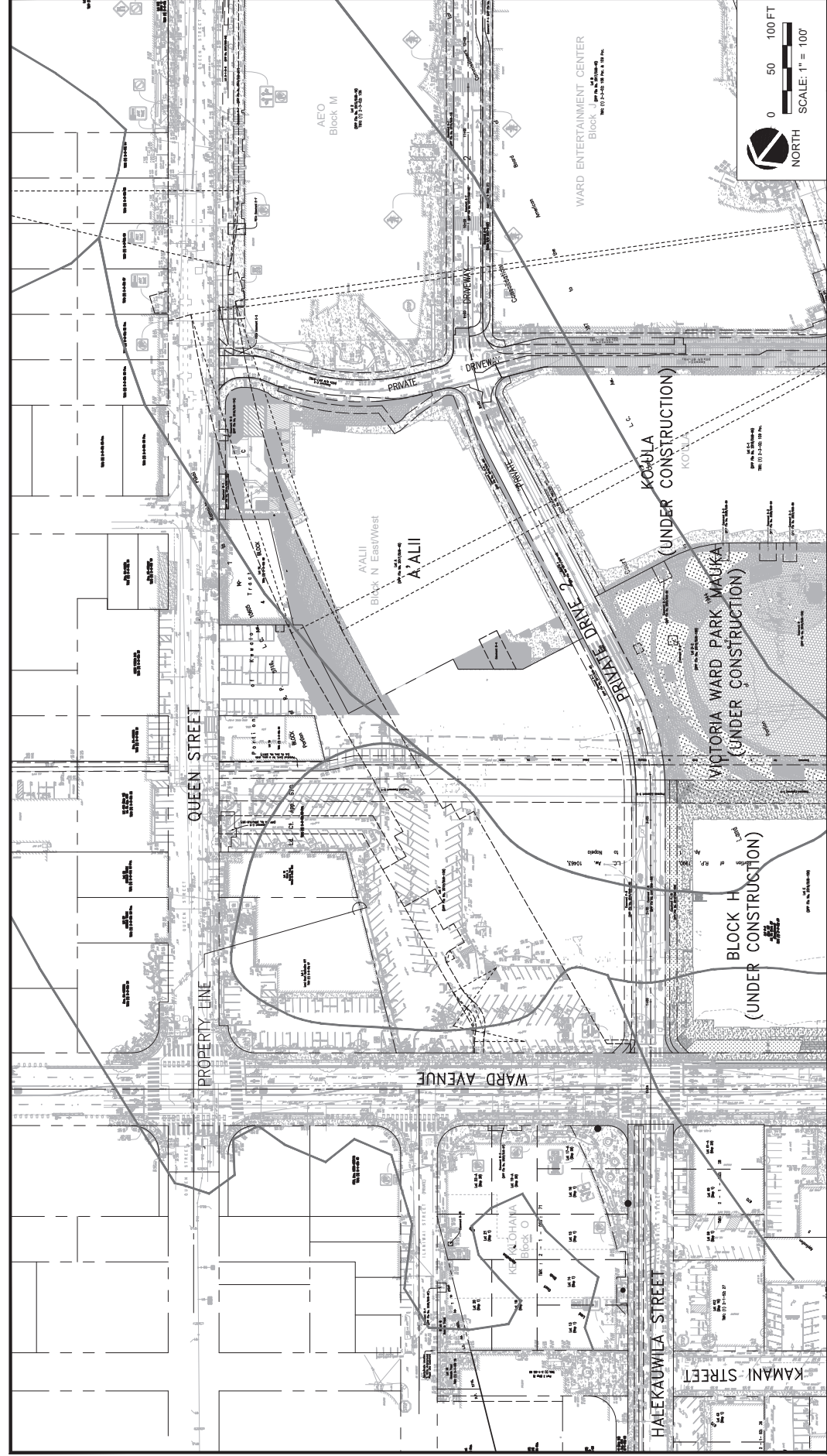
1.4 Flood Hazard

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Community Panel No: 15003C0362G dated January 19, 2011 shows that the project is located in Zone AE (6 feet), Zone AE (7 feet) and Zone X (see Figure 1-4). Zone AE is characterized as a special flood hazard area, where the annual chance of flooding (100-year flood) is determined as 1%. Zone X is characterized as areas determined to be outside the 0.2% annual chance floodplain. The proposed finish floor elevation at Level 1 for the project is 7.25 feet.

1.5 Sea Level Rise

The Pacific Islands Ocean Observing System (PacIOOS) Hawai’i Sea Level Rise Viewer shows that no portion of the project area will be inundated by a 3.2-ft sea level rise by the year 2100 due to combined passive flooding and annual high wave flooding (see Figure 1-5). The portions that will be affected by the sea level rise are at the eastern sides of the project area (see Figure 1-5). The proposed finish floor of the project is above the property’s Flood Base elevation, which is higher than the projected sea level rise; thus, the project site will not be impacted by the 3.2-ft sea level rise.

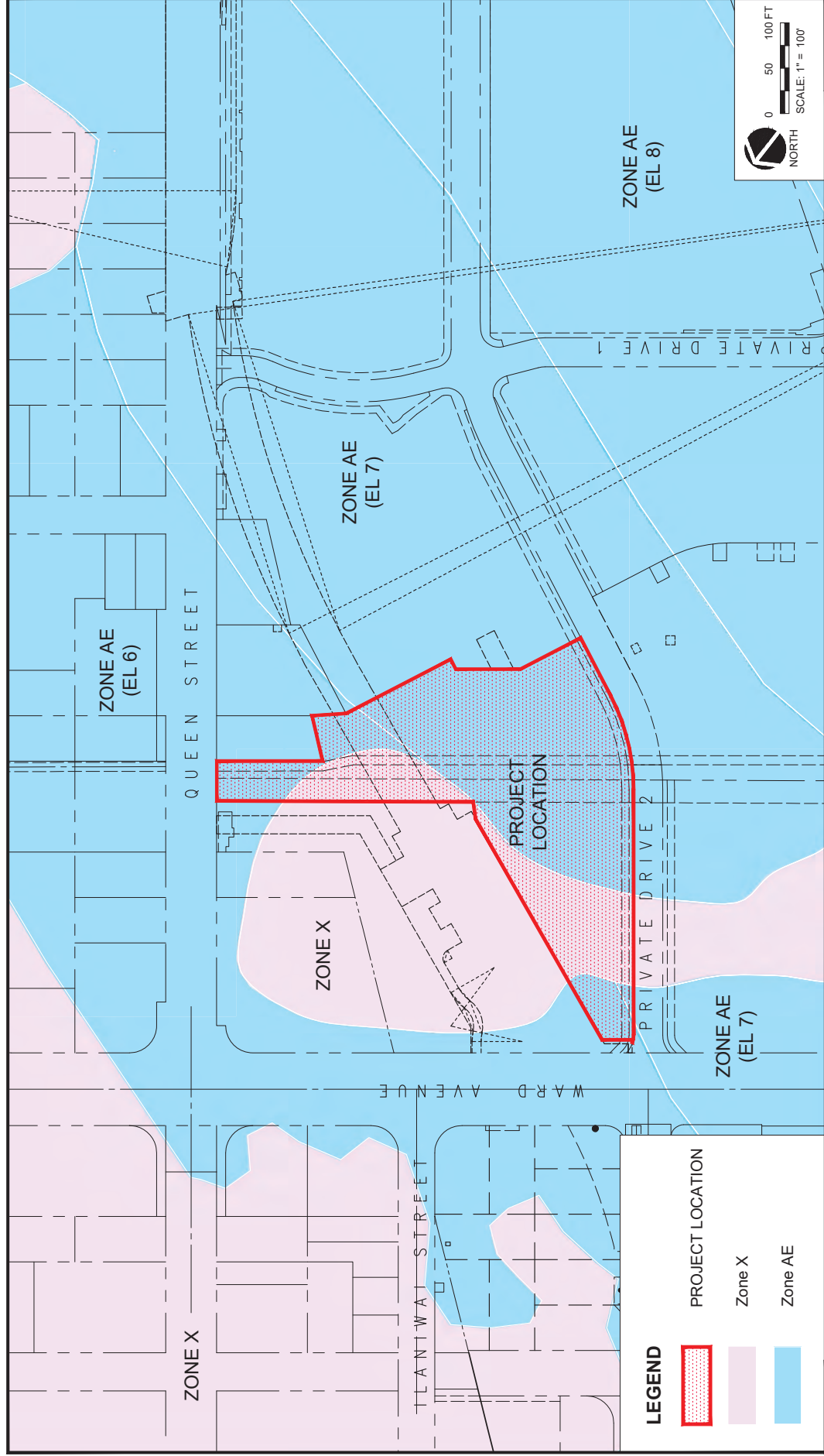




WARD VILLAGE BLOCK N WEST
HONOLULU, OAHU, HAWAII

TOPOGRAPHIC SURVEY MAP

Figure
1-3





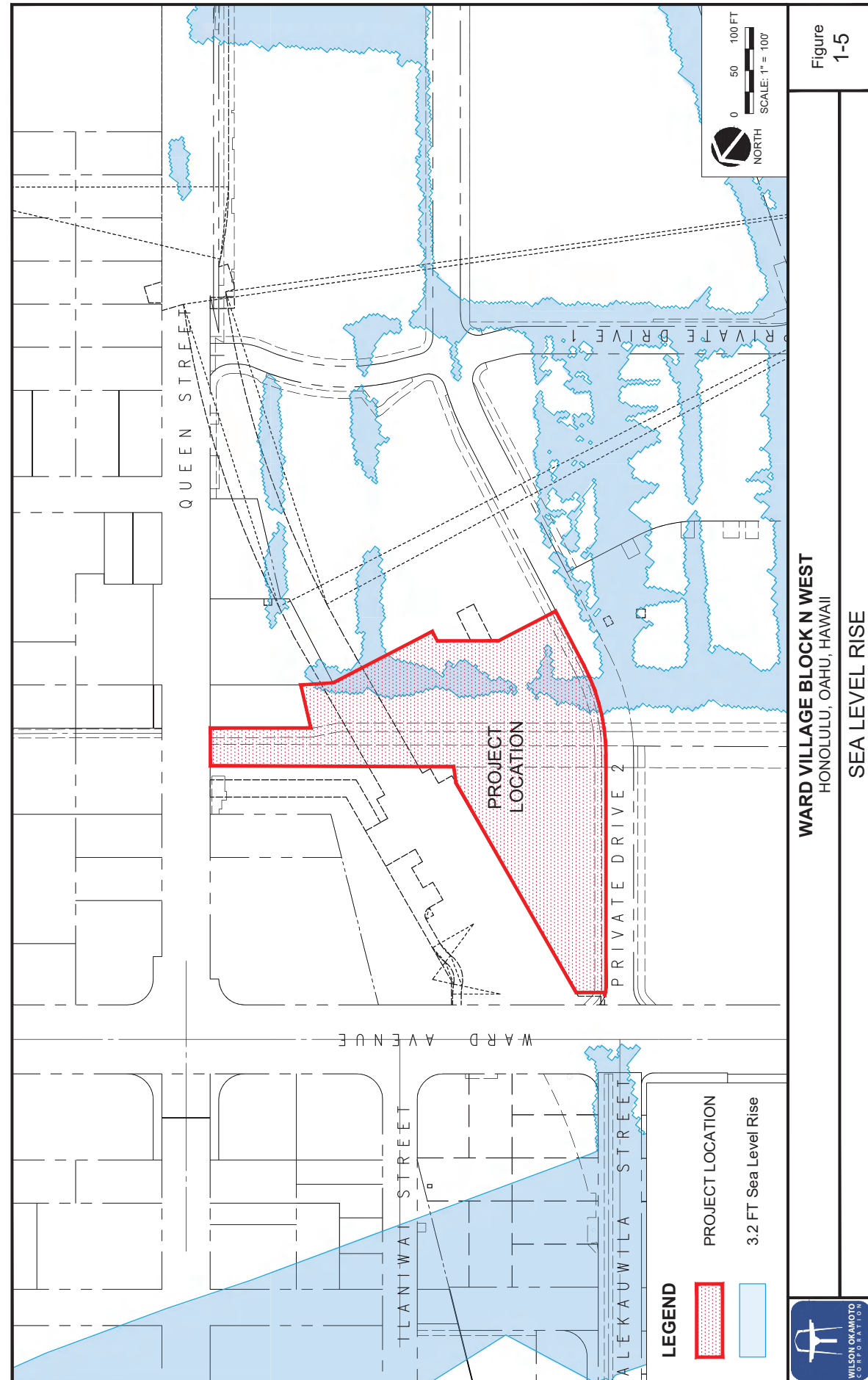
WARD VILLAGE BLOCK N WEST
HONOLULU, OAHU, HAWAII

FLOOD HAZARD MAP

Figure
1-4



- LEGEND**
-  PROJECT LOCATION
 -  Zone X
 -  Zone AE



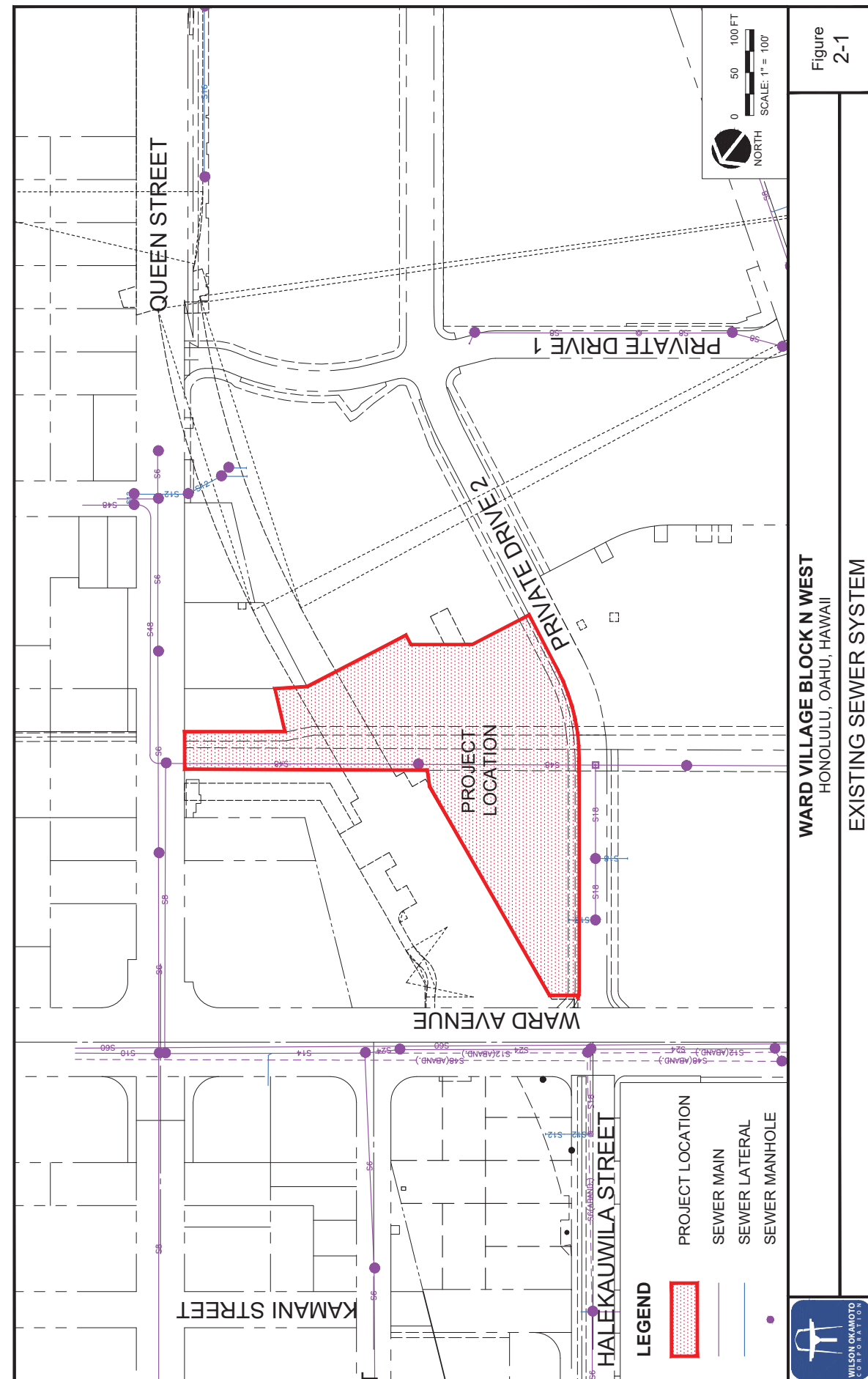
2 UTILITIES

2.1 Sanitary Sewer System

The sanitary sewer system servicing the Kaka`ako Makai area and the project area is owned by the City and County of Honolulu (City) and maintained by its Department of Environmental Services (ENV). The wastewater flow from the project area is discharged into the Ala Moana Wastewater Pump Station and is then conveyed to the City's Sand Island Wastewater Treatment Plant, which serves the Honolulu area from Kuliouou to Moanalua.

The project proposes to connect to the existing 18" sewer main within Private Drive 2 that connected to the existing 48" East End Relief sewer. See Figure 2-1 which identifies the existing sewer system within the project vicinity.

A sewer connection application was submitted on May 1, 2023 to the City Department of Planning and Permitting (DPP), Wastewater Branch (WWB) to confirm the existing sanitary sewer system can accommodate the project. An approved sewer connection application dated May 2, 2023 was received confirming available capacity (see Appendix A).



2.2 Water System

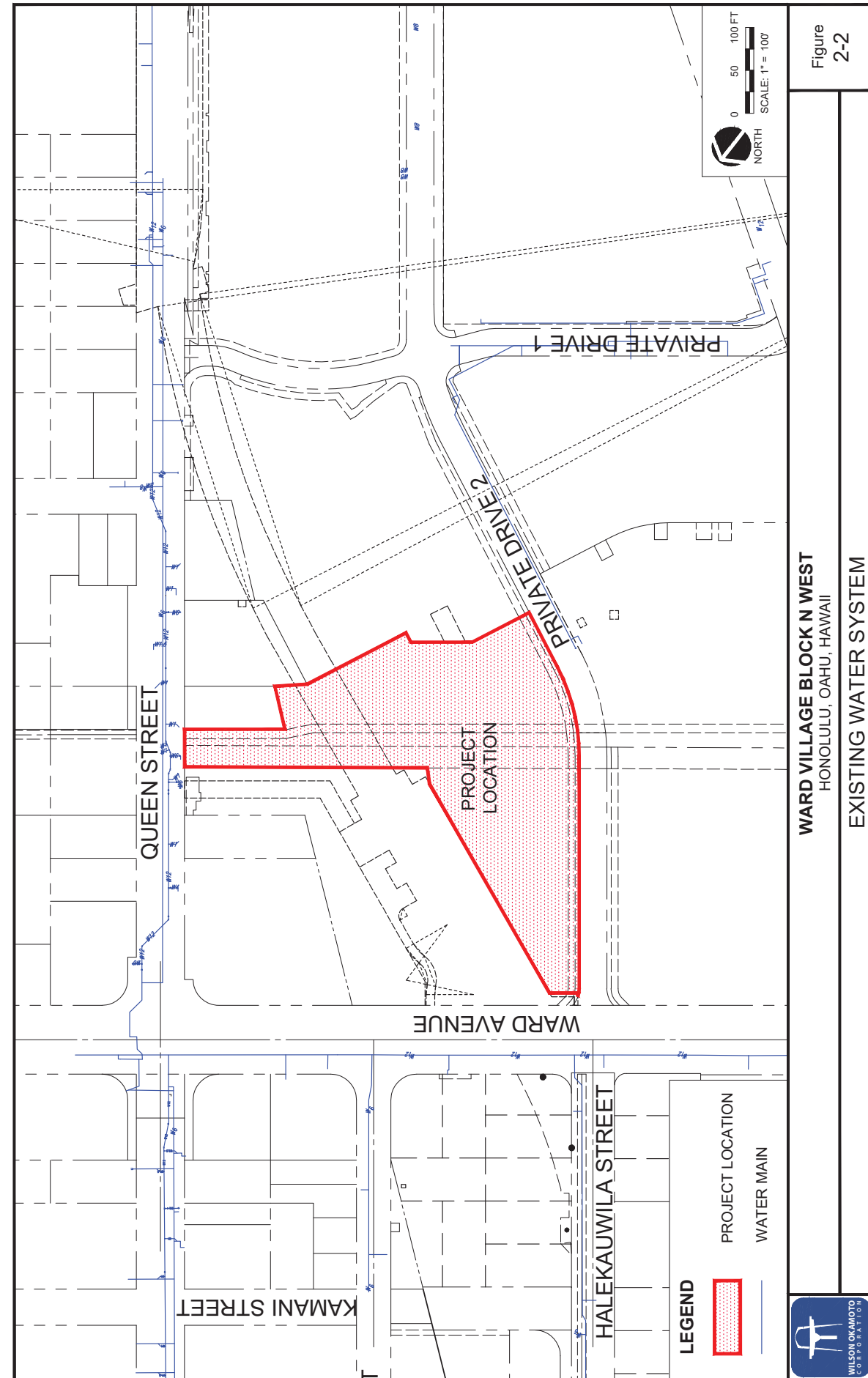
2.2.1 Potable Water

Potable water service for the project will be provided by the City and County of Honolulu’s Board of Water Supply (BWS). The BWS’s water system in the project area consists of a system of looped transmission mains, fire hydrants and water meters.

The project proposes connection to an existing 12-inch water main in Queen Street to accommodate both the residential tower and the commercial space. The size and location of the laterals will be confirmed during the final design phase. See Figure 2-2 which identifies the existing water system within the project vicinity. A letter request to BWS dated December 16, 2022 was sent to confirm that the existing water system can accommodate the project. An adequacy letter dated January 20, 2023 was received confirming available capacity (see Appendix A).

2.2.2 Fire Protection

Fire protection will be provided by private fire hydrants. Water supply from a private fire hydrant must be within 400 feet to the closest point from the building. A fire sprinkler system will be provided for the project. The size and location of the fire line that will supply for the sprinkler system will be confirmed during the final design phase. The Honolulu Fire Department (HFD) was consulted on December 21, 2022 to discuss the project and proposed fire protection methods. A figure was prepared as per the recommendations by HFD (see Appendix A). Recommendations provided by HFD will be maintained during the final design phase.

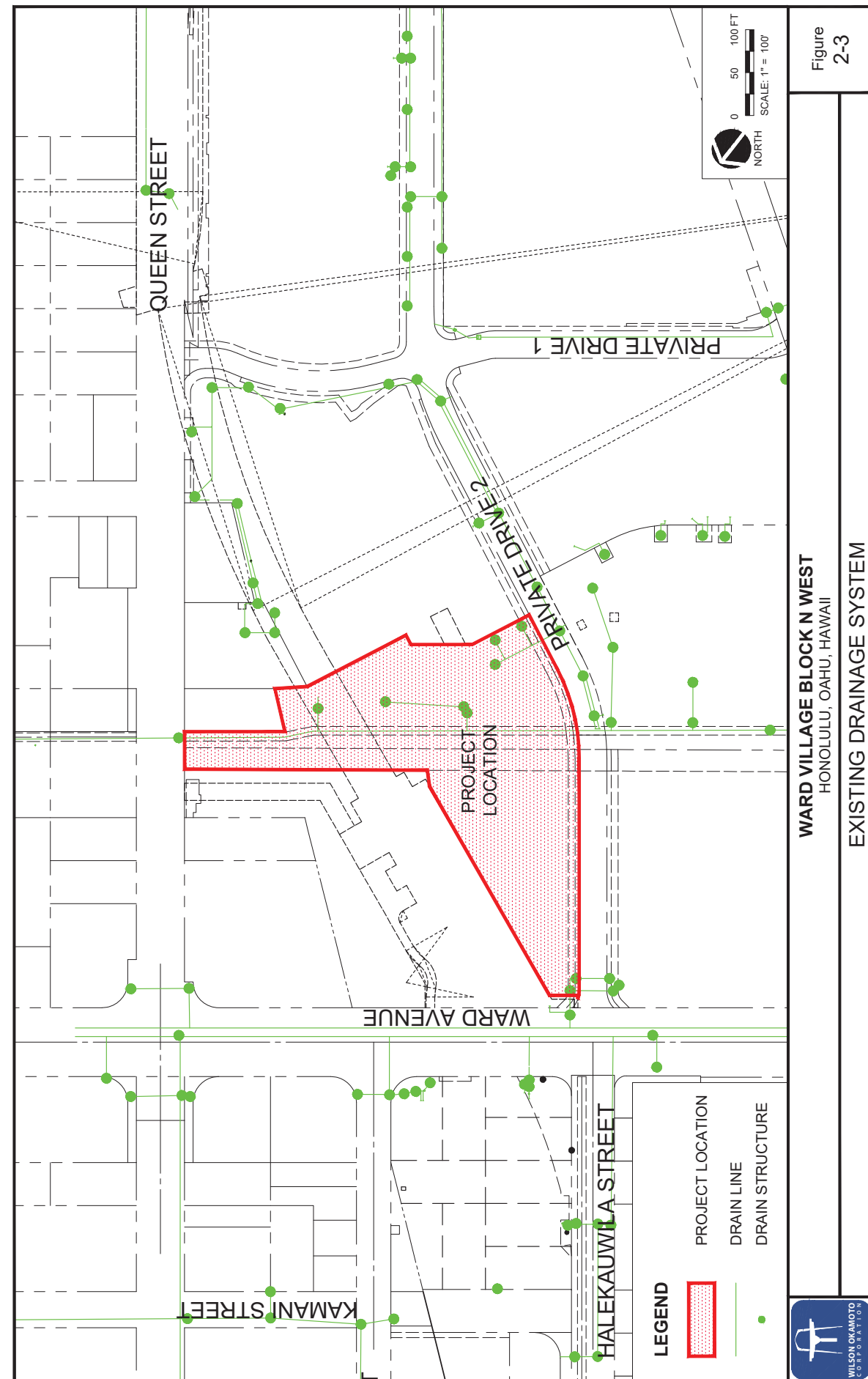


2.3 Site Drainage and Low Impact Development

The drainage system within the City right-of-way and City drainage easements servicing the Kaka`ako Makai area and the project area is owned by its Department of Facilities Maintenance (DFM). Drainage systems within private property are owned and maintained by the respective property owner.

The runoff from the project site will be collected within a private drainage system owned and maintained by VWL with a series of trench drains, drain inlets and catch basins. It is anticipated that the drainage pattern of the project site will be maintained and the peak flow rate and volume will not increase. For this reason, the project will not adversely impact the existing performance of the City system. See Figure 2-3 for the existing drainage system within the project site.

The project proposes to treat the overall storm water quality for the site with manufactured treatment device and green roof. Storm water will be collected by the drain inlets and will be directed to the existing catch basin located at Ward Avenue (City) and Private Drive (Private Drive 2) where it will be discharged into the City Drainage System. Email correspondence for the LID Site Design Strategies is attached in Appendix A.



2.4 Electrical Power Facilities

The Hawaiian Electric Company (HECo) was consulted on December 27, 2022 by Ronald N. S. Ho & Associates, Inc. to confirm that the existing electrical system can accommodate the project. An acknowledgement letter dated February 18, 2023 was received from HECo, confirming HECo's intent to provide service to the Block N West project (see Appendix A).

2.5 Telephone System

The Hawaiian Telecom Inc. was consulted on December 27, 2022 by Ronald N. S. Ho & Associates, Inc. to confirm that the existing communication system can accommodate the project. An assessment letter dated March 28, 2023 was received confirming available service connection for the Block N West project (see Appendix A).

2.6 Cable Television System

The Spectrum (formerly Oceanic and Charter Communications) was consulted on December 27, 2022 by Ronald N. S. Ho & Associates, Inc. to confirm that the existing cable system can accommodate the project. An email correspondence was received confirming that the proposed circuits that will be installed to feed Block N West is a continuation of CATV conduit system along Private Drive 2 (see Appendix A).

2.7 Gas System

Hawaii Gas was consulted on December 21, 2022 to confirm that the existing gas system can accommodate the project. An adequacy letter received on March 28, 2023 clarified service availability for the Block N West project (see Appendix A).

3 TRAFFIC

3.1 Traffic Impact Analysis Report

A Traffic Impact Analysis Report (TIAR) was submitted on February 17, 2023 to the City Department of Planning and Permitting (DPP), Traffic Review Branch (TRB) to identify and assess the potential traffic impacts resulting from the Block D & E development. An email correspondence was received on May 2, 2023 confirming that the findings in the report are acceptable (see Appendix A).

APPENDIX A

- City and County of Honolulu - Department of Planning and Permitting, Wastewater Branch: Sewer Connection Application Letter and Approved Sewer Connection Application
- Honolulu Board of Water Supply: Request Letter and Adequacy Letter
- Honolulu Fire Department: HFD Requirement and Email Correspondence
- City and County of Honolulu – Department of Planning and Permitting, Civil Engineering Branch: LID Correspondence with Keith Miyashiro
- Hawaiian Electric Company: Request Letter and Will Serve Letter
- Hawaiian Telcom: Request Letter and Email Correspondence
- Spectrum (Formerly Oceanic and Charter Communications): Utility Assessment Request Letter and Email Correspondence
- Hawaii Gas: Email Correspondence and Adequacy Letter
- Traffic Review Branch: Email Correspondence

SITE DEVELOPMENT DIVISION MASTER APPLICATION FORM

All required documents and fees must accompany this application form. Please visit www.honoluluodpp.org for applicable procedures and fees under the menu heading Application & Forms, Site Engineering and Subdivision Permits. Electronic submittal of permit applications and other permit-related documents constitutes agreement by the applicant or authorized representative to transact business electronically with this department, in accordance with HRS Chapter 489E.

**City and County of Honolulu - Department of Planning and Permitting
Wastewater Branch**

**Sewer Connection Application Letter
Approved Sewer Connection Application**

I. PERMIT VARIANCE APPROVAL

Check one or more as appropriate:

- | | | | |
|--------------------------------------|--|--|--|
| <input type="checkbox"/> Grading | <input checked="" type="checkbox"/> Sewer Connection | <input type="checkbox"/> Flood Hazard Variance | <input type="checkbox"/> Subdivision, Easement Consolidation |
| <input type="checkbox"/> Grubbing | | <input type="checkbox"/> Flood Determination | <input type="checkbox"/> Park Dedication |
| <input type="checkbox"/> Stockpiling | | <input type="checkbox"/> Floodway Permit | <input type="checkbox"/> Lot Determination |
| <input type="checkbox"/> Trenching | | <input type="checkbox"/> Flood Map Revision | <input type="checkbox"/> Ag. Site Development |

Complete Sections I, II, III and all other sections as possible

II. LOT AND LAND USE INFORMATION

TAX MAP KEY(S) 2-3-002:116 Lot Area: 78,400 /1.80 acres sq.ft./ac.
 Zoning District: Kakaako Dev. District Development Plan Designation: HCDA Kakaako Dev District State Land Use District: Urban
 Street Address/Location of Property: Ward Avenue, Honolulu, HI 96814
 Present Use of Property/Building: Commercial
 Project Name (if any): Ward Village - Block N West
 Request/Proposal (describe the nature of the request, proposed activity or project): The project proposes 340 residential units, 10,455 sf retail space, and 5,958 sf restaurant space.

III. APPLICANT INFORMATION

| | Owner/Developer | Engineer/Architect | Contractor (or Agent for Subdivision apps only) |
|-----------------|---------------------------------|----------------------------------|---|
| Name (& title) | Victoria Ward Limited | Wilson Okamoto Corporation | |
| Mailing Address | 1240 Ala Moana Blvd., Suite 200 | 1907 S. Beretania St., Suite 400 | |
| | Honolulu HI 96814 | Honolulu HI 96826 | |
| | City State Zip | City State Zip | City State Zip |
| Phone Number(s) | (808) 591-411 | (808) 946-2277 | |
| Email Address | | gkuwaye@wilsonokamoto.com | |

| | | | |
|-----------|-------------------------|------------------------------------|------------------------|
| APPLICANT | Glenn Kuwaye | VP & Director of Civil Engineering | |
| | Print NAME of applicant | Print TITLE of applicant | Signature of applicant |

IV. FOR GRADING/GRUBBING/STOCKPILING INFORMATION ONLY

Estimated Dates: Start: _____ Completion: _____ Borrow Material: _____
 Area of work (sf or acres): _____ Borrow Site: _____
 Disturbed area (sf or acres): _____ Disposal Material: _____
 Estimated Quantity (cy): Cut: _____ Fill: _____ Disposal Site: _____

V. AUTHORIZED AGENT

This statement of authorization is used in reference to the information provided for in sections I, II and III above.

I/We, _____, hereby authorize _____
Print NAME and TITLE of person giving authority Print NAME of person receiving authority (Authorized Agent)
 to act in my/our behalf in obtaining/closing the Grading/Grubbing/Stockpiling/Trenching permit for the project.

 Signature of Owner/Developer giving authority Date

FOR DIVISION USE ONLY:

Grading Permit No.: _____ Application No.: _____
 Trenching Permit No.: _____ Date of Application: _____
 Received By: _____

SITE DEVELOPMENT DIVISION MASTER APPLICATION FORM

(REVERSE SIDE)

VI. FOR TRENCHING INFORMATION ONLY Tax Map Key(s): 2-3-002:116

Work to be performed for: _____ Work to be done: Service Connection Repair Borings
 Estimated Dates: Start: _____ Completion: _____ Other: _____
 Estimated Value of work: \$ _____ Dimensions: _____ ft/in _____ ft/in _____ ft/in
 in the city right - of - way

| AGENCY CLEARANCES | SIGNATURE | DATE | ADDRESS | PHONE NO. |
|---|-----------|------|--|-----------|
| DPP, Wastewater Branch | | | 650 So. King St., FMB, 1st Flr. | 768-8210 |
| DTS, Traffic Signal | | | 650 So. King St., FMB, 2nd Flr. | 768-8388 |
| DDC, Street Lightning | | | 650 So. King St., FMB, 11th Flr. | 768-8431 |
| BWS, Customer Care | | | 630 So. Beretania St., 1st Flr. | 748-5460 |
| Hawaiian Electric Co., Inc., Construction Installation | | | 820 Ward Avenue, 4th Flr. bryan.yonaha@hawaiianelectric.com | 543-5654 |
| Hawaiian Telcom, Excavation | | | 1177 Bishop St., Lobby | 546-7746 |
| Gasco., Inc., Maps & Records | | | 515 Kamakee St., 1st Flr. | 594-5575 |
| Spectrum, Engineering & Construction | | | 200 Akamainui St. haw.engineering.research@charter.com | 625-8443 |
| DFM, Division of Road Maintenance (if trenching 200 linear feet or more) | | | 99-999 Iwaena Street, #214 | 484-7695 |

DPP: Dept. of Planning and Permitting DTS: Dept. of Transportation Services DDC: Dept. of Design and Construction BWS: Board of Water Supply DFM: Dept. of Facility Maintenance

Note to agencies providing clearances: Signature on this form may be reproduced (scanned and emailed) and submitted electronically for permitting purposes in accordance with HRS Chapter 489E. Original wet Signatures may be retained by the applicant(s).

Note to the applicants receiving clearances: The utilities listed above may not represent all underground utilities located within City rights-of-ways, nor do their utility clearances relieve the permittee from complying with all other applicable codes, rules, regulations, and/or permit procedures including, but not limited to, additional clearances and requirements for other utilities (i.e. irrigation, data transmission, etc.) located within City rights-of-ways. Pursuant to ROH 1990, Section 14-17.6, the permittee shall indemnify and save harmless the city for any injuries or damages to any person or property received or sustained by any person as a consequence of any act or acts of the permittee on work done under the trenching permit.

VII. FOR SEWER CONNECTION INFORMATION ONLY To receive a response via e-mail, provide email address below and check box here:

Residential: No. of Proposed Units 340 (Provide breakdown below) gkuwaye@wilsonokamoto.com
 56 Studios 156 1 Bedroom 76 2 Bedrooms 52 3 Bedrooms 4 Bedrooms Other

Non-Residential: (See attached sewer table for required category and quantity and provide any additional information in the remarks)

| CATEGORY(IES) | QUANTITY(IES) | NEW WATER METER SIZE(S) |
|---------------|---------------|-------------------------|
| Restaurant | 5,958 sf | TBD |
| Retail | 10,455 sf | TBD |

Date of Connection: 2026 (approximate) Connection Work Desired: Use Existing Lateral Other
 Dimensions: _____ ft. _____ in. _____ ft. _____ ft.

| Existing Structures/Dwellings on Property: (Provide breakdown below) | QUANTITY(IES) | REMAIN | DEMOLISH |
|--|---------------|--------|-----------|
| TYPE (i.e. Single Family) | | | |
| Commercial | 80,684 sf | 0 sf | 80,684 sf |

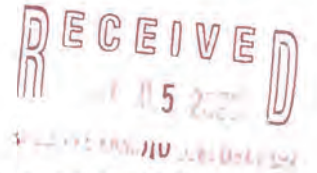
Remarks: (Provide any additional information on the lines provided) To receive a response via e-mail, provide email address below and check box here:
 gkuwaye@wilsonokamoto.com

FOR DIVISION USE ONLY:
 Date of Application: _____ Received By: _____ Application No.: _____

rev. 07/2020



DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
 650 SOUTH KING STREET * HONOLULU, HAWAII 96813
 Phone: (808) 768-8209 * Fax: (808) 768-4210



SEWER CONNECTION APPLICATION

APPLICATION NO.: 2023/SCA-0509 STATUS: **Approved with Conditions** **\$1,574,608.00**
 DATE RECEIVED: 05/01/2023 IWDP APP. NO.:
 PROJECT NAME: 2023/SCA-0509 Ward Village - Block N West
 Estimated Wastewater System Facility Charge

LOCATION:

| Zone | Section | Plat | Parcel |
|------|---------|------|--------|
| 2 | 3 | 002 | 116 |

 363 WARD AVE HONOLULU / DOWNTOWN 96814 153,171 Sq. Ft.
 SPECIFIC LOCATION: Ward Avenue

APPLICANT: **Glenn Kuwaye**
 1907 South Beretania Street, Suite 400
 Honolulu, HI 96826

DEVELOPMENT TYPE: **Dwelling, Multi-family** SEWER CONNECTION WORK DESIRED: **New**

OTHER USES: **Restaurant: 5,958 sf**
Retail: 10,455 sf

NON-RESIDENTIAL AREA: s.f. APPROXIMATE DATE OF CONNECTION:

| PROPOSED UNITS | EXISTING UNITS | UNITS TO BE DEMOLISHED |
|-----------------------|--------------------------|----------------------------------|
| No. of New Units: 340 | No. of Existing Units: 0 | No. of Units to be Demolished: 0 |
| Studios: 56 | Studios: | Studios: |
| 1-Bedroom: 156 | 1-Bedroom: | 1-Bedroom: |
| 2-Bedroom: 76 | 2-Bedroom: | 2-Bedroom: |
| 3-Bedroom: 52 | 3-Bedroom: | 3-Bedroom: |
| 4-Bedroom: | 4-Bedroom: | 4-Bedroom: |
| 5-Bedroom: | 5-Bedroom: | 5-Bedroom: |
| 6-Bedroom: | 6-Bedroom: | 6-Bedroom: |

REMARKS Submit construction plans for review and approval. SCA approval is for sewer capacity only, and shall not be construed as approval to construct in and/or over the existing City sewer easement crossing the property. A new SCA may be required if/when construction in the City sewer easement is approved.

Approved with **05/02/2023** Conditions Valid 2-years after approval date. Construction plans shall be completed and approved within this 2-year period. Construction shall commence within 1-year after approval of plans.

EXPIRATION DATE: 05/01/2025 * Applicable WSFC shall be collected at the prevailing rate in accordance with ROH 1990, Chapter 14, Sections 14-10.3, 14-10.4, 14-10.5 and Appendix 14-C.

REVIEWED BY: **Jing Meng**

 Site Development Division, Wastewater Branch

ExternalID: 111789072-001 JobId: 111789072

Honolulu Board of Water Supply

**Request Letter
Adequacy Letter**



8206-77
December 16, 2022

City and County of Honolulu
Board of Water Supply
Customer Care Operating Unit
630 south Beretania Street
Honolulu, HI 96813

Attention: Mr. Robert Chun

Subject: Block N West – BWS Water System Adequacy

Dear Mr. Chun:

We are requesting Board of Water Supply assistance to determine adequacy of the existing source, storage, and water distribution systems for the residential and commercial development of the Ward Village Block N West located at TMK: 2-3-02-116.

The development will include the following programming:

- Residential Units – 350 Units
 - Studio – 50 Units
 - 1 Bedroom Units – 150 Rooms
 - 2 Bedroom Units – 100 Rooms
 - 3 Bedroom Units – 50 Rooms
- Restaurant – 5,000 sf
- Commercial – 20,000 sf

In addition to your review of the existing water system, we would like to obtain pressure and flow information for any existing fire hydrants located adjacent the project site.

Please call (808) 946-2277 should you have any questions or require further information.

Sincerely,

John S. H. Kim

Enclosures: Project Vicinity and Location Map

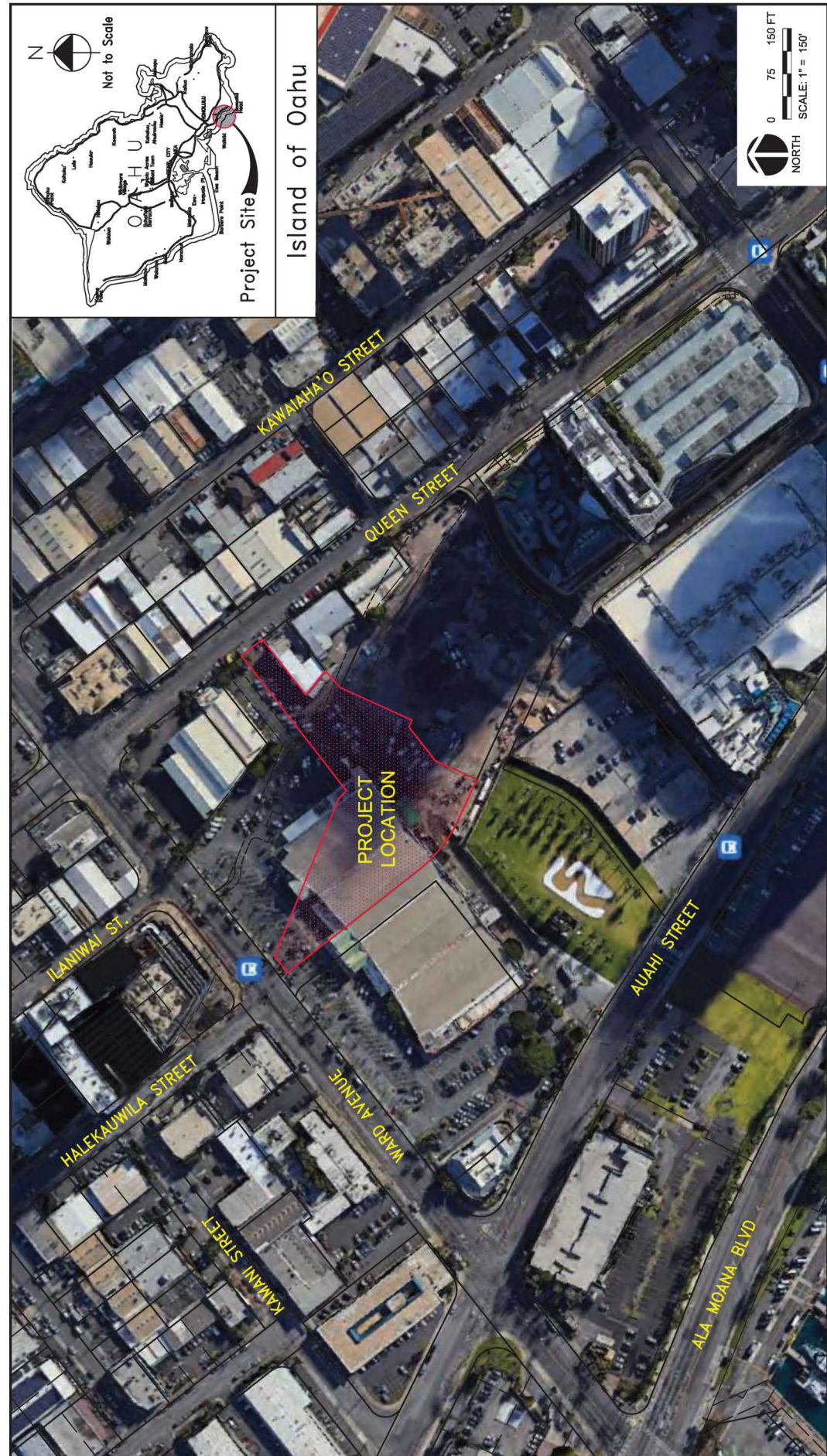


FIGURE 1
PROJECT VICINITY AND LOCATION MAP

WARD VILLAGE BLOCK N WEST / HONOLULU, OAHU, HAWAII



BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com



January 20, 2023

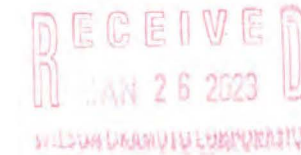
RICK BLANGIARDI, MAYOR

BRYAN P. ANDAYA, Chair
KAPUA SPROAT, Vice Chair
MAX J. SWORD
NA'ALEHU ANTHONY
JONATHAN KANESHIRO

DAWN B. SZEWCZYK, P.E., Ex-Officio
EDWIN H. SNIFFEN, Ex-Officio

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

ERWIN M. KAWATA
Deputy Manager



Mr. John S. H. Kim, P.E.
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Kim:

Subject: Your Letter Dated December 21, 2022 Regarding Availability of Water and Flow and Pressure Data for the Proposed Ward Village Block N West Project Tax Map Key: 2-3-002: 116

Thank you for your letter regarding the proposed mixed-use development of 350-units, 5,000 square feet of restaurant space, and 20,000 square feet of commercial space.

The existing water system is currently adequate to accommodate the proposed residential redevelopment. However, please be advised that the existing Honolulu water system capacity has been reduced due to the shut-down of the Halawa Shaft pumping station as a proactive measure to prevent fuel contamination from the Navy's Red Hill Bulk Storage Tank fuel releases. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval, pending evaluation of the water system conditions at that time on a first-come, first-served basis. 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.

We continue to request 10% voluntary water conservation of all customers until new sources are completed and require water conservation measures in all new developments. If water consumption significantly increases, progressively restrictive conservation measures may be required to avoid low water pressures and disruptions of water service.

Presently, there is no moratorium on the issuance of new and additional water services. Water distributed via the BWS water systems remains safe for consumption. The BWS is closely monitoring water usage and will keep the public informed with the latest findings. Please visit our website at <http://www.boardofwatersupply.com> and <http://www.protectoahuwater.org> for the latest updates and water conservation tips.

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 required for all proposed developments. These measures include utilization of nonpotable water for irrigation using gray water, rain catchment, drought tolerant plants, xeriscape landscaping, efficient irrigation systems, such as a drip system and moisture sensors, and the use of Water Sense labeled ultra-low flow water fixtures and toilets. Prior to BWS approval of water availability, the developer is required to submit a Water Conservation and Reuse Plan for BWS review and approval.

Mr. John S. H. Kim
 January 20, 2023
 Page 2

High-rise buildings with booster pumps will be required to install water hammer arrestors or expansion tanks to reduce pressure spikes and potential main breaks in our water system.

Proposed mixed-use developments are required to install separate domestic water meters and laterals serving the residential and non-residential spaces.

The proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.

The construction drawings should be submitted for our approval, and the construction schedule should be coordinated to minimize impact to the water system.

The BWS has suspended fire flow tests on fire hydrants as a water conservation measure. However, you may use the following calculated flow data for Fire Hydrant No. 99, and M00144:

| Fire Hydrant Number | Location | Static Pressure (psi) | Residual Pressure (psi) | Flow (gpm) |
|---------------------|-------------|-----------------------|-------------------------|------------|
| 99 | Queen St. | 76 | 58 | 4,000 |
| M00144 | Ward Avenue | 76 | 59 | 4,000 |


The data is based on the existing water system, and the static pressure represents the theoretical pressure at the point of calculation with the reservoir full and no demands on the water system. The static pressure is not indicative of the actual pressure in the field. Therefore, in order to determine the flows that are available to the site, you will have to determine the actual field pressure by taking on-site pressure readings at various times of the day and correlating that field data with the above hydraulic design data.

The map showing the location of the fire hydrants is attached.

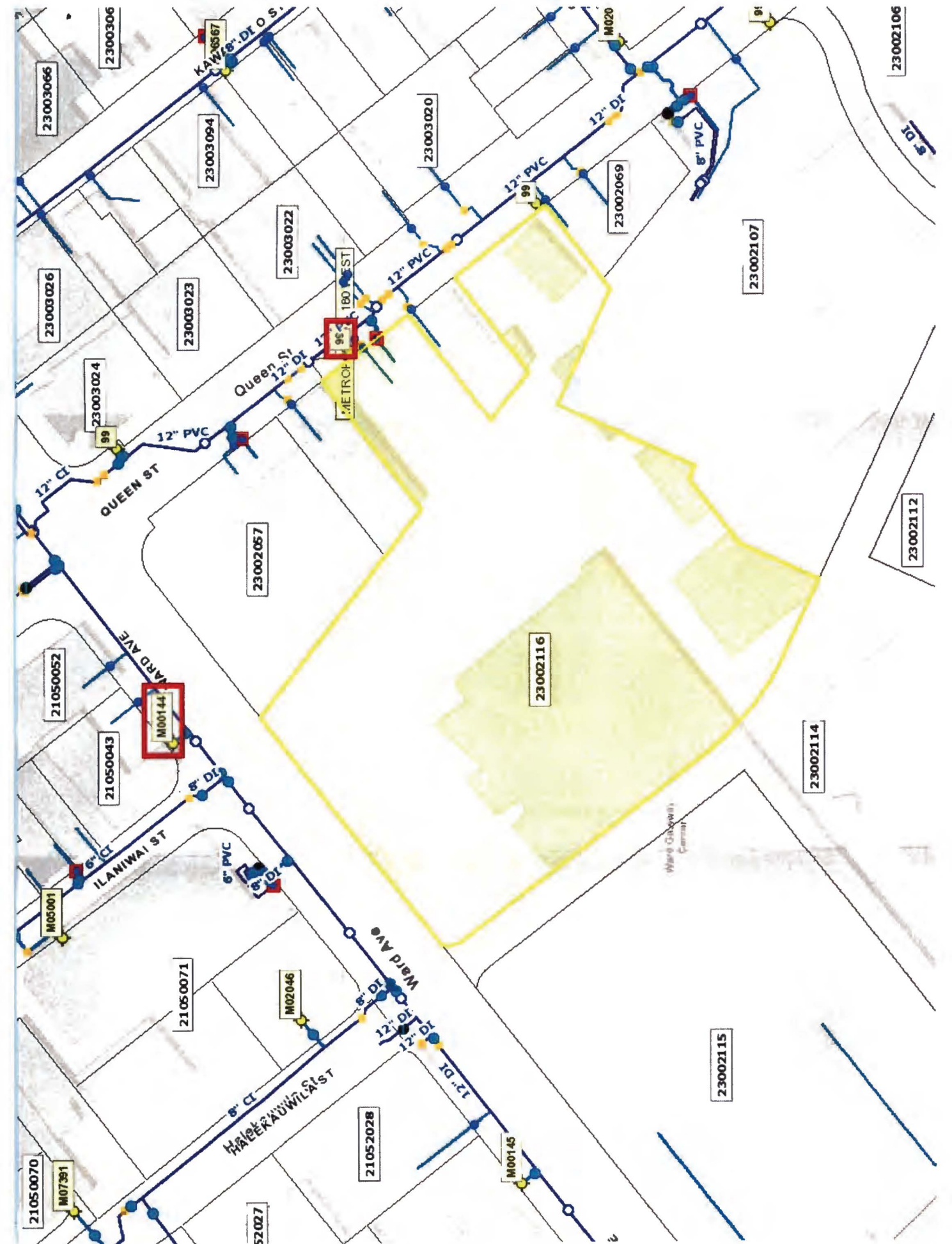
The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

If you have any questions, please contact Barry Usagawa of our Water Resources Division, at (808) 748-5900.

Very truly yours,


 ERNEST Y. W. LAU, P.E.
 Manager and Chief Engineer

Attachment



Honolulu Fire Department HFD Requirement Email Correspondence

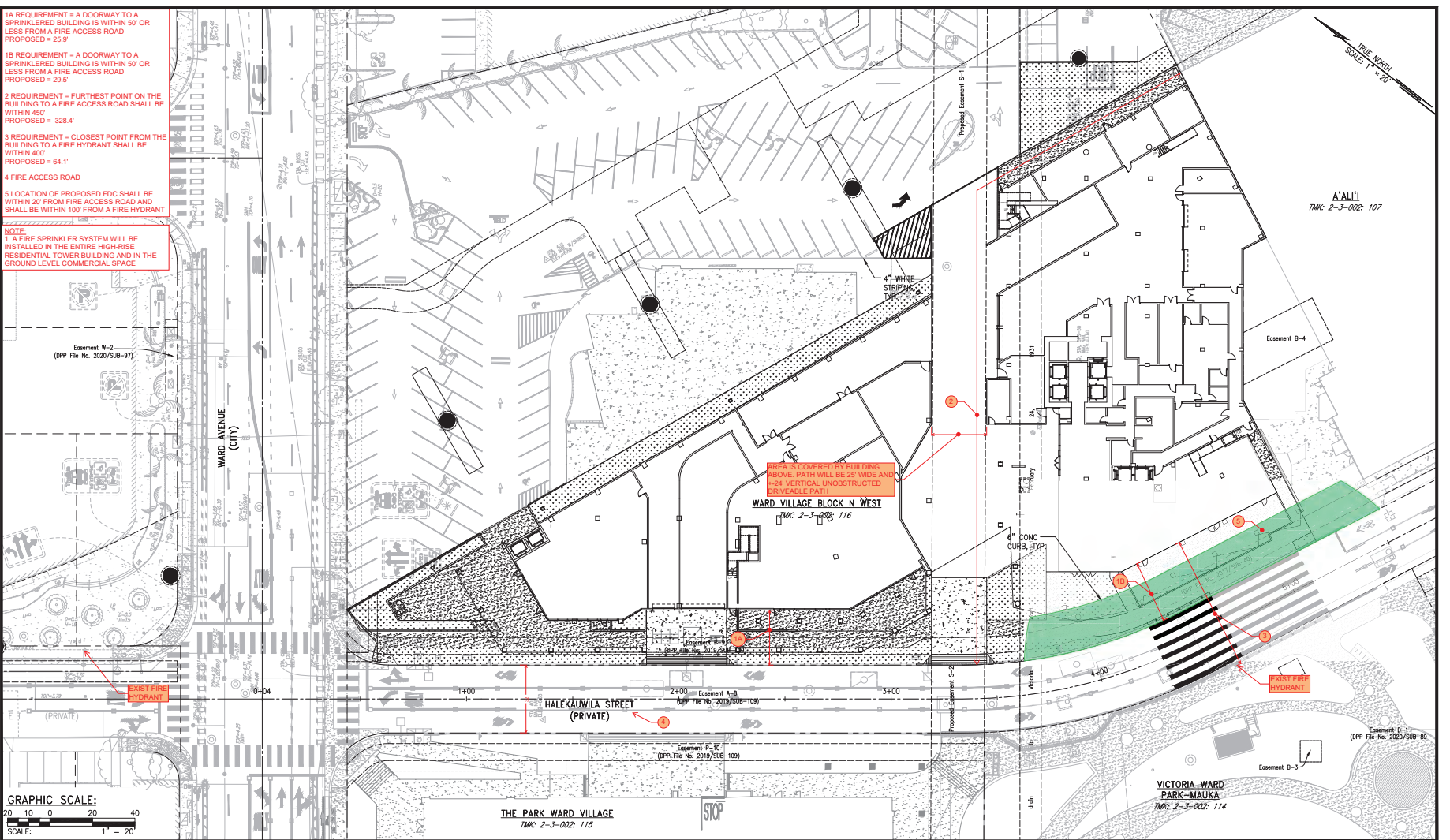


FIGURE 1
FIRE CODE STUDY



John Kim

From: Zapata, Ricardo A <rzapata@honolulu.gov>
Sent: Tuesday, March 28, 2023 12:51 PM
To: John Kim
Subject: RE: Ward Village Block N West - HFD - ActionItem:00036:RXw40

John,
I confirm that the HFD access and water supply requirements as detailed in the attachment are correct and satisfactory.
Ricardo Zapata
Fire Inspector HFD

From: John Kim [mailto:jkim@wilsonokamoto.com]
Sent: Tuesday, March 28, 2023 12:01 PM
To: Zapata, Ricardo A <rzapata@honolulu.gov>
Subject: RE: Ward Village Block N West - HFD - ActionItem:00036:RXw40

CAUTION: Email received from an EXTERNAL sender. Please confirm the content is safe prior to opening attachments or links.

Hi Ricardo,

Thanks again for the call this morning to discuss the subjected project and the preliminary review on the site access and water supply requirements. Please confirm general acceptance of HFD requirements.

Please feel free to reach out to me should you like to discuss further.

Thanks,
John S. H. Kim, PE
Associate Project Manager



1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
T (808) 946-2277 F (808) 946-2253
W <http://www.wilsonokamoto.com>

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From: John Kim <jkim@wilsonokamoto.com>
Sent: Wednesday, December 21, 2022 8:58 PM
To: rzapata@honolulu.gov
Subject: Ward Village Block N West - HFD - ActionItem:00036:RXw40

Hi Ricardo,

We have another project we'd like to share with HFD to confirm our understanding of the fire protection requirements relating to site access and water supply. Wondering if it would be possible to arrange a virtual meeting or over the phone with you, whichever works best for you, to discuss another Ward Village project.

Victoria Ward Ltd. is proceeding with another high-rise residential condominium tentatively named Block N West. See attached for the location map. Project program to be:

Residential – 350 units
Restaurant – 5,000 sf
Other Commercial – 20,000 sf

Attached figure provides the proposed site layout and locations of exiting/proposed hydrants, fire access lanes, and building entries. We also provided callouts and dimensions to clarify our understanding as it relates to site access and water supply. Also, for clarification, a future extension of Halekauwila Street is being shown that connects Kamakee Street to Ward Avenue. This will be done by a separate project (Block H) and will be completed prior to Block N West.

Would it be possible to review and provide input on the site access and water supply requirement? I believe WSP has already reached out to you regarding the building design. Feel free to contact me if you'd like to discuss this further. Thanks,
John S. H. Kim, PE
Associate Project Manager



1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
T (808) 946-2277 F (808) 946-2253
W <http://www.wilsonokamoto.com>

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City and County of Honolulu - Department of Planning and Permitting
Civil Engineering Branch

LID Correspondence with Keith Miyashiro

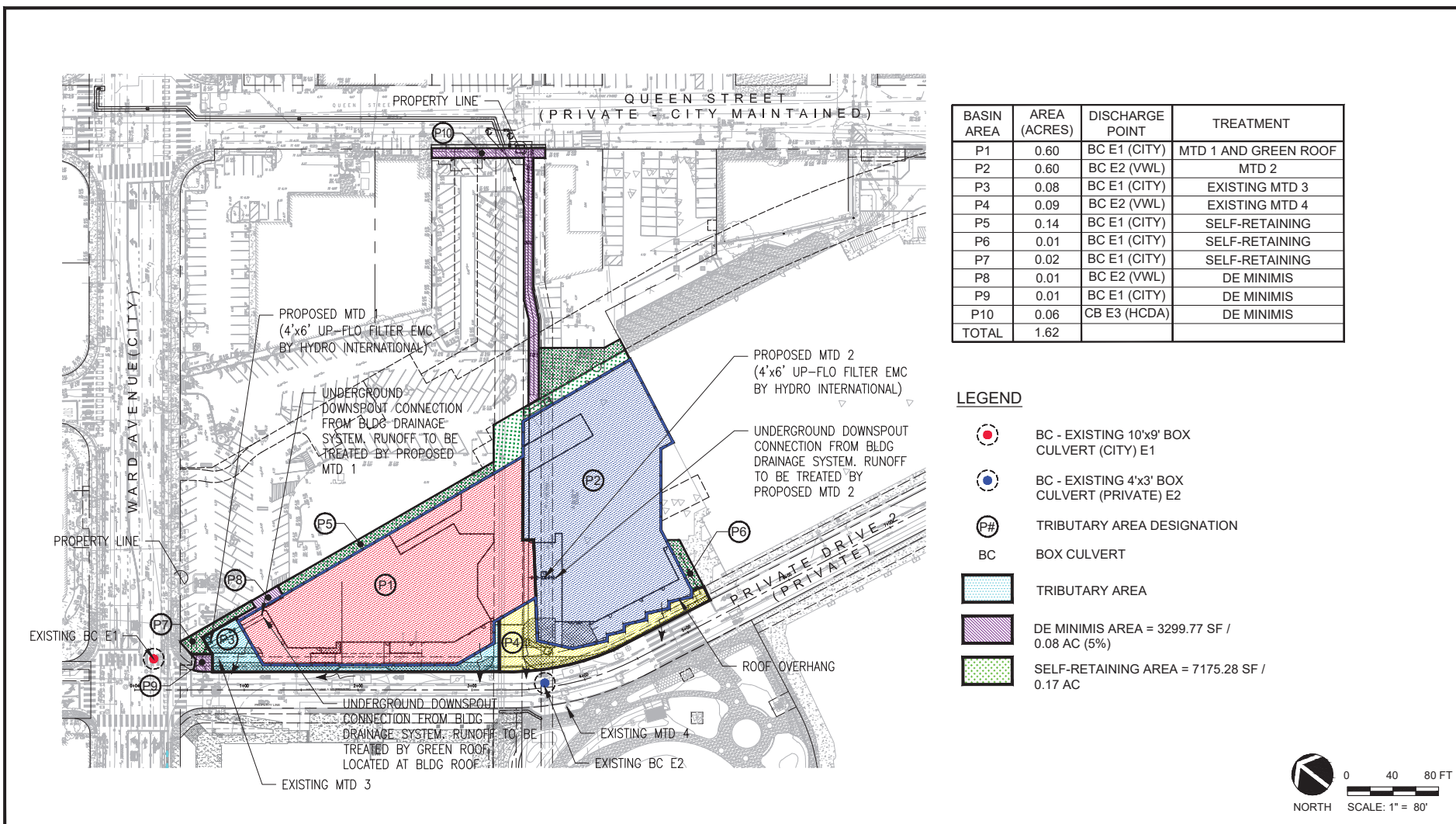


FIGURE D1
STORM WATER QUALITY ANALYSIS



From: [Miyashiro, Keith K](#)
To: [John Kim](#)
Subject: RE: Ward Village Block N West - SWQ Strategy - ActionItem:00037:RXw40
Date: Thursday, April 13, 2023 9:10:30 AM

Hi John,

Based on the information the SWQ concept appears to be ok however actual confirmation of the concept and compliance with the Water quality Rules will be made at the time of formal plan review.

Thanks,

Keith K. Miyashiro

Civil Engineer
City and County of Honolulu
Department of Planning and Permitting
Civil Engineering Branch
650 S. King Street, Honolulu, HI 96813
Email: kmiyashiro1@honolulu.gov
Phone: 808-768-8106

From: John Kim <jkim@wilsonokamoto.com>
Sent: Thursday, April 13, 2023 9:01 AM
To: Miyashiro, Keith K <kmiyashiro1@honolulu.gov>
Subject: RE: Ward Village Block N West - SWQ Strategy - ActionItem:00037:RXw40

CAUTION: Email received from an **EXTERNAL** sender. Please confirm the content is safe prior to opening attachments or links.

Hi Keith,

Following up with the email below. Please let me know after you get a chance to review.

Thanks,
John S. H. Kim
T (808) 946-2277

From: John Kim <jkim@wilsonokamoto.com>
Sent: Monday, April 3, 2023 1:01 PM
To: Miyashiro, Keith K <kmiyashiro1@honolulu.gov>
Subject: RE: Ward Village Block N West - SWQ Strategy - ActionItem:00037:RXw40

Hi Keith,

I've confirmed with the design team that the green roof will be utilized to the maximum extent

practicable. We're anticipating +-10,000 sf of the green roof, but that number will continue to be refined as we proceed into the design and before submitting it for formal permit review. The proposed area between P9 and P10 is just utility AC trench restoration for the Water line and Gas line service off Queen St. Please see attached for the revised figure. Please let me know if the project's swq strategy generally conforms with the WQ standards, understanding that formal approval shall come during permitting.

Thanks,
John S. H. Kim
T (808) 946-2277

From: Miyashiro, Keith K <kmiyashiro1@honolulu.gov>
Sent: Wednesday, January 18, 2023 8:09 AM
To: John Kim <jkim@wilsonokamoto.com>
Subject: RE: Ward Village Block N West - SWQ Strategy - ActionItem:00037:RXw40

Hi John,

Sorry for the late response on this. CEB can confirm retention infeasibility via GWT elevation upon review of the grading plans and SWQR (grade elevations, soils report, etc.). For biofiltration is there a particular reason as to why a green roof is not incorporated into this project? I noticed that some of the other buildings utilized a green roof. No roof deck proposed for this project? Alternative compliance appears to be ok however landscaping should be incorporated to the MEP where applicable. Also what is being proposed for the area between P9 and P10?

Thanks,

Keith K. Miyashiro

Civil Engineer
City and County of Honolulu
Department of Planning and Permitting
Civil Engineering Branch
650 S. King Street, Honolulu, HI 96813
Email: kmiyashiro1@honolulu.gov
Phone: 808-768-8106

From: John Kim <jkim@wilsonokamoto.com>
Sent: Tuesday, January 17, 2023 4:32 PM
To: Miyashiro, Keith K <kmiyashiro1@honolulu.gov>
Subject: FW: Ward Village Block N West - SWQ Strategy - ActionItem:00037:RXw40

CAUTION: Email received from an **EXTERNAL** sender. Please confirm the content is safe prior to opening attachments or links.

Hi Keith,

Following up with the request below. Please let me know after you get a chance to review.

Thanks,
John S. H. Kim
T (808) 946-2277

From: John Kim <jkim@wilsonokamoto.com>
Sent: Friday, December 23, 2022 8:40 AM
To: Keith Miyashiro (kmiyashiro1@honolulu.gov) <kmiyashiro1@honolulu.gov>
Subject: Ward Village Block N West - SWQ Strategy - ActionItem:00037:RXw40

Hi Keith,

Victoria Ward Ltd. is proceeding with another high-rise residential condominium tentatively named Block N West. See attached for the location map.

Would it be possible to confirm if alternative compliance treatment via a manufactured treatment device could be used for this project, given the site constraints listed below, which makes infiltration and biofiltration BMPs infeasible for treatment to most of the site?

1. The ground water table is at +3.00 (with a 3' buffer up to +6.00).
2. The finish floor of the proposed building will be +7.25.
3. The proposed building covers most of the project site.
4. The existing grades around the site are low at around +4.00 to +6.50.
5. The BMP inverts would be within 3' of the GWT.
6. Minimum underground drainage system depths.

Feel free to contact me should you like to discuss further.

Thanks,
John S. H. Kim, PE
Associate Project Manager



1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
T (808) 946-2277 F (808) 946-2253
W <http://www.wilsonokamoto.com>

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Hawaiian Electric Company

Request Letter and Will Serve Letter



Ronald N. S. Ho & Associates, Inc. electrical engineers

Sean K. Sugai, P.E. • Steven H. Sakai, P.E. • Dennis I. Toba, P.E. • Ronald N. S. Ho, P.E. • Billy J. Ornellas, P.E.

27 December 2022

Hawaiian Electric Co.
820 Ward Avenue
Honolulu, HI 96840

Attention: Eric Shimono, P.E.

Project: Ward Village Block NW Utility Assessment

Enclosures: (a) Block NW Concept Site Plan
(b) TMK No. 2-3-002:116

Please be advised that we are working with Wilson Okamoto Corporation who is under contract to Howard Hughes Corporation to develop a utility assessment report for the Block NW development (TMK No. 2-3-002:116). Please find attached for your review and comment enclosure (a) and enclosure (b) which indicate the conceptual site plan and location. It is currently anticipated that the building will consist of 350 dwelling units, a 5,000 square foot restaurant space, and 20,000 square feet of commercial space. Based on a diversified per unit demand load of 5 kVA, a pro-rated common area demand load of 3kVA per residential unit, a demand load of 5 VA per square foot for the retail, and a demand load of 11 VA per square foot for restaurant space, the preliminary peak demand load would be 2,955 kVA. This peak demand load is for planning purposes and it should be noted that the building load, when calculated based on the currently enforced edition of the National Electrical Code, will be higher than this calculation. Please advise on the following:

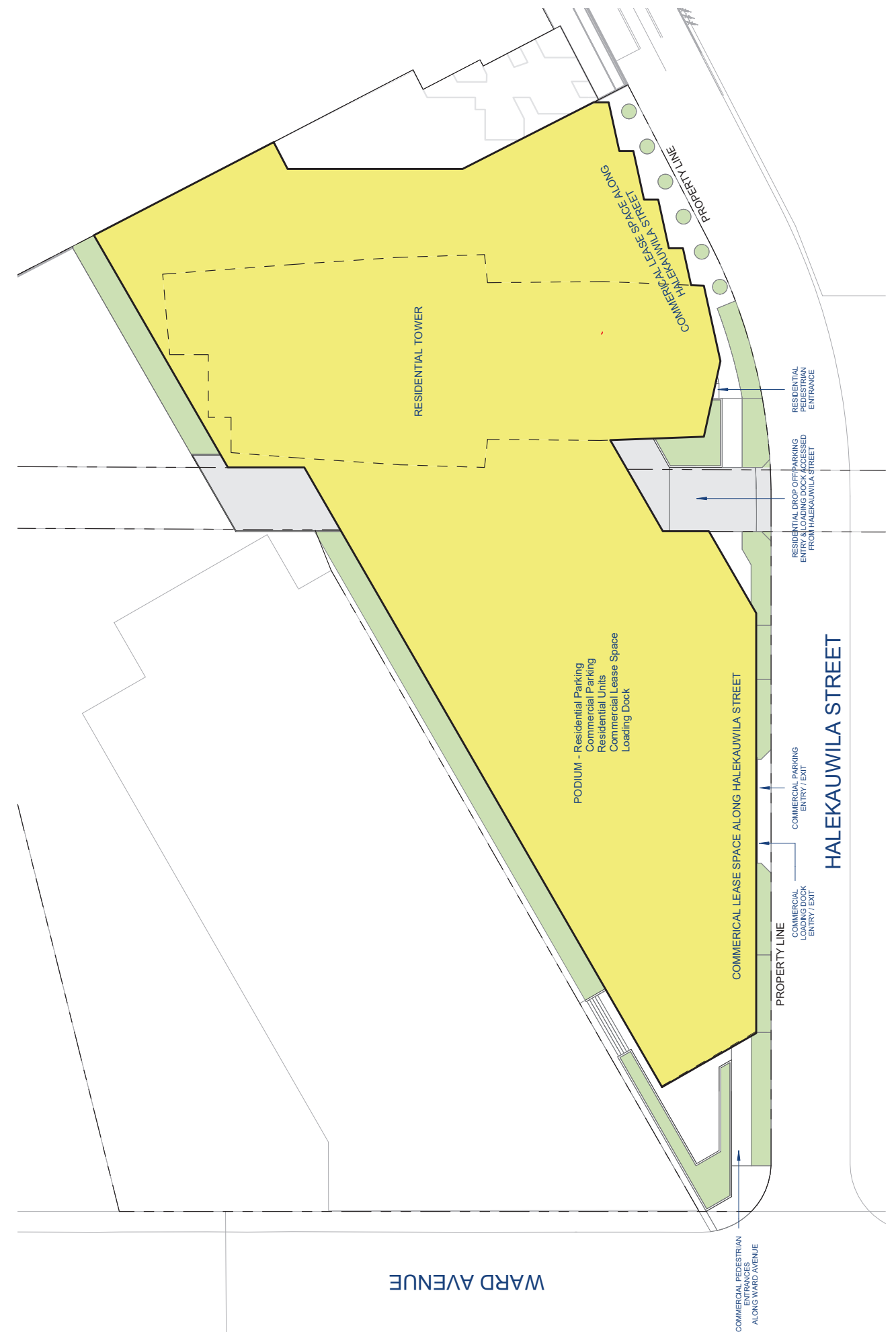
1. HECO would provide a "will serve" letter for this project which will be included in the project's application for approval by the Hawaii Community Development Authority.

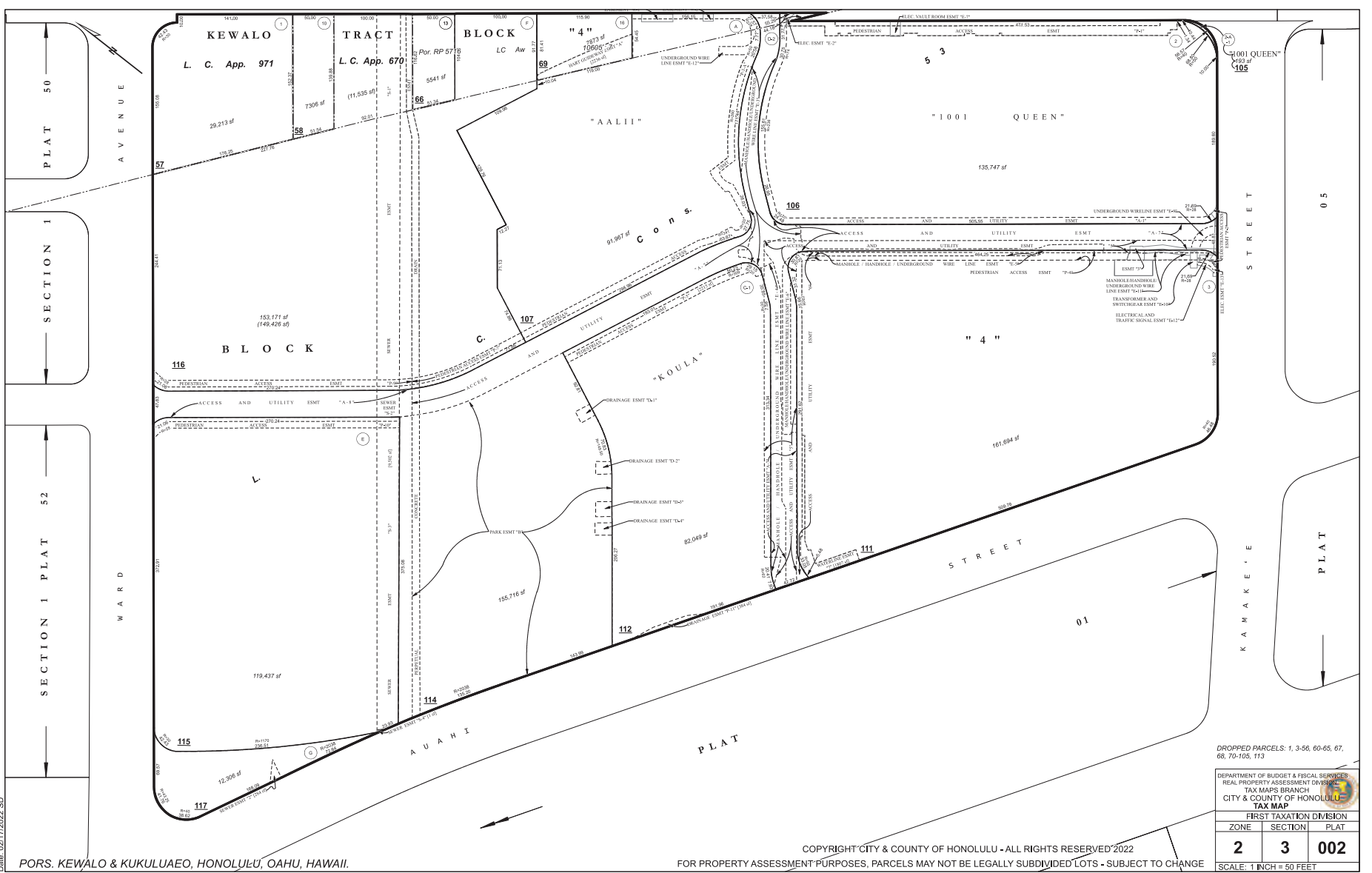
We are trying to complete the draft utility assessment report as quickly as feasible and would appreciate any information you can furnish within the next three weeks. Your assistance in expediting this matter is greatly appreciated. Should you have any questions, please call.

Very truly yours,

Scott Shiraishi

cc: Gary Fukumoto, HECO
John Kim, WOC





DROPPED PARCELS: 1, 3-56, 60-65, 67, 68, 70-105, 113

DEPARTMENT OF BUDGET & FISCAL SERVICES
REAL PROPERTY ASSESSMENT DIVISION
TAX MAPS BRANCH
CITY & COUNTY OF HONOLULU
TAX MAP

| FIRST TAXATION DIVISION | | |
|-------------------------|---------|------|
| ZONE | SECTION | PLAT |
| 2 | 3 | 002 |

SCALE: 1 INCH = 50 FEET



February 18, 2023

Mr. Scott Shiraiishi
Ronald N.S. Ho & Associates
2153 N. King Street #201
Honolulu, HI. 96819

Dear Mr. Shiraiishi:

Re: Ward Village – Block N West

This is in response to your request for a "Will Serve" letter for the subject project.

We have existing distribution circuits along Robinson that could potentially be used to serve the future development. Please keep in mind that these circuits may need to be upgraded depending on the ultimate size of this project's load. At this time we do not have sufficient information and detailed plans to make this determination.

We request that you keep us informed on the status of your project. As soon as you have detailed plans, please create a Service Request with us, and be sure to allow sufficient time for us to work on the project.

Please let us know if we can be of assistance in any other way. Should you have any questions, please call me at 543-7590.

Sincerely,

Eric Shimono
Supervising Engineer
Customer Engineering Department

Hawaiian Electric

PO BOX 2750 / HONOLULU, HI 96840-0001

**Hawaiian Telcom****Request Letter and Assessment Letter**

27 December 2022

Hawaiian Telecom Inc.
1177 Bishop Street, 10th Floor
Honolulu, HI 96813

Attention: Ms. Cassandra Yamamoto

Project: Ward Village Block NW Utility Assessment

Enclosures: (a) Block NW Concept Site Plan
(b) TMK No. 2-3-002:116

Please be advised that we are working with Wilson Okamoto Corporation who is under contract to Howard Hughes Corporation to develop a utility assessment report for the Block NW development (TMK No. 2-3-002:116). Please find attached for your review and comment enclosure (a) and enclosure (b) which indicate the conceptual site plan and location. It is currently anticipated that the building will consist of 350 dwelling units, a 5,000 square foot restaurant space, and 20,000 square feet of commercial space. Based on these figures and assuming conventional telecommunications provisioning, it appears that, for planning purposes, approximately 800 telephone pairs would be required. Please advise on the following:

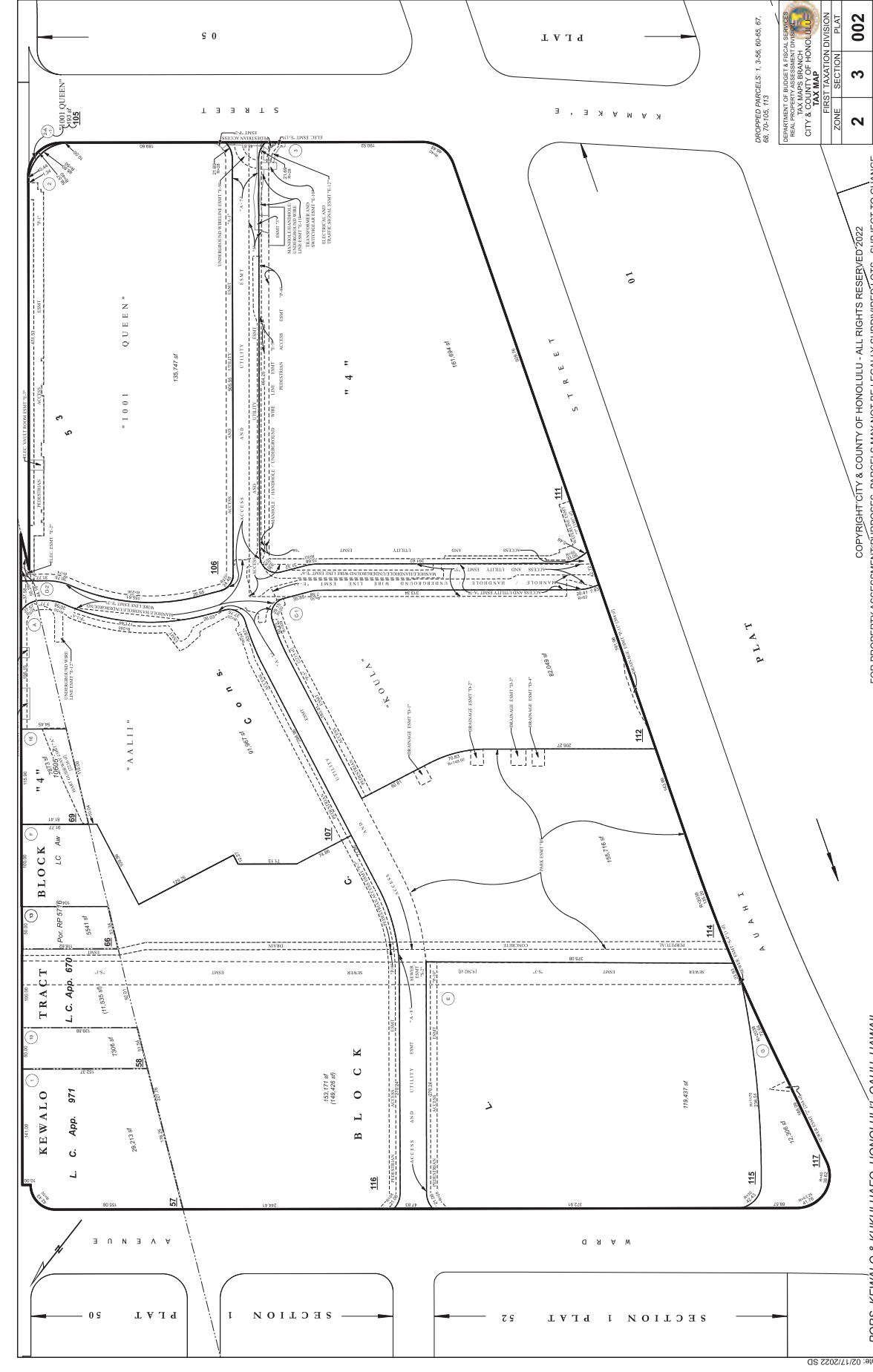
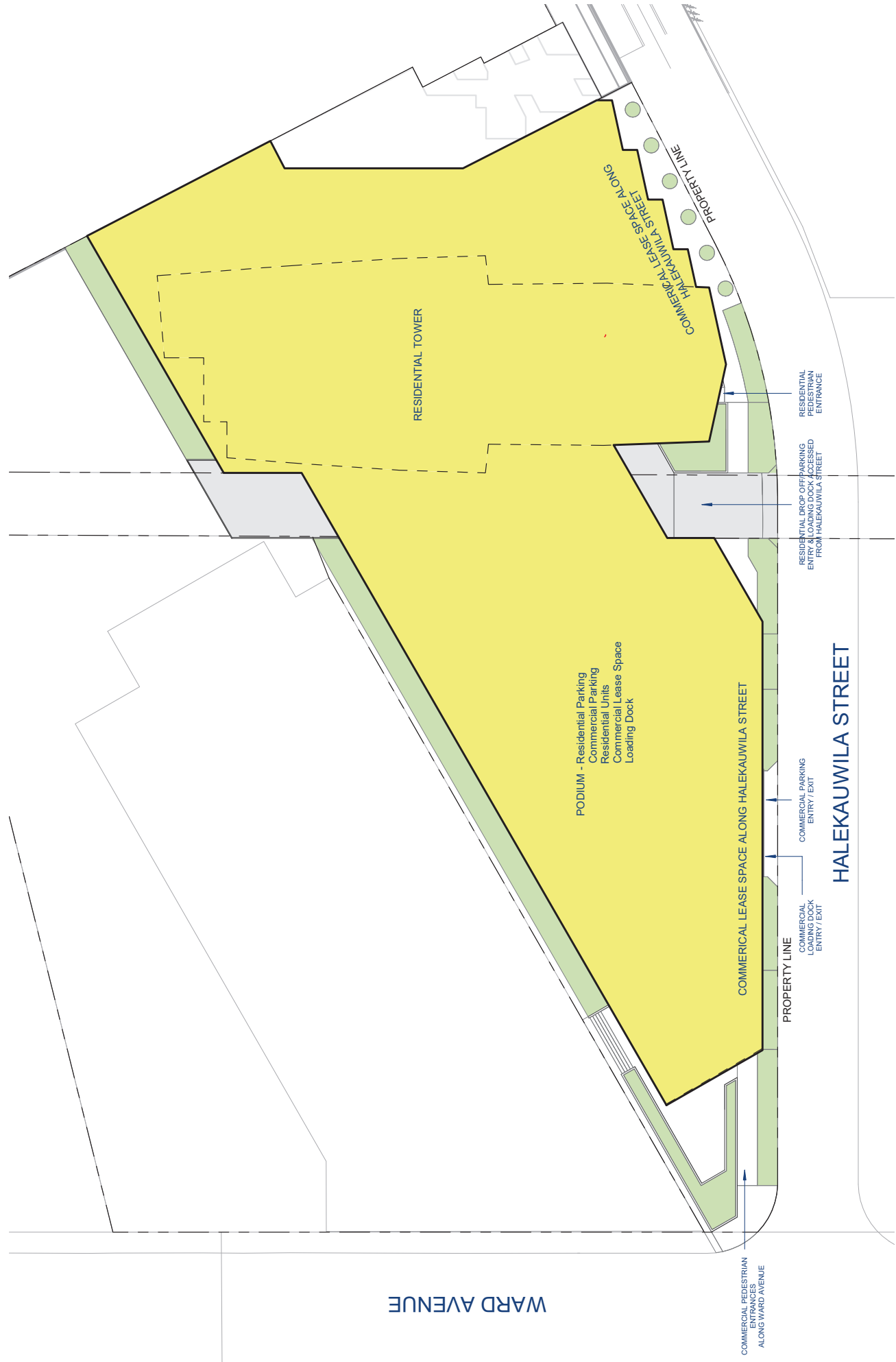
1. We understand that HTCO's distribution system in the area has sufficient capacity to provide service to this development. Off-site improvements will include 4-4" C telecommunication conduits within Halekauwila Street Extension, with 2-4" C telecommunication conduits providing service to this site. Please advise as to the nature and scope of the improvements and whether the Developer might be expected to participate in the cost of these off-site improvements. If the Developer's cost participation is anticipated, please provide an order-of-magnitude budget of the cost.
2. If we may obtain the existing HTCO distribution maps for any existing overhead and underground facilities within or adjacent to the site. These will assist with the development of the utility assessment.

We are trying to complete the draft utility assessment report as quickly as feasible and would appreciate any information you can furnish within the next three weeks. Your assistance in expediting this matter is greatly appreciated. Should you have any questions, please call.

Very truly yours,

Scott Shiraishi

cc: Tracy Hiyane, HTCO
John Kim, WOC



GROUPED PARCELS: 1, 3-56, 60-65, 67, 68, 74-76, 78

DEPARTMENT OF BUDGET & FISCAL SERVICES
REAL PROPERTY TAXATION DIVISION
CITY & COUNTY OF HONOLULU

| ZONE | SECTION | PLAT |
|------|---------|------|
| 2 | 3 | 002 |

FIRST TAXATION DIVISION

SCALE: 1 INCH = 50 FEET

PORS. KEWALO & KUKULUAEO, HONOLULU, OAHU, HAWAII.

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FOR PROPERTY ASSESSMENT PURPOSES, PARCELS MAY NOT BE LEGALLY SUBDIVIDED LOTS - SUBJECT TO CHANGE

March 28, 2023

Scott Shiraishi
Ronald N. S. Ho & Associates, Inc.
2153 North King Street, Suite 201
Honolulu, HI 96819

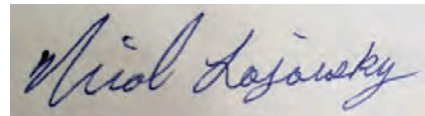
Subject: Block NW

Dear Mr. Shiraishi:

Thank you for sharing information on your proposed Ward Village Block NW located in Honolulu, HI. We understand that this project will have approximately 350 residential units and additional commercial space on the island of Oahu. We are excited to be a part of the development and would gladly provide access to Hawaiian Telcom's services to this new development.

If you have any questions, please do not hesitate to contact me at (808) 546-4858 or email Nicole.Lajousky@hawaiiantel.com.

Sincerely,

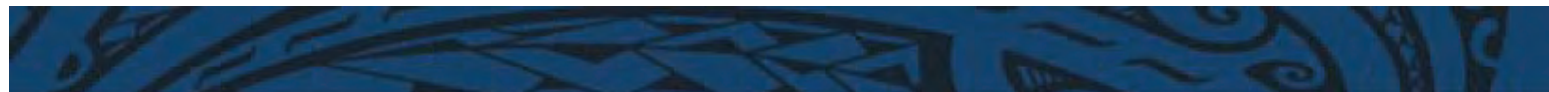
A handwritten signature in blue ink that reads "Nicole Lajousky". The signature is written in a cursive style and is placed on a light-colored rectangular background.

Nicole Lajousky
Strategic Fiber Network Engineer
Strategic Fiber Deployment

Cc: HT-PlanReviews@hawaiiantel.com

Charter Communications aka Spectrum

Utility Assessment Request Letter Email Correspondence





Ronald N. S. Ho & Associates, Inc. electrical engineers

Sean K. Sugai, P.E. • Steven H. Sakai, P.E. • Dennis I. Toba, P.E. • Ronald N. S. Ho, P.E. • Billy J. Ornellas, P.E.

27 December 2022

Charter Communications
200 Akamainui Street
Mililani, HI 96789

Attention: Mr. David Gonsalves

Project: Ward Village Block NW Utility Assessment

Enclosures: (a) Block NW Concept Site Plan
(b) TMK No. 2-3-002:116

Please be advised that we are working with Wilson Okamoto Corporation who is under contract to Howard Hughes Corporation to develop a utility assessment report for the Block NW development (TMK No. 2-3-002:116). Please find attached for your review and comment enclosure (a) and enclosure (b) which indicate the conceptual site plan and location. It is currently anticipated that the building will consist of 350 dwelling units, a 5,000 square foot restaurant space, and 20,000 square feet of commercial space. Please advise on the following:

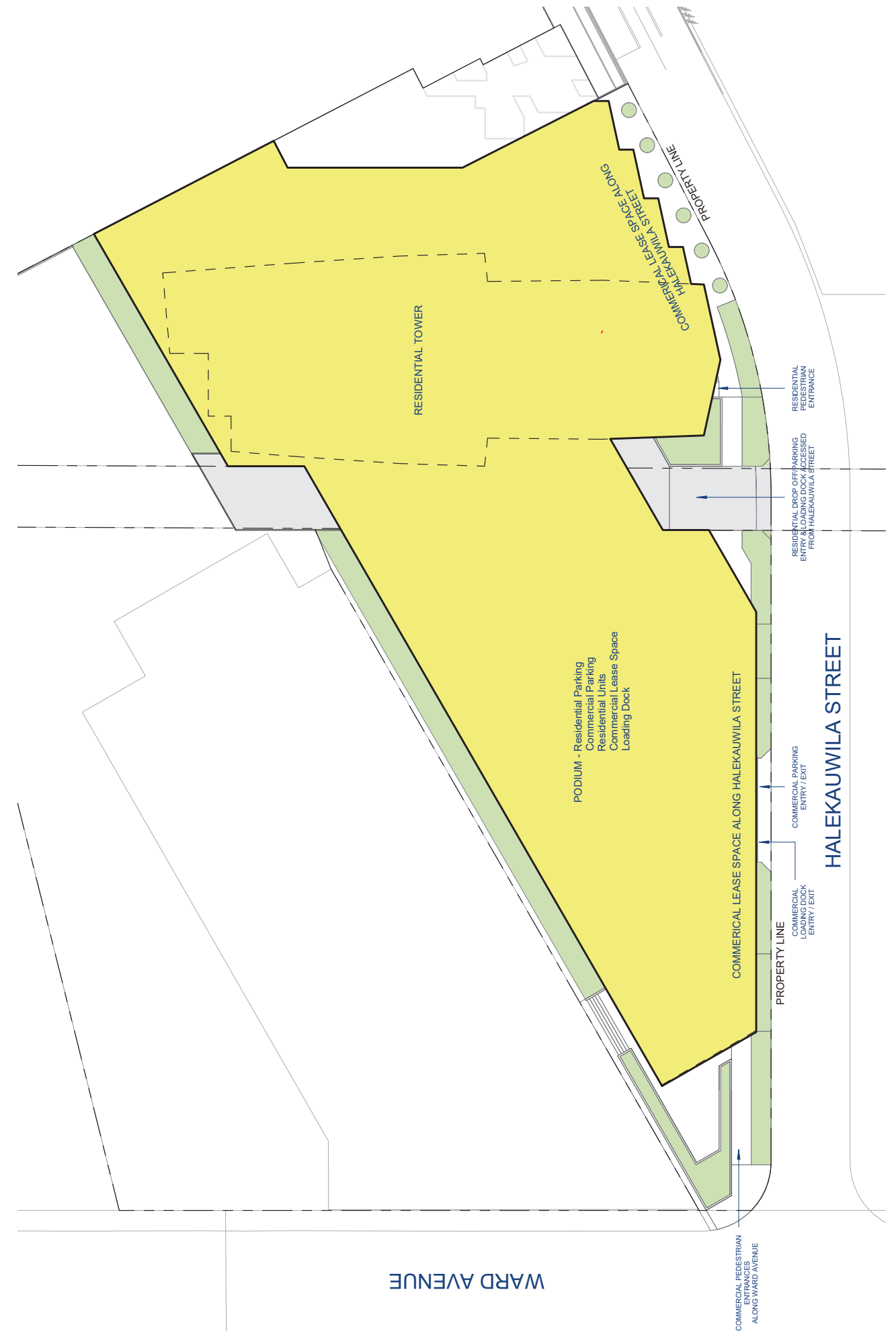
1. Charter's preferred service connection point for this development. We understand that Charter's distribution system in the area has sufficient capacity to provide service to this development. Off-site improvements will include 3-4" CATV conduits in the Halekauwila Street Extension and 1-4" CATV conduit providing service to this site. Please advise as to the nature and scope of the improvements and whether the Developer might be expected to participate in the cost of these off-site improvements. If the Developer's cost participation is anticipated, please provide an order-of-magnitude budget of the cost.
2. If we may obtain the existing Charter distribution maps for any existing overhead and underground facilities within or adjacent to the site. These will assist with the development of the utility assessment.

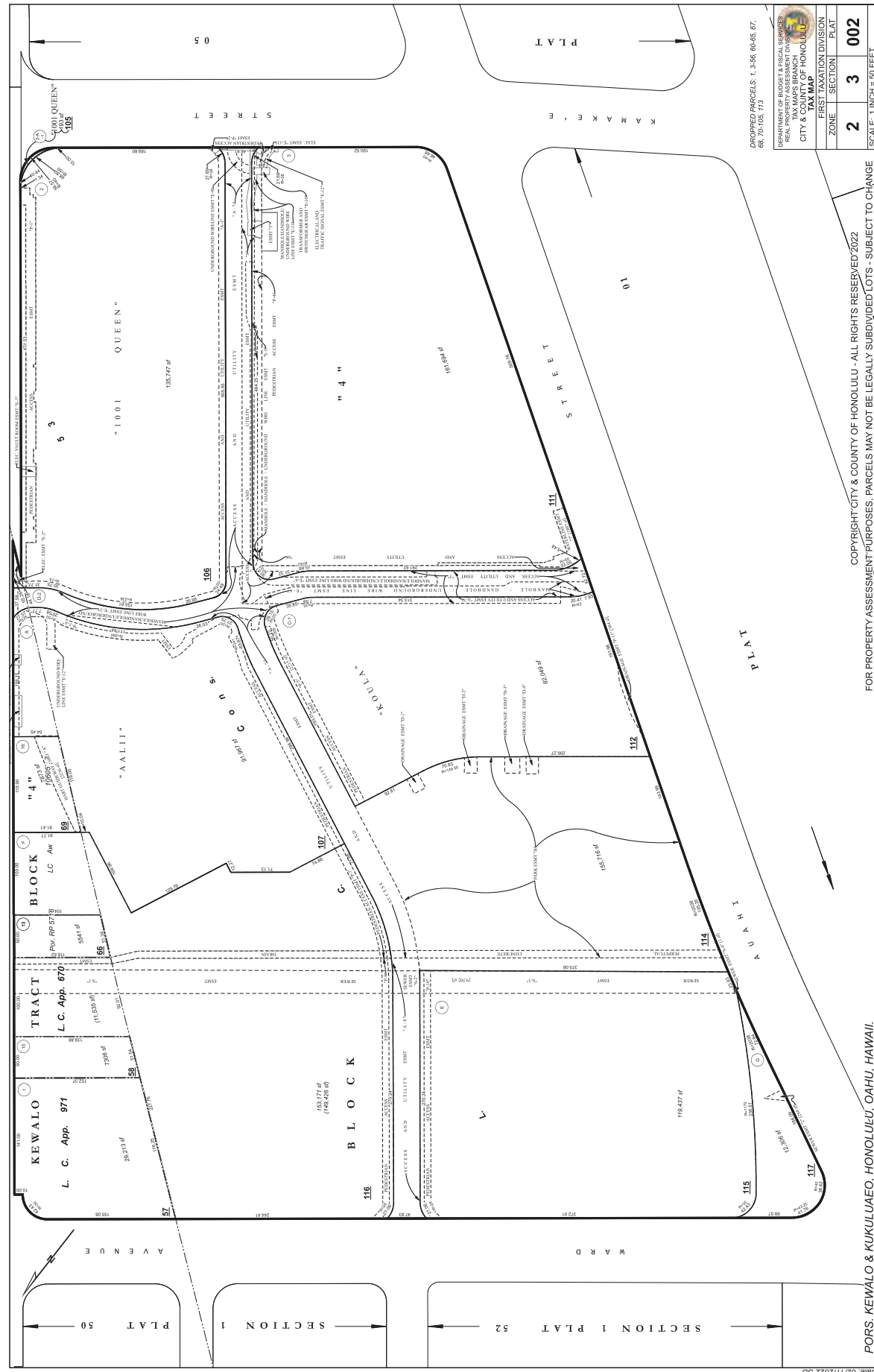
We are trying to complete the draft utility assessment report as quickly as feasible and would appreciate any information you can furnish within the next three weeks. Your assistance in expediting this matter is greatly appreciated. Should you have any questions, please call

Very truly yours,

Scott Shiraishi

cc: Randy Makizuru, Charter
John Kim, WOC





12/15/22

The Howard Hughes Corporation
 Ward Management Development Company, LLC.
 1240 Ala Moana Blvd.
 Honolulu, HI 96814
 Attention: Doug Johnstone

Re: Will Serve Letter for Block NW Concept Site Plan

Dear Doug Johnstone,

Oceanic Time Warner Cable LLC (“Spectrum”), directly or through its parent or affiliate companies, is an innovative provider of cable television, video, data, voice and other services (collectively, the “Services”). Ward Management Development Company, LLC. (“Developer”) is the developer of a proposed project located at TMK No. 2-3-002:116. Oceanic’s understanding is that the Developer wishes to make the Services available to residents and/or commercial tenants at the Project.

This is confirm that Spectrum is willing and able to provide the Services to the Project subject to all of the terms and conditions of its applicable franchise agreement with the State of Hawaii, all applicable federal, state and county laws, rules and regulations, and all other terms and conditions stated in this letter. Developer and/or its successors in interest will enter into a mutually agreeable services agreement with Spectrum, which shall specify the provision of equipment and facilities for the provision of the Services, the specific type(s) of Services provided, and other terms and conditions (which may include terms relating to the provision of easements, conduits, and accommodations for equipment

The issuance of this letter by Spectrum, inclusive of the foregoing terms and conditions, is based upon the representations of the Developer to Spectrum with respect to the location and scope of the Project as of the date of this letter. Please contact us should you have any questions regarding the foregoing.

Chavez Summerville

Chavez Summerville

550 N. Continental Blvd. | El Segundo, CA | 90245
 Director, Spectrum Community Solutions
 Cell: 727.373.8506

Hawaii Gas
Email Correspondence
Adequacy Letter

From: [John Kim](#)
To: ["Keith Yamamoto"](#)
Subject: RE: Block N West - Gas Availability - ActionItem:00038:RXw40
Date: Monday, March 27, 2023 3:41:00 PM

Hi Keith,

Yes, a new line will be provided and connect to the existing 3" main at the intersection of Ward Avenue and Queen St.

Thanks,
John S. H. Kim
T (808) 946-2277

From: Keith Yamamoto <kkyamamo@hawaiigas.com>
Sent: Wednesday, January 18, 2023 9:54 AM
To: John Kim <jkim@wilsonokamoto.com>
Subject: RE: Block N West - Gas Availability - ActionItem:00038:RXw40

John,

Sorry for the late response. With all the new loads that recently came on in the Ward area, a new line will be required from the intersection of Ward Ave. and Queen St. for this project.

Please let me know if you have any questions.

Thanks,
Keith

From: John Kim <jkim@wilsonokamoto.com>
Sent: Tuesday, January 17, 2023 4:33 PM
To: Keith Yamamoto <kkyamamo@hawaiigas.com>
Subject: [EXTERNAL EMAIL] FW: Block N West - Gas Availability - ActionItem:00038:RXw40

CAUTION: This email was received from outside of Hawaii Gas. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Keith,

Following up with the request below. Please let me know after you get a chance to review.

Thanks,
John S. H. Kim
T (808) 946-2277

From: John Kim <jkim@wilsonokamoto.com>
Sent: Wednesday, December 21, 2022 8:30 AM
To: Yamamoto, Keith <kkyamamo@hawaiiigas.com>
Subject: Block N West - Gas Availability - ActionItem:00038:RXw40

Hi Keith,

Hope all is well. Victoria Ward Ltd. is proceeding with another high-rise residential condominium tentatively named Block N West. See attached for location map. Project program to be:

Residential – 350 units
Restaurant – 5,000 sf
Other Commercial – 20,000 sf
Anticipated Gas Load - 5000KBTU

We previously reached out to you to obtain record drawings for the gas facilities on Queen St (attached). We also have the new 2" gas line to be installed with the 'The Park at Ward Village' project, which is also attached. Would it be possible to confirm that the facilities noted on the attached gas maps would be sufficient to provide gas service to the project? If so, please confirm if the connection can be made off the new 2" gas line on Halekauwila St or if the connection needs to be made off the Queen St main.

Thanks,
John S. H. Kim, PE
Associate Project Manager



1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
T (808) 946-2277 F (808) 946-2253
W <http://www.wilsonokamoto.com>

This message contains information that might be confidential and privileged. Unless you are the addressee or are authorized by the sender, you may not use, copy or disclose the information contained in this message. If you have received this message in error, please delete it and advise the sender.

Traffic Review Branch

Email Correspondence

From: [lkwatanabe](#)
To: [Jennylyn Tapat Morrill](#)
Cc: [kandrade1](#)
Subject: Block N West
Date: Tuesday, May 2, 2023 7:15:05 AM

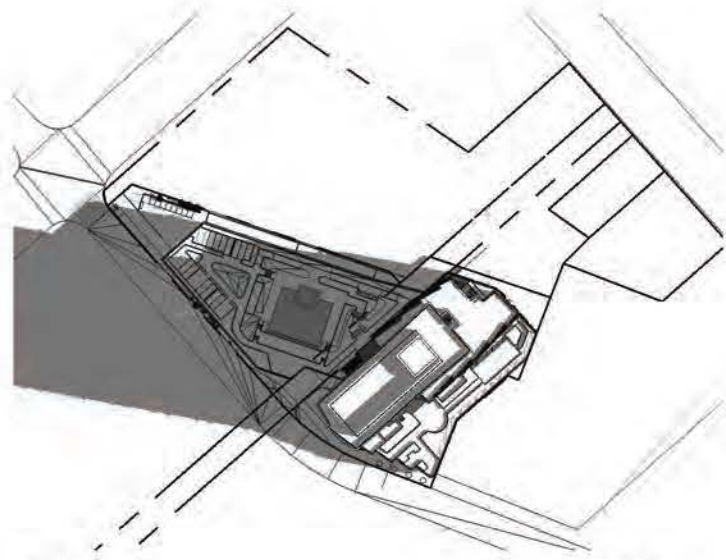
Jenny – TRB has no comments and has accepted the TIR dated March 2023.

I will try my best to get you our comments for Block D & E by the end of the week.

Thanks,
Lance

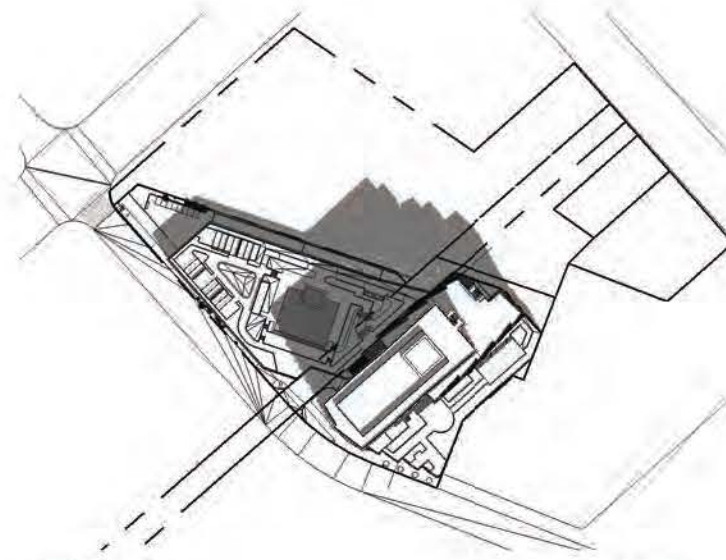
Appendix G

SHADE/SHADOW STUDY



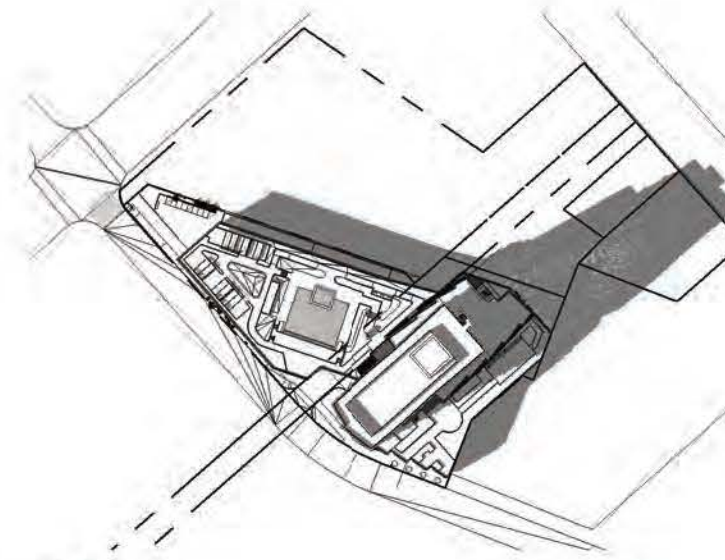
MARCH 22

9:00AM



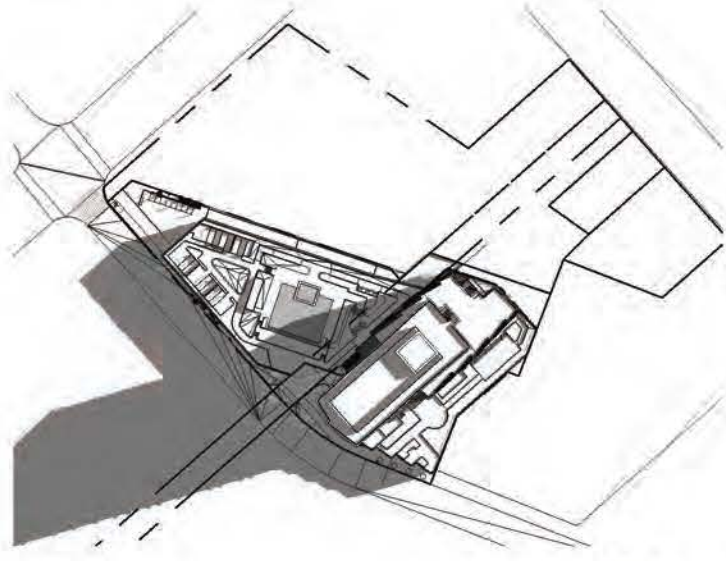
MARCH 22

12:00PM



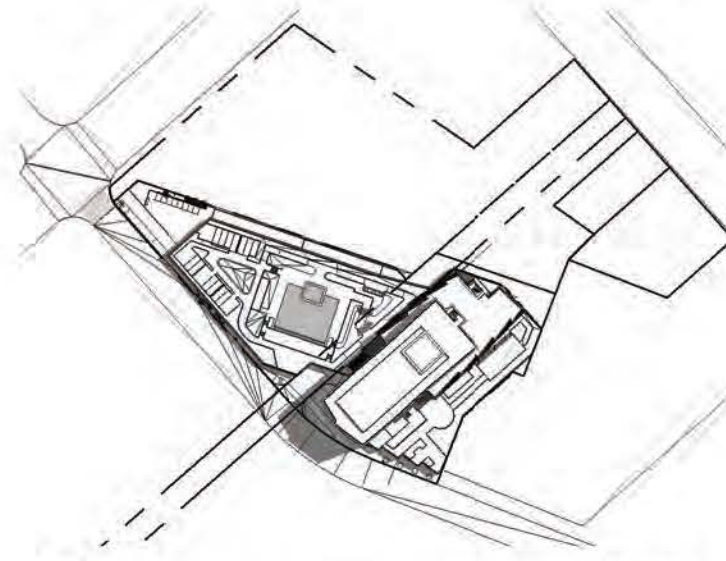
MARCH 22

3:00PM



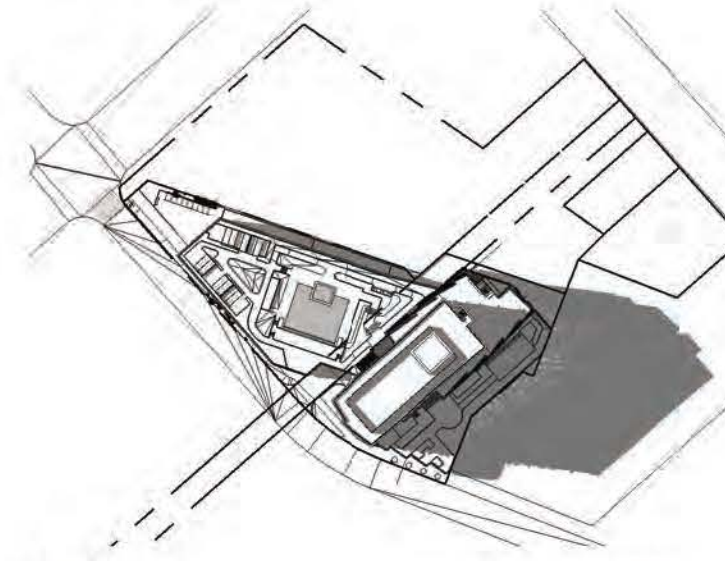
JUNE 22

9:00AM



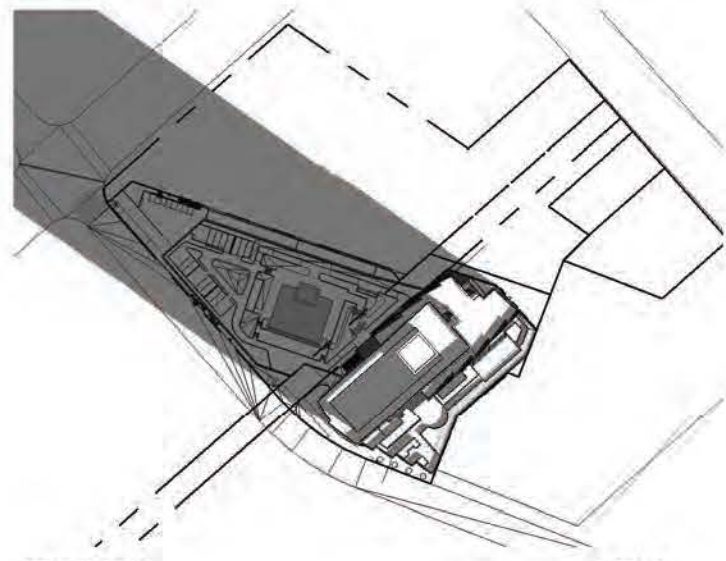
JUNE 22

12:00PM



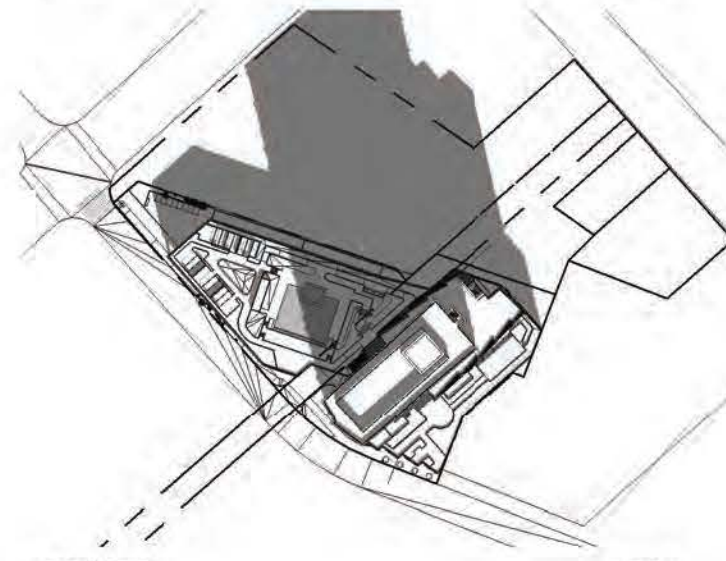
JUNE 22

3:00PM



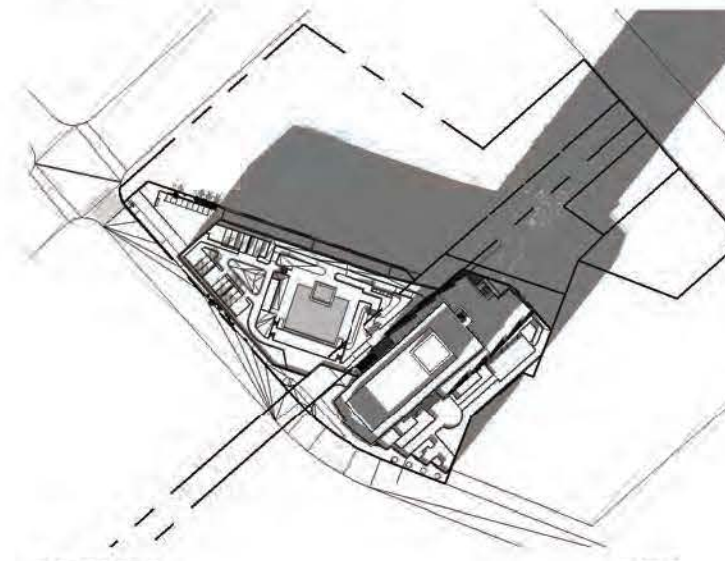
DECEMBER 22

9:00AM



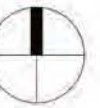
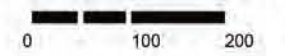
DECEMBER 22

12:00PM



DECEMBER 22

3:00PM



Appendix H

WIND CONSULTANT LETTER

280-1385 West 8th Avenue
Vancouver, BC V6H 3V9
Canada

Tel: +1.604.730.5688



March 29, 2023

Matt Prekosovich
Director, Development
THE HOWARD HUGHES CORPORATION
1240 Ala Moana Boulevard, Suite 200
Honolulu, HI 96814
Matthew.Prekosovich@howardhughes.com

Re: Pedestrian Wind Conditions - Ward Village Block N-West
Honolulu, Hawaii
RWDI Reference No. 2302847

Dear Mr. Prekosovich,

RWDI USA LLC (RWDI) has been requested by The Howard Hughes Corporation to conduct wind tunnel studies for the pedestrian wind conditions on and around the proposed Ward Village Block N-West development in Honolulu, Hawaii.

The proposed development includes a 34-story residential tower located on the corner of Ward Avenue and Halekauwila (Private Drive), just south of the proposed HART rail line. Winds around the proposed development will be simulated in one of RWDI's boundary-layer wind tunnels for the existing and proposed building configurations by using a scale model of the study building and its surroundings. The wind study will focus on frequently used pedestrian areas such as main entrances, sidewalks and outdoor seating areas at both the grade and podium levels. Wind tunnel measurements for 36 wind directions will be taken at key pedestrian areas, and will be combined with the long-term weather data collected from the nearby Honolulu International Airport to predict the wind speeds and frequencies in full scale. These data will then be compared with the RWDI wind comfort and safety criteria to determine if they are appropriate for the intended usage of the pedestrian areas on and around the development. Immediately following the wind tunnel tests, a report will be issued to summarize our main findings through tables and figures. Wind mitigation measures will be provided for areas where higher-than-desired wind speeds are detected.

If you have any questions, please do not hesitate to contact us.

Respectfully submitted by:

A handwritten signature in blue ink, appearing to read 'Jon Barratt'.

Jon Barratt, P.Eng.

RWDI - Associate / Senior Project Manager

This document is intended for the sole use of the party to whom it is addressed and may contain information that is privileged and/or confidential. If you have received this in error, please notify us immediately.
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rwdi.com

Appendix I

ACOUSTICAL CONSULTANT LETTER

28 February 2023

Emily Kuo
Solomon Cordwell Buenz
255 California Street, Floor 3
San Francisco, CA 94111
emily.kuo@scb.com

**Subject: Ward Village Block N-West
Noise Impact Summary
Salter Project 22-0479**

Dear Emily:

We have conducted a noise impact summary for the project. This report summarizes the noise impacts at the project site and the mitigation measures included in the design.

The project is a new 30-story mixed-use development bounded by Queen Street and a private extension of Halekauwila Street, near the east side of Ward Avenue in Honolulu. The noise environment at the site is predominantly controlled by vehicular traffic from Ward Avenue and Queen Street. Train passbys on the future Honolulu Authority of Rapid Transit (HART) elevated tracks will also contribute to the noise environment.

ENVIRONMENTAL NOISE

Although there are no State or City codes related to environmental noise intrusion, we have completed an environmental noise study for the project. To quantify the existing noise environment, we conducted one long-term noise measurement from 9 to 13 December 2022 along Queen Street. The monitor was at a height of 12 feet above grade. This data was used in conjunction with our collected data from other Ward Village projects (i.e., Blocks A, B, C-West, H, and N-East).

The future HART system will be directly adjacent to the Block N-West residential tower. We have included the HART passbys as a noise source in our calculations.

Based on our measured data and future noise projections, we used the CadnaA 3-D noise model to calculate noise levels at the building facade. Using the room sizes and locations shown in the drawings,

we calculated the window STC ratings needed to meet the project criterion¹, which range from 30 to 39. We understand the glazing used for the project will meet or exceed the STC ratings shown in our Environmental Noise Study (dated 22 December 2022).

INTERIOR SOUND ISOLATION

Residences

Party walls and floor-ceiling assemblies have been designed to meet industry standards for market-rate condominiums, which exceeds the Code minimum standards. Residential entry doors will be equipped with perimeter sound gasketing, door shoes, and solid thresholds to be tight-fitting to the frame and sill, as required by Code.

Amenity Spaces

The design includes methods of reducing noise and vibration from the Level 8 amenities to adjacent spaces, including upgraded flooring and ceilings at specific noise-sensitive adjacencies (e.g., guest suites, residences). Limiting amenity use during nighttime hours may also be recommended.

PROJECT-RELATED NOISE IMPACT

Noise mitigation recommendations will be made throughout the design and construction phases project-wide. The following recommendations are intended to reduce environmental noise complaints from future residents and neighboring properties.

MEP Equipment

MEP equipment noise impact to adjacent properties will be analyzed throughout the project design. Potential noise sources include the ground floor transformers, garage exhaust fans, and rooftop mechanical equipment. All stationary mechanical equipment (e.g., garage exhaust fans, rooftop cooling towers) will comply with the required noise limits at the property lines.

Potential recommendations to mitigate MEP equipment noise include acoustical duct liner, silencers, louvers, and barriers. We will review equipment sound data and provide more specific input when this information is available.

¹ The Hawai'i Building Code (i.e., 2012 International Building Code) does not include standards for environmental noise intrusion. However, the Department of Housing and Urban Development (HUD) has a criterion of DNL 45 dB for multi-family residential projects, which is used as the criterion for this project. This criterion is also used in the California Building Code.

Parking and Loading Area

Parking and loading areas might generate intrusive noise to nearby residences and adjacent properties. Potential mitigation includes adding absorptive finishes, selecting a garage floor finish that does not easily cause “tire squeal”, and keeping potential noise-making obstructions outside of the drive aisle.

Construction

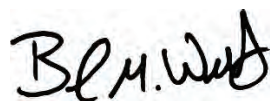
Temporary construction noise might impact nearby properties. The contractor should utilize best practices to mitigate construction noise, as feasible. The contractor is required to submit for a noise permit with the Hawai'i Department of Health. Noise-generating construction activity is permitted from 7:00 am to 6:00 pm on weekdays and 9:00 am to 6:00 pm on Saturdays. Noise-generating construction activity is prohibited on Sundays and holidays.²

* * *

This concludes our noise impact summary for Ward Village Block N-West. Should you have any questions, please give us a call.

Best,

SALTER



Blake Wells, LEED GA
Associate



Eric Mori, PE
Senior Vice President

² Hawai'i Administrative Rules, Title 11 Department of Health, Chapter 46 Community Noise Control