ʻAʻALIʻI

LAND BLOCK 1, PROJECT 3

HCDA PLANNED DEVELOPMENT PERMIT APPLICATION

APPENDICES

SEPTEMBER 2016

Howard Hughes

WARD VILLAGE

APPENDICES

Appendix A LEED Checklist

Appendix B SHPD Letter

Appendix C Traffic Impact Report

Appendix D Infrastructure Availability Report

Appendix E Shadow & Wind Studies

Appendix F Wind Analysis Study Letter

Appendix G Environmental Noise Study

Appendix H View Analysis

APPENDIX A

LEED CHECKLIST

LEED-NC 2009 Checklist

Ward Village - Block N East

8.23.2016

[illegible]

Target = Certified

Project Totals	Yes	?	No
	42	40	28

Certification Level Target: (Does not include ? credits)
Certified

Category	Credit	Credit Name	Yes	?	No	Comments
Sustainable Sites	Prereq 1	Construction Activity Pollution Prevention	Y			Create and implement an erosion and sedimentation control plan
	Credit 1	Site Selection	1			Prohibits hardscape on certain site conditions (Prime farmland, wetland, etc.)
	Credit 2	Development Density & Community Connectivity	5			10 community services within 1/2 mile walking distance
	Credit 3	Brownfield Redevelopment			1	Eligible if asbestos abatement during demolition of existing building
	Credit 4.1	Alternative Transportation, Public Transportation Access	6			Multiple bus lines 1/4 mile away
	Credit 4.2	Alt. Transportation, Bicycle Storage & Changing Rooms		1		197 covered bike spots (residential), 7 bike spots + 1 changing/shower room access (retail)
	Credit 4.3	Alt. Transportation, Low-Emitting & Fuel-Efficient Vehicles		3		LE/FE car-sharing provided to building occupants near-by (1 vehicle)
	Credit 4.4	Alt. Transportation, Parking Capacity	2			Parking does not exceed zoning + car-sharing (1 vehicle) or car pool program facilitated by building management
	Credit 5.1	Site Development, Protect or Restore Habitat	1			50% of site required to be native/adaptive planting
	Credit 5.2	Site Development, Maximize Open Space	1			Pedestrian hardscape, green roof or ground level plantings total 20% of site area
	Credit 6.1	Stormwater Design, Quantity Control		1		25% more pervious than existing condition
	Credit 6.2	Stormwater Design, Quality Control		1		Requires capture and treatment of 90% stormwater
	Credit 7.1	Heat Island Effect, Non-Roof	1			Light colored paving materials for 50% site hardscape (> 29 SRI)
	Credit 7.2	Heat Island Effect, Roof	1			Combination of green roofs and light colored membranes /materials (> 78 SRI)
	Credit 8	Light Pollution Reduction		1		Site lighting (LPDs, light trespassing); Interior lighting (non residential: reduced LPD, shielding), requires lighting add. service
Water Efficiency	Prereq 1	Water Use Reduction	Y			Requires 20% reduction from baseline case
	Credit 1	Water Efficient Landscaping	2	2		50% reduction in potable water use for lanscaping irrigation
	Credit 2	Innovative Wastewater Technologies			2	Water re-use (toilets)
	Credit 3	Water Use Reduction, 30-40% Reduction	2	2		Targeting 35% savings - requires low flow fixtures - will save costs for DHW
Energy and Atmosphere	Prereq 1	Fund. Commissioning of Building Energy Systems	Y			Basic Commissioning
	Prereq 2	Minimum Energy Performance	Y			18% energy improvement to baseline case per ASHRAE 90.1 2007 (Increased from 10% as of 4.8.2016)
	Prereq 3	Fundamental Refrigerant Management	Y			No or low costs. Zero CFC use required
	Credit 1	Optimize Energy Performance	4	3	12	Assumes 18% better than ASHRAE 90.1 20072
	Credit 2	On-Site Renewable Energy		7		1% on site renewable energy (PV Added to L8 Parking Trellis)
	Credit 3	Enhanced Commissioning		2		Additional consulting fees-recommended to get max. value from commissioning-In process of soliciting proposals
	Credit 4	Enhanced Refrigerant Management		2		All mechanical units must comply, dependent on HVAC equipment selections
	Credit 5	Measurement & Verification			3	3 points for additional metering devices and CxA soft costs
	Credit 6	Green Power		2		2 year contract to purchase 35% green power - low cost but decision can be deferred
Materials and Resources	Prereq 1	Storage & Collection of Recyclables	Y			Need interior or exterior space or spaces for recycling and recycling narrative
	Credit 1.1	Building Reuse, MaintainExisting Walls, Floors & Roof			3	Not applicable
	Credit 1.2	Building Reuse, Maintain Interior Non-Structural Elements			1	Not applicable
	Credit 2	Construction Waste Management	2			75% construction waste recycled - 95% feasible for Exemplary Performance
	Credit 3	Materials Reuse			2	Typically too costly
	Credit 4	Recycled Content,		2		Requires 20% recycled content (by cost)
	Credit 5	Regional Materials		2		Requires 20% regional content (by cost)
	Credit 6	Rapidly Renewable Materials			1	If only option is for finish materials usually is expensive
	Credit 7	Certified Wood		1		50% of TOTAL wood budget by VALUE is from FSC certified
Indoor Environmental Quality	Prereq 1	Minimum IAQ Performance	Y			Meet ASHRAE 62.1-2007 sections 4-7 or applicable local code, whichever provides more air
	Prereq 2	Environmental Tobacco Smoke (ETS) Control	Y			No smoking in public spaces and within 25' of building openings.
	Credit 1	Outdoor Air Delivery Monitoring	1			Outdoor airflow monitors required - depends on mechanical system choice
	Credit 2	Increased Ventilation			1	Increase ventilation to at least 30% above ASHRAE 62.1-2007
	Credit 3.1	Construction IAQ Management Plan, During Construction	1			Protect/clean mechanical system during construction - Follow SMACNA 2007 IAQ Plan guidelines
	Credit 3.2	Construction IAQ Management Plan, Before Occupancy		1		Conduct building flush-out prior to occupancy or conduct IAQ tests. Usually difficult because of schedule issues.
	Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	1			Must meet VOC requirements for material type
Indoor Environmental Quality	Credit 4.2	Low-Emitting Materials, Paints & Coatings	1			Must meet VOC requirements for material type
	Credit 4.3	Low-Emitting Materials, Flooring Systems	1			Must meet VOC requirements for material type
	Credit 4.4	Low-Emitting Materials, Composite Wood & Agrifiber Prod.	1			Must meet VOC requirements for material type
	Credit 5	Indoor Chemical & Pollutant Source Control			1	Walkoff systems at all regularly used entrances and MERV-13 filtration
	Credit 6.1	Controllability of Systems, Lighting	1			Switches in each room of units and switches in common facilities
	Credit 6.2	Controllability of Systems, Thermal Comfort	1			Need thermostats (or fans/operable windows) for all common spaces and units
	Credit 7.1	Thermal Comfort, Design	1			Design HVAC system to meet ASHRAE 55
	Credit 7.2	Thermal Comfort, Verification			1	Not applicable in residential buildings
	Credit 8.1	Daylight & Views, Daylight		1		Daylight for 75% of regularly occupied areas of buildings - Requires study by SCB in CDs
	Credit 8.2	Daylight & Views, Views	1			Direct outdoor line of sight view for 90% of all regularly occupied spaces- has to be confirmed with final plan calculations
Innovation in Design	Credit 1.1	Innovation in Design: TBD	1			Exemplary Performance
	Credit 1.2	Innovation in Design: TBD	1			Exemplary Performance
	Credit 1.3	Innovation in Design: TBD	1			Green Education
	Credit 1.4	Innovation in Design: TBD		1		Operations
	Credit 1.5	Innovation in Design: TBD		1		Operations
	Credit 2	LEED® Accredited Professional	1			
Regional Credit Priorities	Credit 1.1	Regional Priority Credit - SSc6.1		1		Stormwater Design - Quantity Control
	Credit 1.2	Regional Priority Credit - SSc6.2		1		Stormwater Design - Quality Control
	Credit 1.3	Regional Priority Credit - WEc1		1		Water Efficient Landscaping - No Potable/Irrigation
	Credit 1.4	Regional Priority Credit - WEc3		1		Water Use Reduction - 35% reduction

Theses graphics have been prepared for planning purposes and are subject to change as a result of the planning and/or permitting process.

APPENDIX B

SHPD LETTER

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON
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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

September 7, 2016

Aedward Los Banos, Interim Executive Director
Hawaii Community Development Authority
547 Queen Street
Honolulu, HI 96813

Race Randle, Senior Director of Development
The Howard Hughes Corporation
1240 Ala Moana Blvd., Suite 200
Honolulu, HI 96814

Log No. 2016.02153
Doc. No. 1609KM03
Archaeology

Dear Mr. Los Banos and Mr. Randle,

SUBJECT: **HRS §6E-42 and HAR §13-284 Historic Preservation Review —**
Compliance for Ward Village Redesigned Block N East Project
Honolulu Ahupua'a, Honolulu (Kona) District, Island of O'ahu
TMK: (1) 2-3-002: 001 por., 067, 086, 087, and Adjacent Portions of Queen and Auahi Streets

Thank you for the opportunity to comment on the letter dated September 7, 2016, in which Victoria Ward Limited (VWL) states that SHPD (1) has had an opportunity to review and comment on the effect of the proposed Ward Village redesigned Block N East project on historic properties (pursuant to HRS §6E-42) and burial sites (pursuant to HRS §6E-43); and requests that SHPD (2) make a determination that VWL has met the respective requirements as set forth in HRS §6E-42 and HRS §6E-43 and HAR §13-284-3(b) Steps 1-5, and has set forth a process to comply with HAR §13-284-3(b) Step 6 and HAR §13-284-9(d). We received this submittal on September 7, 2016.

The redesigned Block N East project includes contiguous portions of the original Block N East, Block I, and Block M, as originally designated in the Ward Neighborhood Master Plan. The Block N East archaeological inventory survey (AIS) report was accepted by SHPD on September 6, 2016 (Log No. 2016.00778, Doc. No. 1609KM01). The Block I AIS report was accepted by SHPD on June 12, 2015 (Log No. 2015.02101, Doc No. 1505SL25). The Block M AIS report was accepted by SHPD on January 21, 2015 (Log No. 2015.00188, Doc No. 1501SL14).

Pursuant to HRS §6E-42 and HAR §13-284-3(b)(1-5), Victoria Ward Limited (VWL) has completed the following five of the six historic preservation review procedural steps:

(1) Identification and inventory to determine if historic properties are present and, if so, to identify and document them;
(2) Evaluation of significance;
(3) Effect determination;
(4) Mitigation commitments; and
(5) Detailed mitigation plan(s).

(1) Identification and inventory. Pursuant to HAR §13-284-3(b)(1), AIS projects conducted within the boundaries of the redesigned Block N East identified and documented additional portions of the following three previously identified historic properties:

(1) 50-80-14-7429 (subsurface cultural layers and related features, including burial sites, associated with pre- and post-Contact habitation and land use–documented during the original Block N AIS and Block M AIS);
(2) 50-80-14-7686 (subsurface historic infrastructure remnants and related base courses associated with 1940s warehouse/commercial development–documented during the original Block N AIS and the Block M AIS); and
(3) 50-80-14-7655 (subsurface historic salt pan remnants and related features including human burials sites documented during the Block I AIS).

(2) Evaluation of Significance. Historic properties were assessed as significant per HAR §13-284-6 based on the following criteria: (a) Historic property reflects major trends or events in the history of the state of nation, (b) Historic property is associated with the lives of persons significant in our past, (c) Historic property is an excellent example of a site type, (d) Historic property has yielded or may be likely to yield information important in prehistory or history, and (e) Historic property has cultural significance to an ethnic group, including, but not limited to, religious structures, burials, and traditional cultural properties.

Pursuant to HAR §13-284-3(b)(2), VWL provided the following site significance evaluations for the historic properties within the redesigned Block N East:

Site 7429 is assessed significant under Criteria "d" and "e," and Site 7686 is assessed as significant under Criteria "d" only within the original Block N AIS and the Block M AIS. Site 7655 was previously assessed significant under Criteria "c", "d" and "e" within the Block I AIS report. SHPD concurred with the site significance assessments for Site 7429 and Site 7686 on September 6, 2016 (Log No. 2016.00778, Doc. No. 1609KM01). SHPD concurred with the site significance assessment for Site 7655 on June 12, 2015(Log No. 2015.02101, Doc No. 1505SL25).

(3) Effect Determination. Pursuant to HAR §13-284-3(b)(3), VWL provided the following project effect recommendation, which SHPD concurred with on September 6, 2016 (Log No. 2016.00778, Doc. No. 1609KM01):

The project effect determination is "effect, with agreed upon mitigation commitments."

(4) Mitigation Commitments. Pursuant to HAR §13-284-3(b)(4), VWL proposed the following mitigation commitments:

The agreed upon mitigation for Site 7655 salt pans is research-defined data recovery. SHPD concurred with the mitigation commitments on June 12, 2015(Log No. 2015.02101, Doc No. 1505SL25). This data recovery work is located outside the boundaries of the redesigned Block N East project area.

The agreed upon mitigation for Site 7429 is burial treatment and archaeological monitoring, and the agreed upon mitigation for Site 7686 is archeological monitoring. The archaeological monitoring program for Sites 7429 and 7686 within the redesigned Block N East will consist of on-site archaeological monitoring for all project related ground disturbing activities. SHPD concurred with the mitigation commitments on September 6, 2016 (Log No. 2016.00778, Doc. No. 1609KM01).

There is an existing burial treatment plan for the Block I project and the OIBC burial treatment determination for the HHC's Block I BTP pertains to all the burial sites addressed in the redesigned Block N East burial site component (BSC) of a data recovery and preservation plan (Log No. 2015.03320, Doc. No. 1512.RKH09; December 9, 2015 OIBC Minutes). The burial treatment measures for the sites are outlined as follows:

- The Site 7429 burial sites (Block I Trenches 3, 7, 8, 13, 17, 24, 57, 69, 70) within the redesigned Block N East project area and Site 7655 burial site (Block I Trench 35) shall be addressed within a BSC of a data recovery and preservation plan for the redesigned Block N East;

- The more southwestern (*makai*) Site 7655 burial site (Block I T-38, 61, 66) is within the Block I project area and shall be addressed within a future BSC of a preservation plan for Block I; and
- The Site 7429 burial sites (original Block N East Trenches 10 and 14-14G) are outside of the redesigned Block N East project area and shall be addressed in a burial treatment plan for the future Block N West project.

(5) Mitigation Plans. Pursuant to HAR §13-284-3(b)(5), VWL has completed, and SHPD has reviewed and accepted the following agreed-upon mitigation plans including an (1) archaeological monitoring plan (AMP) for the redesigned Block N East (September 7, 2016; Log No. 2016.01894, Doc. No. 1609KM02); (2) an AMP for the Block I (August 18, 2015; Log No. 2015.02451, Doc. No. 1508SL16); (3) an AMP for the Block M (January 21, 2015; Log No. 2015.00107, 2015.00187; Doc. No. 1501SL15); and (4) BSC for a data recovery plan and preservation plan (September 7, 2016; Log No. 2016.01900, Doc. No. 1609RKH01) for the redesigned Block N East project:

(1) *Archaeological Monitoring Plan for the Howard Hughes Corporation's Redesigned Block N East Project, Kaka'ako, Honolulu Ahupua'a, Honolulu (Kona) District, O'ahu, TMKs: [1] 2-3-002:001 (por.), 086, and 087* (McDermott and Hensley 2016)
(2) *Archaeological Monitoring Plan for Block I, Kaka'ako, Honolulu Ahupua'a, Honolulu (Kona) District, O'ahu TMK: [1] 2-3-002:001 (portion)* (Sroat et al. 2015)
(3) *Archaeological Monitoring Plan for the Block M Project, Kaka'ako, Honolulu Ahupua'a, Honolulu (Kona) District, O'ahu (TMK: [1] 2-3-002:001 (portion)* (Leger and McDermott 2015)
(4) *Burial Site Component of a Data Recovery and Preservation Plan for Portions of SIHP #s 50-80-14-7429 and 50-80-14-7655, Howard Hughes Corporation's Redesigned Block N East Project, Honolulu Ahupua'a, Honolulu (Kona) District, O'ahu, TMKs: [1] 2-3-002:001 (por.), 086, and 087* (McDermott and Yucha 2016)

VWL provided in their letter dated September 7 , 2016 (Log No. 2016.02153) a plan that specifies the process to be implemented to comply with HAR §13-284-3(b)(6), verification of the detailed mitigation plans.

(6) Verification of Completion. Pursuant to HAR §13-284-3(b)(6), VWL proposes the following procedures and schedules to verify completion of the historic preservation review process:

(1) VWL will submit to the SHPD a request for the accelerated, 2-step verification process outlined in HAR §13-284-9(d), if SHPD deems this appropriate;
(2) Upon initiation of the accelerated 2-step verification process and receipt of a letter from the SHPD agreeing that HAR §13-284-9(d) Step 1 has been completed, that construction may proceed, with the understanding that Step 2 must be completed to conclude the historic preservation process. VWL will implement all pre-construction provisions of the SHPD-accepted redesigned Block N East AMP and BSC;
(3) VWL will implement the required burial treatment measures for the redesigned Block N East SHPD-accepted BSC of a data recovery and preservation plan;
(4) During the pre-construction period, VWL will implement the archaeological monitoring plan pre-construction meetings so that all contractors are aware of the plan's requirements;
(5) During construction, not anticipated to commence until midyear of 2017, VWL will ensure compliance with all provisions in the archaeological monitoring plan;
(6) Following completion of construction, VWL will submit within 6 months an archaeological monitoring report for SHPD review and acceptance; and
(7) VWL will consult regularly throughout this process with SHPD and the recognized cultural descendants and provide project updates to the O'ahu Island Burial Council, as appropriate.

Based on the above, SHPD indicates that it has reviewed and commented on the effect of the proposed project pursuant to HRS §6E-42 and HAR §13-284-3; that it is SHPD's determination that VWL has completed Steps 1 through 5 pursuant to HAR §13-284-3(b)(1-5); and that SHPD concurs with the procedures and schedule VWL has proposed to complete Step 6 (verification of completion) per HAR §13-284-3(b).

Please contact me at (808) 692-8019 or at Susan.A.Lebo@hawaii.gov if you have any questions or concerns regarding this letter.

Aloha,

Susan A. Lebo

Susan A. Lebo, PhD
Archaeology Branch Chief

cc: Matt McDermott, Projects Manager, Cultural Surveys Hawai'i, Inc. (mmcdermott@culturalsurveys.com)

APPENDIX C

TRAFFIC IMPACT REPORT

Traffic Impact Report

Block N East

Prepared for:
The Howard Hughes Corporation

Prepared by:
Wilson Okamoto Corporation

August 2016

TRAFFIC IMPACT REPORT

FOR

BLOCK N EAST

Prepared for:

The Howard Hughes Corporation
1240 Ala Moana Blvd., Suite 200
Honolulu, HI 96813

Prepared by:

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96826
WOC Ref #8206-30

August 2016

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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 East development of the Ward Village Master Plan in Kakaako on the island of Oahu. The Block N East development entails the replacement of existing uses and parking areas with new residential and commercial/retail uses.

B. Scope of Study

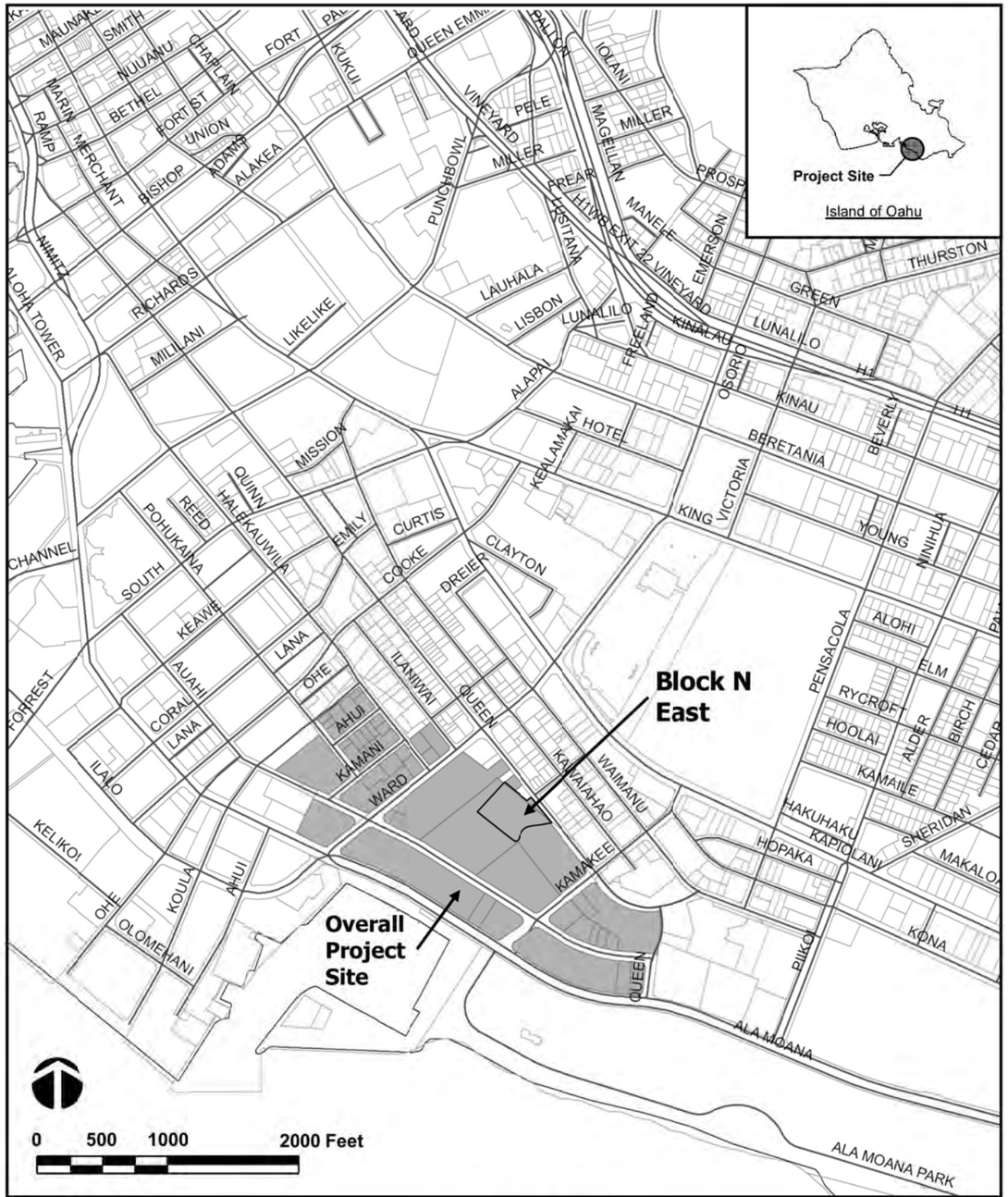
This report presents the findings and conclusions of the traffic study, the scope of which includes:

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. Superimposing 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 East development is located adjacent to Queen Street in Kakaako on the island of Oahu (see Figure 1). Primary access is expected to be provided via the north-south connector road (referred to as "Private Drive") between Queen Street and Auahi Street with secondary access provided via the Halekauwila Street Extension off Kamakee Street. The project site is anticipated to be bounded by Queen Street to the north, Private Drive to the east, the Halekauwila Street Extension to the south, and commercial uses to the west.



WILSON OKAMOTO CORPORATION	BLOCK N EAST LOCATION AND VICINITY MAP	FIGURE 1

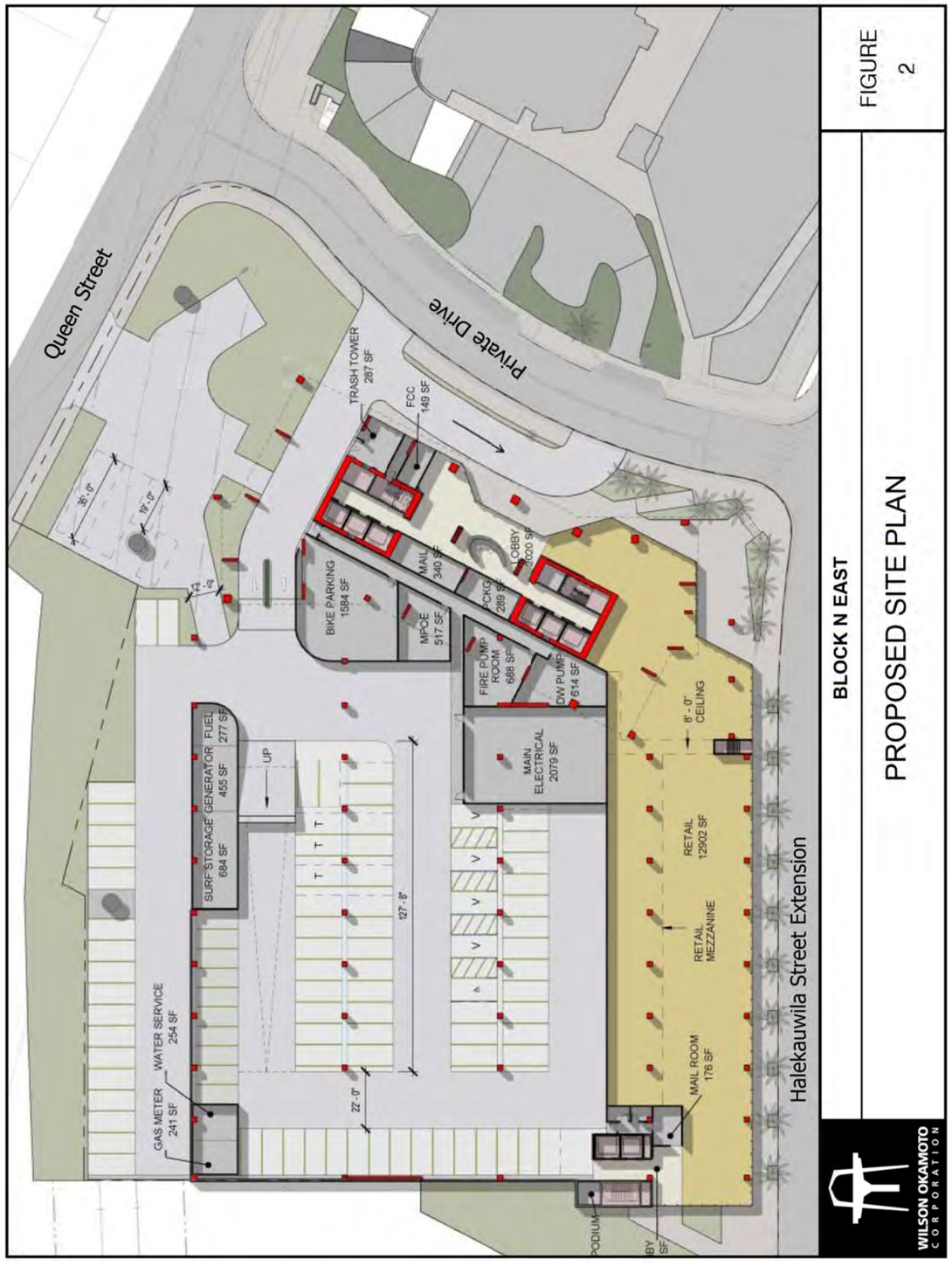
B. Project Characteristics

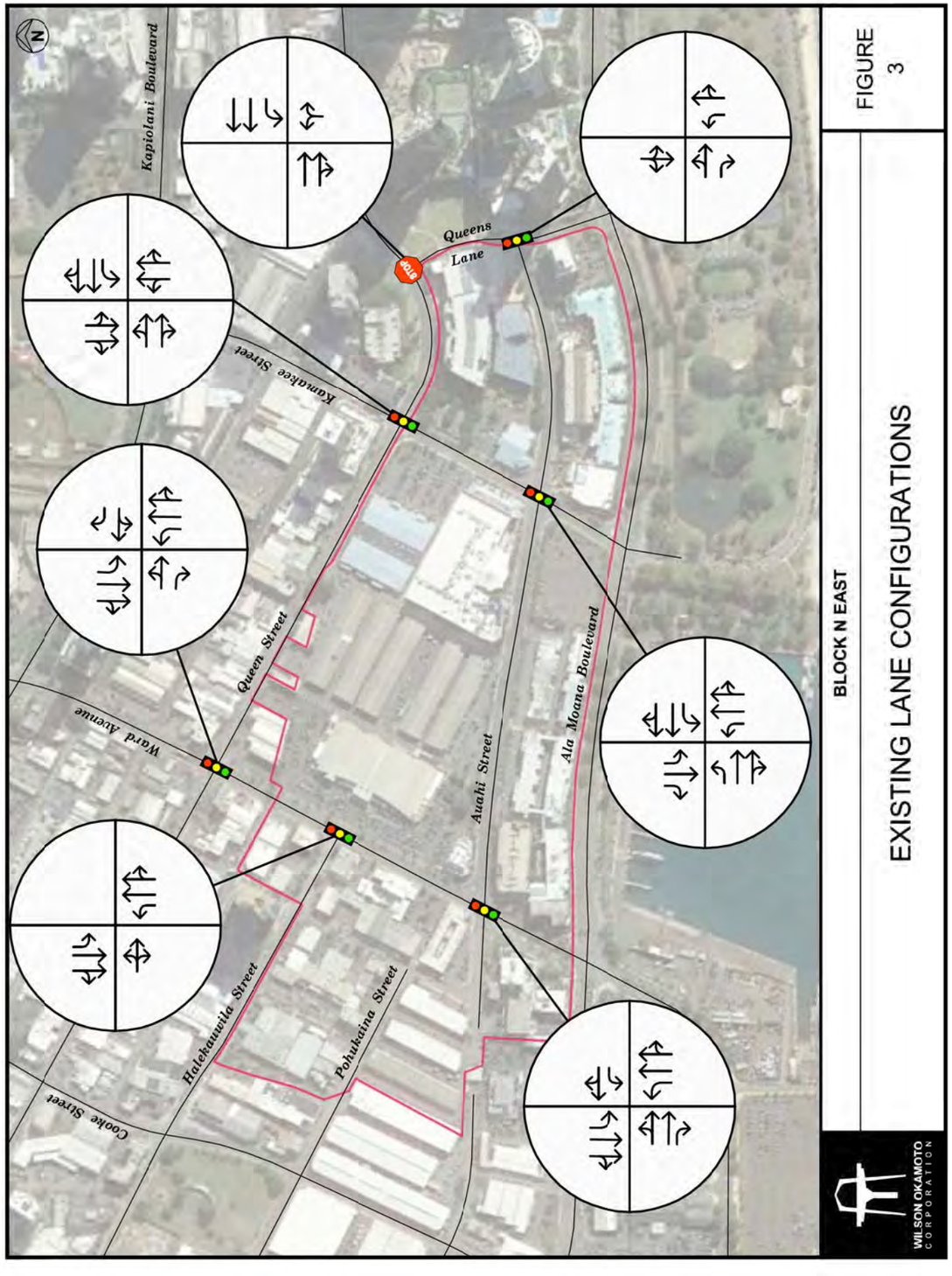
The Block N East development is included in Phase 2 of the overall Ward Village Master Plan. The overall Ward Village Master Plan entails the redevelopment of Ward Warehouse, Ward Center, Ward Entertainment Center, Ward Village Shops, and other surrounding commercial and office buildings in five (5) phases over the next 10-15 years. Phases 1A and 1B are currently under design and/or construction and are expected to be completed by the Year 2019. The Block N East portion of the master plan is expected to be completed by the Year 2020 and include approximately 20,000 square feet of commercial/retail space with 750 multi-family residential units. Primary access for this development is anticipated to be provided via Private Drive between Queen Street and Auahi Street with secondary access provided via the Halekauwila Street Extension off Kamakee Street. Figure 2 shows the proposed project site plan.

III. EXISTING 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 corridors through the project vicinity. These major roadways are supported by a network of smaller 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 provide either one-way or two-way corridors through the project vicinity. These major roadways are supported by a network of smaller connector roadways including Cooke Street and Kamakee Street that provide alternate north-south routes through the surrounding areas. Figure 3 shows the existing lane use at key locations within the study area.





B. Traffic Volumes and Conditions

1. General

a. Field Investigation

The existing traffic count data utilized for this study consisted of turning movement count surveys at approximately 46 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 March and April 2015 at the intersections along the following roadways:

- Kapiolani Boulevard between Cooke Street and Piikoi Street
- Kona Street between Kamakee Street and Piikoi Street
- Waimanu Street between Ward Avenue and Piikoi Street
- Kawaiahao Street between Cooke Street and Kamakee Street
- Queen Street between Cooke Street and Waimanu Street
- Ward Avenue with Ilaniwai Street
- Halekauwila Street between Cooke Street and Ward Avenue
- Pohukaina Street between Cooke Street and Kamani Street
- Auahi Street between South Street and Queens Lane
- Ala Moana Boulevard between Cooke Street and Piikoi Street

These field investigations were supplemented by updated surveys at key intersections conducted in April 2016. A comparison of these volumes with the 2015 traffic data indicates that volumes along the study roadways have remained relatively stable over the past year and, as such, the 2015 traffic data is assumed to be representative of existing (Year 2016) traffic conditions. Appendix A includes the existing 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. 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.

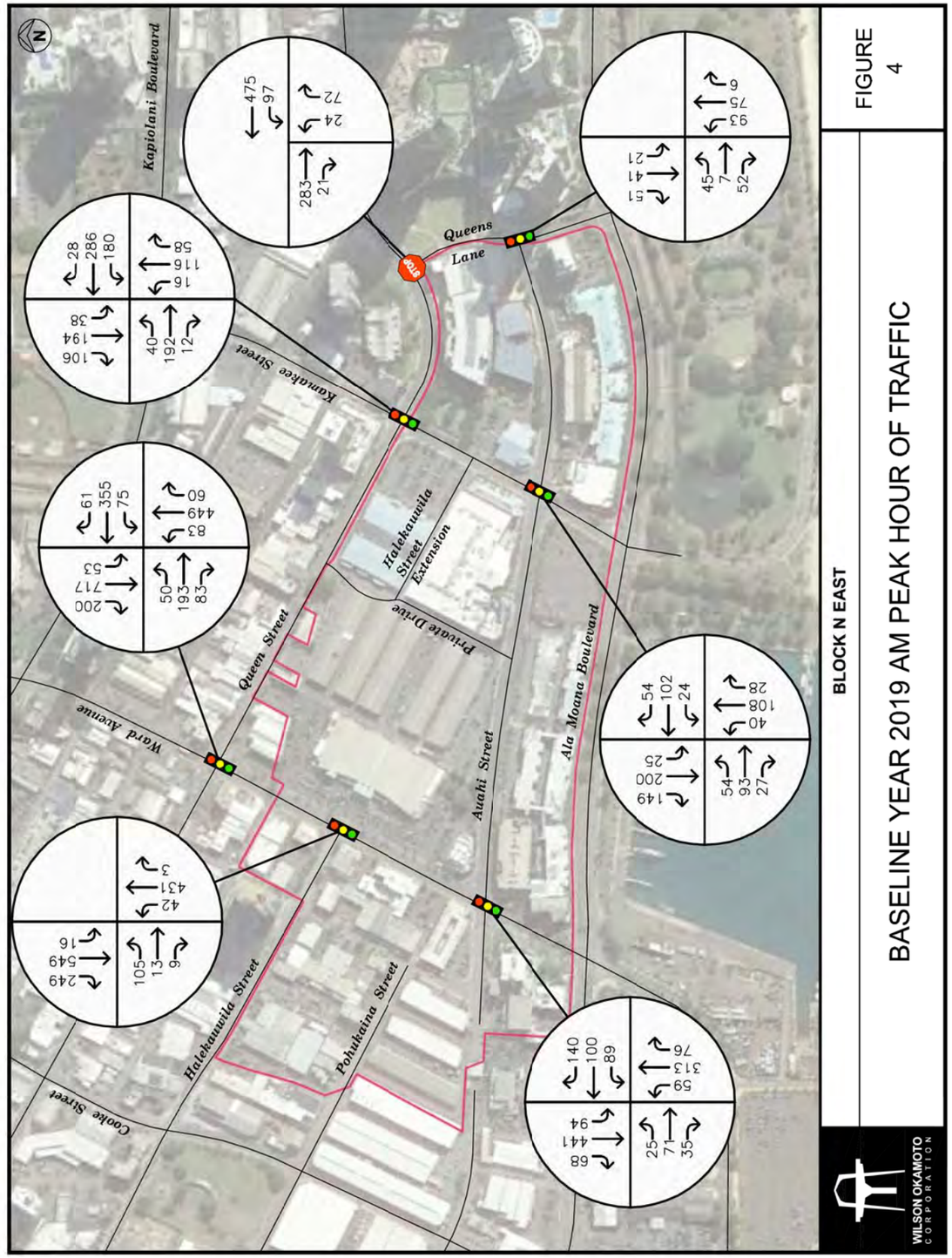
"Volume-to-Capacity" (v/c) ratio is another measure indicating the relative traffic demand to the road carrying capacity. A v/c ratio of one (1.00) indicates that the roadway is operating at or near capacity. A v/c ratio of greater than 1.00 indicates that the traffic demand exceeds the road's carrying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

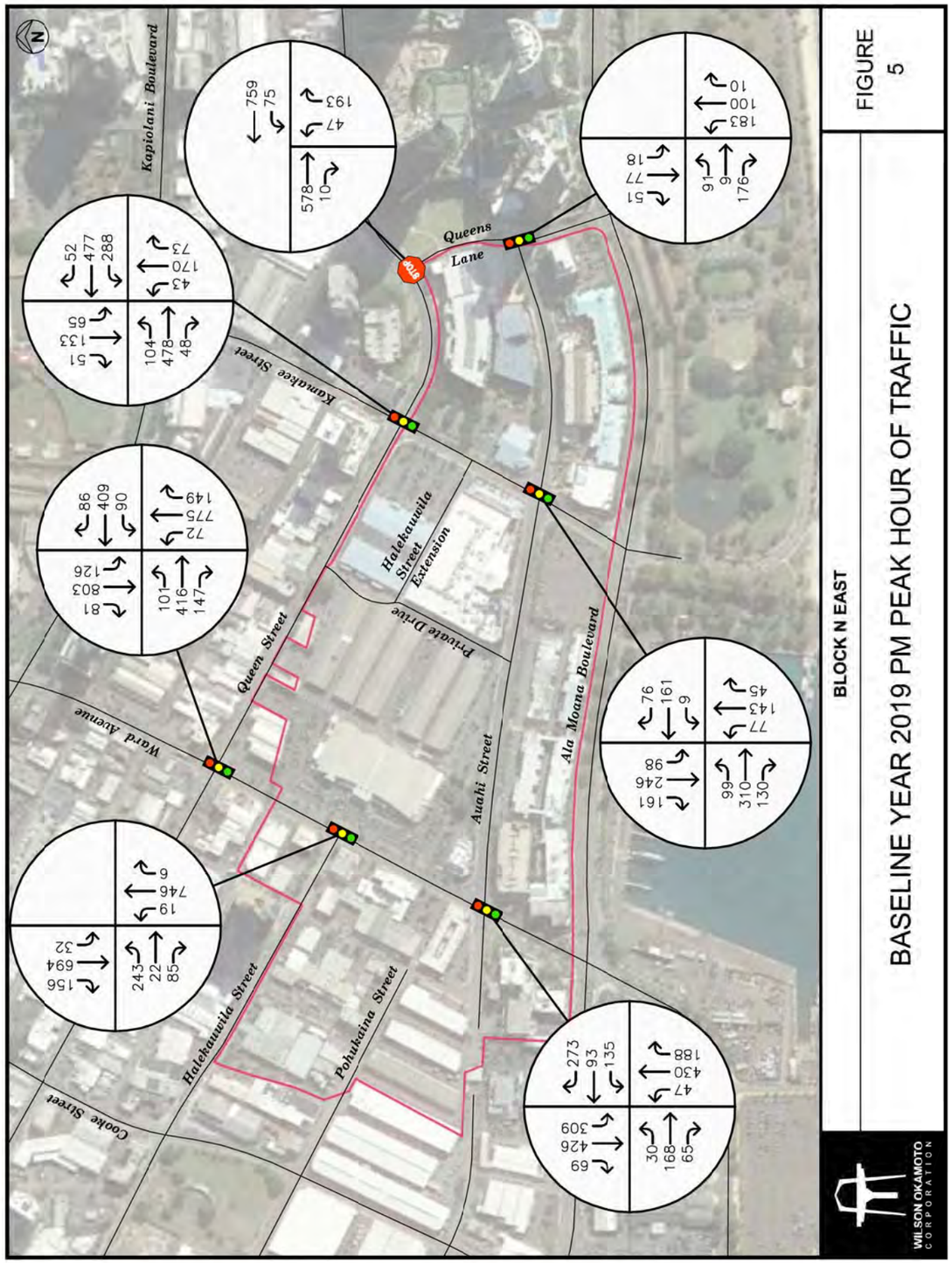
2. Baseline Peak Hour Traffic

a. General

Figures 4 and 5 show the baseline Year 2019 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 1A and 1B of the Ward Village Master Plan. Those phases are expected to include residential and commercial/retail uses for Blocks C East, K, M, and O. The baseline traffic conditions are based on the projected Year 2019 conditions included in the "Transportation Master Plan for the Ward Village Master Plan" dated May 2016.

The AM peak hour of traffic generally occurs between 7:15 AM and 8:15 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 core intersections are included in Appendix C.





b. Ward Avenue and Queen Street

At the intersection with Queen Street, Ward Avenue carries 592 vehicles northbound and 970 vehicles southbound during the AM peak hour of traffic. During the PM peak period, traffic volumes are higher with 996 vehicles traveling northbound and 1,010 vehicles traveling southbound. Both approaches of Ward Avenue operate at LOS "C" during the AM peak period and LOS "D" during the PM peak period.

The Queen Street approaches of the intersection carry 326 vehicles eastbound and 491 vehicles westbound during AM peak hour of traffic. During the PM peak period, traffic volumes are higher with 664 vehicles traveling eastbound and 585 vehicles traveling westbound. Both approaches of Queen Street operate at LOS "C" during the AM peak period and LOS "F" during the PM peak period.

c. Queen Street and Kamakee Street

At the intersection with Kamakee Street, Queen Street carries 244 vehicles eastbound and 494 vehicles westbound during the AM peak hour of traffic. During the PM peak period, traffic volumes are higher with 630 vehicles traveling eastbound and 817 vehicles traveling westbound. The eastbound approach of Queen Street operates at LOS "B" and LOS "C" during the AM and PM peak hours, respectively, while the westbound approach operates at LOS "B" during both peak periods.

The Kamakee Street approaches carry 190 vehicles northbound and 338 vehicles southbound during the AM peak hour of traffic. During the PM peak period, the overall traffic volume is higher with 286 vehicles traveling northbound and 249 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. Queen Street and Queens Lane

At the intersection with Queens Lane, Queen Street carries 304 vehicles eastbound and 572 vehicles westbound during the AM peak period. During the PM peak period, traffic volumes are higher with 588 vehicles traveling eastbound and 834 vehicles traveling westbound. The westbound left-turn traffic movement operates at LOS "A" during both peak periods.

Queens Lane carries 96 vehicles northbound during the AM peak period and 240 vehicles during the PM peak period. The Queens Lane approach operates at LOS "B" during both peak periods.

e. Ward Avenue and Halekauwila Street

At the intersection with Halekauwila Street, Ward Avenue carries 476 vehicles northbound and 814 vehicles southbound during the AM peak hour of traffic. During the PM peak period, the traffic volumes are higher with 771 vehicles traveling northbound and 882 vehicles traveling southbound. Both approaches of Ward Avenue operate at LOS "A" and LOS "B" during the AM and PM peak periods, respectively.

The Halekauwila Street approach of the intersection carries 127 vehicles eastbound during the AM peak period and 350 vehicles during the PM peak period. The eastbound approach of Halekauwila Street operates at LOS "B" during both peak periods.

f. Ward Avenue and Auahi Street

At the intersection with Auahi Street, Ward Avenue carries 448 vehicles northbound and 603 vehicles southbound during the AM peak period. During the PM peak period, traffic volumes are higher with 665 vehicles traveling northbound and 804 vehicles traveling southbound. The northbound approach of Ward Avenue operates at LOS "A" during both peak periods, while the southbound approach operates at LOS "A" and LOS "B" during the AM and PM peak periods, respectively.

The Auahi Street approaches of the intersection carry 131 vehicles eastbound and 329 vehicles westbound during the AM peak period. During the PM peak period, traffic volumes are higher with 263 vehicles traveling eastbound and 501 vehicles traveling westbound. The eastbound approach of Auahi Street operates at LOS "B" during both peak periods, while the westbound approach operates at LOS "B" and LOS "C" during the AM and PM peak periods, respectively.

g. Kamakee Street and Auahi Street

At the intersection with Auahi Street, Kamakee Street carries 176 vehicles northbound and 374 vehicles southbound during the AM peak period. During the PM peak period, traffic volumes are higher with 265 vehicles traveling northbound and 505 vehicles traveling southbound. Both approaches of Kamakee Street operate at LOS "A" during the AM peak period and LOS "C" during the PM peak period.

Auahi Street carries 174 vehicles eastbound and 180 vehicles westbound during the AM peak period. During the PM peak period, traffic volumes are higher with 539 vehicles traveling eastbound and 246 vehicles traveling westbound. The eastbound approach of Auahi Street operates at LOS "C" and LOS "B" during the AM and PM peak periods, respectively, while the westbound approach operates at LOS "B" during both peak periods.

h. Auahi Street, Queens Lane, and Queen Street

At the intersection with Queens Lane and Queen Street, Auahi Street carries 104 vehicles eastbound during the AM peak period and 276 vehicles during the PM peak period. The eastbound approach of Auahi Street operates at LOS "B" during both peak periods.

The Queens Lane approach carries 113 vehicles southbound during the AM peak period and 146 vehicles during the PM peak period. The Queens Lane approach operates at operates at LOS "B" during both peak periods. The northbound approach is comprised of

Queen Street which carries 174 vehicles during the AM peak period and 293 vehicles during the PM peak period. The Queen Street approach also operates at LOS "B" during both peak periods.

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, 9th Edition," 2012. 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 square feet of development. The trip generation methodology developed by ITE also includes provisions for pass-by trips, internal capture of trips, and multi-modal trips. Pass-by trips are generated when vehicles that would be traveling through the area, whether or not the project was developed and make an intermediate stop at the project site between their origin and primary destination. Internal capture of trips accounts for vehicles that visit more than one destination within the same area without adding external vehicular trips to the surrounding major roadways. 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. In addition, the City and County of Honolulu is currently developing a fixed guideway transit system that will extend from Kapolei to potentially the central Honolulu area thereby providing an alternate mode of travel through the Kakaako area. However, the planned system is not expected to be completed prior to the completion of the Block N East development and, as such, is not incorporated into projected conditions. The trip generation characteristics for the proposed project were adjusted to account for the influence of these factors, as well as, to account for

the trip generation characteristics of the existing uses that will be replaced by the new development. Table 1 summarizes the adjusted trip generation characteristics of the new development that incorporates the influence of the aforementioned factors. Appendix D includes a detailed trip generation worksheet for the Block N East development.

Table 1: Adjusted Peak Hour Trip Generation

COMMERCIAL/RETAIL (SHOPPING CENTER)		
INDEPENDENT VARIABLE:	1,000 sf of development = 15	
		PROJECTED TRIP ENDS
AM PEAK	ENTER	3
	EXIT	-1
	TOTAL	2
PM PEAK	ENTER	-16
	EXIT	-18
	TOTAL	-34
FINE DINING RESTAURANT (QUALITY RESTAURANT)		
INDEPENDENT VARIABLE:	1,000 sf of development = 5	
		PROJECTED TRIP ENDS
AM PEAK	ENTER	12
	EXIT	-4
	TOTAL	8
PM PEAK	ENTER	-17
	EXIT	-11
	TOTAL	-28
RESIDENTIAL (CONDOMINIUM/TOWNHOUSE)		
INDEPENDENT VARIABLE:	Dwelling Units = 750	
		PROJECTED TRIP ENDS
AM PEAK	ENTER	28
	EXIT	200
	TOTAL	228
PM PEAK	ENTER	184
	EXIT	86
	TOTAL	270
TOTALS		
		PROJECTED TRIP ENDS
AM PEAK	ENTER	43
	EXIT	195
	TOTAL	238
PM PEAK	ENTER	151
	EXIT	57
	TOTAL	208

2. Trip Distribution and Through Traffic Forecasting Methodology

The travel forecast utilized for this study is based on the OMPO regional forecasting model which contains estimated land usage for the island of Oahu by the Year 2035 including the development of other projects such as the adjacent Kamehameha Schools/Bishop Estate (KSBE) lands to the west. The travel forecast utilized for the OMPO model is based on Socio-Economic Data (SED) which represents the population distribution within a multitude of traffic analysis zones. The model utilizes this data to forecast individual vehicle trips between destinations within the model. The use of the OMPO model more accurately reflects the anticipated impacts of development on the island more than the use of historical travel patterns or traffic count data. 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. In addition, since population estimates for the island of Oahu indicate that population growth is expected to be relatively linear to the Year 2035, a linear growth in traffic was also assumed over that period. As such, a growth factor was determined for the Year 2020.

B. Total Traffic Volumes Without Project

The projected Year 2020 AM and PM peak period traffic volumes and operating conditions without the Block N East development are shown in Figures 9 and 10, and summarized in Table 2. The analysis incorporates the development of other projects in the area, Phases 1A and 1B of the Ward Villages Master Plan, and anticipated ambient growth in traffic in the vicinity. The baseline levels of service are provided for comparison purposes. LOS calculations are included in Appendix E.

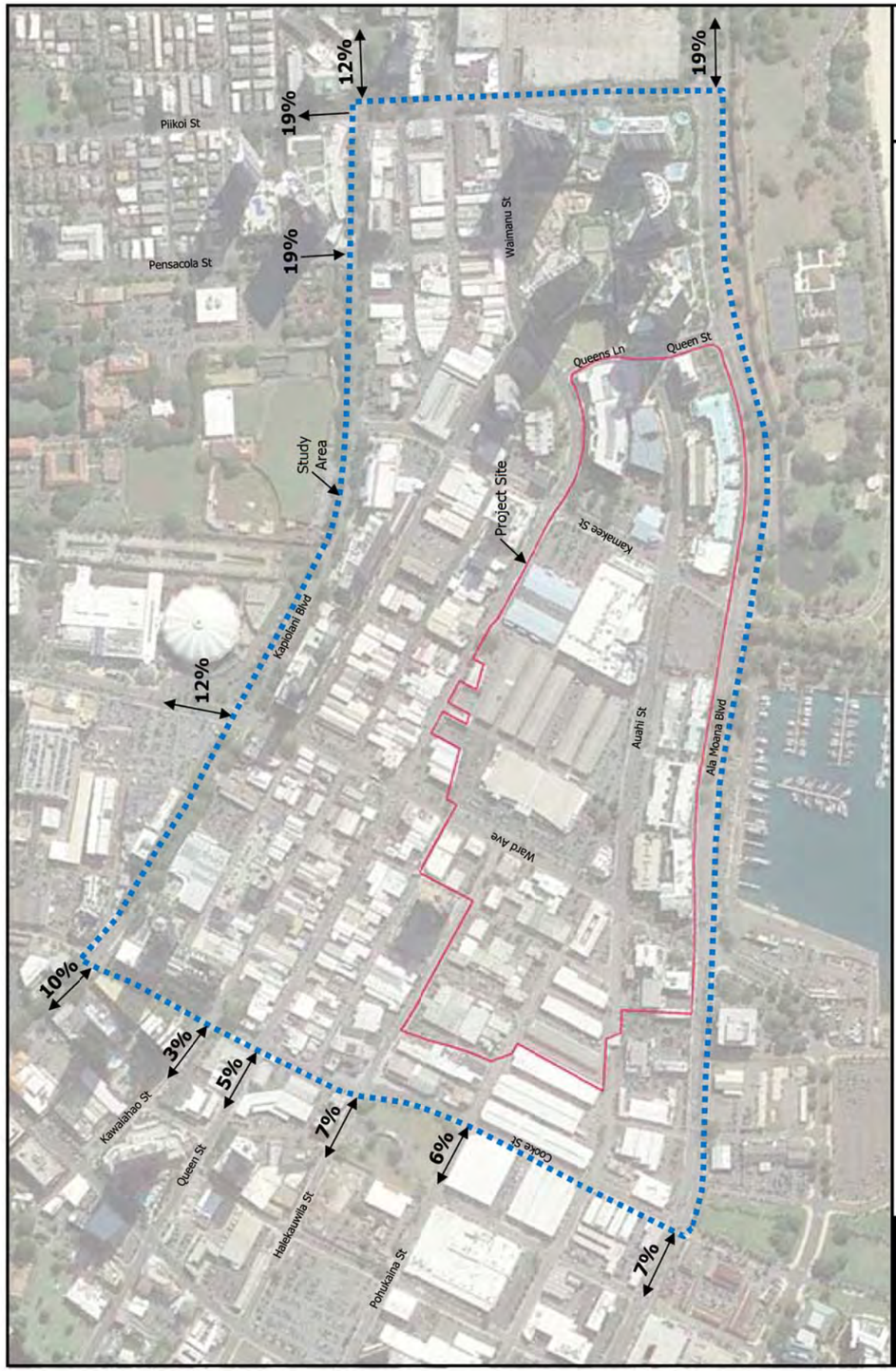
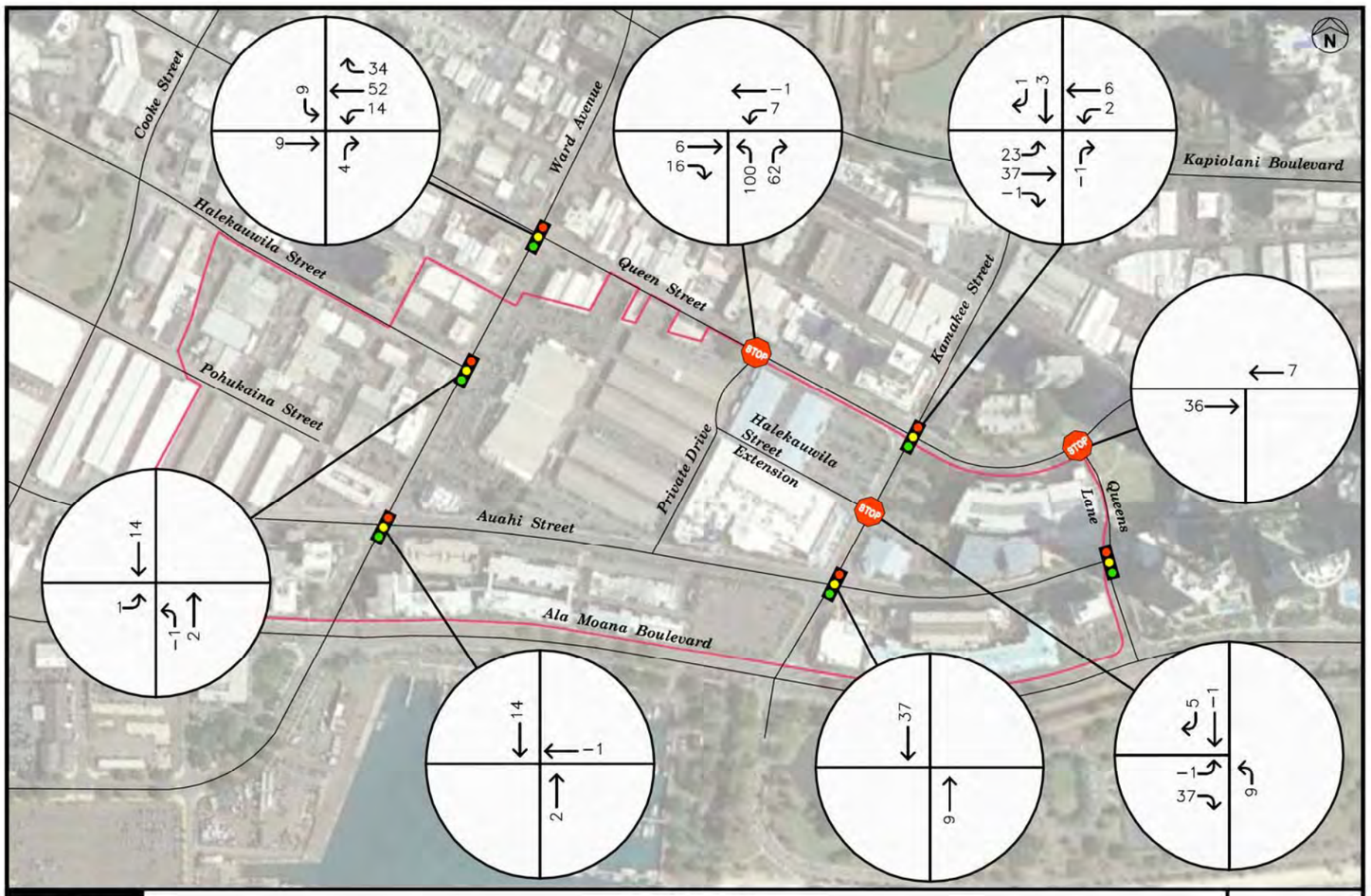


FIGURE 6

DISTRIBUTION OF EXTERNAL SITE-GENERATED TRIPS

BLOCK N EAST

WILSON OKAMOTO CORPORATION

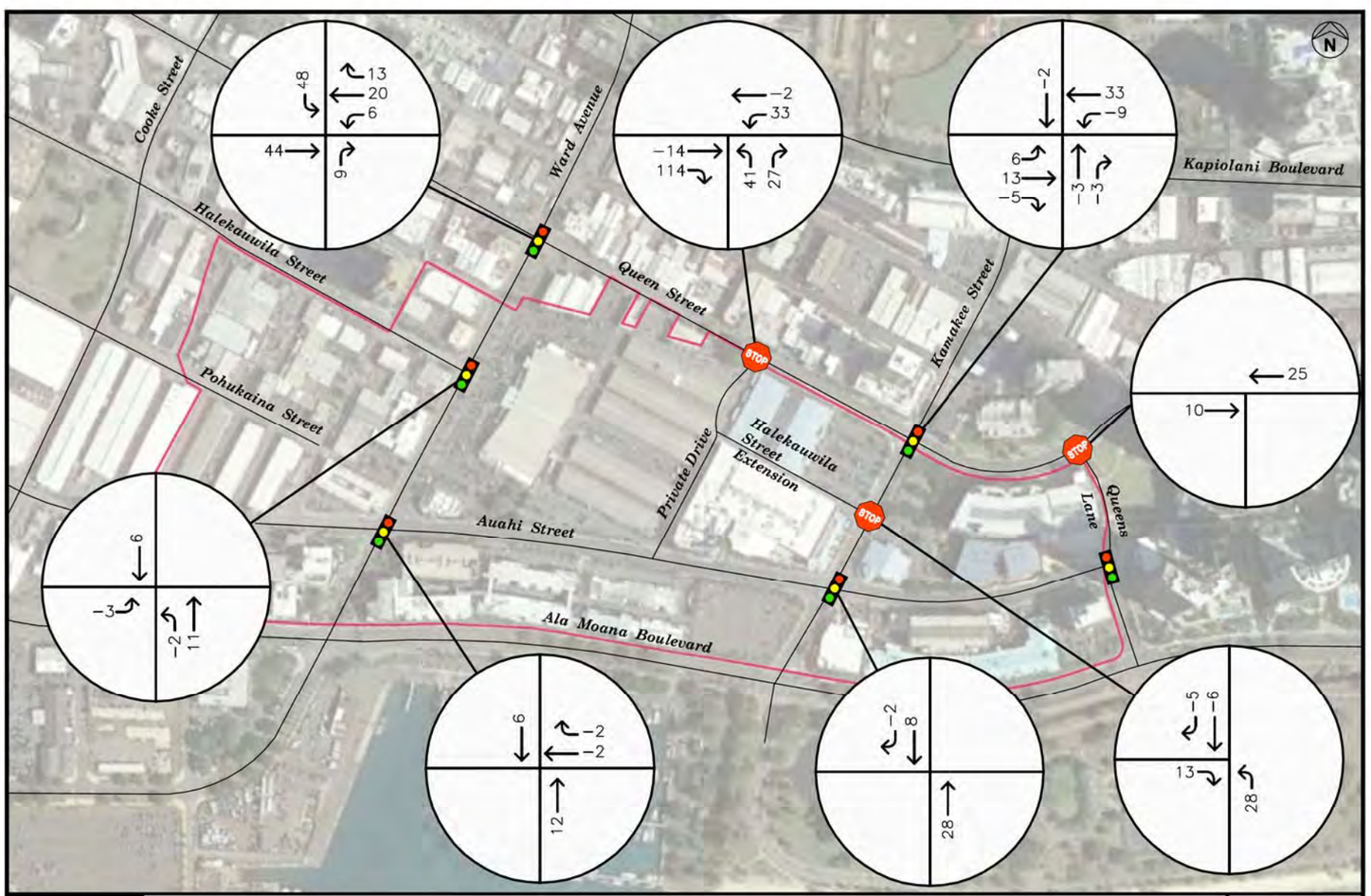


BLOCK N EAST

DISTRIBUTION OF SITE-GENERATED VEHICLES
AM PEAK HOUR OF TRAFFIC WITH PROJECT

FIGURE 7

WILSON OKAMOTO CORPORATION

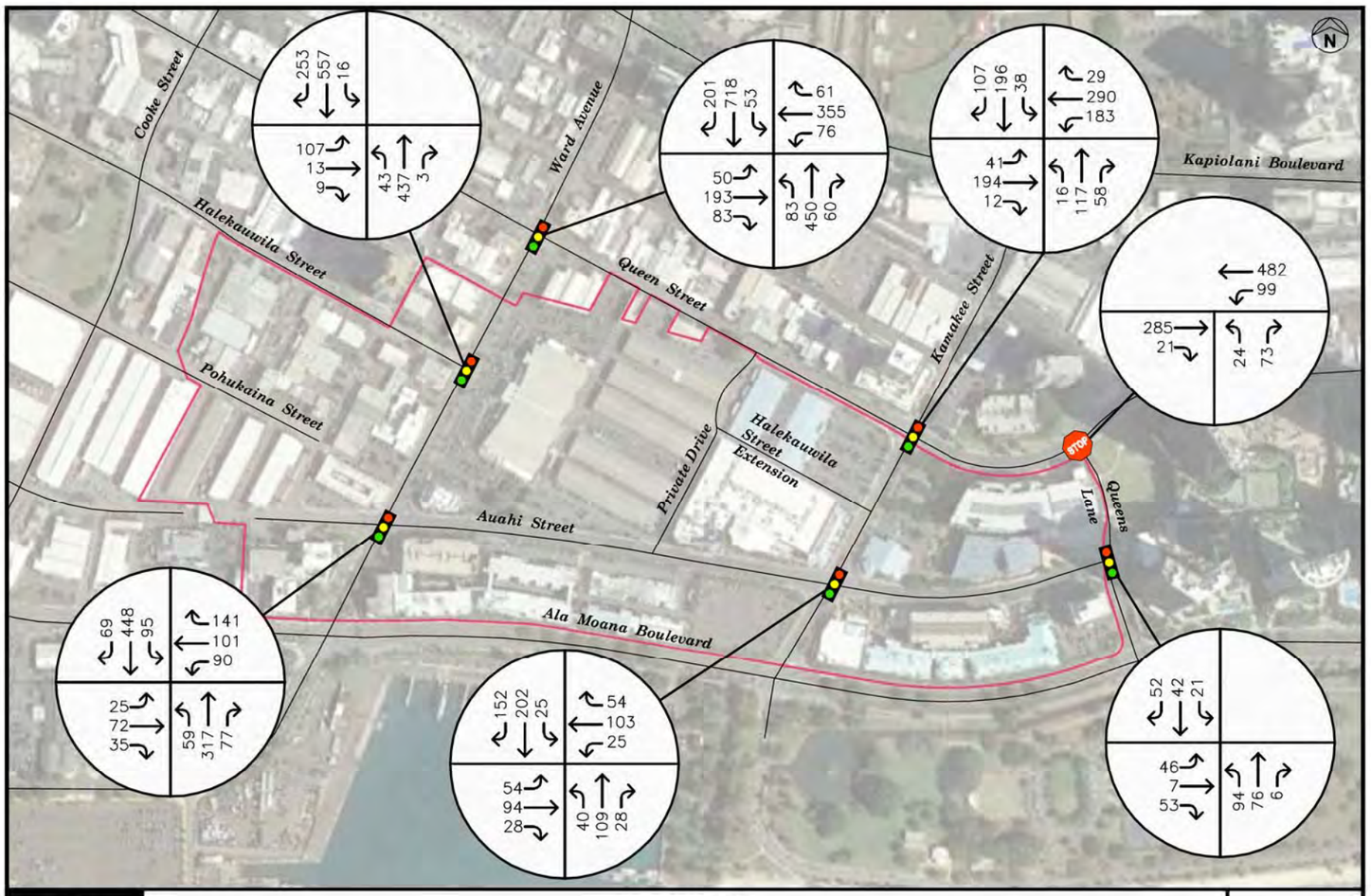


BLOCK N EAST

DISTRIBUTION OF SITE-GENERATED VEHICLES
PM PEAK HOUR OF TRAFFIC WITH PROJECT

FIGURE 8

WILSON OKAMOTO CORPORATION

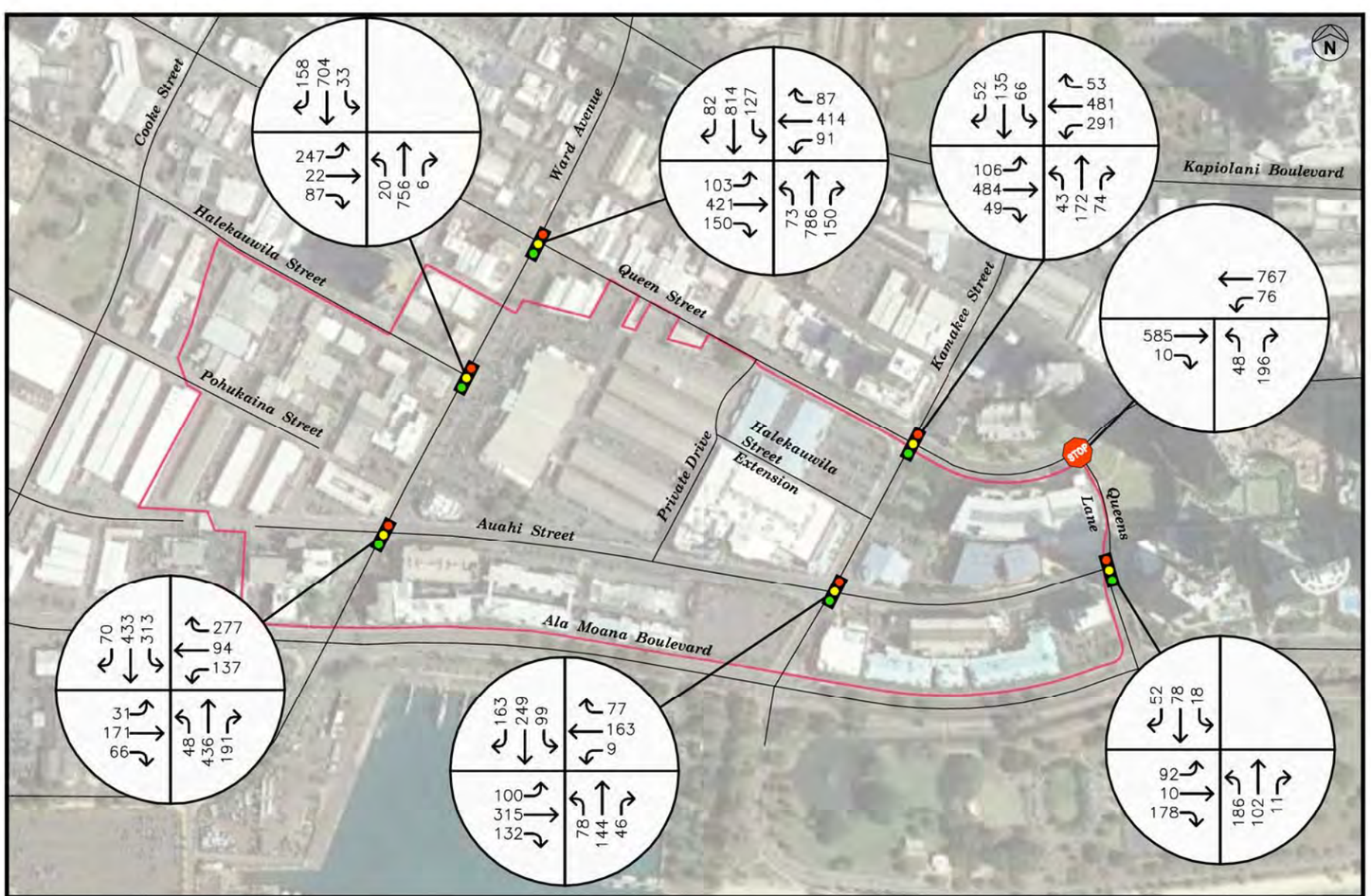


BLOCK N EAST

YEAR 2020 AM PEAK HOUR OF TRAFFIC WITHOUT PROJECT

FIGURE 9

WILSON OKAMOTO CORPORATION



BLOCK N EAST

YEAR 2020 PM PEAK HOUR OF TRAFFIC WITHOUT PROJECT

FIGURE 10

WILSON OKAMOTO CORPORATION

Table 2: Baseline and Projected Year 2020 (Without Project) LOS Traffic Operating Conditions

Intersection	Approach/ Critical Movement	AM		PM	
		Base-line	Year 2020 w/out Proj	Base-line	Year 2020 w/out Proj
Ward Ave/ Queen St	Eastbound	C	C	F	F
	Westbound	C	C	F	F
	Northbound	C	C	D	D
	Southbound	C	C	D	E
Queen St/ Kamakee St	Eastbound	B	B	C	C
	Westbound	B	B	B	B
	Northbound	B	B	C	C
	Southbound	B	B	C	C
Queen St/ Queens Ln	Westbound (LT*)	A	A	A	A
	Northbound	B	B	B	B
Ward Ave/ Halekauwila St	Eastbound	B	B	B	B
	Northbound	A	A	B	B
	Southbound	A	A	B	B
Ward Ave/ Auahi St	Eastbound	B	B	B	B
	Westbound	B	B	C	C
	Northbound	A	A	A	A
	Southbound	A	A	B	B
Kamakee St/ Auahi St	Eastbound	C	C	B	B
	Westbound	B	B	B	B
	Northbound	A	A	C	C
	Southbound	A	A	C	C
Auahi St/ Queens Ln/ Queen St	Eastbound	B	B	B	B
	Northbound	B	B	B	B
	Southbound	B	B	B	B

*LT = Left-Turn

Under Year 2020 without project conditions, traffic operations are generally expected to remain similar to baseline conditions. Along Ward Avenue, traffic operations at the intersections with Halekauwila Street and Auahi Street are expected to continue operating at LOS "B" or better during the AM peak period and LOS "C"

or better during the PM peak period. However, at the intersection with Queen Street, traffic operations are expected to deteriorate from LOS "D" to LOS "E" along the southbound approach during the PM peak period. Traffic operations at the remaining study intersections are expected to operate at levels of service similar to baseline conditions.

C. Total Traffic Volumes With Project

Figures 11 and 12 show the Year 2020 cumulative AM and PM peak hour traffic conditions resulting from the completion of the Block N East development. The cumulative volumes consist of site-generated traffic superimposed over Year 2020 projected traffic demands. The traffic impacts resulting from the proposed project are addressed in the following section.

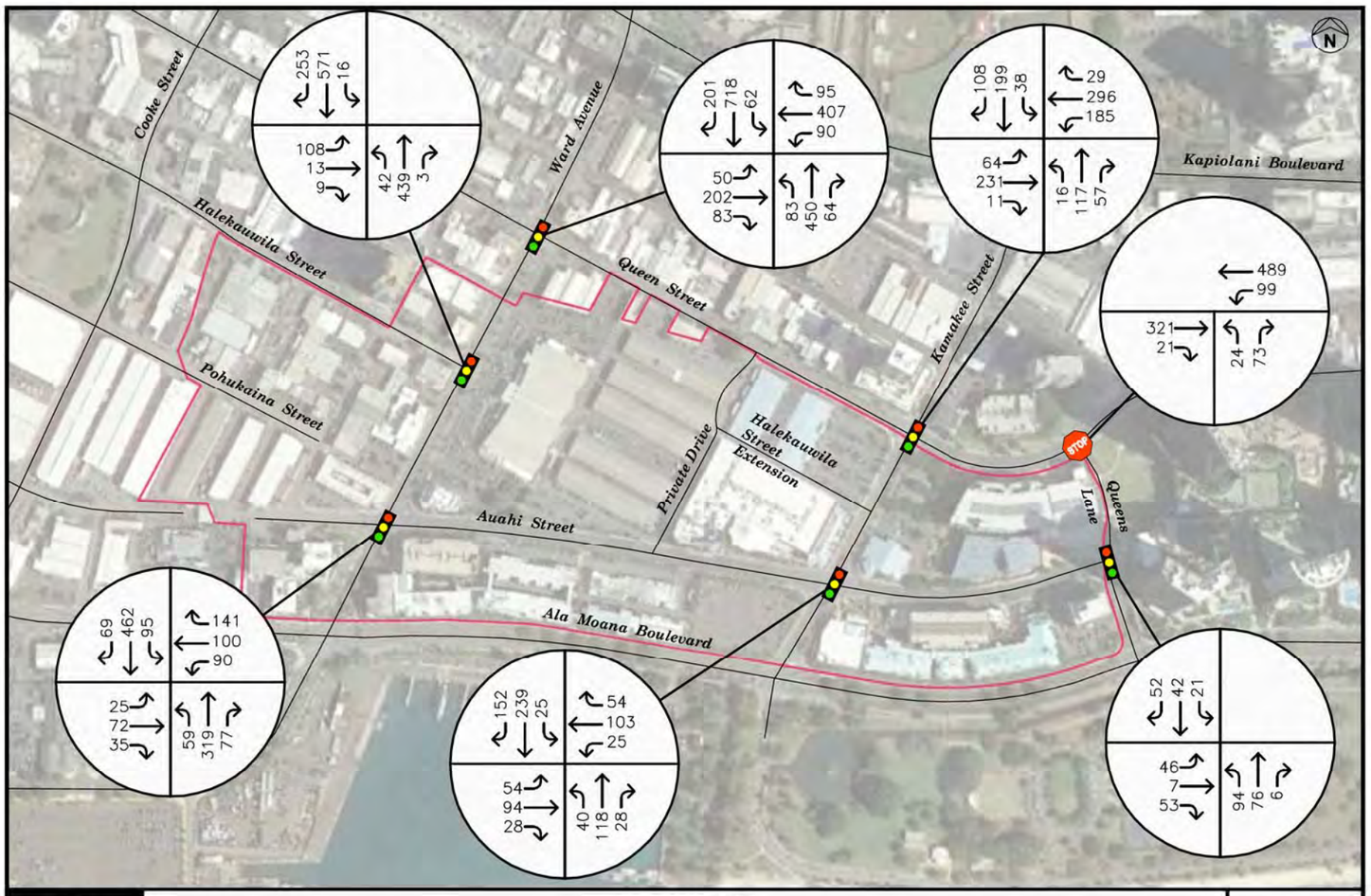
V. TRAFFIC IMPACT ANALYSIS

The Year 2020 cumulative AM and PM peak hour traffic conditions with the completion of the Block N East development are summarized in Table 3. The intersection of Ward Avenue and Queen Street is assumed to be modified under with project conditions to alleviate the anticipated levels of service. At that intersection, lane use modifications are expected to provide an exclusive left-turn lane and a shared through and right-turn lane along both approaches of Queen Street. The baseline and projected Year 2020 (Without Project) operating conditions are provided for comparison purposes. LOS calculations are included in Appendix F.

Table 3: Baseline and Projected Year 2020 (Without and With Project) LOS Traffic Operating Conditions

Intersection	Approach/ Critical Movement	AM			PM		
		Base-line	Year 2020		Base-line	Year 2020	
			w/out Proj	w/ Proj		w/out Proj	w/ Proj
Ward Ave/ Queen St*	Eastbound	C	C	B	F	F	D
	Westbound	C	C	C	F	F	D
	Northbound	C	C	C	D	D	D
	Southbound	C	C	C	D	E	D

*Intersection improvement implemented.

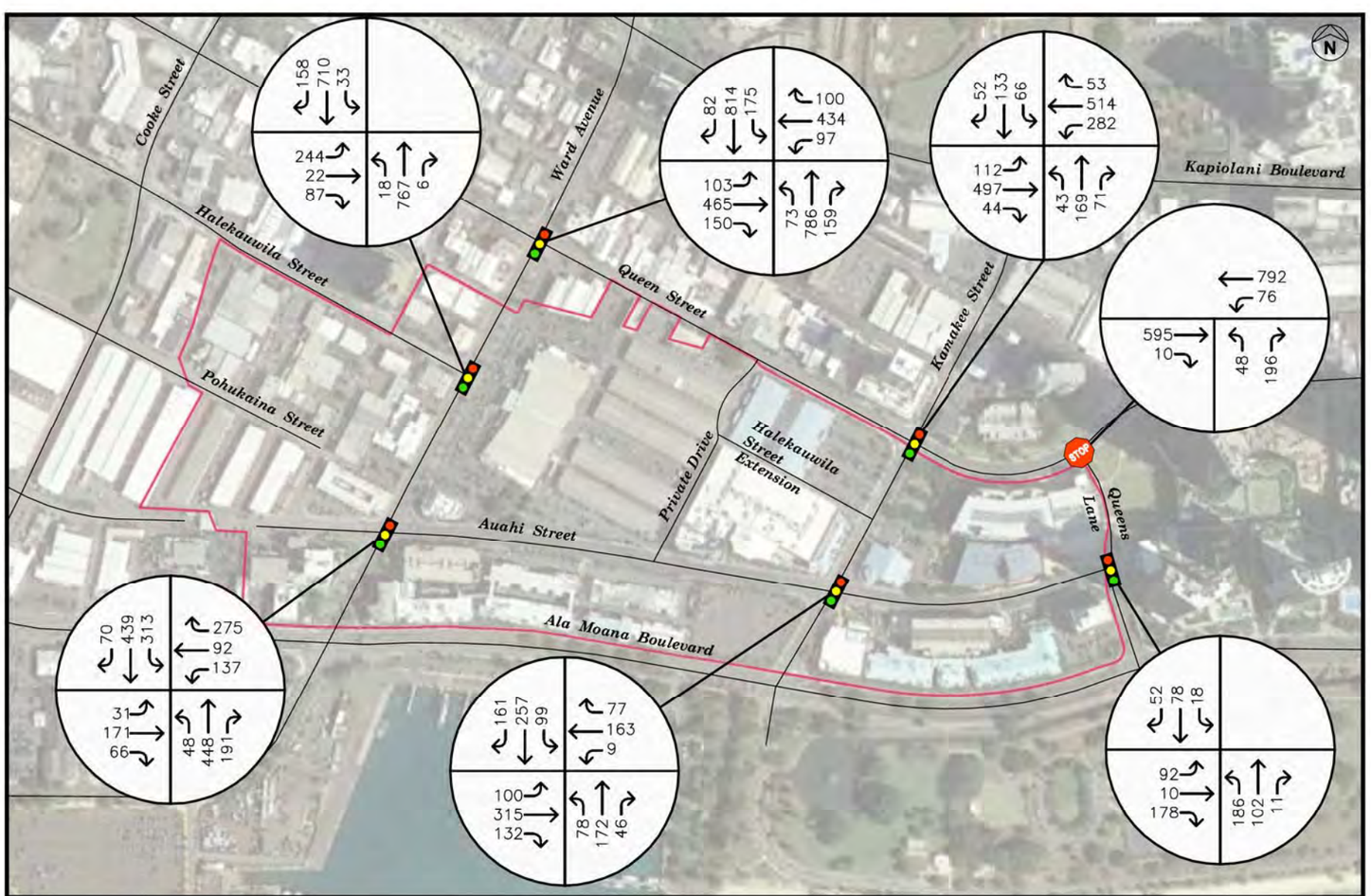


BLOCK N EAST

YEAR 2020 AM PEAK HOUR OF TRAFFIC WITH PROJECT

FIGURE 11

WILSON OKAMOTO CORPORATION



BLOCK N EAST

YEAR 2020 PM PEAK HOUR OF TRAFFIC WITH PROJECT

FIGURE 12

WILSON OKAMOTO CORPORATION

Table 3: Baseline and Projected Year 2020 (Without and With Project) LOS Traffic Operating Conditions (Cont'd)

Intersection	Approach/ Critical Movement	AM			PM		
		Base-line	Year 2020		Base-line	Year 2020	
			w/out Proj	w/ Proj		w/out Proj	w/ Proj
Queen St/ Kamakee St	Eastbound	B	B	B	C	C	C
	Westbound	B	B	B	B	B	B
	Northbound	B	B	B	C	C	C
	Southbound	B	B	B	C	C	C
Queen St/ Queens Ln	Westbound	A	A	A	A	A	A
	Northbound	B	B	B	B	B	B
Ward Ave/ Halekauwila St	Eastbound	B	B	B	B	B	B
	Northbound	A	A	A	B	B	B
	Southbound	A	A	A	B	B	B
Ward Ave/ Auahi St	Eastbound	B	B	B	B	B	B
	Westbound	B	B	B	C	C	C
	Northbound	A	A	A	A	A	A
	Southbound	A	A	A	B	B	B
Kamakee St/ Auahi St	Eastbound	C	C	C	B	B	B
	Westbound	B	B	B	B	B	B
	Northbound	A	A	A	C	C	C
	Southbound	A	A	A	C	C	C
Queens Ln/ Queen St/ Auahi St	Eastbound	B	B	B	B	B	B
	Northbound	B	B	B	B	B	B
	Southbound	B	B	B	B	B	B

Traffic operations under Year 2020 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 Ward Avenue, at the intersections with Halekauwila Street and Auahi Street traffic operations are expected to continue operating at LOS "B" or better during the AM peak period and LOS "C" or better during the PM peak. At the intersection with Queen Street traffic operations are expected to improve to LOS "C" or better during the AM peak period and LOS "D" or better during the PM peak period primarily due to the lane use modifications along Queen Street. At the remaining study intersections, traffic

operations are expected to continue to operate at levels of service similar to without project conditions.

VI. 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. Maintain sufficient sight distance for motorists to safely enter and exit the project driveway.

2. Provide adequate on-site loading and off-loading service areas and prohibit off-site loading operations.

3. Provide adequate turn-around area for service, delivery, and refuse collection vehicles to maneuver on the project site to avoid 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. Modify the lane use on both of the Queen Street approaches at the intersection with Ward Avenue to provide an exclusive left-turn lane and a shared through and right-turn lane. The layout and dimensions of these lanes should be determined during the design of the projects as listed above.

6. Consider actively managing the loading area to minimize vehicular conflicts to the adjacent intersection of Queen Street and Private Drive.

7. 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 for the Ward Villages Master Plan," dated May 2016,

VII. CONCLUSION

The project site for the Ward Village Master Plan currently encompasses Ward Warehouse, Ward Centre, Ward Entertainment Center, Ward Village Shops, and other surrounding commercial and office buildings. The overall master plan is expected to be implemented in five (5) phases over the next 10-15 years and entail the redevelopment of most of the existing commercial, office, and industrial spaces. Block N East is a part of Phase 2 of the master plan which is expected to include new commercial/retail space and residential units adjacent to Queen Street midway between Ward Avenue and Kamakee Street. With the implementation of the aforementioned recommendations, traffic operations

at the study intersections with the Block N East development are generally expected to operate at levels of service similar to without project conditions. 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) be prepared for each phase of the project to verify future conditions and ensure necessary mitigation measures are implemented.

APPENDIX A

EXISTING TRAFFIC COUNT DATA

Wilson Okamoto Corporation

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

Counted By:JC, CY
Counters:D4-3888, D4-5677
Weather:Clear

File Name : AuaKam AM
Site Code : 00000006
Start Date : 3/3/2015
Page No : 1

Groups Printed- Unshifted

	Kamani Street Thru = Vehicles Entering Bank Of Hawaii Parking Garage Southbound					Auahi Street Left = Turn Into Bank Of Hawaii Driveway Westbound					Bank Of Hawaii Driveway Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	5	1	0	0	6	1	6	2	0	9	0	0	1	0	1	0	0	0	0	0	16
06:15 AM	4	0	1	0	5	5	0	15	0	20	0	0	2	0	2	1	0	0	0	1	28
06:30 AM	9	0	1	0	10	0	0	14	0	14	0	0	1	0	1	0	0	0	0	0	25
06:45 AM	9	0	2	1	12	1	0	22	0	23	0	0	0	0	0	1	0	0	0	1	36
Total	27	1	4	1	33	7	6	53	0	66	0	0	4	0	4	2	0	0	0	2	105
07:00 AM	12	0	0	1	13	3	1	39	0	43	0	0	0	0	0	0	0	0	0	0	56
07:15 AM	24	4	0	1	29	3	0	37	0	40	0	0	1	0	1	0	0	0	0	0	70
07:30 AM	13	0	0	0	13	5	1	49	0	55	0	0	0	0	0	0	1	0	0	1	69
07:45 AM	12	1	1	3	17	4	5	40	0	49	0	0	3	0	3	1	0	0	0	1	70
Total	61	5	1	5	72	15	7	165	0	187	0	0	4	0	4	1	1	0	0	2	265
08:00 AM	19	1	1	0	21	4	1	40	0	45	0	0	4	0	4	2	0	0	0	2	72
08:15 AM	26	3	1	0	30	9	1	50	0	60	0	0	4	0	4	0	1	0	0	1	95
08:30 AM	30	4	2	1	37	12	2	35	0	49	0	0	5	0	5	1	1	0	0	2	93
08:45 AM	38	6	2	1	47	10	0	24	0	34	0	0	5	0	5	2	1	0	0	3	89
Total	113	14	6	2	135	35	4	149	0	188	0	0	18	0	18	5	3	0	0	8	349
Grand Total	201	20	11	8	240	57	17	367	0	441	0	0	26	0	26	8	4	0	0	12	719
Apprch %	83.8	8.3	4.6	3.3		12.9	3.9	83.2	0		0	0	100	0		66.7	33.3	0	0		
Total %	28	2.8	1.5	1.1	33.4	7.9	2.4	51	0	61.3	0	0	3.6	0	3.6	1.1	0.6	0	0	1.7	

	Kamani Street Thru = Vehicles Entering Bank Of Hawaii Parking Garage Southbound				Auahi Street Left = Turn Into Bank Of Hawaii Driveway Westbound				Bank Of Hawaii Driveway Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	19	1	1	21	4	1	40	45	0	0	4	4	**2**	0	0	2	72
08:15 AM	26	3	1	30	9	1	**50**	**60**	0	0	4	4	0	**1**	0	1	**95**
08:30 AM	30	4	**2**	36	**12**	**2**	35	49	0	0	**5**	**5**	1	1	0	2	92
08:45 AM	**38**	**6**	2	**46**	10	0	24	34	0	0	5	5	2	1	0	**3**	88
Total Volume	113	14	6	133	35	4	149	188	0	0	18	18	5	3	0	8	347
% App. Total	85	10.5	4.5		18.6	2.1	79.3		0	0	100		62.5	37.5	0		
PHF	.743	.583	.750	.723	.729	.500	.745	.783	.000	.000	.900	.900	.625	.750	.000	.667	.913

Wilson Okamoto Corporation

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

Counted By: CY, JC
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Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	34	2	1	0	37	2	0	30	0	32	0	0	10	0	10	0	2	0	0	2	81
03:15 PM	47	2	1	0	50	7	0	56	0	63	0	0	6	0	6	1	2	0	0	3	122
03:30 PM	50	2	1	3	56	6	1	41	0	48	0	0	5	0	5	3	1	0	0	4	113
03:45 PM	50	1	0	0	51	5	0	37	0	42	0	0	4	0	4	1	0	0	0	1	98
Total	181	7	3	3	194	20	1	164	0	185	0	0	25	0	25	5	5	0	0	10	414
04:00 PM	42	2	0	1	45	4	0	34	0	38	0	0	12	0	12	4	4	0	0	8	103
04:15 PM	47	0	1	0	48	1	1	42	0	44	0	0	7	0	7	0	2	0	0	2	101
04:30 PM	52	1	0	0	53	2	1	43	0	46	0	0	7	0	7	4	4	0	0	8	114
04:45 PM	53	1	0	0	54	5	0	31	0	36	0	0	7	0	7	3	0	0	0	3	100
Total	194	4	1	1	200	12	2	150	0	164	0	0	33	0	33	11	10	0	0	21	418
05:00 PM	49	0	0	0	49	5	0	53	1	59	0	0	13	0	13	7	2	0	0	9	130
05:15 PM	46	0	0	0	46	3	0	34	0	37	0	0	0	0	0	1	1	0	0	2	85
05:30 PM	50	0	0	0	50	4	0	42	0	46	0	0	8	0	8	1	3	0	0	4	108
05:45 PM	45	3	0	0	48	8	0	32	0	40	1	0	9	0	10	1	0	1	0	2	100
Total	190	3	0	0	193	20	0	161	1	182	1	0	30	0	31	10	6	1	0	17	423
Grand Total	565	14	4	4	587	52	3	475	1	531	1	0	88	0	89	26	21	1	0	48	1255
Apprch %	96.3	2.4	0.7	0.7		9.8	0.6	89.5	0.2		1.1	0	98.9	0		54.2	43.8	2.1	0		
Total %	45	1.1	0.3	0.3	46.8	4.1	0.2	37.8	0.1	42.3	0.1	0	7	0	7.1	2.1	1.7	0.1	0	3.8	

	Kamani Street Thru = Vehicles Entering Bank Of Hawaii Parking Garage Southbound				Auahi Street Westbound				Bank Of Hawaii Driveway Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	47	0	**1**	48	1	**1**	42	44	0	0	7	7	0	2	0	2	101
04:30 PM	52	**1**	0	53	2	1	43	46	0	0	7	7	4	**4**	0	8	114
04:45 PM	**53**	1	0	**54**	**5**	0	31	36	0	0	7	7	3	0	0	3	100
05:00 PM	49	0	0	49	5	0	**53**	**58**	0	0	**13**	**13**	**7**	2	0	**9**	**129**
Total Volume	201	2	1	204	13	2	169	184	0	0	34	34	14	8	0	22	444
% App. Total	98.5	1	0.5		7.1	1.1	91.8		0	0	100		63.6	36.4	0		
PHF	.948	.500	.250	.944	.650	.500	.797	.793	.000	.000	.654	.654	.500	.500	.000	.611	.860

Wilson Okamoto Corporation

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

Counted By:FS, PA
Counters:D4-5672, D4-5673
Weather:Clear

File Name : PohKam AM
Site Code : 00000005
Start Date : 3/3/2015
Page No : 1

Groups Printed- Unshifted

	Kamani Street Left = Left Turn Into Business Driveway Southbound					Business Driveway Westbound					Kamani Street Northbound					Pohukaina Street Thru = To Business Driveway Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	0	5	1	7	0	0	0	0	0	3	1	0	0	4	3	1	3	0	7	18
06:15 AM	0	1	7	0	8	0	0	0	2	2	13	2	1	0	16	0	0	3	0	3	29
06:30 AM	0	0	5	0	5	0	0	0	1	1	12	0	0	0	12	5	3	12	0	20	38
06:45 AM	0	3	7	1	11	0	2	0	1	3	20	1	1	0	22	5	2	8	1	16	52
Total	1	4	24	2	31	0	2	0	4	6	48	4	2	0	54	13	6	26	1	46	137
07:00 AM	0	2	9	1	12	0	1	0	2	3	28	4	1	0	33	4	0	9	1	14	62
07:15 AM	0	4	17	2	23	0	1	0	4	5	35	5	0	0	40	11	1	24	0	36	104
07:30 AM	0	2	19	2	23	0	1	0	0	1	41	3	1	0	45	10	1	13	3	27	96
07:45 AM	0	1	18	0	19	0	0	1	1	2	46	3	0	0	49	7	1	13	3	24	94
Total	0	9	63	5	77	0	3	1	7	11	150	15	2	0	167	32	3	59	7	101	356
08:00 AM	0	6	9	3	18	0	2	0	10	12	32	4	0	0	36	8	0	17	2	27	93
08:15 AM	1	3	9	1	14	0	0	0	1	1	38	7	0	0	45	1	0	24	0	25	85
08:30 AM	0	4	8	1	13	0	1	1	3	5	37	5	2	0	44	6	0	22	1	29	91
08:45 AM	0	4	14	2	20	0	3	0	3	6	21	8	0	0	29	2	1	34	1	38	93
Total	1	17	40	7	65	0	6	1	17	24	128	24	2	0	154	17	1	97	4	119	362
Grand Total	2	30	127	14	173	0	11	2	28	41	326	43	6	0	375	62	10	182	12	266	855
Apprch %	1.2	17.3	73.4	8.1		0	26.8	4.9	68.3		86.9	11.5	1.6	0		23.3	3.8	68.4	4.5		
Total %	0.2	3.5	14.9	1.6	20.2	0	1.3	0.2	3.3	4.8	38.1	5	0.7	0	43.9	7.3	1.2	21.3	1.4	31.1	

	Kamani Street Left = Left Turn Into Business Driveway Southbound				Business Driveway Westbound				Kamani Street Northbound				Pohukaina Street Thru = To Business Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	4	**17**	**21**	0	1	0	1	35	**5**	0	40	**11**	**1**	**24**	**36**	**98**
07:30 AM	0	2	**19**	21	0	1	0	1	**41**	3	**1**	45	10	1	13	24	91
07:45 AM	0	1	18	19	0	0	**1**	1	**46**	3	0	**49**	7	1	13	21	90
08:00 AM	0	**6**	9	15	0	**2**	0	**2**	32	4	0	36	8	0	17	25	78
Total Volume	0	13	63	76	0	4	1	5	154	15	1	170	36	3	67	106	357
% App. Total	0	17.1	82.9		0	80	20		90.6	8.8	0.6		34	2.8	63.2		
PHF	.000	.542	.829	.905	.000	.500	.250	.625	.837	.750	.250	.867	.818	.750	.698	.736	.911

Wilson Okamoto Corporation

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

Counted By:FS, PA
Counters:D4-5673, D4-5672
Weather:Clear

File Name : PohKam PM
Site Code : 00000005
Start Date : 3/3/2015
Page No : 1

Groups Printed- Unshifted

	Kamani Street Southbound					Business Driveway Westbound					Kamani Street Northbound					Pohukaina Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	2	4	4	5	15	0	1	0	8	9	16	13	4	0	33	10	1	20	3	34	91
03:15 PM	1	3	8	5	17	0	1	0	9	10	44	17	3	0	64	8	2	31	0	41	132
03:30 PM	0	6	10	4	20	0	1	0	8	9	38	10	1	0	49	14	0	38	2	54	132
03:45 PM	0	4	14	1	19	0	3	1	8	12	28	13	0	0	41	12	1	40	4	57	129
Total	3	17	36	15	71	0	6	1	33	40	126	53	8	0	187	44	4	129	9	186	484
04:00 PM	1	3	12	4	20	0	1	4	3	8	25	13	1	0	39	8	1	36	4	49	116
04:15 PM	0	8	11	1	20	0	0	1	3	4	31	10	1	0	42	10	2	44	1	57	123
04:30 PM	0	5	10	2	17	0	0	2	2	4	31	12	1	0	44	18	3	53	5	79	144
04:45 PM	0	7	13	5	25	0	0	1	2	3	20	11	1	0	32	14	1	52	4	71	131
Total	1	23	46	12	82	0	1	8	10	19	107	46	4	0	157	50	7	185	14	256	514
05:00 PM	2	6	8	0	16	0	3	0	8	11	35	21	0	0	56	14	6	50	2	72	155
05:15 PM	0	1	10	6	17	0	0	1	6	7	21	8	0	0	29	9	2	50	3	64	117
05:30 PM	0	9	14	3	26	0	1	3	1	5	18	10	2	0	30	16	1	36	1	54	115
05:45 PM	1	5	8	3	17	0	6	3	7	16	24	7	1	4	36	13	3	51	1	68	137
Total	3	21	40	12	76	0	10	7	22	39	98	46	3	4	151	52	12	187	7	258	524
Grand Total	7	61	122	39	229	0	17	16	65	98	331	145	15	4	495	146	23	501	30	700	1522
Apprch %	3.1	26.6	53.3	17		0	17.3	16.3	66.3		66.9	29.3	3	0.8		20.9	3.3	71.6	4.3		
Total %	0.5	4	8	2.6	15	0	1.1	1.1	4.3	6.4	21.7	9.5	1	0.3	32.5	9.6	1.5	32.9	2	46	

	Kamani Street Southbound				Business Driveway Westbound				Kamani Street Northbound				Pohukaina Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	**8**	11	19	0	0	1	1	31	10	**1**	42	10	2	44	56	118
04:30 PM	0	5	10	15	0	0	**2**	2	31	12	1	44	**18**	3	**53**	**74**	135
04:45 PM	0	7	**13**	**20**	0	0	1	1	20	11	1	32	14	1	52	67	120
05:00 PM	**2**	6	8	16	0	**3**	0	**3**	**35**	**21**	0	**56**	14	**6**	50	70	**145**
Total Volume	2	26	42	70	0	3	4	7	117	54	3	174	56	12	199	267	518
% App. Total	2.9	37.1	60		0	42.9	57.1		67.2	31	1.7		21	4.5	74.5		
PHF	.250	.813	.808	.875	.000	.250	.500	.583	.836	.643	.750	.777	.778	.500	.939	.902	.893

Wilson Okamoto Corporation

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

Counted By:DY, GC
Counters:D4-5676, D4-5675
Weather:Clear

File Name : WarAua AM
Site Code : 00000003
Start Date : 3/3/2015
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Auahi Street Westbound					Ward Avenue Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	10	70	7	1	88	8	5	2	6	21	2	29	10	1	42	2	1	2	3	8	159
06:15 AM	7	77	6	3	93	9	7	8	6	30	7	38	10	0	55	1	2	4	3	10	188
06:30 AM	5	75	8	2	90	8	4	3	6	21	1	42	11	0	54	2	3	5	3	13	178
06:45 AM	13	73	7	2	95	17	10	7	3	37	6	48	12	0	66	1	6	4	4	15	213
Total	35	295	28	8	366	42	26	20	21	109	16	157	43	1	217	6	12	15	13	46	738
07:00 AM	11	84	15	3	113	9	14	12	9	44	13	50	14	0	77	2	4	5	5	16	250
07:15 AM	15	105	9	7	136	16	23	8	16	63	7	56	10	0	73	3	12	7	6	28	300
07:30 AM	16	90	13	7	126	16	18	21	18	73	25	69	15	0	109	1	8	6	3	18	326
07:45 AM	12	77	10	9	108	20	30	11	17	78	15	73	20	0	108	0	7	7	8	22	316
Total	54	356	47	26	483	61	85	52	60	258	60	248	59	0	367	6	31	25	22	84	1192
08:00 AM	18	96	10	8	132	17	17	24	11	69	12	78	12	0	102	3	11	3	6	23	326
08:15 AM	15	116	10	9	150	26	33	18	17	94	21	73	21	0	115	10	11	7	5	33	392
08:30 AM	25	103	21	8	157	22	22	31	20	95	13	79	22	0	114	6	18	8	10	42	408
08:45 AM	27	86	24	12	149	19	11	29	8	67	10	66	18	0	94	5	24	15	13	57	367
Total	85	401	65	37	588	84	83	102	56	325	56	296	73	0	425	24	64	33	34	155	1493
Grand Total	174	1052	140	71	1437	187	194	174	137	692	132	701	175	1	1009	36	107	73	69	285	3423
Apprch %	12.1	73.2	9.7	4.9		27	28	25.1	19.8		13.1	69.5	17.3	0.1		12.6	37.5	25.6	24.2		
Total %	5.1	30.7	4.1	2.1	42	5.5	5.7	5.1	4	20.2	3.9	20.5	5.1	0	29.5	1.1	3.1	2.1	2	8.3	

	Ward Avenue Southbound				Auahi Street Westbound				Ward Avenue Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	18	96	10	124	17	17	24	58	12	78	12	102	3	11	3	17	301
08:15 AM	15	**116**	10	141	**26**	**33**	18	**77**	**21**	73	21	**115**	**10**	11	7	28	361
08:30 AM	25	103	21	**149**	22	22	**31**	75	13	**79**	**22**	114	6	18	8	32	**370**
08:45 AM	**27**	86	**24**	137	19	11	29	59	10	66	18	94	5	**24**	**15**	**44**	334
Total Volume	85	401	65	551	84	83	102	269	56	296	73	425	24	64	33	121	1366
% App. Total	15.4	72.8	11.8		31.2	30.9	37.9		13.2	69.6	17.2		19.8	52.9	27.3		
PHF	.787	.864	.677	.924	.808	.629	.823	.873	.667	.937	.830	.924	.600	.667	.550	.688	.923

Wilson Okamoto Corporation

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

Counted By:GC, DY
Counters:D4-5675, D4-5676
Weather:Clear

File Name : WarAua PM
Site Code : 00000003
Start Date : 3/3/2015
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Auahi Street Westbound					Ward Avenue Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	37	74	20	10	141	39	16	56	21	132	6	77	20	9	112	8	20	14	9	51	436
03:15 PM	44	107	33	13	197	26	43	52	21	142	12	86	28	4	130	8	20	14	6	48	517
03:30 PM	40	88	13	13	154	36	26	52	20	134	9	82	31	9	131	15	22	16	9	62	481
03:45 PM	39	92	16	12	159	31	23	60	36	150	10	76	36	6	128	10	34	14	7	65	502
Total	160	361	82	48	651	132	108	220	98	558	37	321	115	28	501	41	96	58	31	226	1936
04:00 PM	42	100	13	14	169	35	24	39	23	121	5	83	33	9	130	13	27	14	11	65	485
04:15 PM	54	102	9	10	175	42	18	51	27	138	16	89	34	12	151	9	38	18	14	79	543
04:30 PM	60	85	12	16	173	34	12	58	21	125	19	89	40	8	156	10	32	21	7	70	524
04:45 PM	68	84	8	20	180	39	18	49	16	122	10	87	34	3	134	9	42	14	4	69	505
Total	224	371	42	60	697	150	72	197	87	506	50	348	141	32	571	41	139	67	36	283	2057
05:00 PM	59	103	10	17	189	31	34	62	18	145	17	78	39	8	142	8	39	16	12	75	551
05:15 PM	79	99	17	14	209	27	18	50	24	119	8	95	46	10	159	9	37	18	11	75	562
05:30 PM	70	100	18	14	202	42	19	51	25	137	13	97	47	10	167	7	33	21	10	71	577
05:45 PM	71	101	21	9	202	29	14	55	19	117	7	93	46	11	157	5	47	7	10	69	545
Total	279	403	66	54	802	129	85	218	86	518	45	363	178	39	625	29	156	62	43	290	2235
Grand Total	663	1135	190	162	2150	411	265	635	271	1582	132	1032	434	99	1697	111	391	187	110	799	6228
Apprch %	30.8	52.8	8.8	7.5		26	16.8	40.1	17.1		7.8	60.8	25.6	5.8		13.9	48.9	23.4	13.8		
Total %	10.6	18.2	3.1	2.6	34.5	6.6	4.3	10.2	4.4	25.4	2.1	16.6	7	1.6	27.2	1.8	6.3	3	1.8	12.8	

	Ward Avenue Southbound				Auahi Street Westbound				Ward Avenue Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	59	**103**	10	172	31	**34**	**62**	**127**	**17**	78	39	134	8	39	16	63	496
05:15 PM	**79**	99	17	**195**	27	18	50	95	8	95	46	149	**9**	37	18	**64**	503
05:30 PM	70	100	18	188	**42**	19	51	112	13	**97**	**47**	**157**	7	33	**21**	61	**518**
05:45 PM	71	101	**21**	193	29	14	55	98	7	93	46	146	5	**47**	7	59	496
Total Volume	279	403	66	748	129	85	218	432	45	363	178	586	29	156	62	247	2013
% App. Total	37.3	53.9	8.8		29.9	19.7	50.5		7.7	61.9	30.4		11.7	63.2	25.1		
PHF	.883	.978	.786	.959	.768	.625	.879	.850	.662	.936	.947	.933	.806	.830	.738	.965	.972

Wilson Okamoto Corporation

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

Counted By:CM
Counters:TU-2050
Weather:Clear

File Name : KamAua AM
Site Code : 00000004
Start Date : 4/12/2016
Page No : 1

Groups Printed- Unshifted

	Kamakee Street Southbound					Auahi Street Westbound					Kamakee Street Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	16	14	4	35	1	6	1	4	12	3	5	5	8	21	4	9	3	7	23	91
06:15 AM	3	24	15	9	51	2	3	1	16	22	6	17	5	7	35	2	12	3	21	38	146
06:30 AM	5	22	22	16	65	1	6	2	12	21	10	19	5	13	47	4	8	9	10	31	164
06:45 AM	7	34	21	14	76	2	6	5	2	15	6	18	13	7	44	8	11	1	13	33	168
Total	16	96	72	43	227	6	21	9	34	70	25	59	28	35	147	18	40	16	51	125	569
07:00 AM	6	30	20	3	59	0	12	4	6	22	7	11	6	4	28	4	19	3	7	33	142
07:15 AM	5	24	33	3	65	1	24	4	5	34	7	21	1	4	33	2	15	1	7	25	157
07:30 AM	5	46	40	11	102	1	21	4	5	31	7	22	4	5	38	5	12	0	5	22	193
07:45 AM	11	43	36	5	95	2	18	3	2	25	5	27	4	4	40	6	28	3	5	42	202
Total	27	143	129	22	321	4	75	15	18	112	26	81	15	17	139	17	74	7	24	122	694
08:00 AM	11	31	37	7	86	0	24	5	7	36	22	24	7	3	56	5	32	2	3	42	220
08:15 AM	13	35	40	11	99	3	16	5	6	30	4	33	4	3	44	6	35	2	4	47	220
08:30 AM	6	33	34	13	86	4	17	3	1	25	9	19	6	2	36	6	25	2	2	35	182
08:45 AM	7	25	40	6	78	1	13	8	2	24	8	14	8	9	39	9	32	2	10	53	194
Total	37	124	151	37	349	8	70	21	16	115	43	90	25	17	175	26	124	8	19	177	816
Grand Total	80	363	352	102	897	18	166	45	68	297	94	230	68	69	461	61	238	31	94	424	2079
Apprch %	8.9	40.5	39.2	11.4		6.1	55.9	15.2	22.9		20.4	49.9	14.8	15		14.4	56.1	7.3	22.2		
Total %	3.8	17.5	16.9	4.9	43.1	0.9	8	2.2	3.3	14.3	4.5	11.1	3.3	3.3	22.2	2.9	11.4	1.5	4.5	20.4	

	Kamakee Street Southbound				Auahi Street Westbound				Kamakee Street Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	5	**46**	**40**	**91**	1	21	4	26	**7**	22	4	33	5	12	0	17	167
07:45 AM	11	43	36	90	2	18	3	23	5	27	4	36	**6**	28	**3**	37	186
08:00 AM	11	31	37	79	0	**24**	**5**	**29**	**22**	24	**7**	**53**	5	32	2	39	**200**
08:15 AM	**13**	35	40	88	**3**	16	5	24	4	**33**	4	41	6	**35**	2	**43**	196
Total Volume	40	155	153	348	6	79	17	102	38	106	19	163	22	107	7	136	749
% App. Total	11.5	44.5	44		5.9	77.5	16.7		23.3	65	11.7		16.2	78.7	5.1		
PHF	.769	.842	.956	.956	.500	.823	.850	.879	.432	.803	.679	.769	.917	.764	.583	.791	.936

Wilson Okamoto Corporation

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

Counted By:JH, PA
Counters:TU-2050, TU-1957
Weather:Clear

File Name : KamAua PM
Site Code : 00000004
Start Date : 4/12/2016
Page No : 1

Groups Printed- Unshifted

	Kamakee Street Southbound					Auahi Street Westbound					Kamakee Street Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	12	41	32	45	130	1	24	19	6	50	11	24	6	21	62	36	56	4	24	120	362
03:15 PM	7	41	29	34	111	3	30	6	13	52	10	18	6	10	44	28	56	2	9	95	302
03:30 PM	11	56	36	40	143	2	46	14	18	80	13	21	7	17	58	32	48	4	11	95	376
03:45 PM	5	60	38	24	127	3	28	8	23	62	10	34	10	12	66	20	62	6	19	107	362
Total	35	198	135	143	511	9	128	47	60	244	44	97	29	60	230	116	222	16	63	417	1402
04:00 PM	16	55	28	25	124	8	33	9	25	75	12	27	5	3	47	26	39	3	3	71	317
04:15 PM	6	38	32	44	120	1	38	9	26	74	10	22	10	2	44	27	53	11	3	94	332
04:30 PM	13	34	39	32	118	5	26	11	13	55	8	31	11	9	59	37	39	5	4	85	317
04:45 PM	5	45	27	36	113	3	17	6	21	47	9	20	10	4	43	34	74	6	12	126	329
Total	40	172	126	137	475	17	114	35	85	251	39	100	36	18	193	124	205	25	22	376	1295
05:00 PM	12	58	37	37	144	3	14	7	21	45	11	19	10	7	47	28	58	4	5	95	331
05:15 PM	21	49	27	25	122	3	19	10	9	41	19	32	11	4	66	12	67	8	6	93	322
05:30 PM	16	47	35	40	138	1	33	5	33	72	11	16	13	0	40	28	63	10	11	112	362
05:45 PM	19	48	31	22	120	8	21	6	25	60	13	21	8	3	45	27	59	2	9	97	322
Total	68	202	130	124	524	15	87	28	88	218	54	88	42	14	198	95	247	24	31	397	1337
Grand Total	143	572	391	404	1510	41	329	110	233	713	137	285	107	92	621	335	674	65	116	1190	4034
Apprch %	9.5	37.9	25.9	26.8		5.8	46.1	15.4	32.7		22.1	45.9	17.2	14.8		28.2	56.6	5.5	9.7		
Total %	3.5	14.2	9.7	10	37.4	1	8.2	2.7	5.8	17.7	3.4	7.1	2.7	2.3	15.4	8.3	16.7	1.6	2.9	29.5	

	Kamakee Street Southbound				Auahi Street Westbound				Kamakee Street Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	11	56	36	**103**	2	**46**	**14**	**62**	**13**	21	7	41	**32**	48	4	84	**290**
03:45 PM	5	**60**	**38**	103	3	28	8	39	10	**34**	**10**	**54**	20	**62**	6	88	284
04:00 PM	**16**	55	28	99	**8**	33	9	50	12	27	5	44	26	39	3	68	261
04:15 PM	6	38	32	76	1	38	9	48	10	22	10	42	27	53	**11**	**91**	257
Total Volume	38	209	134	381	14	145	40	199	45	104	32	181	105	202	24	331	1092
% App. Total	10	54.9	35.2		7	72.9	20.1		24.9	57.5	17.7		31.7	61	7.3		
PHF	.594	.871	.882	.925	.438	.788	.714	.802	.865	.765	.800	.838	.820	.815	.545	.909	.941

Wilson Okamoto Corporation

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

Counted By:RJ, JJ
Counters:TU-0651, TU-0652
Weather:Clear

File Name : KamAua AM
Site Code : 00000002
Start Date : 3/3/2015
Page No : 1

Groups Printed- Unshifted

	Kamakee Street Southbound					Auahi Street Westbound					Kamakee Street Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	2	20	8	3	33	1	3	1	4	9	3	6	3	6	18	2	6	3	12	23	83
06:15 AM	1	29	10	4	44	0	5	2	3	10	3	7	1	6	17	1	6	3	5	15	86
06:30 AM	0	25	16	5	46	1	3	9	2	15	2	12	0	1	15	4	9	5	13	31	107
06:45 AM	2	26	18	8	54	0	4	2	6	12	11	10	2	4	27	9	8	5	8	30	123
Total	5	100	52	20	177	2	15	14	15	46	19	35	6	17	77	16	29	16	38	99	399
07:00 AM	3	29	29	7	68	0	9	4	6	19	8	21	3	1	33	7	11	4	8	30	150
07:15 AM	0	42	29	5	76	1	14	5	9	29	2	21	2	4	29	3	16	6	5	30	164
07:30 AM	5	34	33	5	77	2	20	3	5	30	11	24	9	9	53	6	14	4	8	32	192
07:45 AM	4	40	31	4	79	3	16	3	7	29	8	18	8	8	42	4	11	4	7	26	176
Total	12	145	122	21	300	6	59	15	27	107	29	84	22	22	157	20	52	18	28	118	682
08:00 AM	4	42	35	7	88	3	18	6	7	34	9	20	6	5	40	4	14	13	5	36	198
08:15 AM	6	45	40	13	104	1	21	3	10	35	13	24	7	10	54	5	24	4	9	42	235
08:30 AM	5	29	37	7	78	2	20	2	5	29	6	12	4	11	33	13	26	6	13	58	198
08:45 AM	8	35	28	19	90	3	18	12	11	44	8	26	7	8	49	16	21	3	16	56	239
Total	23	151	140	46	360	9	77	23	33	142	36	82	24	34	176	38	85	26	43	192	870
Grand Total	40	396	314	87	837	17	151	52	75	295	84	201	52	73	410	74	166	60	109	409	1951
Apprch %	4.8	47.3	37.5	10.4		5.8	51.2	17.6	25.4		20.5	49	12.7	17.8		18.1	40.6	14.7	26.7		
Total %	2.1	20.3	16.1	4.5	42.9	0.9	7.7	2.7	3.8	15.1	4.3	10.3	2.7	3.7	21	3.8	8.5	3.1	5.6	21	

	Kamakee Street Southbound				Auahi Street Westbound				Kamakee Street Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	4	42	35	81	**3**	18	6	27	9	20	6	35	4	14	**13**	31	174
08:15 AM	6	**45**	**40**	**91**	1	**21**	3	25	**13**	24	**7**	**44**	5	24	4	33	**193**
08:30 AM	5	29	37	71	2	20	2	24	6	12	4	22	13	**26**	6	**45**	162
08:45 AM	**8**	35	28	71	3	18	**12**	**33**	8	**26**	7	41	**16**	21	3	40	185
Total Volume	23	151	140	314	9	77	23	109	36	82	24	142	38	85	26	149	714
% App. Total	7.3	48.1	44.6		8.3	70.6	21.1		25.4	57.7	16.9		25.5	57	17.4		
PHF	.719	.839	.875	.863	.750	.917	.479	.826	.692	.788	.857	.807	.594	.817	.500	.828	.925

Wilson Okamoto Corporation

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

Counted By:RJ, JJ
Counters:TU-0651, TUI-0652
Weather:Clear

File Name : KamAua PM
Site Code : 00000002
Start Date : 3/3/2015
Page No : 1

Groups Printed- Unshifted

	Kamakee Street Southbound					Auahi Street Westbound					Kamakee Street Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	13	52	43	47	155	3	27	8	40	78	16	20	10	25	71	20	48	16	29	113	417
03:15 PM	7	47	44	52	150	5	43	9	36	93	13	30	8	32	83	34	51	4	26	115	441
03:30 PM	16	55	33	30	134	7	28	13	11	59	18	34	9	35	96	21	43	12	28	104	393
03:45 PM	12	53	35	30	130	1	28	8	25	62	16	38	12	36	102	14	52	6	21	93	387
Total	48	207	155	159	569	16	126	38	112	292	63	122	39	128	352	89	194	38	104	425	1638
04:00 PM	19	41	32	64	156	1	37	9	27	74	14	25	6	34	79	31	42	5	22	100	409
04:15 PM	10	27	32	40	109	2	20	12	45	79	15	25	8	48	96	39	47	14	23	123	407
04:30 PM	7	49	36	45	137	3	30	13	29	75	18	30	15	40	103	22	59	13	18	112	427
04:45 PM	7	34	39	60	140	3	31	12	24	70	20	20	9	45	94	27	60	14	20	121	425
Total	43	151	139	209	542	9	118	46	125	298	67	100	38	167	372	119	208	46	83	456	1668
05:00 PM	18	54	36	39	147	0	42	17	34	93	11	24	14	27	76	22	77	17	28	144	460
05:15 PM	14	52	41	41	148	1	35	18	50	104	19	18	7	42	86	24	67	8	26	125	463
05:30 PM	17	42	35	38	132	2	35	15	18	70	17	27	11	46	101	23	70	15	31	139	442
05:45 PM	22	60	37	47	166	1	35	12	20	68	16	31	10	31	88	19	81	14	16	130	452
Total	71	208	149	165	593	4	147	62	122	335	63	100	42	146	351	88	295	54	101	538	1817
Grand Total	162	566	443	533	1704	29	391	146	359	925	193	322	119	441	1075	296	697	138	288	1419	5123
Apprch %	9.5	33.2	26	31.3		3.1	42.3	15.8	38.8		18	30	11.1	41		20.9	49.1	9.7	20.3		
Total %	3.2	11	8.6	10.4	33.3	0.6	7.6	2.8	7	18.1	3.8	6.3	2.3	8.6	21	5.8	13.6	2.7	5.6	27.7	

	Kamakee Street Southbound				Auahi Street Westbound				Kamakee Street Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	18	54	36	108	0	**42**	17	**59**	11	24	**14**	49	22	77	**17**	**116**	332
05:15 PM	14	52	**41**	107	1	35	**18**	54	**19**	18	7	44	**24**	67	8	99	304
05:30 PM	17	42	35	94	**2**	35	15	52	17	27	11	55	23	70	15	108	309
05:45 PM	**22**	**60**	37	**119**	1	35	12	48	16	**31**	10	**57**	19	**81**	14	114	**338**
Total Volume	71	208	149	428	4	147	62	213	63	100	42	205	88	295	54	437	1283
% App. Total	16.6	48.6	34.8		1.9	69	29.1		30.7	48.8	20.5		20.1	67.5	12.4		
PHF	.807	.867	.909	.899	.500	.875	.861	.903	.829	.806	.750	.899	.917	.910	.794	.942	.949

Wilson Okamoto Corporation

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

Counted By:KW, AC
Counters:TU-650, TU-0649
Weather:Clear

File Name : AuaQue AM
Site Code : 00000001
Start Date : 3/3/2015
Page No : 1

Groups Printed- Unshifted

	Queen's Lane Southbound					Honua Building Westbound					Queen Street Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	6	2	0	9	0	0	0	7	7	9	7	0	5	21	1	1	0	3	5	42
06:15 AM	4	1	3	0	8	0	0	0	5	5	6	7	1	0	14	1	2	3	8	14	41
06:30 AM	3	4	4	3	14	0	0	0	3	3	13	5	0	0	18	2	0	1	9	12	47
06:45 AM	1	5	4	4	14	0	0	0	7	7	5	4	1	3	13	4	1	5	7	17	51
Total	9	16	13	7	45	0	0	0	22	22	33	23	2	8	66	8	4	9	27	48	181
07:00 AM	4	3	5	1	13	0	0	0	2	2	11	8	1	3	23	1	0	5	5	11	49
07:15 AM	3	8	7	3	21	0	0	0	5	5	18	14	3	2	37	6	1	9	14	30	93
07:30 AM	3	4	6	1	14	0	0	0	5	5	19	12	0	3	34	8	2	6	9	25	78
07:45 AM	1	9	7	2	19	0	0	0	3	3	18	22	4	6	50	6	3	5	16	30	102
Total	11	24	25	7	67	0	0	0	15	15	66	56	8	14	144	21	6	25	44	96	322
08:00 AM	2	7	11	4	24	0	0	0	5	5	14	17	2	14	47	11	1	8	22	42	118
08:15 AM	7	7	9	4	27	0	0	0	2	2	26	16	2	5	49	12	2	16	12	42	120
08:30 AM	5	6	3	2	16	0	0	0	4	4	18	18	2	5	43	4	4	13	12	33	96
08:45 AM	6	10	18	2	36	0	0	0	5	5	20	21	0	10	51	14	0	7	13	34	126
Total	20	30	41	12	103	0	0	0	16	16	78	72	6	34	190	41	7	44	59	151	460
Grand Total	40	70	79	26	215	0	0	0	53	53	177	151	16	56	400	70	17	78	130	295	963
Apprch %	18.6	32.6	36.7	12.1		0	0	0	100		44.2	37.8	4	14		23.7	5.8	26.4	44.1		
Total %	4.2	7.3	8.2	2.7	22.3	0	0	0	5.5	5.5	18.4	15.7	1.7	5.8	41.5	7.3	1.8	8.1	13.5	30.6	

	Queen's Lane Southbound				Honua Building Westbound				Queen Street Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	2	7	11	20	0	0	0	0	14	17	**2**	33	11	1	8	20	73
08:15 AM	**7**	7	9	23	0	0	0	0	**26**	16	2	**44**	12	2	**16**	**30**	**97**
08:30 AM	5	6	3	14	0	0	0	0	18	18	2	38	4	**4**	13	21	73
08:45 AM	6	**10**	**18**	**34**	0	0	0	0	20	**21**	0	41	**14**	0	7	21	96
Total Volume	20	30	41	91	0	0	0	0	78	72	6	156	41	7	44	92	339
% App. Total	22	33	45.1		0	0	0		50	46.2	3.8		44.6	7.6	47.8		
PHF	.714	.750	.569	.669	.000	.000	.000	.000	.750	.857	.750	.886	.732	.438	.688	.767	.874

Wilson Okamoto Corporation

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

Counted By:
Counters:
Weather:

File Name : AuaQue PM
Site Code : 00000001
Start Date : 3/3/2015
Page No : 1

Groups Printed- Unshifted

	Queen's Lane Southbound					Honua Driveway Westbound					Queen Street Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	3	11	7	18	39	0	0	0	9	9	18	14	4	8	44	19	4	31	6	60	152
03:15 PM	6	13	10	26	55	0	0	0	11	11	29	22	4	22	77	24	3	30	29	86	229
03:30 PM	10	17	7	17	51	0	0	0	8	8	28	28	0	3	59	24	2	30	9	65	183
03:45 PM	6	13	19	14	52	0	0	0	9	9	33	14	4	10	61	27	3	28	24	82	204
Total	25	54	43	75	197	0	0	0	37	37	108	78	12	43	241	94	12	119	68	293	768
04:00 PM	4	23	11	8	46	0	0	0	8	8	27	19	3	17	66	26	0	22	4	52	172
04:15 PM	7	14	8	7	36	0	0	0	10	10	35	16	1	16	68	27	1	25	21	74	188
04:30 PM	4	13	13	18	48	0	0	0	8	8	38	23	3	15	79	29	2	26	18	75	210
04:45 PM	11	9	10	12	42	0	0	0	18	18	31	23	3	14	71	24	0	35	11	70	201
Total	26	59	42	45	172	0	0	0	44	44	131	81	10	62	284	106	3	108	54	271	771
05:00 PM	8	21	8	18	55	0	0	0	11	11	40	26	3	13	82	17	3	36	29	85	233
05:15 PM	4	16	14	9	43	0	0	0	7	7	45	23	3	31	102	28	1	44	35	108	260
05:30 PM	2	15	7	19	43	0	0	0	12	12	46	21	2	16	85	27	1	44	24	96	236
05:45 PM	3	18	16	14	51	0	0	0	17	17	27	26	2	17	72	15	4	43	14	76	216
Total	17	70	45	60	192	0	0	0	47	47	158	96	10	77	341	87	9	167	102	365	945
Grand Total	68	183	130	180	561	0	0	0	128	128	397	255	32	182	866	287	24	394	224	929	2484
Apprch %	12.1	32.6	23.2	32.1		0	0	0	100		45.8	29.4	3.7	21		30.9	2.6	42.4	24.1		
Total %	2.7	7.4	5.2	7.2	22.6	0	0	0	5.2	5.2	16	10.3	1.3	7.3	34.9	11.6	1	15.9	9	37.4	

	Queen's Lane Southbound				Honua Driveway Westbound				Queen Street Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**8**	**21**	8	**55**	0	0	0	11	40	**26**	**3**	82	17	3	36	85	233
05:15 PM	4	16	14	43	0	0	0	7	45	23	3	**31**	**102**	**28**	1	**44**	**35**	**108**	**260**
05:30 PM	2	15	7	**19**	0	0	0	12	**46**	21	2	16	85	27	1	44	24	96	236
05:45 PM	3	18	**16**	14	0	0	0	**17**	**17**	27	26	2	17	72	15	**4**	43	14	76	216
Total Volume	17	70	45	60	192	0	0	0	47	47	158	96	10	77	341	87	9	167	102	365	945
% App. Total	8.9	36.5	23.4	31.2		0	0	0	100		46.3	28.2	2.9	22.6		23.8	2.5	45.8	27.9		
PHF	.531	.833	.703	.789	.873	.000	.000	.000	.691	.691	.859	.923	.833	.621	.836	.777	.563	.949	.729	.845	.909

Wilson Okamoto Corporation

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

Counted By:GC, KW
Counters:D4-5674, D4-5671
Weather:Clear

File Name : SouAua AM
Site Code : 00000001
Start Date : 3/4/2015
Page No : 1

Groups Printed- Unshifted

	South Street Southbound					Auahi Street Westbound					South Street Northbound					Eastbound	
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Int. Total
06:00 AM	0	8	0	2	10	3	0	4	1	8	0	31	4	1	36	0	54
06:15 AM	5	7	0	0	12	5	0	4	2	11	0	32	4	0	36	0	59
06:30 AM	8	5	0	2	15	7	0	8	1	16	0	47	3	0	50	0	81
06:45 AM	6	7	0	1	14	5	0	7	1	13	0	51	5	0	56	0	83
Total	19	27	0	5	51	20	0	23	5	48	0	161	16	1	178	0	277
07:00 AM	4	18	0	5	27	5	0	9	8	22	0	71	2	0	73	0	122
07:15 AM	12	17	0	6	35	4	0	14	2	20	0	78	3	0	81	0	136
07:30 AM	6	16	0	3	25	7	0	6	2	15	0	91	2	0	93	0	133
07:45 AM	8	21	0	6	35	7	0	9	1	17	0	74	6	0	80	0	132
Total	30	72	0	20	122	23	0	38	13	74	0	314	13	0	327	0	523
08:00 AM	10	16	0	4	30	6	0	15	0	21	0	68	5	0	73	0	124
08:15 AM	10	20	0	2	32	4	0	17	1	22	0	76	3	0	79	0	133
08:30 AM	6	17	0	11	34	3	0	8	6	17	0	61	8	0	69	0	120
08:45 AM	8	9	0	7	24	4	0	6	3	13	0	70	8	0	78	0	115
Total	34	62	0	24	120	17	0	46	10	73	0	275	24	0	299	0	492
Grand Total	83	161	0	49	293	60	0	107	28	195	0	750	53	1	804	0	1292
Apprch %	28.3	54.9	0	16.7		30.8	0	54.9	14.4		0	93.3	6.6	0.1			
Total %	6.4	12.5	0	3.8	22.7	4.6	0	8.3	2.2	15.1	0	58	4.1	0.1	62.2	0	

	South Street Southbound				Auahi Street Westbound				South Street Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Int. 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	6	16	0	22	**7**	0	6	13	0	**91**	2	**93**	0	128
07:45 AM	8	**21**	0	29	7	0	9	16	0	74	**6**	80	0	125
08:00 AM	**10**	16	0	26	6	0	15	**21**	0	68	5	73	0	120
08:15 AM	10	20	0	**30**	4	0	**17**	21	0	76	3	79	0	**130**
Total Volume	34	73	0	107	24	0	47	71	0	309	16	325	0	503
% App. Total	31.8	68.2	0		33.8	0	66.2		0	95.1	4.9			
PHF	.850	.869	.000	.892	.857	.000	.691	.845	.000	.849	.667	.874	.000	.967

Wilson Okamoto Corporation

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

Counted By:GC, KW
Counters:D4-5671, D4-5674
Weather:Clear

File Name : SouAua PM
Site Code : 00000001
Start Date : 3/4/2015
Page No : 1

Groups Printed- Unshifted

	South Street Southbound					Auahi Street Westbound					South Street Northbound					Eastbound	
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Int. Total
03:00 PM	5	28	0	7	40	10	0	9	2	21	0	48	3	0	51	0	112
03:15 PM	8	23	0	5	36	7	0	11	1	19	0	56	1	0	57	0	112
03:30 PM	12	32	0	4	48	2	0	15	2	19	0	61	5	0	66	0	133
03:45 PM	4	24	0	5	33	6	0	14	2	22	0	60	4	0	64	0	119
Total	29	107	0	21	157	25	0	49	7	81	0	225	13	0	238	0	476
04:00 PM	9	33	0	8	50	12	0	9	3	24	0	62	4	0	66	0	140
04:15 PM	6	30	0	5	41	3	0	17	0	20	0	66	3	0	69	0	130
04:30 PM	7	59	0	3	69	9	0	13	0	22	0	80	9	0	89	0	180
04:45 PM	10	35	0	7	52	8	0	16	1	25	0	83	13	0	96	0	173
Total	32	157	0	23	212	32	0	55	4	91	0	291	29	0	320	0	623
05:00 PM	8	55	0	6	69	7	0	10	3	20	0	85	5	0	90	0	179
05:15 PM	12	53	0	5	70	8	0	19	4	31	0	84	11	0	95	0	196
05:30 PM	9	24	0	11	44	5	0	8	11	24	0	67	4	0	71	0	139
05:45 PM	4	21	0	5	30	2	0	11	5	18	0	84	10	0	94	0	142
Total	33	153	0	27	213	22	0	48	23	93	0	320	30	0	350	0	656
Grand Total	94	417	0	71	582	79	0	152	34	265	0	836	72	0	908	0	1755
Apprch %	16.2	71.6	0	12.2		29.8	0	57.4	12.8		0	92.1	7.9	0			
Total %	5.4	23.8	0	4	33.2	4.5	0	8.7	1.9	15.1	0	47.6	4.1	0	51.7	0	

	South Street Southbound				Auahi Street Westbound				South Street Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Int. 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	7	**59**	0	**66**	**9**	0	13	22	0	80	9	89	0	177
04:45 PM	10	35	0	45	8	0	16	24	0	83	**13**	**96**	0	165
05:00 PM	8	55	0	63	7	0	10	17	0	**85**	5	90	0	170
05:15 PM	**12**	53	0	65	8	0	**19**	**27**	0	84	11	95	0	**187**
Total Volume	37	202	0	239	32	0	58	90	0	332	38	370	0	699
% App. Total	15.5	84.5	0		35.6	0	64.4		0	89.7	10.3			
PHF	.771	.856	.000	.905	.889	.000	.763	.833	.000	.976	.731	.964	.000	.934

Wilson Okamoto Corporation

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

Counted By:CY, DY
Counters:TU-0653, TU-0654
Weather:Clear

File Name : KeaAua AM
Site Code : 00000003
Start Date : 3/4/2015
Page No : 1

Groups Printed- Unshifted

	Keawe Street Southbound					Auahi Street Westbound					Keawe Street Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	2	3	4	3	12	1	4	1	2	8	1	6	2	2	11	2	3	1	2	8	39
06:15 AM	1	5	2	2	10	1	4	3	5	13	3	3	0	1	7	2	1	3	3	9	39
06:30 AM	2	6	3	4	15	0	5	1	3	9	6	6	3	4	19	2	4	0	11	17	60
06:45 AM	3	3	1	11	18	2	6	3	10	21	5	8	4	0	17	2	8	3	12	25	81
Total	8	17	10	20	55	4	19	8	20	51	15	23	9	7	54	8	16	7	28	59	219
07:00 AM	3	9	3	4	19	1	3	0	4	8	6	9	3	0	18	1	2	2	2	7	52
07:15 AM	0	5	3	1	9	0	9	1	4	14	5	5	2	2	14	2	7	3	5	17	54
07:30 AM	0	11	2	2	15	1	6	4	1	12	4	12	3	1	20	0	5	3	2	10	57
07:45 AM	2	7	9	6	24	2	3	3	2	10	3	12	5	0	20	2	5	4	1	12	66
Total	5	32	17	13	67	4	21	8	11	44	18	38	13	3	72	5	19	12	10	46	229
08:00 AM	5	9	5	3	22	0	6	4	3	13	3	15	5	3	26	5	4	1	2	12	73
08:15 AM	5	9	4	3	21	1	6	3	7	17	4	10	0	0	14	3	3	2	2	10	62
08:30 AM	8	13	3	3	27	0	2	5	7	14	4	8	8	0	20	2	7	1	3	13	74
08:45 AM	3	5	3	2	13	1	8	5	7	21	1	10	3	3	17	6	5	1	7	19	70
Total	21	36	15	11	83	2	22	17	24	65	12	43	16	6	77	16	19	5	14	54	279
Grand Total	34	85	42	44	205	10	62	33	55	160	45	104	38	16	203	29	54	24	52	159	727
Apprch %	16.6	41.5	20.5	21.5		6.2	38.8	20.6	34.4		22.2	51.2	18.7	7.9		18.2	34	15.1	32.7		
Total %	4.7	11.7	5.8	6.1	28.2	1.4	8.5	4.5	7.6	22	6.2	14.3	5.2	2.2	27.9	4	7.4	3.3	7.2	21.9	

	Keawe Street Southbound				Auahi Street Westbound				Keawe Street Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	2	7	**9**	18	**2**	3	3	8	3	12	5	20	2	5	**4**	**11**	57
08:00 AM	5	9	5	19	0	**6**	4	**10**	3	**15**	5	**23**	**5**	4	1	10	**62**
08:15 AM	5	9	4	18	1	6	3	10	**4**	10	0	14	3	3	2	8	50
08:30 AM	**8**	**13**	3	**24**	0	2	**5**	7	4	8	**8**	20	2	**7**	1	10	61
Total Volume	20	38	21	79	3	17	15	35	14	45	18	77	12	19	8	39	230
% App. Total	25.3	48.1	26.6		8.6	48.6	42.9		18.2	58.4	23.4		30.8	48.7	20.5		
PHF	.625	.731	.583	.823	.375	.708	.750	.875	.875	.750	.563	.837	.600	.679	.500	.886	.927

Wilson Okamoto Corporation

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

Counted By:CY, DY
Counters:TU-0654, TU-0653
Weather:Clear

File Name : KeaAua PM
Site Code : 00000003
Start Date : 3/4/2015
Page No : 1

Groups Printed- Unshifted

	Keawe Street Southbound					Auahi Street Westbound					Keawe Street Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	3	20	6	5	34	0	9	4	7	20	1	2	6	3	12	2	4	1	8	15	81
03:15 PM	4	6	3	0	13	0	9	2	4	15	2	8	4	1	15	5	4	3	0	12	55
03:30 PM	7	17	7	2	33	0	9	6	7	22	2	6	3	2	13	2	8	5	0	15	83
03:45 PM	3	16	4	6	29	3	12	6	13	34	3	11	9	2	25	4	6	2	2	14	102
Total	17	59	20	13	109	3	39	18	31	91	8	27	22	8	65	13	22	11	10	56	321
04:00 PM	5	21	5	2	33	1	13	6	1	21	0	13	7	0	20	2	10	0	1	13	87
04:15 PM	6	31	6	4	47	0	4	7	4	15	5	10	6	0	21	1	4	4	1	10	93
04:30 PM	5	20	6	2	33	1	12	6	5	24	6	13	6	2	27	7	10	3	1	21	105
04:45 PM	0	13	11	3	27	1	13	5	2	21	4	9	9	2	24	4	14	4	4	26	98
Total	16	85	28	11	140	3	42	24	12	81	15	45	28	4	92	14	38	11	7	70	383
05:00 PM	9	21	4	0	34	1	12	2	10	25	2	9	3	6	20	2	11	1	0	14	93
05:15 PM	3	16	7	4	30	6	11	6	4	27	4	8	6	0	18	3	17	2	3	25	100
05:30 PM	3	13	3	9	28	0	9	2	8	19	1	10	8	7	26	4	9	1	7	21	94
05:45 PM	6	9	5	3	23	2	9	5	5	21	2	9	11	9	31	2	14	3	5	24	99
Total	21	59	19	16	115	9	41	15	27	92	9	36	28	22	95	11	51	7	15	84	386
Grand Total	54	203	67	40	364	15	122	57	70	264	32	108	78	34	252	38	111	29	32	210	1090
Apprch %	14.8	55.8	18.4	11		5.7	46.2	21.6	26.5		12.7	42.9	31	13.5		18.1	52.9	13.8	15.2		
Total %	5	18.6	6.1	3.7	33.4	1.4	11.2	5.2	6.4	24.2	2.9	9.9	7.2	3.1	23.1	3.5	10.2	2.7	2.9	19.3	

	Keawe Street Southbound				Auahi Street Westbound				Keawe Street Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	21	5	31	**1**	**13**	6	**20**	0	**13**	7	20	2	10	0	12	83
04:15 PM	**6**	**31**	6	**43**	0	4	7	11	5	10	6	21	1	4	**4**	9	**84**
04:30 PM	5	20	6	31	1	12	6	19	**6**	13	6	**25**	7	10	3	20	**95**
04:45 PM	0	13	**11**	24	1	13	5	19	4	9	**9**	22	**4**	**14**	4	**22**	87
Total Volume	16	85	28	129	3	42	24	69	15	45	28	88	14	38	11	63	349
% App. Total	12.4	65.9	21.7		4.3	60.9	34.8		17	51.1	31.8		22.2	60.3	17.5		
PHF	.667	.685	.636	.750	.750	.808	.857	.863	.625	.865	.778	.880	.500	.679	.688	.716	.918

Wilson Okamoto Corporation

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

Counted By:JC, AC
Counters:TU-0649, TU-0650
Weather:Clear

File Name : CorAua AM
Site Code : 00000004
Start Date : 3/4/2015
Page No : 1

Groups Printed- Unshifted

	Coral Street Southbound					Auahi Street Westbound					Coral Street Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	2	3	1	1	7	1	4	0	4	9	1	3	3	1	8	1	2	0	3	6	30
06:15 AM	1	3	0	3	7	1	5	1	0	7	1	0	1	2	4	1	3	1	0	5	23
06:30 AM	2	1	0	8	11	4	7	1	4	16	0	5	2	7	14	2	1	0	3	6	47
06:45 AM	2	6	2	5	15	5	5	3	3	16	2	8	1	4	15	2	4	2	3	11	57
Total	7	13	3	17	40	11	21	5	11	48	4	16	7	14	41	6	10	3	9	28	157
07:00 AM	0	6	2	0	8	5	6	2	1	14	2	2	3	0	7	1	7	2	1	11	40
07:15 AM	0	7	1	1	9	0	8	2	2	12	4	4	0	1	9	0	8	1	2	11	41
07:30 AM	2	8	2	6	18	2	5	1	4	12	1	6	1	5	13	2	8	2	2	14	57
07:45 AM	2	10	0	4	16	1	6	0	3	10	5	4	3	4	16	2	9	0	4	15	57
Total	4	31	5	11	51	8	25	5	10	48	12	16	7	10	45	5	32	5	9	51	195
08:00 AM	5	11	7	2	25	3	4	1	7	15	4	4	3	1	12	5	9	6	3	23	75
08:15 AM	8	19	1	4	32	2	8	5	3	18	3	5	0	3	11	6	14	2	2	24	85
08:30 AM	1	11	2	3	17	1	5	1	0	7	3	7	6	2	18	2	9	1	0	12	54
08:45 AM	2	10	3	5	20	4	9	3	1	17	2	5	3	3	13	2	11	3	0	16	66
Total	16	51	13	14	94	10	26	10	11	57	12	21	12	9	54	15	43	12	5	75	280
Grand Total	27	95	21	42	185	29	72	20	32	153	28	53	26	33	140	26	85	20	23	154	632
Apprch %	14.6	51.4	11.4	22.7		19	47.1	13.1	20.9		20	37.9	18.6	23.6		16.9	55.2	13	14.9		
Total %	4.3	15	3.3	6.6	29.3	4.6	11.4	3.2	5.1	24.2	4.4	8.4	4.1	5.2	22.2	4.1	13.4	3.2	3.6	24.4	

	Coral Street Southbound				Auahi Street Westbound				Coral Street Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	5	11	**7**	23	3	4	1	8	**4**	4	3	11	5	9	**6**	20	62
08:15 AM	**8**	**19**	1	**28**	2	8	**5**	15	3	5	0	8	**6**	**14**	2	**22**	**73**
08:30 AM	1	11	2	14	1	5	1	7	3	**7**	**6**	**16**	2	9	1	12	49
08:45 AM	2	10	3	15	**4**	**9**	3	**16**	2	5	3	10	2	11	3	16	57
Total Volume	16	51	13	80	10	26	10	46	12	21	12	45	15	43	12	70	241
% App. Total	20	63.8	16.2		21.7	56.5	21.7		26.7	46.7	26.7		21.4	61.4	17.1		
PHF	.500	.671	.464	.714	.625	.722	.500	.719	.750	.750	.500	.703	.625	.768	.500	.795	.825

Wilson Okamoto Corporation

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

Counted By:AC, JC
Counters:TU-0649, TU-0650
Weather:Clear

File Name : CorAua PM
Site Code : 00000000
Start Date : 3/4/2015
Page No : 1

Groups Printed- Unshifted

	Coral Street Southbound					Auahi Street Westbound					Coral Street Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	5	8	5	7	25	0	8	3	5	16	3	8	1	3	15	6	7	5	5	23	79
03:15 PM	5	16	2	3	26	4	3	3	2	12	4	2	5	3	14	3	14	2	0	19	71
03:30 PM	2	14	4	0	20	5	7	5	3	20	5	11	3	0	19	2	14	3	2	21	80
03:45 PM	2	16	5	12	35	3	11	3	1	18	1	10	3	4	18	1	10	7	0	18	89
Total	14	54	16	22	106	12	29	14	11	66	13	31	12	10	66	12	45	17	7	81	319
04:00 PM	4	4	1	8	17	3	10	3	4	20	5	7	3	6	21	2	4	1	1	8	66
04:15 PM	1	19	1	6	27	4	4	5	0	13	2	5	0	2	9	1	12	0	3	16	65
04:30 PM	3	18	3	6	30	2	15	11	1	29	3	5	0	4	12	2	17	3	0	22	93
04:45 PM	8	19	2	6	35	1	10	6	0	17	4	8	4	5	21	1	13	2	0	16	89
Total	16	60	7	26	109	10	39	25	5	79	14	25	7	17	63	6	46	6	4	62	313
05:00 PM	1	18	6	4	29	4	10	4	6	24	6	16	1	1	24	1	14	2	0	17	94
05:15 PM	3	9	3	2	17	1	9	1	1	12	6	7	3	1	17	0	5	3	1	9	55
05:30 PM	2	11	2	0	15	0	5	3	2	10	1	7	3	0	11	1	6	2	0	9	45
05:45 PM	1	20	6	1	28	4	9	7	1	21	8	14	1	1	24	1	14	6	1	22	95
Total	7	58	17	7	89	9	33	15	10	67	21	44	8	3	76	3	39	13	2	57	289
Grand Total	37	172	40	55	304	31	101	54	26	212	48	100	27	30	205	21	130	36	13	200	921
Apprch %	12.2	56.6	13.2	18.1		14.6	47.6	25.5	12.3		23.4	48.8	13.2	14.6		10.5	65	18	6.5		
Total %	4	18.7	4.3	6	33	3.4	11	5.9	2.8	23	5.2	10.9	2.9	3.3	22.3	2.3	14.1	3.9	1.4	21.7	

	Coral Street Southbound				Auahi Street Westbound				Coral Street Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	1	**19**	1	21	**4**	4	5	13	2	5	0	7	1	12	0	13	54
04:30 PM	3	18	3	24	2	**15**	**11**	**28**	3	5	0	8	**2**	**17**	**3**	**22**	82
04:45 PM	**8**	19	2	**29**	1	10	6	17	4	8	**4**	16	1	13	2	16	78
05:00 PM	1	18	**6**	25	4	10	4	18	**6**	**16**	1	**23**	1	14	2	17	**83**
Total Volume	13	74	12	99	11	39	26	76	15	34	5	54	5	56	7	68	297
% App. Total	13.1	74.7	12.1		14.5	51.3	34.2		27.8	63	9.3		7.4	82.4	10.3		
PHF	.406	.974	.500	.853	.688	.650	.591	.679	.625	.531	.313	.587	.625	.824	.583	.773	.895

Wilson Okamoto Corporation

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

Counted By:JJ, RJ
Counters:TU-0653, TU-0654
Weather:Clear

File Name : CooAua AM
Site Code : 00000002
Start Date : 3/4/2015
Page No : 1

Groups Printed- Unshifted

	Cooke Street Southbound					Auahi Street Westbound					Cooke Street Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	2	18	3	1	24	1	2	9	2	14	4	8	1	2	15	2	2	3	2	9	62
06:15 AM	5	7	6	1	19	0	0	3	1	4	8	11	0	1	20	3	1	1	1	6	49
06:30 AM	3	17	8	1	29	1	2	3	0	6	10	12	2	4	28	2	2	1	1	6	69
06:45 AM	3	12	10	2	27	2	1	7	0	10	10	21	1	1	33	3	3	2	2	10	80
Total	13	54	27	5	99	4	5	22	3	34	32	52	4	8	96	10	8	7	6	31	260
07:00 AM	5	20	9	3	37	1	5	6	3	15	8	16	2	2	28	6	4	0	3	13	93
07:15 AM	4	20	5	2	31	1	4	13	1	19	7	31	3	1	42	4	3	1	1	9	101
07:30 AM	6	29	5	2	42	1	0	9	5	15	8	28	1	2	39	7	4	2	2	15	111
07:45 AM	10	26	3	1	40	3	1	7	1	12	6	24	1	0	31	11	3	0	4	18	101
Total	25	95	22	8	150	6	10	35	10	61	29	99	7	5	140	28	14	3	10	55	406
08:00 AM	9	29	6	4	48	2	4	13	5	24	5	24	2	1	32	12	5	1	2	20	124
08:15 AM	11	23	10	1	45	2	2	14	6	24	12	27	2	0	41	13	7	3	3	26	136
08:30 AM	8	39	5	1	53	2	2	14	0	18	5	30	3	3	41	11	5	1	1	18	130
08:45 AM	6	30	8	2	46	6	3	13	1	23	13	24	1	0	38	9	4	2	2	17	124
Total	34	121	29	8	192	12	11	54	12	89	35	105	8	4	152	45	21	7	8	81	514
Grand Total	72	270	78	21	441	22	26	111	25	184	96	256	19	17	388	83	43	17	24	167	1180
Apprch %	16.3	61.2	17.7	4.8		12	14.1	60.3	13.6		24.7	66	4.9	4.4		49.7	25.7	10.2	14.4		
Total %	6.1	22.9	6.6	1.8	37.4	1.9	2.2	9.4	2.1	15.6	8.1	21.7	1.6	1.4	32.9	7	3.6	1.4	2	14.2	

	Cooke Street Southbound				Auahi Street Westbound				Cooke Street Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	9	29	6	44	2	**4**	13	19	5	24	2	31	12	5	1	18	112
08:15 AM	**11**	23	**10**	44	2	2	**14**	18	12	27	2	**41**	**13**	**7**	**3**	**23**	**126**
08:30 AM	8	**39**	5	**52**	2	2	14	18	5	**30**	**3**	38	11	5	1	17	125
08:45 AM	6	30	8	44	**6**	3	13	**22**	**13**	24	1	38	9	4	2	15	119
Total Volume	34	121	29	184	12	11	54	77	35	105	8	148	45	21	7	73	482
% App. Total	18.5	65.8	15.8		15.6	14.3	70.1		23.6	70.9	5.4		61.6	28.8	9.6		
PHF	.773	.776	.725	.885	.500	.688	.964	.875	.673	.875	.667	.902	.865	.750	.583	.793	.956

Wilson Okamoto Corporation

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

Counted By:JJ, RJ
Counters:TU-0653, TU-0654
Weather:Clear

File Name : CooAua PM
Site Code : 00000002
Start Date : 3/4/2015
Page No : 1

Groups Printed- Unshifted

	Cooke Street Southbound					Auahi Street Westbound					Cooke Street Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	8	29	3	4	44	1	3	11	0	15	5	22	3	0	30	10	2	1	3	16	105
03:15 PM	5	36	3	0	44	3	1	19	6	29	6	31	0	2	39	17	5	2	5	29	141
03:30 PM	11	54	8	4	77	5	5	16	6	32	4	27	2	0	33	13	4	2	5	24	166
03:45 PM	14	47	9	3	73	5	4	16	5	30	5	24	5	2	36	12	2	1	2	17	156
Total	38	166	23	11	238	14	13	62	17	106	20	104	10	4	138	52	13	6	15	86	568
04:00 PM	7	50	4	5	66	6	8	25	5	44	4	27	1	0	32	8	2	1	2	13	155
04:15 PM	8	51	10	3	72	1	3	17	6	27	0	32	4	1	37	8	4	1	1	14	150
04:30 PM	10	45	18	0	73	1	9	15	2	27	1	22	4	2	29	15	3	2	3	23	152
04:45 PM	9	40	8	7	64	0	2	21	5	28	7	26	2	5	40	17	4	4	7	32	164
Total	34	186	40	15	275	8	22	78	18	126	12	107	11	8	138	48	13	8	13	82	621
05:00 PM	5	49	8	1	63	4	4	26	6	40	6	20	1	0	27	10	2	4	1	17	147
05:15 PM	3	41	7	1	52	0	3	22	2	27	1	18	0	1	20	6	2	3	1	12	111
05:30 PM	5	43	7	0	55	1	1	19	7	28	0	24	1	3	28	6	4	1	5	16	127
05:45 PM	7	34	12	4	57	1	2	11	2	16	6	20	1	0	27	13	2	1	4	20	120
Total	20	167	34	6	227	6	10	78	17	111	13	82	3	4	102	35	10	9	11	65	505
Grand Total	92	519	97	32	740	28	45	218	52	343	45	293	24	16	378	135	36	23	39	233	1694
Apprch %	12.4	70.1	13.1	4.3		8.2	13.1	63.6	15.2		11.9	77.5	6.3	4.2		57.9	15.5	9.9	16.7		
Total %	5.4	30.6	5.7	1.9	43.7	1.7	2.7	12.9	3.1	20.2	2.7	17.3	1.4	0.9	22.3	8	2.1	1.4	2.3	13.8	

	Cooke Street Southbound				Auahi Street Westbound				Cooke Street Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	11	**54**	8	**73**	5	5	16	26	4	27	2	33	**13**	**4**	**2**	**19**	**151**
03:45 PM	**14**	47	9	70	5	4	16	25	**5**	24	**5**	34	12	2	1	15	144
04:00 PM	7	50	4	61	**6**	**8**	**25**	**39**	4	27	1	32	8	2	1	11	143
04:15 PM	8	51	**10**	69	**1**	3	17	21	0	**32**	4	**36**	8	4	1	13	139
Total Volume	40	202	31	273	17	20	74	111	13	110	12	135	41	12	5	58	577
% App. Total	14.7	74	11.4		15.3	18	66.7		9.6	81.5	8.9		70.7	20.7	8.6		
PHF	.714	.935	.775	.935	.708	.625	.740	.712	.650	.859	.600	.938	.788	.750	.625	.763	.955

Wilson Okamoto Corporation

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

Counted By:FS
Counters:D4-5673
Weather:Clear

File Name : OheAua AM
Site Code : 00000007
Start Date : 3/4/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Auahi Street Westbound					Ohe Street Northbound					Auahi Street Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	2	0	2	0	0	0	0	0	3	0	0	0	3	5
06:15 AM	0	0	0	2	0	2	0	0	0	0	0	4	0	1	0	5	7
06:30 AM	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	4	0	2	0	6	6
Total	0	0	0	6	0	6	0	0	0	0	0	11	0	3	0	14	20
07:00 AM	0	1	0	0	0	1	1	0	0	0	1	2	0	0	0	2	4
07:15 AM	0	0	0	1	0	1	0	0	0	0	0	6	0	0	1	7	8
07:30 AM	0	0	0	2	0	2	0	0	0	1	1	9	0	0	2	11	14
07:45 AM	0	0	0	6	1	7	0	0	0	0	0	14	0	0	0	14	21
Total	0	1	0	9	1	11	1	0	0	1	2	31	0	0	3	34	47
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	6	0	1	0	7	7
08:15 AM	0	1	0	4	0	5	0	0	0	0	0	4	0	2	0	6	11
08:30 AM	0	1	0	2	0	3	0	0	0	0	0	5	0	1	0	6	9
08:45 AM	0	1	0	2	0	3	0	0	0	0	0	0	0	2	0	2	5
Total	0	3	0	8	0	11	0	0	0	0	0	15	0	6	0	21	32
Grand Total	0	4	0	23	1	28	1	0	0	1	2	57	0	9	3	69	99
Apprch %		14.3	0	82.1	3.6		50	0	0	50		82.6	0	13	4.3		
Total %	0	4	0	23.2	1	28.3	1	0	0	1	2	57.6	0	9.1	3	69.7	

	Southbound	Auahi Street Westbound				Ohe Street Northbound				Auahi Street Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	0	0	0	2	2	0	0	0	0	9	0	0	9	11
07:45 AM	0	0	0	**6**	**6**	0	0	0	0	**14**	0	0	**14**	**20**
08:00 AM	0	0	0	0	0	0	0	0	0	6	0	1	7	7
08:15 AM	0	**1**	0	4	5	0	0	0	0	4	0	**2**	6	11
Total Volume	0	1	0	12	13	0	0	0	0	33	0	3	36	49
% App. Total		7.7	0	92.3		0	0	0		91.7	0	8.3		
PHF	.000	.250	.000	.500	.542	.000	.000	.000	.000	.589	.000	.375	.643	.613

Wilson Okamoto Corporation

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

Counted By:FS
Counters:D4-5673
Weather:Clear

File Name : OheAua PM
Site Code : 00000006
Start Date : 3/4/2015
Page No : 1

Groups Printed- Unshifted

	Ohe Street Southbound					Auahi Street Westbound					Ohe Street Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	0	0	0	1	1	0	0	4	0	4	1	0	0	2	3	4	0	0	1	5	13
03:15 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	0	0	3	4
03:30 PM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	3	0	5	7
03:45 PM	0	0	1	0	1	0	0	2	0	2	0	0	0	0	0	5	0	1	1	7	10
Total	0	0	1	1	2	0	0	9	0	9	1	0	0	2	3	14	0	4	2	20	34
04:00 PM	0	0	0	0	0	1	0	3	0	4	1	0	0	0	1	2	0	2	1	5	10
04:15 PM	0	0	0	3	3	0	0	14	0	14	4	0	0	0	4	3	0	0	1	4	25
04:30 PM	0	0	0	4	4	0	0	3	0	3	1	0	0	2	3	3	0	0	0	3	13
04:45 PM	0	0	0	1	1	1	0	4	0	5	2	0	1	1	4	1	0	1	2	4	14
Total	0	0	0	8	8	2	0	24	0	26	8	0	1	3	12	9	0	3	4	16	62
05:00 PM	1	0	1	5	7	1	0	3	0	4	0	0	0	0	0	4	0	0	0	4	15
05:15 PM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	0	1	2	4
05:30 PM	0	0	0	1	1	0	0	5	0	5	1	0	0	0	1	1	0	0	0	1	8
05:45 PM	1	0	0	0	1	0	0	3	0	3	0	0	0	0	0	4	0	1	0	5	9
Total	2	0	1	6	9	1	0	13	0	14	1	0	0	0	1	10	0	1	1	12	36
Grand Total	2	0	2	15	19	3	0	46	0	49	10	0	1	5	16	33	0	8	7	48	132
Apprch %	10.5	0	10.5	78.9		6.1	0	93.9	0		62.5	0	6.2	31.2		68.8	0	16.7	14.6		
Total %	1.5	0	1.5	11.4	14.4	2.3	0	34.8	0	37.1	7.6	0	0.8	3.8	12.1	25	0	6.1	5.3	36.4	

	Ohe Street Southbound				Auahi Street Westbound				Ohe Street Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	0	**14**	14	**4**	0	0	**4**	3	0	0	3	**21**
04:30 PM	0	0	0	0	0	0	3	3	1	0	0	1	3	0	0	3	7
04:45 PM	0	0	0	0	**1**	0	4	5	2	0	1	3	1	0	1	2	10
05:00 PM	**1**	0	**1**	**2**	1	0	3	4	0	0	0	0	**4**	0	0	**4**	10
Total Volume	1	0	1	2	2	0	24	26	7	0	1	8	11	0	1	12	48
% App. Total	50	0	50		7.7	0	92.3		87.5	0	12.5		91.7	0	8.3		
PHF	.250	.000	.250	.250	.500	.000	.429	.464	.438	.000	.250	.500	.688	.000	.250	.750	.571

Wilson Okamoto Corporation

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

Counted By:PA
Counters:D4-3889
Weather:Clear

File Name : KouAua AM
Site Code : 00000006
Start Date : 3/4/2015
Page No : 1

Groups Printed- Unshifted

	Koula Street Southbound					Auahi Street Westbound					Koula Street Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	2	11	1	15	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	17
06:15 AM	1	0	5	0	6	2	1	0	1	4	1	0	0	0	1	0	2	0	0	2	13
06:30 AM	1	1	6	0	8	2	1	0	0	3	0	0	2	0	2	0	2	1	0	3	16
06:45 AM	1	4	6	0	11	4	4	0	0	8	2	0	3	1	6	0	5	1	0	6	31
Total	4	7	28	1	40	8	6	0	1	15	4	0	5	1	10	0	10	2	0	12	77
07:00 AM	1	1	6	0	8	2	2	0	0	4	2	0	1	1	4	0	1	3	0	4	20
07:15 AM	3	3	13	0	19	0	3	0	0	3	5	0	2	2	9	0	3	2	1	6	37
07:30 AM	0	1	7	0	8	1	1	0	0	2	4	0	2	0	6	0	1	2	0	3	19
07:45 AM	2	3	9	0	14	3	2	0	0	5	4	0	3	2	9	0	2	2	0	4	32
Total	6	8	35	0	49	6	8	0	0	14	15	0	8	5	28	0	7	9	1	17	108
08:00 AM	1	2	12	0	15	6	6	0	0	12	3	0	0	0	3	0	4	3	0	7	37
08:15 AM	5	7	11	0	23	0	5	0	0	5	5	0	2	0	7	0	8	2	0	10	45
08:30 AM	4	3	10	0	17	3	5	0	0	8	3	0	1	2	6	0	3	1	0	4	35
08:45 AM	1	3	14	0	18	5	3	0	0	8	1	0	4	0	5	0	2	5	0	7	38
Total	11	15	47	0	73	14	19	0	0	33	12	0	7	2	21	0	17	11	0	28	155
Grand Total	21	30	110	1	162	28	33	0	1	62	31	0	20	8	59	0	34	22	1	57	340
Apprch %	13	18.5	67.9	0.6		45.2	53.2	0	1.6		52.5	0	33.9	13.6		0	59.6	38.6	1.8		
Total %	6.2	8.8	32.4	0.3	47.6	8.2	9.7	0	0.3	18.2	9.1	0	5.9	2.4	17.4	0	10	6.5	0.3	16.8	

	Koula Street Southbound				Auahi Street Westbound				Koula Street Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	1	2	12	15	**6**	**6**	0	**12**	3	0	0	3	0	4	3	7	37
08:15 AM	**5**	**7**	11	**23**	0	5	0	5	**5**	0	2	**7**	0	**8**	2	**10**	**45**
08:30 AM	4	3	10	17	3	5	0	8	3	0	1	4	0	3	**1**	4	33
08:45 AM	1	3	**14**	18	5	3	0	8	1	0	**4**	5	0	2	**5**	7	38
Total Volume	11	15	47	73	14	19	0	33	12	0	7	19	0	17	11	28	153
% App. Total	15.1	20.5	64.4		42.4	57.6	0		63.2	0	36.8		0	60.7	39.3		
PHF	.550	.536	.839	.793	.583	.792	.000	.688	.600	.000	.438	.679	.000	.531	.550	.700	.850

Wilson Okamoto Corporation

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

Counted By:PA
Counters:D4-3889
Weather:Clear

File Name : KouAua PM
Site Code : 00000007
Start Date : 3/4/2015
Page No : 1

Groups Printed- Unshifted

	Koula Street Southbound					Auahi Street Westbound					Koula Street Northbound					Auahi Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	1	1	7	1	10	4	4	0	0	8	6	0	5	0	11	0	3	6	3	12	41
03:15 PM	1	4	10	0	15	5	4	0	0	9	5	0	3	1	9	0	4	0	1	5	38
03:30 PM	5	1	16	0	22	3	6	0	0	9	2	1	4	1	8	0	1	7	0	8	47
03:45 PM	0	0	7	0	7	2	9	0	1	12	10	0	5	4	19	0	5	5	1	11	49
Total	7	6	40	1	54	14	23	0	1	38	23	1	17	6	47	0	13	18	5	36	175
04:00 PM	3	3	11	0	17	4	12	0	0	16	14	0	4	4	22	0	5	2	0	7	62
04:15 PM	4	2	22	0	28	5	4	0	2	11	7	0	1	4	12	0	2	5	0	7	58
04:30 PM	1	5	14	0	20	3	4	0	0	7	7	0	1	2	10	0	4	10	1	15	52
04:45 PM	6	6	14	0	26	2	4	0	0	6	11	0	1	1	13	0	9	6	0	15	60
Total	14	16	61	0	91	14	24	0	2	40	39	0	7	11	57	0	20	23	1	44	232
05:00 PM	1	3	16	0	20	5	11	0	0	16	6	0	0	2	8	0	2	8	0	10	54
05:15 PM	3	4	8	0	15	0	6	0	0	6	10	0	2	2	14	0	2	5	0	7	42
05:30 PM	5	1	12	0	18	0	3	0	0	3	8	0	1	7	16	0	2	6	0	8	45
05:45 PM	1	5	11	0	17	2	3	0	0	5	3	0	1	5	9	0	4	5	0	9	40
Total	10	13	47	0	70	7	23	0	0	30	27	0	4	16	47	0	10	24	0	34	181
Grand Total	31	35	148	1	215	35	70	0	3	108	89	1	28	33	151	0	43	65	6	114	588
Apprch %	14.4	16.3	68.8	0.5		32.4	64.8	0	2.8		58.9	0.7	18.5	21.9		0	37.7	57	5.3		
Total %	5.3	6	25.2	0.2	36.6	6	11.9	0	0.5	18.4	15.1	0.2	4.8	5.6	25.7	0	7.3	11.1	1	19.4	

	Koula Street Southbound				Auahi Street Westbound				Koula Street Northbound				Auahi Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	3	3	11	17	**4**	**12**	0	**16**	**14**	0	**4**	**18**	0	5	2	7	58
04:15 PM	4	2	**22**	**28**	**5**	4	0	9	7	0	1	8	0	2	5	7	52
04:30 PM	1	5	14	20	3	4	0	7	7	0	1	8	0	4	**10**	14	49
04:45 PM	**6**	**6**	14	26	2	4	0	6	11	0	1	12	0	**9**	6	**15**	**59**
Total Volume	14	16	61	91	14	24	0	38	39	0	7	46	0	20	23	43	218
% App. Total	15.4	17.6	67		36.8	63.2	0		84.8	0	15.2		0	46.5	53.5		
PHF	.583	.667	.693	.813	.700	.500	.000	.594	.696	.000	.438	.639	.000	.556	.575	.717	.924

Wilson Okamoto Corporation

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

Counted By:KW, GC
Counters:D4-3888, D4-3890
Weather:Clear

File Name : CooAla AM
Site Code : 00000001
Start Date : 3/5/2015
Page No : 1

Groups Printed- Unshifted

	Cooke Street Southbound					Ala Moana Boulevard Westbound					Cooke Street Northbound					Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	2	8	2	13	2	174	1	3	180	4	3	1	4	12	5	267	7	0	279	484
06:15 AM	1	3	7	5	16	0	224	5	2	231	0	2	0	3	5	9	319	8	2	338	590
06:30 AM	5	2	14	6	27	2	275	5	0	282	3	0	1	8	12	10	337	7	3	357	678
06:45 AM	3	5	11	6	25	0	324	5	1	330	6	5	1	6	18	22	390	11	5	428	801
Total	10	12	40	19	81	4	997	16	6	1023	13	10	3	21	47	46	1313	33	10	1402	2553
07:00 AM	4	3	11	0	18	3	363	5	4	375	4	3	0	8	15	25	402	8	3	438	846
07:15 AM	4	2	25	0	31	4	410	10	2	426	4	3	1	6	14	26	445	12	4	487	958
07:30 AM	2	6	16	5	29	1	394	5	3	403	5	3	0	9	17	21	423	6	3	453	902
07:45 AM	7	6	19	3	35	5	444	6	2	457	7	4	0	12	23	15	377	11	6	409	924
Total	17	17	71	8	113	13	1611	26	11	1661	20	13	1	35	69	87	1647	37	16	1787	3630
08:00 AM	6	6	20	7	39	3	406	6	6	421	10	6	2	11	29	32	413	11	1	457	946
08:15 AM	6	8	23	5	42	3	409	6	6	424	3	6	0	4	13	15	340	11	4	370	849
08:30 AM	3	9	16	7	35	7	335	8	3	353	9	3	1	7	20	22	304	10	7	343	751
08:45 AM	4	10	15	5	34	4	281	15	2	302	6	5	7	3	21	14	306	12	2	334	691
Total	19	33	74	24	150	17	1431	35	17	1500	28	20	10	25	83	83	1363	44	14	1504	3237
Grand Total	46	62	185	51	344	34	4039	77	34	4184	61	43	14	81	199	216	4323	114	40	4693	9420
Apprch %	13.4	18	53.8	14.8		0.8	96.5	1.8	0.8		30.7	21.6	7	40.7		4.6	92.1	2.4	0.9		
Total %	0.5	0.7	2	0.5	3.7	0.4	42.9	0.8	0.4	44.4	0.6	0.5	0.1	0.9	2.1	2.3	45.9	1.2	0.4	49.8	

	Cooke Street Southbound				Ala Moana Boulevard Westbound				Cooke Street Northbound				Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	4	2	**25**	31	4	410	**10**	424	4	3	1	8	26	**445**	**12**	**483**	**946**
07:30 AM	2	**6**	16	24	1	394	5	400	5	3	0	8	21	423	6	450	882
07:45 AM	7	6	19	**32**	**5**	**444**	6	**455**	7	4	0	11	15	377	11	403	901
08:00 AM	6	6	20	32	3	406	6	415	**10**	**6**	**2**	**18**	**32**	413	11	456	921
Total Volume	19	20	80	119	13	1654	27	1694	26	16	3	45	94	1658	40	1792	3650
% App. Total	16	16.8	67.2		0.8	97.6	1.6		57.8	35.6	6.7		5.2	92.5	2.2		
PHF	.679	.833	.800	.930	.650	.931	.675	.931	.650	.667	.375	.625	.734	.931	.833	.928	.965

Wilson Okamoto Corporation

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

Counted By:CY, DY
Counters:TU-0651, TU-0652
Weather:Clear

File Name : CooAla PM
Site Code : 00000002
Start Date : 3/5/2015
Page No : 1

Groups Printed- Unshifted

	Koula Street Southbound					Ala Moana Boulevard Westbound					Koula Street Northbound					Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	13	3	23	2	41	1	341	6	1	349	15	7	6	12	40	7	437	7	1	452	882
03:15 PM	5	4	18	5	32	3	362	18	2	385	14	10	9	14	47	13	439	6	2	460	924
03:30 PM	8	6	32	11	57	2	395	13	5	415	22	11	5	12	50	13	532	10	5	560	1082
03:45 PM	9	8	39	8	64	5	425	14	3	447	12	7	4	11	34	12	547	4	5	568	1113
Total	35	21	112	26	194	11	1523	51	11	1596	63	35	24	49	171	45	1955	27	13	2040	4001
04:00 PM	9	10	25	11	55	2	391	15	0	408	14	15	1	11	41	19	499	10	2	530	1034
04:15 PM	9	4	43	11	67	0	416	10	10	436	11	12	3	5	31	18	476	6	3	503	1037
04:30 PM	11	11	33	17	72	2	353	11	3	369	9	15	3	14	41	14	521	8	12	555	1037
04:45 PM	11	7	29	6	53	2	378	8	7	395	16	14	2	5	37	5	478	2	8	493	978
Total	40	32	130	45	247	6	1538	44	20	1608	50	56	9	35	150	56	1974	26	25	2081	4086
05:00 PM	8	12	27	8	55	4	342	9	6	361	7	11	5	12	35	6	507	8	10	531	982
05:15 PM	14	10	32	11	67	2	349	13	3	367	3	10	4	14	31	9	517	13	11	550	1015
05:30 PM	11	6	21	7	45	1	395	6	10	412	8	14	3	14	39	10	506	4	19	539	1035
05:45 PM	13	2	26	7	48	2	325	7	4	338	11	9	2	16	38	10	519	0	12	541	965
Total	46	30	106	33	215	9	1411	35	23	1478	29	44	14	56	143	35	2049	25	52	2161	3997
Grand Total	121	83	348	104	656	26	4472	130	54	4682	142	135	47	140	464	136	5978	78	90	6282	12084
Apprch %	18.4	12.7	53	15.9		0.6	95.5	2.8	1.2		30.6	29.1	10.1	30.2		2.2	95.2	1.2	1.4		
Total %	1	0.7	2.9	0.9	5.4	0.2	37	1.1	0.4	38.7	1.2	1.1	0.4	1.2	3.8	1.1	49.5	0.6	0.7	52	

	Koula Street Southbound				Ala Moana Boulevard Westbound				Koula Street Northbound				Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	8	6	32	46	2	395	13	410	**22**	11	**5**	**38**	13	532	**10**	555	1049
03:45 PM	**9**	8	39	**56**	**5**	**425**	14	**444**	12	**7**	4	23	12	**547**	4	**563**	**1086**
04:00 PM	9	**10**	25	44	2	391	**15**	408	14	**15**	1	30	**19**	499	10	528	1010
04:15 PM	9	4	**43**	56	0	416	10	426	11	12	3	26	18	476	6	500	1008
Total Volume	35	28	139	202	9	1627	52	1688	59	45	13	117	62	2054	30	2146	4153
% App. Total	17.3	13.9	68.8		0.5	96.4	3.1		50.4	38.5	11.1		2.9	95.7	1.4		
PHF	.972	.700	.808	.902	.450	.957	.867	.950	.670	.750	.650	.770	.816	.939	.750	.953	.956

Wilson Okamoto Corporation

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

Counted By:AC, FS
Counters:TU-0649, TU-0650
Weather:Clear

File Name : OheAla AM
Site Code : 00000004
Start Date : 3/5/2015
Page No : 1

Groups Printed- Unshifted

	Ohe Street Southbound					Ala Moana Boulevard Westbound					Ohe Street Northbound					Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	1	1	2	0	178	0	0	178	0	1	2	1	4	0	260	1	1	262	446
06:15 AM	0	0	0	4	4	0	234	1	0	235	0	0	3	4	7	0	310	9	5	324	570
06:30 AM	0	0	0	4	4	0	285	0	0	285	0	0	0	6	6	0	320	7	4	331	626
06:45 AM	0	0	0	3	3	0	330	0	0	330	0	0	0	6	6	0	368	8	5	381	720
Total	0	0	1	12	13	0	1027	1	0	1028	0	1	5	17	23	0	1258	25	15	1298	2362
07:00 AM	0	0	0	3	3	0	371	0	0	371	0	0	1	9	10	0	380	6	3	389	773
07:15 AM	0	0	0	5	5	0	423	0	0	423	0	0	0	6	6	0	413	13	5	431	865
07:30 AM	0	0	0	3	3	0	404	0	0	404	0	0	2	15	17	0	404	6	2	412	836
07:45 AM	0	0	0	1	1	0	456	0	0	456	0	0	1	15	16	0	356	11	6	373	846
Total	0	0	0	12	12	0	1654	0	0	1654	0	0	4	45	49	0	1553	36	16	1605	3320
08:00 AM	0	0	1	4	5	0	410	1	0	411	0	0	1	11	12	0	385	11	1	397	825
08:15 AM	0	0	2	1	3	0	415	0	0	415	0	0	0	5	5	0	305	12	4	321	744
08:30 AM	0	0	1	3	4	0	351	0	0	351	0	0	0	5	5	0	274	11	7	292	652
08:45 AM	0	0	2	4	6	0	290	0	0	290	0	0	0	4	4	0	285	13	4	302	602
Total	0	0	6	12	18	0	1466	1	0	1467	0	0	1	25	26	0	1249	47	16	1312	2823
Grand Total	0	0	7	36	43	0	4147	2	0	4149	0	1	10	87	98	0	4060	108	47	4215	8505
Apprch %	0	0	16.3	83.7		0	100	0	0		0	1	10.2	88.8		0	96.3	2.6	1.1		
Total %	0	0	0.1	0.4	0.5	0	48.8	0	0	48.8	0	0	0.1	1	1.2	0	47.7	1.3	0.6	49.6	

	Ohe Street Southbound				Ala Moana Boulevard Westbound				Ohe Street Northbound				Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	423	0	423	0	0	0	0	0	**413**	**13**	**426**	**849**
07:30 AM	0	0	0	0	0	404	0	404	0	0	**2**	**2**	0	404	6	410	816
07:45 AM	0	0	0	0	0	**456**	0	**456**	0	0	1	1	0	356	11	367	824
08:00 AM	0	0	**1**	**1**	0	410	**1**	411	0	0	1	1	0	385	11	396	809
Total Volume	0	0	1	1	0	1693	1	1694	0	0	4	4	0	1558	41	1599	3298
% App. Total	0	0	100		0	99.9	0.1		0	0	100		0	97.4	2.6		
PHF	.000	.000	.250	.250	.000	.928	.250	.929	.000	.000	.500	.500	.000	.943	.788	.938	.971

Wilson Okamoto Corporation

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

Counted By:AC, FS
Counters:TU-0649, TU-0650
Weather:Clear

File Name : OheAla PM
Site Code : 00000004
Start Date : 3/5/2015
Page No : 1

Groups Printed- Unshifted

	Ohe Street Southbound					Ala Moana Boulevard Westbound					Ohe Street Northbound					Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	0	0	0	3	3	0	350	0	0	350	0	0	4	8	12	0	452	7	0	459	824
03:15 PM	0	0	3	4	7	0	388	0	0	388	0	0	0	13	13	0	426	7	2	435	843
03:30 PM	0	0	1	11	12	0	397	0	0	397	0	0	0	11	11	0	523	11	2	536	956
03:45 PM	0	0	3	5	8	0	441	0	0	441	0	0	0	6	6	0	528	2	3	533	988
Total	0	0	7	23	30	0	1576	0	0	1576	0	0	4	38	42	0	1929	27	7	1963	3611
04:00 PM	0	0	0	5	5	0	392	0	0	392	0	0	0	6	6	0	491	8	1	500	903
04:15 PM	0	0	3	16	19	0	430	2	0	432	0	0	0	2	2	0	460	5	3	468	921
04:30 PM	0	0	2	7	9	0	357	1	0	358	0	0	0	13	13	0	522	6	11	539	919
04:45 PM	0	0	2	2	4	0	391	1	0	392	0	0	0	6	6	0	467	3	9	479	881
Total	0	0	7	30	37	0	1570	4	0	1574	0	0	0	27	27	0	1940	22	24	1986	3624
05:00 PM	0	0	2	6	8	0	366	0	0	366	0	0	0	12	12	0	510	7	10	527	913
05:15 PM	1	1	2	9	13	0	373	0	0	373	0	1	4	14	19	0	531	8	7	546	951
05:30 PM	0	0	1	5	6	0	367	1	0	368	0	0	2	15	17	0	510	2	15	527	918
05:45 PM	0	0	0	14	14	0	361	0	0	361	0	0	0	7	7	0	537	0	11	548	930
Total	1	1	5	34	41	0	1467	1	0	1468	0	1	6	48	55	0	2088	17	43	2148	3712
Grand Total	1	1	19	87	108	0	4613	5	0	4618	0	1	10	113	124	0	5957	66	74	6097	10947
Apprch %	0.9	0.9	17.6	80.6		0	99.9	0.1	0		0	0.8	8.1	91.1		0	97.7	1.1	1.2		
Total %	0	0	0.2	0.8	1	0	42.1	0	0	42.2	0	0	0.1	1	1.1	0	54.4	0.6	0.7	55.7	

	Ohe Street Southbound				Ala Moana Boulevard Westbound				Ohe Street Northbound				Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	0	0	1	1	0	397	0	397	0	0	0	0	0	523	11	**534**	932
03:45 PM	0	0	**3**	**3**	0	**441**	0	**441**	0	0	0	0	0	**528**	2	530	**974**
04:00 PM	0	0	0	0	0	392	0	392	0	0	0	0	0	491	8	499	891
04:15 PM	0	0	3	3	0	430	**2**	432	0	0	0	0	0	460	5	465	900
Total Volume	0	0	7	7	0	1660	2	1662	0	0	0	0	0	2002	26	2028	3697
% App. Total	0	0	100		0	99.9	0.1		0	0	0		0	98.7	1.3		
PHF	.000	.000	.583	.583	.000	.941	.250	.942	.000	.000	.000	.000	.000	.948	.591	.949	.949

Wilson Okamoto Corporation

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

Counted By:DY, CY
Counters:TU-0652, TU-0651
Weather:Clear

File Name : KouAla AM
Site Code : 00000002
Start Date : 3/5/2015
Page No : 1

Groups Printed- Unshifted

	Koula Street Southbound					Ala Moana Boulevard Westbound					Koula Street Northbound					Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	2	1	0	2	5	3	188	2	2	195	1	0	0	3	4	1	254	4	0	259	463
06:15 AM	1	0	2	6	9	2	235	1	4	242	2	0	1	2	5	3	310	5	0	318	574
06:30 AM	1	1	0	4	6	1	282	2	2	287	1	0	0	2	3	2	320	1	0	323	619
06:45 AM	1	0	4	10	15	3	319	2	7	331	0	0	0	4	4	4	368	3	0	375	725
Total	5	2	6	22	35	9	1024	7	15	1055	4	0	1	11	16	10	1252	13	0	1275	2381
07:00 AM	0	2	1	7	10	5	381	2	2	390	0	0	0	3	3	1	380	2	0	383	786
07:15 AM	2	0	1	7	10	4	409	1	3	417	0	0	0	3	3	1	413	3	0	417	847
07:30 AM	2	2	3	6	13	2	389	1	11	403	0	0	0	6	6	2	404	1	0	407	829
07:45 AM	3	1	3	1	8	11	462	3	3	479	3	0	1	3	7	3	356	1	0	360	854
Total	7	5	8	21	41	22	1641	7	19	1689	3	0	1	15	19	7	1553	7	0	1567	3316
08:00 AM	1	0	2	4	7	6	422	3	3	434	1	0	1	7	9	2	385	0	0	387	837
08:15 AM	3	1	4	7	15	4	421	4	7	436	1	0	0	2	3	5	305	4	0	314	768
08:30 AM	2	0	4	5	11	1	351	5	3	360	1	0	1	3	5	3	274	2	0	279	655
08:45 AM	1	0	6	9	16	3	280	6	3	292	0	0	0	3	3	3	285	3	0	291	602
Total	7	1	16	25	49	14	1474	18	16	1522	3	0	2	15	20	13	1249	9	0	1271	2862
Grand Total	19	8	30	68	125	45	4139	32	50	4266	10	0	4	41	55	30	4054	29	0	4113	8559
Apprch %	15.2	6.4	24	54.4		1.1	97	0.8	1.2		18.2	0	7.3	74.5		0.7	98.6	0.7	0		
Total %	0.2	0.1	0.4	0.8	1.5	0.5	48.4	0.4	0.6	49.8	0.1	0	0	0.5	0.6	0.4	47.4	0.3	0	48.1	

	Koula Street Southbound				Ala Moana Boulevard Westbound				Koula Street Northbound				Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	2	0	1	3	4	409	1	414	0	0	0	0	1	**413**	**3**	**417**	834
07:30 AM	2	**2**	**3**	**7**	2	389	1	392	0	0	0	0	2	404	1	407	806
07:45 AM	**3**	1	3	7	**11**	**462**	**3**	**476**	**3**	0	**1**	**4**	**3**	356	1	360	**847**
08:00 AM	1	0	2	3	6	422	3	431	1	0	1	2	2	385	0	387	823
Total Volume	8	3	9	20	23	1682	8	1713	4	0	2	6	8	1558	5	1571	3310
% App. Total	40	15	45		1.3	98.2	0.5		66.7	0	33.3		0.5	99.2	0.3		
PHF	.667	.375	.750	.714	.523	.910	.667	.900	.333	.000	.500	.375	.667	.943	.417	.942	.977

Wilson Okamoto Corporation

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

Counted By:DY, CY
Counters:TU-0651, TU-0652
Weather:Clear

File Name : KouAla PM
Site Code : 00000002
Start Date : 3/5/2015
Page No : 1

Groups Printed- Unshifted

	Koula Street Southbound					Ala Moana Boulevard Westbound					Koula Street Northbound					Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	6	0	1	3	10	2	358	2	0	362	0	0	1	6	7	4	451	8	0	463	842
03:15 PM	6	2	6	2	16	1	372	1	3	377	2	0	1	3	6	6	421	0	0	427	826
03:30 PM	3	0	2	8	13	3	390	7	2	402	1	1	0	5	7	1	528	1	0	530	952
03:45 PM	5	0	2	6	13	3	430	6	5	444	1	0	0	5	6	2	525	1	0	528	991
Total	20	2	11	19	52	9	1550	16	10	1585	4	1	2	19	26	13	1925	10	0	1948	3611
04:00 PM	6	0	4	6	16	1	372	11	6	390	4	5	1	6	16	6	486	4	0	496	918
04:15 PM	6	1	3	15	25	3	479	6	2	490	0	4	1	1	6	7	461	0	0	468	989
04:30 PM	4	0	4	7	15	0	366	11	4	381	4	1	0	7	12	0	512	1	0	513	921
04:45 PM	9	0	5	5	19	3	334	4	3	344	0	0	0	0	0	3	470	1	0	474	837
Total	25	1	16	33	75	7	1551	32	15	1605	8	10	2	14	34	16	1929	6	0	1951	3665
05:00 PM	8	4	3	7	22	0	371	5	3	379	1	3	1	8	13	4	516	1	0	521	935
05:15 PM	6	0	1	8	15	3	370	6	8	387	0	0	0	7	7	6	534	2	0	542	951
05:30 PM	2	1	3	5	11	1	361	5	5	372	5	0	0	8	13	13	501	3	0	517	913
05:45 PM	4	0	7	12	23	17	364	8	11	400	1	0	0	2	3	4	534	2	0	540	966
Total	20	5	14	32	71	21	1466	24	27	1538	7	3	1	25	36	27	2085	8	0	2120	3765
Grand Total	65	8	41	84	198	37	4567	72	52	4728	19	14	5	58	96	56	5939	24	0	6019	11041
Apprch %	32.8	4	20.7	42.4		0.8	96.6	1.5	1.1		19.8	14.6	5.2	60.4		0.9	98.7	0.4	0		
Total %	0.6	0.1	0.4	0.8	1.8	0.3	41.4	0.7	0.5	42.8	0.2	0.1	0	0.5	0.9	0.5	53.8	0.2	0	54.5	

	Koula Street Southbound				Ala Moana Boulevard Westbound				Koula Street Northbound				Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	3	0	2	5	**3**	390	7	400	1	1	0	2	1	**528**	1	**530**	937
03:45 PM	5	0	2	7	3	430	6	439	1	0	0	1	2	525	1	528	**975**
04:00 PM	**6**	0	**4**	**10**	1	372	**11**	384	**4**	**5**	**1**	**10**	6	486	4	496	900
04:15 PM	6	**1**	3	10	3	**479**	6	**488**	0	4	1	5	**7**	461	0	468	971
Total Volume	20	1	11	32	10	1671	30	1711	6	10	2	18	16	2000	6	2022	3783
% App. Total	62.5	3.1	34.4		0.6	97.7	1.8		33.3	55.6	11.1		0.8	98.9	0.3		
PHF	.833	.250	.688	.800	.833	.872	.682	.877	.375	.500	.500	.450	.571	.947	.375	.954	.970

Wilson Okamoto Corporation

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

Counted By:PA, JC
Counters:D4-5672, D4-5677
Weather:Clear

File Name : AhuiAla AM
Site Code : 00000000
Start Date : 3/5/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Ala Moana Boulevard Westbound					Ahui Street Northbound					Ala Moana Boulevard Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	180	0	0	180	0	0	0	6	6	0	241	10	0	251	437
06:15 AM	0	0	231	0	0	231	0	0	1	6	7	0	302	9	0	311	549
06:30 AM	0	0	290	0	0	290	0	0	0	9	9	0	317	9	0	326	625
06:45 AM	0	0	328	0	0	328	0	0	0	13	13	0	361	12	0	373	714
Total	0	0	1029	0	0	1029	0	0	1	34	35	0	1221	40	0	1261	2325
07:00 AM	0	0	389	0	0	389	0	0	1	11	12	0	373	7	0	380	781
07:15 AM	0	0	418	0	0	418	0	0	4	6	10	1	407	7	0	415	843
07:30 AM	0	0	397	0	0	397	0	0	1	9	10	0	400	8	0	408	815
07:45 AM	0	0	487	0	0	487	0	0	1	6	7	0	353	7	0	360	854
Total	0	0	1691	0	0	1691	0	0	7	32	39	1	1533	29	0	1563	3293
08:00 AM	0	0	418	0	0	418	0	0	0	6	6	0	384	8	0	392	816
08:15 AM	0	0	411	0	0	411	0	0	1	2	3	0	297	9	0	306	720
08:30 AM	0	1	351	0	0	352	0	0	1	9	10	0	268	7	0	275	637
08:45 AM	0	1	291	0	0	292	0	0	0	4	4	0	279	8	0	287	583
Total	0	2	1471	0	0	1473	0	0	2	21	23	0	1228	32	0	1260	2756
Grand Total	0	2	4191	0	0	4193	0	0	10	87	97	1	3982	101	0	4084	8374
Apprch %		0	100	0	0		0	0	10.3	89.7		0	97.5	2.5	0		
Total %	0	0	50	0	0	50.1	0	0	0.1	1	1.2	0	47.6	1.2	0	48.8	

	Southbound	Ala Moana Boulevard Westbound				Ahui Street Northbound				Ala Moana Boulevard Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:15 AM														
07:15 AM	0	0	418	0	418	0	0	**4**	**4**	**1**	**407**	7	**415**	837
07:30 AM	0	0	397	0	397	0	0	1	1	0	400	**8**	408	806
07:45 AM	0	0	**487**	0	**487**	0	0	1	1	0	353	7	360	**848**
08:00 AM	0	0	418	0	418	0	0	0	0	0	384	8	392	810
Total Volume	0	0	1720	0	1720	0	0	6	6	1	1544	30	1575	3301
% App. Total		0	100	0		0	0	100		0.1	98	1.9		
PHF	.000	.000	.883	.000	.883	.000	.000	.375	.375	.250	.948	.938	.949	.973

Wilson Okamoto Corporation

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

Counted By:PA, JC
Counters:D4-5672, D4-5677
Weather:Clear

File Name : AhuiAla PM
Site Code : 00000004
Start Date : 3/5/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Ala Moana Boulevard Westbound					Ahui Street Northbound					Ala Moana Boulevard Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	0	0	364	0	0	364	0	0	1	6	7	0	451	4	0	455	826
03:15 PM	0	1	373	0	0	374	0	0	4	7	11	0	419	5	0	424	809
03:30 PM	0	0	411	0	0	411	0	0	2	13	15	0	534	10	0	544	970
03:45 PM	0	0	438	0	0	438	0	0	6	8	14	0	531	4	0	535	987
Total	0	1	1586	0	0	1587	0	0	13	34	47	0	1935	23	0	1958	3592
04:00 PM	0	0	378	0	0	378	0	0	0	5	5	0	487	3	0	490	873
04:15 PM	0	1	489	0	0	490	0	0	4	5	9	0	470	3	0	473	972
04:30 PM	0	0	374	0	0	374	0	0	2	14	16	0	520	3	0	523	913
04:45 PM	0	0	341	0	0	341	0	0	4	5	9	0	487	2	0	489	839
Total	0	1	1582	0	0	1583	0	0	10	29	39	0	1964	11	0	1975	3597
05:00 PM	0	0	378	0	0	378	0	0	1	8	9	0	533	0	0	533	920
05:15 PM	0	0	381	0	0	381	0	0	3	19	22	0	538	2	0	540	943
05:30 PM	0	0	370	0	0	370	0	0	2	10	12	0	505	2	0	507	889
05:45 PM	0	0	382	0	0	382	0	0	1	2	3	0	530	2	0	532	917
Total	0	0	1511	0	0	1511	0	0	7	39	46	0	2106	6	0	2112	3669
Grand Total	0	2	4679	0	0	4681	0	0	30	102	132	0	6005	40	0	6045	10858
Apprch %		0	100	0	0		0	0	22.7	77.3		0	99.3	0.7	0		
Total %	0	0	43.1	0	0	43.1	0	0	0.3	0.9	1.2	0	55.3	0.4	0	55.7	

	Southbound	Ala Moana Boulevard Westbound				Ahui Street Northbound				Ala Moana Boulevard Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 03:30 PM														
03:30 PM	0	0	411	0	411	0	0	2	2	0	**534**	**10**	**544**	957
03:45 PM	0	0	438	0	438	0	0	**6**	**6**	0	531	4	535	**979**
04:00 PM	0	0	378	0	378	0	0	0	0	0	487	3	490	868
04:15 PM	0	**1**	**489**	0	**490**	0	0	4	4	0	470	3	473	967
Total Volume	0	1	1716	0	1717	0	0	12	12	0	2022	20	2042	3771
% App. Total		0.1	99.9	0		0	0	100		0	99	1		
PHF	.000	.250	.877	.000	.876	.000	.000	.500	.500	.000	.947	.500	.938	.963

Wilson Okamoto Corporation

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

Counted By:GC, DY
Counters:D4-5675, D4-5676
Weather:Clear

File Name : AlaWar AM
Site Code : 00000001
Start Date : 4/13/2016
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Ala Moana Boulevard Westbound					Ward Avenue Northbound					Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	38	9	42	3	92	5	157	7	3	172	3	2	4	3	12	32	266	0	0	298	574
06:15 AM	38	25	39	5	107	10	221	10	2	243	1	3	6	4	14	33	271	1	6	311	675
06:30 AM	24	17	37	9	87	17	255	22	5	299	1	3	2	8	14	43	313	2	2	360	760
06:45 AM	26	25	30	4	85	11	322	9	4	346	0	4	6	1	11	60	330	0	8	398	840
Total	126	76	148	21	371	43	955	48	14	1060	5	12	18	16	51	168	1180	3	16	1367	2849
07:00 AM	25	25	42	7	99	23	352	34	5	414	0	6	4	2	12	37	352	0	8	397	922
07:15 AM	36	30	37	3	106	26	382	41	10	459	0	9	7	6	22	53	346	1	4	404	991
07:30 AM	37	29	50	3	119	21	389	35	4	449	0	11	8	2	21	40	345	1	3	389	978
07:45 AM	29	24	71	2	126	30	336	45	7	418	1	4	8	5	18	63	327	0	6	396	958
Total	127	108	200	15	450	100	1459	155	26	1740	1	30	27	15	73	193	1370	2	21	1586	3849
08:00 AM	33	33	49	3	118	41	364	37	10	452	1	3	11	1	16	53	349	1	4	407	993
08:15 AM	36	32	63	2	133	35	397	55	2	489	0	4	13	2	19	53	338	1	3	395	1036
08:30 AM	38	36	54	6	134	17	260	41	12	330	0	8	8	1	17	59	271	0	6	336	817
08:45 AM	35	22	46	3	106	25	263	41	2	331	1	7	12	2	22	56	306	0	2	364	823
Total	142	123	212	14	491	118	1284	174	26	1602	2	22	44	6	74	221	1264	2	15	1502	3669
Grand Total	395	307	560	50	1312	261	3698	377	66	4402	8	64	89	37	198	582	3814	7	52	4455	10367
Apprch %	30.1	23.4	42.7	3.8		5.9	84	8.6	1.5		4	32.3	44.9	18.7		13.1	85.6	0.2	1.2		
Total %	3.8	3	5.4	0.5	12.7	2.5	35.7	3.6	0.6	42.5	0.1	0.6	0.9	0.4	1.9	5.6	36.8	0.1	0.5	43	

	Ward Avenue Southbound				Ala Moana Boulevard Westbound				Ward Avenue Northbound				Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	**37**	29	50	116	21	389	35	445	0	**11**	8	**19**	40	345	**1**	386	966
07:45 AM	29	24	**71**	124	30	336	45	411	**1**	4	8	13	**63**	327	0	390	938
08:00 AM	33	**33**	49	115	**41**	364	37	442	1	3	11	15	53	**349**	1	**403**	975
08:15 AM	36	32	63	**131**	35	**397**	**55**	**487**	0	4	**13**	17	53	338	1	392	**1027**
Total Volume	135	118	233	486	127	1486	172	1785	2	22	40	64	209	1359	3	1571	3906
% App. Total	27.8	24.3	47.9		7.1	83.2	9.6		3.1	34.4	62.5		13.3	86.5	0.2		
PHF	.912	.894	.820	.927	.774	.936	.782	.916	.500	.500	.769	.842	.829	.973	.750	.975	.951

Wilson Okamoto Corporation

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

Counted By:GC, DY
Counters:D4-5675, D4-5676
Weather:Clear

File Name : AlaWar AM - U-Turns
Site Code : 00000001
Start Date : 4/13/2016
Page No : 1

Groups Printed- Unshifted

	Southbound	Ala Moana Boulevard Left = U-Turns Westbound					Northbound	Eastbound	
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	App. Total	Int. Total
06:00 AM	0	2	0	0	0	2	0	0	2
06:15 AM	0	1	0	0	0	1	0	0	1
06:30 AM	0	1	0	0	0	1	0	0	1
06:45 AM	0	2	0	0	0	2	0	0	2
Total	0	6	0	0	0	6	0	0	6
07:00 AM	0	1	0	0	0	1	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0
07:30 AM	0	2	0	0	0	2	0	0	2
07:45 AM	0	1	0	0	0	1	0	0	1
Total	0	4	0	0	0	4	0	0	4
08:00 AM	0	1	0	0	0	1	0	0	1
08:15 AM	0	3	0	0	0	3	0	0	3
08:30 AM	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0
Total	0	4	0	0	0	4	0	0	4
Grand Total	0	14	0	0	0	14	0	0	14
Apprch %		100	0	0	0				
Total %	0	100	0	0	0	100	0	0	

	Southbound	Westbound	Northbound	Eastbound	
Start Time	App. Total	App. Total	App. Total	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1					
Peak Hour for Entire Intersection Begins at 06:00 AM					
06:00 AM	0	0	0	0	0
06:15 AM	0	0	0	0	0
06:30 AM	0	0	0	0	0
06:45 AM	0	0	0	0	0
Total Volume	0	0	0	0	0
% App. Total					
PHF	.000	.000	.000	.000	.000

Wilson Okamoto Corporation

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

Counted By:GC, DY
Counters:D4-5675, D4-5676
Weather:Clear

File Name : AlaWar PM
Site Code : 00000001
Start Date : 4/13/2016
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Ala Moana Boulevard Westbound					Ward Avenue Northbound					Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	37	11	88	6	142	10	312	34	14	370	2	20	10	6	38	41	408	3	2	454	1004
03:15 PM	39	11	75	1	126	21	355	54	5	435	1	18	9	5	33	72	457	1	3	533	1127
03:30 PM	53	15	98	2	168	8	361	45	8	422	4	24	14	5	47	48	405	1	6	460	1097
03:45 PM	37	14	80	1	132	7	393	57	9	466	1	21	21	7	50	63	470	2	3	538	1186
Total	166	51	341	10	568	46	1421	190	36	1693	8	83	54	23	168	224	1740	7	14	1985	4414
04:00 PM	51	8	76	2	137	8	313	41	9	371	1	25	24	4	54	63	448	0	11	522	1084
04:15 PM	68	12	80	2	162	10	375	47	9	441	1	33	34	3	71	56	458	2	13	529	1203
04:30 PM	43	11	72	1	127	12	341	39	11	403	1	41	33	11	86	66	475	1	4	546	1162
04:45 PM	51	11	76	4	142	13	291	53	10	367	3	21	34	9	67	68	413	3	2	486	1062
Total	213	42	304	9	568	43	1320	180	39	1582	6	120	125	27	278	253	1794	6	30	2083	4511
05:00 PM	47	8	55	6	116	11	298	41	15	365	0	34	38	7	79	52	477	1	4	534	1094
05:15 PM	71	13	58	9	151	13	315	36	9	373	2	25	28	7	62	68	469	0	4	541	1127
05:30 PM	56	12	80	5	153	9	265	53	14	341	1	24	26	4	55	80	414	1	2	497	1046
05:45 PM	36	5	71	0	112	8	310	40	4	362	1	18	25	8	52	75	517	1	2	595	1121
Total	210	38	264	20	532	41	1188	170	42	1441	4	101	117	26	248	275	1877	3	12	2167	4388
Grand Total	589	131	909	39	1668	130	3929	540	117	4716	18	304	296	76	694	752	5411	16	56	6235	13313
Apprch %	35.3	7.9	54.5	2.3		2.8	83.3	11.5	2.5		2.6	43.8	42.7	11		12.1	86.8	0.3	0.9		
Total %	4.4	1	6.8	0.3	12.5	1	29.5	4.1	0.9	35.4	0.1	2.3	2.2	0.6	5.2	5.6	40.6	0.1	0.4	46.8	

	Ward Avenue Southbound				Ala Moana Boulevard Westbound				Ward Avenue Northbound				Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:45 PM																	
03:45 PM	37	**14**	**80**	131	7	**393**	**57**	**457**	**1**	21	21	43	63	470	**2**	535	1166
04:00 PM	51	8	76	135	8	313	41	362	1	25	24	50	63	448	0	511	1058
04:15 PM	**68**	12	80	**160**	10	375	47	432	1	33	**34**	68	56	458	2	516	**1176**
04:30 PM	43	11	72	126	**12**	341	39	392	1	**41**	33	**75**	**66**	**475**	1	**542**	1135
Total Volume	199	45	308	552	37	1422	184	1643	4	120	112	236	248	1851	5	2104	4535
% App. Total	36.1	8.2	55.8		2.3	86.5	11.2		1.7	50.8	47.5		11.8	88	0.2		
PHF	.732	.804	.963	.863	.771	.905	.807	.899	1.00	.732	.824	.787	.939	.974	.625	.970	.964

Wilson Okamoto Corporation

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

Counted By:GC, DY
Counters:D4-5675, D4-5676
Weather:Clear

File Name : AlaWar PM - U-Turns
Site Code : 00000001
Start Date : 4/13/2016
Page No : 1

Groups Printed- Unshifted

	Southbound	Ala Moana Boulevard Left = U-Turns Westbound					Northbound	Eastbound	
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	App. Total	Int. Total
03:00 PM	0	1	0	0	0	1	0	0	1
03:15 PM	0	0	0	0	0	0	0	0	0
03:30 PM	0	1	0	0	0	1	0	0	1
03:45 PM	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	0	2	0	0	2
04:00 PM	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0
05:45 PM	0	2	0	0	0	2	0	0	2
Total	0	2	0	0	0	2	0	0	2
Grand Total	0	4	0	0	0	4	0	0	4
Apprch %		100	0	0	0				
Total %	0	100	0	0	0	100	0	0	

	Southbound	Ala Moana Boulevard Left = U-Turns Westbound				Northbound	Eastbound	
Start Time	App. Total	Left	Thru	Right	App. Total	App. Total	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 03:00 PM								
03:00 PM	0	1	0	0	1	0	0	1
03:15 PM	0	0	0	0	0	0	0	0
03:30 PM	0	1	0	0	1	0	0	1
03:45 PM	0	0	0	0	0	0	0	0
Total Volume	0	2	0	0	2	0	0	2
% App. Total		100	0	0				
PHF	.000	.500	.000	.000	.500	.000	.000	.500

Wilson Okamoto Corporation

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

Counted By:JJ, RJ
Counters:D4-5675, D4-5676
Weather:Clear

File Name : WarAla AM
Site Code : 00000005
Start Date : 3/5/2015
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Ala Moana Boulevard Westbound					Ward Avenue Northbound					Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	28	21	19	2	70	10	164	8	3	185	0	5	2	3	10	25	215	0	0	240	505
06:15 AM	22	33	38	4	97	10	190	16	1	217	2	3	5	4	14	38	269	2	1	310	638
06:30 AM	33	27	28	3	91	17	259	19	3	298	1	6	10	9	26	32	287	0	4	323	738
06:45 AM	23	22	27	3	75	11	303	21	1	336	0	5	7	8	20	58	302	1	3	364	795
Total	106	103	112	12	333	48	916	64	8	1036	3	19	24	24	70	153	1073	3	8	1237	2676
07:00 AM	24	25	50	0	99	23	341	21	2	387	0	6	14	9	29	56	315	0	10	381	896
07:15 AM	28	33	38	3	102	26	375	33	3	437	0	8	10	4	22	41	367	0	8	416	977
07:30 AM	33	26	46	6	111	27	347	37	1	412	1	8	8	8	25	50	357	2	10	419	967
07:45 AM	23	31	59	4	117	32	440	43	10	525	0	12	12	3	27	44	308	2	8	362	1031
Total	108	115	193	13	429	108	1503	134	16	1761	1	34	44	24	103	191	1347	4	36	1578	3871
08:00 AM	29	46	45	3	123	33	375	27	5	440	0	10	12	4	26	48	332	0	4	384	973
08:15 AM	22	42	61	4	129	40	355	40	4	439	1	9	10	3	23	39	259	1	7	306	897
08:30 AM	30	33	44	4	111	29	302	30	7	368	1	13	13	10	37	47	221	0	6	274	790
08:45 AM	19	43	56	10	128	37	231	24	13	305	2	9	13	5	29	66	213	1	9	289	751
Total	100	164	206	21	491	139	1263	121	29	1552	4	41	48	22	115	200	1025	2	26	1253	3411
Grand Total	314	382	511	46	1253	295	3682	319	53	4349	8	94	116	70	288	544	3445	9	70	4068	9958
Apprch %	25.1	30.5	40.8	3.7		6.8	84.7	7.3	1.2		2.8	32.6	40.3	24.3		13.4	84.7	0.2	1.7		
Total %	3.2	3.8	5.1	0.5	12.6	3	37	3.2	0.5	43.7	0.1	0.9	1.2	0.7	2.9	5.5	34.6	0.1	0.7	40.9	

	Ward Avenue Southbound				Ala Moana Boulevard Westbound				Ward Avenue Northbound				Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	28	33	38	99	26	375	33	434	0	8	10	18	41	**367**	0	408	959
07:30 AM	**33**	26	46	105	27	347	37	411	**1**	8	8	17	**50**	357	**2**	**409**	942
07:45 AM	23	31	**59**	113	32	**440**	**43**	**515**	0	**12**	**12**	**24**	44	308	2	354	**1006**
08:00 AM	29	**46**	45	**120**	**33**	375	27	435	0	10	12	22	48	332	0	380	957
Total Volume	113	136	188	437	118	1537	140	1795	1	38	42	81	183	1364	4	1551	3864
% App. Total	25.9	31.1	43		6.6	85.6	7.8		1.2	46.9	51.9		11.8	87.9	0.3		
PHF	.856	.739	.797	.910	.894	.873	.814	.871	.250	.792	.875	.844	.915	.929	.500	.948	.960

Wilson Okamoto Corporation

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

Counted By:JJ, RJ
Counters:D4-5675, D4-5676
Weather:Clear

File Name : WarAla AM - U-Turns
Site Code : 00000005
Start Date : 3/5/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Ala Moana Boulevard Left = U-Turns Westbound					Northbound	Eastbound	
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	App. Total	Int. Total
06:00 AM	0	1	0	0	0	1	0	0	1
06:15 AM	0	1	0	0	0	1	0	0	1
06:30 AM	0	2	0	0	0	2	0	0	2
06:45 AM	0	2	0	0	0	2	0	0	2
Total	0	6	0	0	0	6	0	0	6
07:00 AM	0	5	0	0	0	5	0	0	5
07:15 AM	0	1	0	0	0	1	0	0	1
07:30 AM	0	4	0	0	0	4	0	0	4
07:45 AM	0	2	0	0	0	2	0	0	2
Total	0	12	0	0	0	12	0	0	12
08:00 AM	0	1	0	0	0	1	0	0	1
08:15 AM	0	2	0	0	0	2	0	0	2
08:30 AM	0	1	0	0	0	1	0	0	1
08:45 AM	0	3	0	0	0	3	0	0	3
Total	0	7	0	0	0	7	0	0	7
Grand Total	0	25	0	0	0	25	0	0	25
Apprch %		100	0	0	0				
Total %	0	100	0	0	0	100	0	0	

	Southbound	Ala Moana Boulevard Left = U-Turns Westbound				Northbound	Eastbound	
Start Time	App. Total	Left	Thru	Right	App. Total	App. Total	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 06:45 AM								
06:45 AM	0	2	0	0	2	0	0	2
07:00 AM	0	**5**	0	0	**5**	0	0	**5**
07:15 AM	0	1	0	0	1	0	0	1
07:30 AM	0	4	0	0	4	0	0	4
Total Volume	0	12	0	0	12	0	0	12
% App. Total		100	0	0				
PHF	.000	.600	.000	.000	.600	.000	.000	.600

Wilson Okamoto Corporation

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

Counted By:JJ, RJ
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File Name : WarAla PM
Site Code : 00000005
Start Date : 3/5/2015
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Ala Moana Boulevard Westbound					Ward Avenue Northbound					Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	33	16	68	2	119	11	302	38	8	359	1	18	14	4	37	48	398	0	3	449	964
03:15 PM	42	15	73	4	134	8	294	32	16	350	2	17	15	7	41	62	362	0	6	430	955
03:30 PM	35	16	79	7	137	9	330	40	17	396	1	33	12	12	58	65	463	0	8	536	1127
03:45 PM	55	16	71	5	147	13	358	51	16	438	2	19	16	11	48	77	467	1	9	554	1187
Total	165	63	291	18	537	41	1284	161	57	1543	6	87	57	34	184	252	1690	1	26	1969	4233
04:00 PM	44	18	78	9	149	9	292	34	17	352	0	32	33	12	77	55	400	0	4	459	1037
04:15 PM	58	16	63	9	146	9	427	44	15	495	3	35	36	10	84	59	473	0	3	535	1260
04:30 PM	57	12	76	14	159	12	264	42	23	341	3	31	27	12	73	67	435	0	24	526	1099
04:45 PM	61	12	69	2	144	15	274	42	13	344	1	29	40	11	81	50	448	0	7	505	1074
Total	220	58	286	34	598	45	1257	162	68	1532	7	127	136	45	315	231	1756	0	38	2025	4470
05:00 PM	53	22	55	8	138	6	310	51	11	378	6	32	36	6	80	53	494	3	7	557	1153
05:15 PM	60	20	58	9	147	14	316	39	17	386	2	28	33	13	76	63	465	1	2	531	1140
05:30 PM	60	21	77	10	168	17	295	23	16	351	2	29	44	13	88	49	469	4	8	530	1137
05:45 PM	71	14	57	11	153	10	321	29	13	373	1	21	31	8	61	61	471	1	5	538	1125
Total	244	77	247	38	606	47	1242	142	57	1488	11	110	144	40	305	226	1899	9	22	2156	4555
Grand Total	629	198	824	90	1741	133	3783	465	182	4563	24	324	337	119	804	709	5345	10	86	6150	13258
Apprch %	36.1	11.4	47.3	5.2		2.9	82.9	10.2	4		3	40.3	41.9	14.8		11.5	86.9	0.2	1.4		
Total %	4.7	1.5	6.2	0.7	13.1	1	28.5	3.5	1.4	34.4	0.2	2.4	2.5	0.9	6.1	5.3	40.3	0.1	0.6	46.4	

	Ward Avenue Southbound				Ala Moana Boulevard Westbound				Ward Avenue Northbound				Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	35	16	**79**	130	9	330	40	379	1	33	12	46	65	463	0	528	1083
03:45 PM	55	16	71	**142**	**13**	358	**51**	422	2	19	16	37	**77**	467	**1**	**545**	1146
04:00 PM	44	**18**	78	140	9	292	34	335	0	32	33	65	55	400	0	455	995
04:15 PM	**58**	16	63	137	9	**427**	44	**480**	**3**	**35**	**36**	**74**	59	**473**	0	532	**1223**
Total Volume	192	66	291	549	40	1407	169	1616	6	119	97	222	256	1803	1	2060	4447
% App. Total	35	12	53		2.5	87.1	10.5		2.7	53.6	43.7		12.4	87.5	0		
PHF	.828	.917	.921	.967	.769	.824	.828	.842	.500	.850	.674	.750	.831	.953	.250	.945	.909

Wilson Okamoto Corporation

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

Counted By:JJ, RJ
Counters:D4-5675, D4-5676
Weather:Clear

File Name : WarAla PM - U-Turns
Site Code : 00000005
Start Date : 3/5/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Ala Moana Boulevard Left = U-Turns Westbound					Northbound	Eastbound	
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	App. Total	Int. Total
03:00 PM	0	1	0	0	0	1	0	0	1
03:15 PM	0	1	0	0	0	1	0	0	1
03:30 PM	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	0	2	0	0	2
04:00 PM	0	1	0	0	0	1	0	0	1
04:15 PM	0	3	0	0	0	3	0	0	3
04:30 PM	0	3	0	0	0	3	0	0	3
04:45 PM	0	6	0	0	0	6	0	0	6
Total	0	13	0	0	0	13	0	0	13
05:00 PM	0	1	0	0	0	1	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	1	0	0	1
Grand Total	0	16	0	0	0	16	0	0	16
Apprch %		100	0	0	0				
Total %	0	100	0	0	0	100	0	0	

	Southbound	Ala Moana Boulevard Left = U-Turns Westbound				Northbound	Eastbound	
Start Time	App. Total	Left	Thru	Right	App. Total	App. Total	App. Total	Int. 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	0	1	0	0	1	0	0	1
04:15 PM	0	3	0	0	3	0	0	3
04:30 PM	0	3	0	0	3	0	0	3
04:45 PM	0	**6**	0	0	**6**	0	0	**6**
Total Volume	0	13	0	0	13	0	0	13
% App. Total		100	0	0				
PHF	.000	.542	.000	.000	.542	.000	.000	.542

Wilson Okamoto Corporation

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

Counted By:PA
Counters:D4-5677
Weather:Clear

File Name : Kewalo Basin Driveways West and East AM
Site Code : 00000004
Start Date : 3/10/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Westbound	Kewalo Basin Driveway (East) Northbound					Ala Moana Boulevard Right = RT Into Kewalo Basin Driveway (West) Eastbound					
Start Time	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	2	0	2	0	0	3	0	3	5
06:15 AM	0	0	0	0	0	0	0	0	0	3	0	3	3
06:30 AM	0	0	0	0	0	0	0	0	0	5	0	5	5
06:45 AM	0	0	0	0	1	0	1	0	0	6	0	6	7
Total	0	0	0	0	3	0	3	0	0	17	0	17	20
07:00 AM	0	0	0	0	0	0	0	0	0	8	0	8	8
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
07:30 AM	0	0	0	0	1	0	1	0	0	9	0	9	10
07:45 AM	0	0	0	0	1	0	1	0	0	9	0	9	10
Total	0	0	0	0	2	0	2	0	0	27	0	27	29
08:00 AM	0	0	0	0	0	0	0	0	0	5	0	5	5
08:15 AM	0	0	0	0	0	0	0	0	0	16	0	16	16
08:30 AM	0	0	0	0	2	0	2	0	0	4	0	4	6
08:45 AM	0	0	0	0	0	0	0	0	0	11	0	11	11
Total	0	0	0	0	2	0	2	0	0	36	0	36	38
Grand Total	0	0	0	0	7	0	7	0	0	80	0	80	87
Apprch %			0	0	100	0		0	0	100	0		
Total %	0	0	0	0	8	0	8	0	0	92	0	92	

	Southbound	Westbound	Kewalo Basin Driveway (East) Northbound				Ala Moana Boulevard Right = RT Into Kewalo Basin Driveway (West) Eastbound				
Start Time	App. Total	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	0	0	0	0	**1**	**1**	0	0	9	9	10
07:45 AM	0	0	0	0	1	1	0	0	9	9	10
08:00 AM	0	0	0	0	0	0	0	0	5	5	5
08:15 AM	0	0	0	0	0	0	0	0	**16**	**16**	**16**
Total Volume	0	0	0	0	2	2	0	0	39	39	41
% App. Total			0	0	100		0	0	100		
PHF	.000	.000	.000	.000	.500	.500	.000	.000	.609	.609	.641

Wilson Okamoto Corporation

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

Counted By:PA
Counters:D4-5677
Weather:Clear

File Name : Kewalo Basin Driveways West and East PM
Site Code : 00000004
Start Date : 3/10/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Westbound	Kewalo Basin Driveway (East) Northbound					Ala Moana Boulevard Right = RT Into Kewalo Basin Driveway (West) Eastbound					
Start Time	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	0	0	0	0	3	0	3	0	0	18	0	18	21
03:15 PM	0	0	0	0	2	0	2	0	0	8	0	8	10
03:30 PM	0	0	0	0	2	0	2	0	0	17	0	17	19
03:45 PM	0	0	0	0	1	0	1	0	0	18	0	18	19
Total	0	0	0	0	8	0	8	0	0	61	0	61	69
04:00 PM	0	0	0	0	1	0	1	0	0	13	0	13	14
04:15 PM	0	0	0	0	0	0	0	0	0	8	0	8	8
04:30 PM	0	0	0	0	1	0	1	0	0	22	0	22	23
04:45 PM	0	0	0	0	0	0	0	0	0	8	0	8	8
Total	0	0	0	0	2	0	2	0	0	51	0	51	53
05:00 PM	0	0	0	0	1	0	1	0	0	8	0	8	9
05:15 PM	0	0	0	0	0	0	0	0	0	11	0	11	11
05:30 PM	0	0	0	0	0	0	0	0	0	11	0	11	11
05:45 PM	0	0	0	0	2	0	2	0	0	10	0	10	12
Total	0	0	0	0	3	0	3	0	0	40	0	40	43
Grand Total	0	0	0	0	13	0	13	0	0	152	0	152	165
Apprch %			0	0	100	0		0	0	100	0		
Total %	0	0	0	0	7.9	0	7.9	0	0	92.1	0	92.1	

	Southbound	Westbound	Kewalo Basin Driveway (East) Northbound				Ala Moana Boulevard Right = RT Into Kewalo Basin Driveway (West) Eastbound				
Start Time	App. Total	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 03:00 PM											
03:00 PM	0	0	0	0	**3**	**3**	0	0	**18**	**18**	**21**
03:15 PM	0	0	0	0	2	2	0	0	8	8	10
03:30 PM	0	0	0	0	2	2	0	0	17	17	19
03:45 PM	0	0	0	0	1	1	0	0	18	18	19
Total Volume	0	0	0	0	8	8	0	0	61	61	69
% App. Total			0	0	100		0	0	100		
PHF	.000	.000	.000	.000	.667	.667	.000	.000	.847	.847	.821

Wilson Okamoto Corporation

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

Counted By:DY, JC
Counters:TU-0654, TU-0653
Weather:Clear

File Name : Kewalo Basin Entrance AM
Site Code : 00000000
Start Date : 3/10/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Ala Moana Boulevard Westbound					Kewalo Basin Entrance Northbound					Ala Moana Boulevard Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	173	0	0	173	2	0	3	2	7	0	200	10	0	210	390
06:15 AM	0	0	227	0	0	227	2	0	1	1	4	0	270	9	0	279	510
06:30 AM	0	0	282	0	0	282	3	0	3	3	9	0	290	12	0	302	593
06:45 AM	0	0	336	0	0	336	2	0	3	7	12	0	403	10	3	416	764
Total	0	0	1018	0	0	1018	9	0	10	13	32	0	1163	41	3	1207	2257
07:00 AM	0	0	405	0	0	405	10	0	4	6	20	0	390	5	1	396	821
07:15 AM	0	0	457	0	0	457	5	0	5	10	20	0	378	2	0	380	857
07:30 AM	0	0	436	0	0	436	5	0	5	7	17	0	391	4	0	395	848
07:45 AM	0	0	387	0	0	387	5	1	6	12	24	0	375	8	0	383	794
Total	0	0	1685	0	0	1685	25	1	20	35	81	0	1534	19	1	1554	3320
08:00 AM	0	0	447	0	0	447	4	0	4	6	14	0	371	4	0	375	836
08:15 AM	0	0	411	0	0	411	7	0	4	12	23	0	349	4	0	353	787
08:30 AM	0	1	389	0	0	390	4	0	7	6	17	0	350	4	1	355	762
08:45 AM	0	0	304	0	0	304	6	0	4	5	15	0	326	12	1	339	658
Total	0	1	1551	0	0	1552	21	0	19	29	69	0	1396	24	2	1422	3043
Grand Total	0	1	4254	0	0	4255	55	1	49	77	182	0	4093	84	6	4183	8620
Apprch %		0	100	0	0		30.2	0.5	26.9	42.3		0	97.8	2	0.1		
Total %	0	0	49.4	0	0	49.4	0.6	0	0.6	0.9	2.1	0	47.5	1	0.1	48.5	

	Southbound	Ala Moana Boulevard Westbound				Kewalo Basin Entrance Northbound				Ala Moana Boulevard Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:15 AM														
07:15 AM	0	0	**457**	0	**457**	**5**	0	5	10	0	378	2	380	**847**
07:30 AM	0	0	436	0	436	5	0	5	10	0	**391**	4	**395**	841
07:45 AM	0	0	387	0	387	5	**1**	**6**	**12**	0	375	**8**	383	782
08:00 AM	0	0	447	0	447	4	0	4	8	0	371	4	375	830
Total Volume	0	0	1727	0	1727	19	1	20	40	0	1515	18	1533	3300
% App. Total		0	100	0		47.5	2.5	50		0	98.8	1.2		
PHF	.000	.000	.945	.000	.945	.950	.250	.833	.833	.000	.969	.563	.970	.974

Wilson Okamoto Corporation

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

Counted By:DY, CY
Counters:TU-0653, TU-0654
Weather:Clear

File Name : Kewalo Basin Entrance PM
Site Code : 00000002
Start Date : 3/10/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Ala Moana Boulevard Westbound					Kewalo Basin Driveway Northbound					Ala Moana Boulevard Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	0	0	368	0	0	368	8	0	8	8	24	0	400	7	0	407	799
03:15 PM	0	0	316	0	0	316	9	0	15	9	33	0	387	6	2	395	744
03:30 PM	0	0	427	0	0	427	20	0	13	4	37	0	477	7	1	485	949
03:45 PM	0	0	398	0	0	398	10	0	11	3	24	0	460	6	1	467	889
Total	0	0	1509	0	0	1509	47	0	47	24	118	0	1724	26	4	1754	3381
04:00 PM	0	0	359	0	0	359	20	0	10	5	35	0	518	12	1	531	925
04:15 PM	0	0	402	0	0	402	7	0	20	6	33	0	551	5	2	558	993
04:30 PM	0	0	342	0	0	342	1	0	6	1	8	0	511	7	0	518	868
04:45 PM	0	0	348	0	0	348	5	0	9	4	18	0	546	5	0	551	917
Total	0	0	1451	0	0	1451	33	0	45	16	94	0	2126	29	3	2158	3703
05:00 PM	0	0	304	0	0	304	5	0	8	18	31	0	536	8	0	544	879
05:15 PM	0	0	368	0	0	368	5	0	15	15	35	0	515	7	0	522	925
05:30 PM	0	0	340	0	0	340	5	0	10	22	37	0	555	6	0	561	938
05:45 PM	0	0	310	0	0	310	7	0	10	17	34	0	514	6	0	520	864
Total	0	0	1322	0	0	1322	22	0	43	72	137	0	2120	27	0	2147	3606
Grand Total	0	0	4282	0	0	4282	102	0	135	112	349	0	5970	82	7	6059	10690
Apprch %		0	100	0	0		29.2	0	38.7	32.1		0	98.5	1.4	0.1		
Total %	0	0	40.1	0	0	40.1	1	0	1.3	1	3.3	0	55.8	0.8	0.1	56.7	

	Southbound	Ala Moana Boulevard Westbound				Kewalo Basin Driveway Northbound				Ala Moana Boulevard Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 03:30 PM														
03:30 PM	0	0	**427**	0	**427**	**20**	0	13	**33**	0	477	7	484	944
03:45 PM	0	0	398	0	398	10	0	11	21	0	460	6	466	885
04:00 PM	0	0	359	0	359	20	0	10	30	0	518	**12**	530	919
04:15 PM	0	0	402	0	402	7	0	**20**	27	0	**551**	5	**556**	**985**
Total Volume	0	0	1586	0	1586	57	0	54	111	0	2006	30	2036	3733
% App. Total		0	100	0		51.4	0	48.6		0	98.5	1.5		
PHF	.000	.000	.929	.000	.929	.713	.000	.675	.841	.000	.910	.625	.915	.947

Wilson Okamoto Corporation

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

Counted By:KC, CC
Counters:TU-0650, TU-0651
Weather:Clear

File Name : AlaKam AM
Site Code : 00000002
Start Date : 4/13/2016
Page No : 1

Groups Printed- Unshifted

	Kamakee Street Southbound					Ala Moana Boulevard Westbound					Kamakee Street Northbound					Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	4	4	12	32	52	1	167	4	40	212	0	0	1	14	15	13	256	25	0	294	573
06:15 AM	3	11	15	38	67	0	215	6	55	276	3	2	0	32	37	22	267	18	0	307	687
06:30 AM	10	3	16	34	63	0	293	8	41	342	4	3	2	16	25	17	298	16	0	331	761
06:45 AM	3	6	29	16	54	4	310	12	19	345	8	6	0	5	19	17	331	15	0	363	781
Total	20	24	72	120	236	5	985	30	155	1175	15	11	3	67	96	69	1152	74	0	1295	2802
07:00 AM	5	1	25	12	43	2	373	7	13	395	10	2	1	4	17	16	356	21	0	393	848
07:15 AM	3	6	20	7	36	3	429	7	14	453	18	4	3	3	28	17	345	15	0	377	894
07:30 AM	3	7	40	4	54	1	386	11	11	409	12	5	2	5	24	15	364	20	0	399	886
07:45 AM	2	10	31	6	49	9	430	13	12	464	9	8	1	6	24	18	330	20	0	368	905
Total	13	24	116	29	182	15	1618	38	50	1721	49	19	7	18	93	66	1395	76	0	1537	3533
08:00 AM	1	5	29	4	39	2	399	31	15	447	8	9	1	7	25	17	358	21	0	396	907
08:15 AM	2	8	30	3	43	2	369	12	10	393	14	8	4	7	33	19	347	31	0	397	866
08:30 AM	1	6	29	8	44	2	266	15	9	292	20	10	5	7	42	19	269	23	0	311	689
08:45 AM	3	5	21	8	37	0	293	11	7	311	16	3	4	4	27	17	306	25	0	348	723
Total	7	24	109	23	163	6	1327	69	41	1443	58	30	14	25	127	72	1280	100	0	1452	3185
Grand Total	40	72	297	172	581	26	3930	137	246	4339	122	60	24	110	316	207	3827	250	0	4284	9520
Apprch %	6.9	12.4	51.1	29.6		0.6	90.6	3.2	5.7		38.6	19	7.6	34.8		4.8	89.3	5.8	0		
Total %	0.4	0.8	3.1	1.8	6.1	0.3	41.3	1.4	2.6	45.6	1.3	0.6	0.3	1.2	3.3	2.2	40.2	2.6	0	45	

	Kamakee Street Southbound				Ala Moana Boulevard Westbound				Kamakee Street Northbound				Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**3**	6	20	29	3	429	7	439	**18**	4	**3**	**25**	17	345	15	377	870
07:30 AM	3	7	**40**	**50**	1	386	11	398	12	5	2	19	15	**364**	20	**399**	866
07:45 AM	2	**10**	31	43	**9**	**430**	13	**452**	9	8	1	18	**18**	330	20	368	**881**
08:00 AM	1	5	29	35	2	399	**31**	432	8	**9**	1	18	17	358	**21**	396	881
Total Volume	9	28	120	157	15	1644	62	1721	47	26	7	80	67	1397	76	1540	3498
% App. Total	5.7	17.8	76.4		0.9	95.5	3.6		58.8	32.5	8.8		4.4	90.7	4.9		
PHF	.750	.700	.750	.785	.417	.956	.500	.952	.653	.722	.583	.800	.931	.959	.905	.965	.993

Wilson Okamoto Corporation

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

Counted By:CC, KC
Counters:TU-0650, TU-0651
Weather:Clear

File Name : AlaKam PM
Site Code : 00000002
Start Date : 4/13/2016
Page No : 1

Groups Printed- Unshifted

	Kamakee Street Southbound					Ala Moana Boulevard Westbound					Ala Moana Park Drive Northbound					Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	4	6	36	21	67	4	321	15	29	369	16	5	7	15	43	19	340	20	0	379	858
03:15 PM	3	11	32	31	77	5	372	21	18	416	10	2	4	13	29	6	440	19	0	465	987
03:30 PM	12	7	43	42	104	4	355	18	61	438	13	5	2	46	66	21	418	37	0	476	1084
03:45 PM	11	18	40	15	84	2	375	17	12	406	26	13	3	5	47	25	408	29	0	462	999
Total	30	42	151	109	332	15	1423	71	120	1629	65	25	16	79	185	71	1606	105	0	1782	3928
04:00 PM	11	23	32	9	75	4	318	21	25	368	13	14	6	11	44	15	524	35	0	574	1061
04:15 PM	8	9	34	11	62	3	376	21	13	413	12	11	3	7	33	15	487	36	0	538	1046
04:30 PM	11	7	27	7	52	9	337	16	11	373	21	18	4	12	55	17	399	28	0	444	924
04:45 PM	14	14	26	11	65	5	314	20	16	355	28	6	4	17	55	14	439	25	0	478	953
Total	44	53	119	38	254	21	1345	78	65	1509	74	49	17	47	187	61	1849	124	0	2034	3984
05:00 PM	17	12	35	12	76	5	287	15	12	319	18	10	11	14	53	17	446	34	0	497	945
05:15 PM	15	16	37	14	82	5	311	38	9	363	16	9	8	10	43	19	444	40	0	503	991
05:30 PM	12	9	37	8	66	3	284	20	24	331	7	11	10	23	51	17	406	27	0	450	898
05:45 PM	9	7	33	13	62	4	298	20	14	336	17	8	6	8	39	14	472	28	0	514	951
Total	53	44	142	47	286	17	1180	93	59	1349	58	38	35	55	186	67	1768	129	0	1964	3785
Grand Total	127	139	412	194	872	53	3948	242	244	4487	197	112	68	181	558	199	5223	358	0	5780	11697
Apprch %	14.6	15.9	47.2	22.2		1.2	88	5.4	5.4		35.3	20.1	12.2	32.4		3.4	90.4	6.2	0		
Total %	1.1	1.2	3.5	1.7	7.5	0.5	33.8	2.1	2.1	38.4	1.7	1	0.6	1.5	4.8	1.7	44.7	3.1	0	49.4	

	Kamakee Street Southbound				Ala Moana Boulevard Westbound				Ala Moana Park Drive Northbound				Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	**12**	7	**43**	62	**4**	355	18	377	13	5	2	20	21	418	**37**	476	935
03:45 PM	11	18	40	**69**	2	375	17	394	**26**	13	3	**42**	**25**	408	29	462	967
04:00 PM	11	**23**	32	66	4	318	**21**	343	13	**14**	**6**	33	15	**524**	35	**574**	**1016**
04:15 PM	8	9	34	51	3	**376**	21	**400**	12	11	3	26	15	487	36	538	1015
Total Volume	42	57	149	248	13	1424	77	1514	64	43	14	121	76	1837	137	2050	3933
% App. Total	16.9	23	60.1		0.9	94.1	5.1		52.9	35.5	11.6		3.7	89.6	6.7		
PHF	.875	.620	.866	.899	.813	.947	.917	.946	.615	.768	.583	.720	.760	.876	.926	.893	.968

Wilson Okamoto Corporation

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

Counted By:GC, KW
Counters:D4-5675, D4-5676
Weather:Clear

File Name : AlaKam AM
Site Code : 00000001
Start Date : 3/10/2015
Page No : 1

Groups Printed- Unshifted

	Kamakee Street Southbound					Ala Moana Boulevard Westbound					Ala Moana Park Drive Northbound					Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	2	3	9	1	15	2	160	4	8	174	4	0	1	4	9	7	175	24	0	206	404
06:15 AM	4	8	4	20	36	1	215	3	23	242	3	1	2	3	9	6	241	25	0	272	559
06:30 AM	3	8	11	12	34	3	267	5	20	295	3	4	1	7	15	42	231	23	0	296	640
06:45 AM	3	6	12	14	35	1	309	5	21	336	9	4	2	2	17	9	371	15	0	395	783
Total	12	25	36	47	120	7	951	17	72	1047	19	9	6	16	50	64	1018	87	0	1169	2386
07:00 AM	4	6	12	4	26	2	377	4	12	395	13	4	0	4	21	16	361	19	0	396	838
07:15 AM	1	6	17	3	27	3	423	12	13	451	15	5	5	9	34	11	363	13	0	387	899
07:30 AM	7	12	19	3	41	5	411	13	12	441	5	8	2	10	25	17	369	15	0	401	908
07:45 AM	2	8	15	10	35	2	382	13	17	414	11	8	5	17	41	14	346	16	0	376	866
Total	14	32	63	20	129	12	1593	42	54	1701	44	25	12	40	121	58	1439	63	0	1560	3511
08:00 AM	3	8	29	4	44	3	420	11	12	446	11	6	1	7	25	11	345	26	0	382	897
08:15 AM	4	7	15	4	30	3	367	13	11	394	19	5	3	6	33	19	321	17	0	357	814
08:30 AM	10	4	17	0	31	5	333	5	16	359	22	4	1	10	37	13	329	14	0	356	783
08:45 AM	5	16	15	2	38	4	281	10	7	302	13	6	5	9	33	14	300	19	0	333	706
Total	22	35	76	10	143	15	1401	39	46	1501	65	21	10	32	128	57	1295	76	0	1428	3200
Grand Total	48	92	175	77	392	34	3945	98	172	4249	128	55	28	88	299	179	3752	226	0	4157	9097
Apprch %	12.2	23.5	44.6	19.6		0.8	92.8	2.3	4		42.8	18.4	9.4	29.4		4.3	90.3	5.4	0		
Total %	0.5	1	1.9	0.8	4.3	0.4	43.4	1.1	1.9	46.7	1.4	0.6	0.3	1	3.3	2	41.2	2.5	0	45.7	

	Kamakee Street Southbound				Ala Moana Boulevard Westbound				Ala Moana Park Drive Northbound				Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	6	17	24	3	**423**	12	**438**	**15**	5	**5**	**25**	11	363	13	387	874
07:30 AM	**7**	**12**	19	38	**5**	411	**13**	429	5	**8**	2	15	**17**	**369**	15	**401**	**883**
07:45 AM	2	8	15	25	2	382	13	397	11	8	5	24	14	346	16	376	822
08:00 AM	3	8	**29**	**40**	3	420	11	434	11	6	1	18	11	345	**26**	382	874
Total Volume	13	34	80	127	13	1636	49	1698	42	27	13	82	53	1423	70	1546	3453
% App. Total	10.2	26.8	63		0.8	96.3	2.9		51.2	32.9	15.9		3.4	92	4.5		
PHF	.464	.708	.690	.794	.650	.967	.942	.969	.700	.844	.650	.820	.779	.964	.673	.964	.978

Wilson Okamoto Corporation

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

Counted By:GC, KW
Counters:D4-5675, D4-5676
Weather:Clear

File Name : AlaKam PM
Site Code : 00000001
Start Date : 3/10/2015
Page No : 1

Groups Printed- Unshifted

	Kamakee Street Southbound					Ala Moana Boulevard Westbound					Ala Moana Park Drive Northbound					Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	7	6	6	7	26	4	340	12	19	375	18	6	4	13	41	9	379	18	0	406	848
03:15 PM	12	23	30	6	71	3	269	16	28	316	16	13	7	5	41	16	364	22	0	402	830
03:30 PM	13	8	30	27	78	2	365	19	37	423	29	14	6	13	62	16	453	17	0	486	1049
03:45 PM	8	19	21	15	63	6	367	28	28	429	9	6	7	7	29	22	413	32	0	467	988
Total	40	56	87	55	238	15	1341	75	112	1543	72	39	24	38	173	63	1609	89	0	1761	3715
04:00 PM	10	21	28	7	66	1	307	16	30	354	13	9	7	10	39	23	465	34	0	522	981
04:15 PM	15	11	15	1	42	8	364	22	27	421	17	7	7	10	41	12	506	48	0	566	1070
04:30 PM	13	11	17	10	51	1	316	11	23	351	22	7	3	5	37	22	457	37	0	516	955
04:45 PM	19	21	36	3	79	4	313	24	20	361	12	13	5	5	35	13	494	50	0	557	1032
Total	57	64	96	21	238	14	1300	73	100	1487	64	36	22	30	152	70	1922	169	0	2161	4038
05:00 PM	11	18	19	3	51	8	270	26	26	330	11	10	11	22	54	14	478	49	0	541	976
05:15 PM	16	18	39	6	79	6	317	18	20	361	14	12	9	17	52	16	467	44	0	527	1019
05:30 PM	13	27	32	29	101	5	277	29	38	349	33	19	3	22	77	21	495	47	0	563	1090
05:45 PM	16	20	22	12	70	6	260	16	16	298	25	11	9	21	66	24	448	51	0	523	957
Total	56	83	112	50	301	25	1124	89	100	1338	83	52	32	82	249	75	1888	191	0	2154	4042
Grand Total	153	203	295	126	777	54	3765	237	312	4368	219	127	78	150	574	208	5419	449	0	6076	11795
Apprch %	19.7	26.1	38	16.2		1.2	86.2	5.4	7.1		38.2	22.1	13.6	26.1		3.4	89.2	7.4	0		
Total %	1.3	1.7	2.5	1.1	6.6	0.5	31.9	2	2.6	37	1.9	1.1	0.7	1.3	4.9	1.8	45.9	3.8	0	51.5	

	Kamakee Street Southbound				Ala Moana Boulevard Westbound				Ala Moana Park Drive Northbound				Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**19**	21	36	**76**	4	313	24	**341**	12	13	5	30	13	494	**50**	557	**1004**
05:00 PM	11	18	19	48	**8**	270	26	304	11	10	**11**	32	14	478	49	541	925
05:15 PM	16	18	**39**	73	6	**317**	18	341	14	12	9	35	16	467	44	527	976
05:30 PM	13	**27**	32	72	5	277	**29**	311	**33**	**19**	3	**55**	**21**	**495**	47	**563**	1001
Total Volume	59	84	126	269	23	1177	97	1297	70	54	28	152	64	1934	190	2188	3906
% App. Total	21.9	31.2	46.8		1.8	90.7	7.5		46.1	35.5	18.4		2.9	88.4	8.7		
PHF	.776	.778	.808	.885	.719	.928	.836	.951	.530	.711	.636	.691	.762	.977	.950	.972	.973

Wilson Okamoto Corporation

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

Counted By:RJ, JJ
Counters:D4-5671, D4-5674
Weather:Clear

File Name : QueAla AM
Site Code : 00000003
Start Date : 3/10/2015
Page No : 1

Groups Printed- Unshifted

	Queen Street Southbound					Ala Moana Boulevard Westbound					Northbound	Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	3	0	1	3	7	0	168	9	0	177	0	3	176	0	3	182	366
06:15 AM	3	0	1	3	7	0	224	12	0	236	0	1	263	0	7	271	514
06:30 AM	3	0	3	6	12	0	272	12	0	284	0	0	237	0	4	241	537
06:45 AM	6	0	3	3	12	0	315	16	0	331	0	1	355	0	7	363	706
Total	15	0	8	15	38	0	979	49	0	1028	0	5	1031	0	21	1057	2123
07:00 AM	10	0	3	2	15	0	374	21	0	395	0	3	359	0	7	369	779
07:15 AM	7	0	3	6	16	0	442	35	0	477	0	3	372	0	9	384	877
07:30 AM	8	0	3	9	20	0	432	29	0	461	0	4	378	0	14	396	877
07:45 AM	10	0	7	2	19	0	395	34	0	429	0	5	347	0	14	366	814
Total	35	0	16	19	70	0	1643	119	0	1762	0	15	1456	0	44	1515	3347
08:00 AM	18	0	6	8	32	0	425	35	0	460	0	3	349	0	10	362	854
08:15 AM	10	0	6	18	34	0	375	30	0	405	0	2	334	0	14	350	789
08:30 AM	12	0	9	6	27	0	331	32	0	363	0	5	329	0	9	343	733
08:45 AM	19	0	4	7	30	0	312	32	0	344	0	6	318	0	2	326	700
Total	59	0	25	39	123	0	1443	129	0	1572	0	16	1330	0	35	1381	3076
Grand Total	109	0	49	73	231	0	4065	297	0	4362	0	36	3817	0	100	3953	8546
Apprch %	47.2	0	21.2	31.6		0	93.2	6.8	0			0.9	96.6	0	2.5		
Total %	1.3	0	0.6	0.9	2.7	0	47.6	3.5	0	51	0	0.4	44.7	0	1.2	46.3	

	Queen Street Southbound				Ala Moana Boulevard Westbound				Northbound	Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:15 AM														
07:15 AM	7	0	3	10	0	**442**	**35**	**477**	0	3	372	0	375	**862**
07:30 AM	8	0	3	11	0	432	29	461	0	4	**378**	0	**382**	854
07:45 AM	10	0	**7**	17	0	395	34	429	0	**5**	347	0	352	798
08:00 AM	**18**	0	6	**24**	0	425	35	460	0	3	349	0	352	836
Total Volume	43	0	19	62	0	1694	133	1827	0	15	1446	0	1461	3350
% App. Total	69.4	0	30.6		0	92.7	7.3			1	99	0		
PHF	.597	.000	.679	.646	.000	.958	.950	.958	.000	.750	.956	.000	.956	.972

Wilson Okamoto Corporation

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

Counted By:RJ, JJ
Counters:D4-5671, D4-5674
Weather:Clear

File Name : QueAla PM
Site Code : 00000003
Start Date : 3/10/2015
Page No : 1

Groups Printed- Unshifted

	Queen Street Southbound					Ala Moana Boulevard Westbound					Northbound	Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	47	0	20	17	84	0	308	39	0	347	0	7	378	0	8	393	824
03:15 PM	31	0	9	14	54	0	294	38	0	332	0	4	384	0	23	411	797
03:30 PM	37	0	11	20	68	0	377	47	0	424	0	13	462	0	10	485	977
03:45 PM	46	0	19	4	69	0	366	40	0	406	0	11	418	0	9	438	913
Total	161	0	59	55	275	0	1345	164	0	1509	0	35	1642	0	50	1727	3511
04:00 PM	32	0	6	14	52	0	379	46	0	425	0	8	497	0	18	523	1000
04:15 PM	40	0	8	9	57	0	339	48	0	387	0	6	495	0	14	515	959
04:30 PM	41	0	6	13	60	0	313	47	0	360	0	4	466	0	13	483	903
04:45 PM	29	0	13	12	54	0	360	49	0	409	0	8	524	0	17	549	1012
Total	142	0	33	48	223	0	1391	190	0	1581	0	26	1982	0	62	2070	3874
05:00 PM	45	0	8	6	59	0	275	40	0	315	0	9	465	0	17	491	865
05:15 PM	67	0	12	13	92	0	334	56	0	390	0	8	497	0	21	526	1008
05:30 PM	43	0	16	21	80	0	316	71	0	387	0	3	522	0	12	537	1004
05:45 PM	42	0	4	33	79	0	261	39	0	300	0	10	459	0	52	521	900
Total	197	0	40	73	310	0	1186	206	0	1392	0	30	1943	0	102	2075	3777
Grand Total	500	0	132	176	808	0	3922	560	0	4482	0	91	5567	0	214	5872	11162
Apprch %	61.9	0	16.3	21.8		0	87.5	12.5	0			1.5	94.8	0	3.6		
Total %	4.5	0	1.2	1.6	7.2	0	35.1	5	0	40.2	0	0.8	49.9	0	1.9	52.6	

	Queen Street Southbound				Ala Moana Boulevard Westbound				Northbound	Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 04:45 PM														
04:45 PM	29	0	13	42	0	**360**	49	**409**	0	8	**524**	0	**532**	**983**
05:00 PM	45	0	8	53	0	275	40	315	0	**9**	465	0	474	842
05:15 PM	**67**	0	12	**79**	0	334	56	390	0	8	497	0	505	974
05:30 PM	43	0	**16**	59	0	316	**71**	387	0	3	522	0	525	971
Total Volume	184	0	49	233	0	1285	216	1501	0	28	2008	0	2036	3770
% App. Total	79	0	21		0	85.6	14.4			1.4	98.6	0		
PHF	.687	.000	.766	.737	.000	.892	.761	.917	.000	.778	.958	.000	.957	.959

Wilson Okamoto Corporation

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

Counted By:AC,DM,FS
Counters:D4-3888, D4-3889, D4-3890
Weather:Clear

File Name : PiiAla AM
Site Code : 00000006
Start Date : 3/10/2015
Page No : 1

Groups Printed- Unshifted

	Piikoi Street Southbound					Ala Moana Boulevard Westbound					Northbound	Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	12	0	8	2	22	0	174	57	9	240	0	45	132	0	0	177	439
06:15 AM	14	0	21	2	37	0	207	65	24	296	0	54	222	0	0	276	609
06:30 AM	29	0	12	3	44	0	274	69	34	377	0	53	182	0	0	235	656
06:45 AM	24	0	25	2	51	0	304	72	15	391	0	80	273	0	0	353	795
Total	79	0	66	9	154	0	959	263	82	1304	0	232	809	0	0	1041	2499
07:00 AM	20	0	31	2	53	0	361	65	22	448	0	98	279	0	0	377	878
07:15 AM	27	0	21	1	49	0	451	92	6	549	0	83	289	0	0	372	970
07:30 AM	46	0	37	2	85	0	431	72	16	519	0	90	300	0	0	390	994
07:45 AM	33	0	37	2	72	0	389	78	6	473	0	110	255	0	0	365	910
Total	126	0	126	7	259	0	1632	307	50	1989	0	381	1123	0	0	1504	3752
08:00 AM	26	0	32	4	62	0	423	83	11	517	0	80	264	0	0	344	923
08:15 AM	24	0	34	0	58	0	368	62	8	438	0	84	254	0	0	338	834
08:30 AM	27	0	29	6	62	0	329	56	14	399	0	108	253	0	0	361	822
08:45 AM	28	0	29	0	57	0	315	59	10	384	0	87	269	0	0	356	797
Total	105	0	124	10	239	0	1435	260	43	1738	0	359	1040	0	0	1399	3376
Grand Total	310	0	316	26	652	0	4026	830	175	5031	0	972	2972	0	0	3944	9627
Apprch %	47.5	0	48.5	4		0	80	16.5	3.5			24.6	75.4	0	0		
Total %	3.2	0	3.3	0.3	6.8	0	41.8	8.6	1.8	52.3	0	10.1	30.9	0	0	41	

	Piikoi Street Southbound				Ala Moana Boulevard Westbound				Northbound	Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:15 AM														
07:15 AM	27	0	21	48	0	**451**	**92**	**543**	0	83	289	0	372	963
07:30 AM	**46**	0	**37**	**83**	0	431	72	503	0	90	**300**	0	**390**	**976**
07:45 AM	33	0	37	70	0	389	78	467	0	**110**	255	0	365	902
08:00 AM	26	0	32	58	0	423	83	506	0	80	264	0	344	908
Total Volume	132	0	127	259	0	1694	325	2019	0	363	1108	0	1471	3749
% App. Total	51	0	49		0	83.9	16.1			24.7	75.3	0		
PHF	.717	.000	.858	.780	.000	.939	.883	.930	.000	.825	.923	.000	.943	.960

Wilson Okamoto Corporation

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

Counted By:JC, AC, DM
Counters:D4-3889, D4-3890, D4-3888
Weather:Clear

File Name : PiiAla PM
Site Code : 00000006
Start Date : 3/10/2015
Page No : 1

Groups Printed- Unshifted

	Piikoi Street Southbound					Ala Moana Boulevard Westbound					Northbound	Ala Moana Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	55	0	59	32	146	0	278	59	13	350	0	88	332	0	0	420	916
03:15 PM	55	0	60	26	141	0	283	75	7	365	0	80	346	0	0	426	932
03:30 PM	57	0	58	30	145	0	361	74	18	453	0	67	416	0	0	483	1081
03:45 PM	53	0	50	29	132	0	355	80	2	437	0	82	403	0	0	485	1054
Total	220	0	227	117	564	0	1277	288	40	1605	0	317	1497	0	0	1814	3983
04:00 PM	43	0	50	16	109	0	369	85	9	463	0	72	445	0	0	517	1089
04:15 PM	58	0	55	17	130	0	330	99	2	431	0	96	447	0	0	543	1104
04:30 PM	47	0	33	26	106	0	325	38	5	368	0	80	414	0	0	494	968
04:45 PM	49	0	43	17	109	0	360	71	12	443	0	63	509	0	0	572	1124
Total	197	0	181	76	454	0	1384	293	28	1705	0	311	1815	0	0	2126	4285
05:00 PM	65	0	40	23	128	0	272	67	10	349	0	90	423	0	0	513	990
05:15 PM	81	0	67	39	187	0	325	64	51	440	0	83	477	0	0	560	1187
05:30 PM	50	0	44	37	131	0	350	102	29	481	0	82	487	0	0	569	1181
05:45 PM	65	0	52	40	157	0	251	88	38	377	0	84	436	0	0	520	1054
Total	261	0	203	139	603	0	1198	321	128	1647	0	339	1823	0	0	2162	4412
Grand Total	678	0	611	332	1621	0	3859	902	196	4957	0	967	5135	0	0	6102	12680
Apprch %	41.8	0	37.7	20.5		0	77.8	18.2	4			15.8	84.2	0	0		
Total %	5.3	0	4.8	2.6	12.8	0	30.4	7.1	1.5	39.1	0	7.6	40.5	0	0	48.1	

	Piikoi Street Southbound				Ala Moana Boulevard Westbound				Northbound	Ala Moana Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 04:45 PM														
04:45 PM	49	0	43	92	0	**360**	71	431	0	63	**509**	0	**572**	1095
05:00 PM	65	0	40	105	0	272	67	339	0	**90**	423	0	513	957
05:15 PM	**81**	0	**67**	**148**	0	325	64	389	0	83	477	0	560	1097
05:30 PM	50	0	44	94	0	350	**102**	**452**	0	82	487	0	569	**1115**
Total Volume	245	0	194	439	0	1307	304	1611	0	318	1896	0	2214	4264
% App. Total	55.8	0	44.2		0	81.1	18.9			14.4	85.6	0		
PHF	.756	.000	.724	.742	.000	.908	.745	.891	.000	.883	.931	.000	.968	.956

Wilson Okamoto Corporation

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

Counted By:DY, JC
Counters:D4-5677, D4-3889
Weather:Clear

File Name : KamQue AM
Site Code : 00000005
Start Date : 3/11/2015
Page No : 1

Groups Printed- Unshifted

	Kamakee Street Southbound					Queen Street Westbound					Kamakee Street Northbound					Queen Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	4	20	7	1	32	15	15	2	5	37	2	8	1	0	11	3	17	1	7	28	108
06:15 AM	1	18	9	6	34	6	22	3	3	34	1	7	4	2	14	2	8	1	7	18	100
06:30 AM	6	37	17	6	66	8	25	3	0	36	1	4	3	0	8	4	13	3	9	29	139
06:45 AM	5	17	17	7	46	17	38	3	3	61	3	9	6	1	19	6	16	1	8	31	157
Total	16	92	50	20	178	46	100	11	11	168	7	28	14	3	52	15	54	6	31	106	504
07:00 AM	5	26	15	12	58	13	37	3	2	55	2	7	9	1	19	3	17	3	4	27	159
07:15 AM	6	43	13	5	67	31	63	7	6	107	2	7	7	1	17	4	19	5	6	34	225
07:30 AM	2	38	33	6	79	37	50	4	4	95	5	18	8	1	32	9	22	2	21	54	260
07:45 AM	5	40	32	8	85	42	76	8	3	129	3	15	10	1	29	5	25	1	8	39	282
Total	18	147	93	31	289	123	226	22	15	386	12	47	34	4	97	21	83	11	39	154	926
08:00 AM	6	48	19	5	78	43	60	9	3	115	3	27	6	0	36	8	34	1	12	55	284
08:15 AM	5	45	15	4	69	38	59	4	4	105	1	19	12	7	39	6	32	3	19	60	273
08:30 AM	6	35	15	3	59	32	58	9	5	104	2	23	2	1	28	4	33	4	15	56	247
08:45 AM	12	36	22	10	80	28	56	4	9	97	3	17	8	5	33	11	35	3	10	59	269
Total	29	164	71	22	286	141	233	26	21	421	9	86	28	13	136	29	134	11	56	230	1073
Grand Total	63	403	214	73	753	310	559	59	47	975	28	161	76	20	285	65	271	28	126	490	2503
Apprch %	8.4	53.5	28.4	9.7		31.8	57.3	6.1	4.8		9.8	56.5	26.7	7		13.3	55.3	5.7	25.7		
Total %	2.5	16.1	8.5	2.9	30.1	12.4	22.3	2.4	1.9	39	1.1	6.4	3	0.8	11.4	2.6	10.8	1.1	5	19.6	

	Kamakee Street Southbound				Queen Street Westbound				Kamakee Street Northbound				Queen Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	2	38	**33**	73	37	50	4	91	**5**	18	8	31	**9**	22	2	33	228
07:45 AM	5	40	32	**77**	42	**76**	8	**126**	3	15	10	28	5	25	1	31	262
08:00 AM	**6**	**48**	19	73	**43**	60	**9**	112	3	**27**	6	**36**	8	**34**	1	**43**	**264**
08:15 AM	5	45	15	65	38	59	4	101	1	19	**12**	32	6	32	**3**	41	239
Total Volume	18	171	99	288	160	245	25	430	12	79	36	127	28	113	7	148	993
% App. Total	6.2	59.4	34.4		37.2	57	5.8		9.4	62.2	28.3		18.9	76.4	4.7		
PHF	.750	.891	.750	.935	.930	.806	.694	.853	.600	.731	.750	.882	.778	.831	.583	.860	.940

Wilson Okamoto Corporation

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

Counted By:DY, JC
Counters:D4-3889, D4-5677
Weather:Clear

File Name : KamQue PM
Site Code : 00000005
Start Date : 3/11/2015
Page No : 1

Groups Printed- Unshifted

	Kamakee Street Southbound					Queen Street Westbound					Kamakee Street Northbound					Queen Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	12	46	18	9	85	44	62	17	13	136	4	23	17	7	51	17	44	9	29	99	371
03:15 PM	5	33	16	7	61	51	66	14	14	145	4	19	15	9	47	19	52	7	24	102	355
03:30 PM	16	27	17	10	70	48	100	14	13	175	5	38	13	5	61	22	70	4	24	120	426
03:45 PM	8	28	15	10	61	47	76	9	10	142	8	37	10	6	61	25	57	6	25	113	377
Total	41	134	66	36	277	190	304	54	50	598	21	117	55	27	220	83	223	26	102	434	1529
04:00 PM	9	31	17	7	64	48	64	15	14	141	4	21	16	15	56	21	57	6	25	109	370
04:15 PM	8	23	12	8	51	62	77	12	14	165	7	26	21	9	63	25	84	10	28	147	426
04:30 PM	9	27	15	20	71	51	81	9	11	152	9	32	14	9	64	26	92	13	36	167	454
04:45 PM	10	32	14	15	71	66	70	8	18	162	2	30	17	3	52	27	93	17	13	150	435
Total	36	113	58	50	257	227	292	44	57	620	22	109	68	36	235	99	326	46	102	573	1685
05:00 PM	17	30	11	17	75	59	79	11	20	169	5	33	11	5	54	16	83	7	39	145	443
05:15 PM	17	35	9	19	80	57	69	22	17	165	4	27	17	16	64	28	100	10	20	158	467
05:30 PM	16	42	17	9	84	40	54	22	9	125	6	27	13	12	58	34	83	9	44	170	437
05:45 PM	16	42	18	7	83	58	59	19	17	153	5	41	14	13	73	22	68	12	35	137	446
Total	66	149	55	52	322	214	261	74	63	612	20	128	55	46	249	100	334	38	138	610	1793
Grand Total	143	396	179	138	856	631	857	172	170	1830	63	354	178	109	704	282	883	110	342	1617	5007
Apprch %	16.7	46.3	20.9	16.1		34.5	46.8	9.4	9.3		8.9	50.3	25.3	15.5		17.4	54.6	6.8	21.2		
Total %	2.9	7.9	3.6	2.8	17.1	12.6	17.1	3.4	3.4	36.5	1.3	7.1	3.6	2.2	14.1	5.6	17.6	2.2	6.8	32.3	

	Kamakee Street Southbound				Queen Street Westbound				Kamakee Street Northbound				Queen Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	9	27	**15**	51	51	**81**	9	141	**9**	32	14	**55**	26	92	13	131	378
04:45 PM	10	32	14	56	**66**	70	8	144	2	30	**17**	49	27	93	**17**	137	386
05:00 PM	**17**	30	11	58	59	79	11	**149**	5	**33**	11	49	16	83	7	106	362
05:15 PM	17	**35**	9	**61**	57	69	**22**	148	4	27	17	48	**28**	**100**	10	**138**	**395**
Total Volume	53	124	49	226	233	299	50	582	20	122	59	201	97	368	47	512	1521
% App. Total	23.5	54.9	21.7		40	51.4	8.6		10	60.7	29.4		18.9	71.9	9.2		
PHF	.779	.886	.817	.926	.883	.923	.568	.977	.556	.924	.868	.914	.866	.920	.691	.928	.963

Wilson Okamoto Corporation

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

Counted By:AC, DM
Counters:TU-0650, TU-0652
Weather:Clear

File Name : QueQue AM
Site Code : 00000004
Start Date : 3/11/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Queen Street Westbound					Queen's Lane Northbound					Queen Street Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	7	29	0	0	36	3	0	0	2	5	0	14	0	0	14	55
06:15 AM	0	6	26	0	0	32	5	0	5	0	10	0	7	0	0	7	49
06:30 AM	0	3	31	0	0	34	5	0	5	2	12	0	13	1	0	14	60
06:45 AM	0	10	53	0	0	63	5	0	7	0	12	0	16	1	0	17	92
Total	0	26	139	0	0	165	18	0	17	4	39	0	50	2	0	52	256
07:00 AM	0	17	49	0	0	66	4	0	10	0	14	0	23	0	0	23	103
07:15 AM	0	13	91	0	0	104	11	0	14	4	29	0	29	0	0	29	162
07:30 AM	0	23	85	0	0	108	5	0	12	2	19	0	26	0	0	26	153
07:45 AM	0	20	119	0	0	139	8	0	13	2	23	0	42	2	2	46	208
Total	0	73	344	0	0	417	28	0	49	8	85	0	120	2	2	124	626
08:00 AM	0	29	103	0	0	132	6	0	17	1	24	0	41	1	0	42	198
08:15 AM	0	22	98	0	0	120	7	0	12	5	24	0	47	0	0	47	191
08:30 AM	0	22	97	0	0	119	2	0	25	6	33	0	41	0	0	41	193
08:45 AM	0	11	89	0	0	100	2	0	3	7	12	0	31	0	0	31	143
Total	0	84	387	0	0	471	17	0	57	19	93	0	160	1	0	161	725
Grand Total	0	183	870	0	0	1053	63	0	123	31	217	0	330	5	2	337	1607
Apprch %		17.4	82.6	0	0		29	0	56.7	14.3		0	97.9	1.5	0.6		
Total %	0	11.4	54.1	0	0	65.5	3.9	0	7.7	1.9	13.5	0	20.5	0.3	0.1	21	

	Southbound	Queen Street Westbound				Queen's Lane Northbound				Queen Street Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:45 AM														
07:45 AM	0	20	**119**	0	**139**	**8**	0	13	21	0	42	**2**	44	**204**
08:00 AM	0	**29**	103	0	132	6	0	17	23	0	41	1	42	197
08:15 AM	0	22	98	0	120	7	0	12	19	0	**47**	0	**47**	186
08:30 AM	0	22	97	0	119	2	0	**25**	**27**	0	41	0	41	187
Total Volume	0	93	417	0	510	23	0	67	90	0	171	3	174	774
% App. Total		18.2	81.8	0		25.6	0	74.4		0	98.3	1.7		
PHF	.000	.802	.876	.000	.917	.719	.000	.670	.833	.000	.910	.375	.926	.949

Wilson Okamoto Corporation

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

Counted By:AC, DM
Counters:D4-3889, D4-3890
Weather:Clear

File Name : QueQue PM
Site Code : 00000004
Start Date : 3/11/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Queen Street Westbound					Queen's Lane Northbound					Queen Street Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	0	18	118	0	0	136	5	0	53	1	59	0	82	1	0	83	278
03:15 PM	0	14	114	0	0	128	8	0	45	6	59	0	85	0	0	85	272
03:30 PM	0	20	140	0	0	160	20	0	41	5	66	0	95	1	0	96	322
03:45 PM	0	17	134	0	0	151	7	0	51	8	66	0	86	0	0	86	303
Total	0	69	506	0	0	575	40	0	190	20	250	0	348	2	0	350	1175
04:00 PM	0	14	118	0	0	132	14	0	46	6	66	0	74	1	0	75	273
04:15 PM	0	16	130	0	0	146	18	0	57	17	92	0	107	0	0	107	345
04:30 PM	0	10	136	0	0	146	13	0	45	4	62	0	110	3	0	113	321
04:45 PM	0	18	123	0	0	141	8	0	45	8	61	0	128	0	0	128	330
Total	0	58	507	0	0	565	53	0	193	35	281	0	419	4	0	423	1269
05:00 PM	0	20	129	0	0	149	13	0	60	2	75	0	116	0	0	116	340
05:15 PM	0	23	137	0	0	160	11	0	65	5	81	0	144	0	0	144	385
05:30 PM	0	13	96	0	0	109	13	0	35	7	55	0	107	0	0	107	271
05:45 PM	0	17	108	0	0	125	14	0	32	3	49	0	99	0	0	99	273
Total	0	73	470	0	0	543	51	0	192	17	260	0	466	0	0	466	1269
Grand Total	0	200	1483	0	0	1683	144	0	575	72	791	0	1233	6	0	1239	3713
Apprch %		11.9	88.1	0	0		18.2	0	72.7	9.1		0	99.5	0.5	0		
Total %	0	5.4	39.9	0	0	45.3	3.9	0	15.5	1.9	21.3	0	33.2	0.2	0	33.4	

	Southbound	Queen Street Westbound				Queen's Lane Northbound				Queen Street Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	0	10	136	0	146	**13**	0	45	58	0	110	**3**	113	317
04:45 PM	0	18	123	0	141	8	0	45	53	0	128	0	128	322
05:00 PM	0	20	129	0	149	13	0	60	73	0	116	0	116	338
05:15 PM	0	**23**	**137**	0	**160**	11	0	**65**	**76**	0	**144**	0	**144**	**380**
Total Volume	0	71	525	0	596	45	0	215	260	0	498	3	501	1357
% App. Total		11.9	88.1	0		**17.3**	0	82.7		0	99.4	0.6		
PHF	.000	.772	.958	.000	.931	.865	.000	.827	.855	.000	.865	.250	.870	.893

Wilson Okamoto Corporation

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

Counted By:PA, FS
Counters:D4-3888, D4-3890
Weather:Clear

File Name : QueWai AM
Site Code : 00000001
Start Date : 3/11/2015
Page No : 1

Groups Printed- Unshifted

	Waimanu Street Southbound					Queen Street Westbound					Northbound	Queen Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	3	0	6	1	10	0	30	9	0	39	0	2	14	0	12	28	77
06:15 AM	8	0	1	2	11	0	30	7	0	37	0	1	12	0	6	19	67
06:30 AM	19	0	5	2	26	0	29	9	0	38	0	1	14	0	10	25	89
06:45 AM	18	0	4	0	22	0	59	18	0	77	0	1	24	0	5	30	129
Total	48	0	16	5	69	0	148	43	0	191	0	5	64	0	33	102	362
07:00 AM	19	0	8	11	38	0	58	15	0	73	0	2	36	0	11	49	160
07:15 AM	17	0	3	2	22	0	102	20	0	122	0	2	41	0	7	50	194
07:30 AM	16	0	5	3	24	0	102	13	0	115	0	2	38	0	11	51	190
07:45 AM	16	0	4	1	21	0	133	22	0	155	0	4	44	0	3	51	227
Total	68	0	20	17	105	0	395	70	0	465	0	10	159	0	32	201	771
08:00 AM	13	0	4	1	18	0	128	19	0	147	0	4	50	0	7	61	226
08:15 AM	18	0	7	1	26	0	113	18	0	131	0	2	47	0	7	56	213
08:30 AM	14	0	5	2	21	0	114	24	0	138	0	4	50	0	6	60	219
08:45 AM	11	0	4	0	15	0	96	18	0	114	0	5	55	0	8	68	197
Total	56	0	20	4	80	0	451	79	0	530	0	15	202	0	28	245	855
Grand Total	172	0	56	26	254	0	994	192	0	1186	0	30	425	0	93	548	1988
Apprch %	67.7	0	22	10.2		0	83.8	16.2	0			5.5	77.6	0	17		
Total %	8.7	0	2.8	1.3	12.8	0	50	9.7	0	59.7	0	1.5	21.4	0	4.7	27.6	

	Waimanu Street Southbound				Queen Street Westbound				Northbound	Queen Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:45 AM														
07:45 AM	16	0	4	20	0	**133**	22	**155**	0	**4**	44	0	48	**223**
08:00 AM	13	0	4	17	0	128	19	147	0	4	**50**	0	**54**	218
08:15 AM	**18**	0	**7**	**25**	0	113	18	131	0	2	47	0	49	205
08:30 AM	14	0	5	19	0	114	**24**	138	0	4	50	0	54	211
Total Volume	61	0	20	81	0	488	83	571	0	14	191	0	205	857
% App. Total	75.3	0	24.7		0	85.5	14.5			6.8	93.2	0		
PHF	.847	.000	.714	.810	.000	.917	.865	.921	.000	.875	.955	.000	.949	.961

Wilson Okamoto Corporation

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

Counted By:PA,, FS
Counters:D4-3890, D4-3888
Weather:Clear

File Name : QueWai PM
Site Code : 00000001
Start Date : 3/11/2015
Page No : 1

Groups Printed- Unshifted

	Waimanu Street Southbound					Queen Street Westbound					Northbound	Queen Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	15	0	5	4	24	0	127	24	0	151	0	9	126	0	11	146	321
03:15 PM	6	0	6	6	18	0	122	27	0	149	0	14	120	0	8	142	309
03:30 PM	12	0	9	8	29	0	164	35	0	199	0	8	115	0	5	128	356
03:45 PM	10	0	6	3	19	0	135	19	0	154	0	8	119	0	8	135	308
Total	43	0	26	21	90	0	548	105	0	653	0	39	480	0	32	551	1294
04:00 PM	9	0	1	0	10	0	132	29	0	161	0	11	110	0	1	122	293
04:15 PM	19	0	5	0	24	0	142	27	0	169	0	8	147	0	9	164	357
04:30 PM	18	0	13	6	37	0	144	27	0	171	0	16	130	0	6	152	360
04:45 PM	16	0	3	3	22	0	135	30	0	165	0	19	133	0	10	162	349
Total	62	0	22	9	93	0	553	113	0	666	0	54	520	0	26	600	1359
05:00 PM	16	0	9	3	28	0	150	36	0	186	0	14	143	0	12	169	383
05:15 PM	19	0	8	7	34	0	144	40	0	184	0	14	169	0	6	189	407
05:30 PM	11	0	5	2	18	0	121	26	0	147	0	10	128	0	9	147	312
05:45 PM	10	0	6	4	20	0	127	37	0	164	0	9	113	0	13	135	319
Total	56	0	28	16	100	0	542	139	0	681	0	47	553	0	40	640	1421
Grand Total	161	0	76	46	283	0	1643	357	0	2000	0	140	1553	0	98	1791	4074
Apprch %	56.9	0	26.9	16.3		0	82.2	17.9	0			7.8	86.7	0	5.5		
Total %	4	0	1.9	1.1	6.9	0	40.3	8.8	0	49.1	0	3.4	38.1	0	2.4	44	

	Waimanu Street Southbound				Queen Street Westbound				Northbound	Queen Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Int. 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	18	0	**13**	**31**	0	144	27	171	0	16	130	0	146	348
04:45 PM	16	0	3	19	0	135	30	165	0	**19**	133	0	152	336
05:00 PM	16	0	9	25	0	**150**	36	**186**	0	14	143	0	157	368
05:15 PM	**19**	0	8	27	0	144	**40**	184	0	14	**169**	0	**183**	**394**
Total Volume	69	0	33	102	0	573	133	706	0	63	575	0	638	1446
% App. Total	67.6	0	32.4		0	81.2	18.8			9.9	90.1	0		
PHF	.908	.000	.635	.823	.000	.955	.831	.949	.000	.829	.851	.000	.872	.918

Wilson Okamoto Corporation

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

Counted By:JJ, RJ
Counters:TU-0649, TU-0651
Weather:Clear

File Name : PenWai AM
Site Code : 00000002
Start Date : 3/11/2015
Page No : 1

Groups Printed- Unshifted

	Pensacola Street Southbound					Waimanu Street Westbound					Honua Condominium Northbound					Waimanu Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	44	4	29	1	78	0	7	0	0	7	3	0	8	5	16	0	18	0	3	21	122
06:15 AM	49	4	31	0	84	0	3	0	0	3	2	0	11	3	16	0	15	1	1	17	120
06:30 AM	47	4	34	3	88	0	2	0	0	2	4	0	11	1	16	0	34	2	4	40	146
06:45 AM	38	8	61	1	108	0	8	0	0	8	7	0	14	10	31	0	44	1	3	48	195
Total	178	20	155	5	358	0	20	0	0	20	16	0	44	19	79	0	111	4	11	126	583
07:00 AM	40	3	54	7	104	0	10	0	0	10	11	0	25	7	43	0	49	7	5	61	218
07:15 AM	45	10	90	2	147	0	12	0	0	12	18	0	20	5	43	0	58	1	1	60	262
07:30 AM	58	9	99	5	171	0	5	0	0	5	9	0	24	14	47	0	47	4	6	57	280
07:45 AM	60	9	122	4	195	0	22	0	0	22	10	0	22	8	40	0	51	4	13	68	325
Total	203	31	365	18	617	0	49	0	0	49	48	0	91	34	173	0	205	16	25	246	1085
08:00 AM	72	24	124	6	226	1	19	0	0	20	5	0	18	13	36	0	56	13	5	74	356
08:15 AM	64	18	115	1	198	0	9	0	0	9	5	0	10	21	36	0	68	10	9	87	330
08:30 AM	78	6	111	3	198	2	15	0	0	17	9	0	22	13	44	0	74	6	8	88	347
08:45 AM	65	8	99	3	175	2	12	0	0	14	6	0	14	9	29	0	67	6	2	75	293
Total	279	56	449	13	797	5	55	0	0	60	25	0	64	56	145	0	265	35	24	324	1326
Grand Total	660	107	969	36	1772	5	124	0	0	129	89	0	199	109	397	0	581	55	60	696	2994
Apprch %	37.2	6	54.7	2		3.9	96.1	0	0		22.4	0	50.1	27.5		0	83.5	7.9	8.6		
Total %	22	3.6	32.4	1.2	59.2	0.2	4.1	0	0	4.3	3	0	6.6	3.6	13.3	0	19.4	1.8	2	23.2	

	Pensacola Street Southbound				Waimanu Street Westbound				Honua Condominium Northbound				Waimanu Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	60	9	122	191	0	**22**	0	**22**	**10**	0	**22**	**32**	0	51	**4**	55	300
08:00 AM	72	**24**	**124**	**220**	1	19	0	20	5	0	18	23	0	56	**13**	69	**332**
08:15 AM	64	18	115	197	0	9	0	9	5	0	10	15	0	68	10	78	299
08:30 AM	**78**	6	111	195	**2**	15	0	17	9	0	22	31	0	**74**	6	**80**	323
Total Volume	274	57	472	803	3	65	0	68	29	0	72	101	0	249	33	282	1254
% App. Total	34.1	7.1	58.8		4.4	95.6	0		28.7	0	71.3		0	88.3	11.7		
PHF	.878	.594	.952	.913	.375	.739	.000	.773	.725	.000	.818	.789	.000	.841	.635	.881	.944

Wilson Okamoto Corporation

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

Counted By:JJ, RJ
Counters:TU-0649, TU-0651
Weather:Clear

File Name : PenWai PM
Site Code : 00000002
Start Date : 3/11/2015
Page No : 1

Groups Printed- Unshifted

	Pensacola Street Southbound					Waimanu Street Westbound					Honua Condominium Northbound					Waimanu Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	101	13	103	4	221	0	40	0	0	40	5	0	11	33	49	0	122	11	14	147	457
03:15 PM	108	10	101	10	229	2	41	0	0	43	5	0	10	23	38	0	113	11	5	129	439
03:30 PM	75	7	113	0	195	2	76	0	0	78	10	0	9	24	43	0	127	9	10	146	462
03:45 PM	86	25	104	9	224	3	40	0	0	43	7	0	10	27	44	0	128	11	9	148	459
Total	370	55	421	23	869	7	197	0	0	204	27	0	40	107	174	0	490	42	38	570	1817
04:00 PM	98	13	113	3	227	0	41	0	0	41	2	0	10	37	49	0	107	6	6	119	436
04:15 PM	79	12	128	3	222	1	40	0	0	41	4	0	9	27	40	0	147	13	9	169	472
04:30 PM	98	15	121	7	241	5	36	0	0	41	10	0	16	24	50	0	125	8	11	144	476
04:45 PM	93	12	115	6	226	0	42	0	0	42	5	0	18	31	54	0	148	8	13	169	491
Total	368	52	477	19	916	6	159	0	0	165	21	0	53	119	193	0	527	35	39	601	1875
05:00 PM	97	15	128	5	245	1	51	0	0	52	7	0	13	41	61	0	137	13	12	162	520
05:15 PM	86	12	137	12	247	3	39	0	0	42	5	0	12	16	33	0	169	10	11	190	512
05:30 PM	88	10	108	7	213	0	34	0	0	34	5	0	8	27	40	0	125	13	14	152	439
05:45 PM	92	13	102	5	212	2	46	0	0	48	4	0	9	41	54	0	126	6	8	140	454
Total	363	50	475	29	917	6	170	0	0	176	21	0	42	125	188	0	557	42	45	644	1925
Grand Total	1101	157	1373	71	2702	19	526	0	0	545	69	0	135	351	555	0	1574	119	122	1815	5617
Apprch %	40.7	5.8	50.8	2.6		3.5	96.5	0	0		12.4	0	24.3	63.2		0	86.7	6.6	6.7		
Total %	19.6	2.8	24.4	1.3	48.1	0.3	9.4	0	0	9.7	1.2	0	2.4	6.2	9.9	0	28	2.1	2.2	32.3	

	Pensacola Street Southbound				Waimanu Street Westbound				Honua Condominium Northbound				Waimanu Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	**98**	**15**	121	234	**5**	36	0	41	**10**	0	16	**26**	0	125	8	133	434
04:45 PM	93	12	115	220	0	42	0	42	5	0	**18**	23	0	148	8	156	441
05:00 PM	97	15	128	**240**	1	**51**	0	**52**	7	0	13	20	0	137	**13**	150	462
05:15 PM	86	12	**137**	235	3	39	0	42	5	0	12	17	0	**169**	10	**179**	**473**
Total Volume	374	54	501	929	9	168	0	177	27	0	59	86	0	579	39	618	1810
% App. Total	40.3	5.8	53.9		5.1	94.9	0		31.4	0	68.6		0	93.7	6.3		
PHF	.954	.900	.914	.968	.450	.824	.000	.851	.675	.000	.819	.827	.000	.857	.750	.863	.957

Wilson Okamoto Corporation

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

Counted By:GC, KW
Counters:T-1841, D4-5673
Weather:Clear

File Name : PiiWai AM
Site Code : 00000001
Start Date : 3/11/2015
Page No : 1

Groups Printed- Unshifted

	Piikoi Street Southbound					Ala Moana Ramp Westbound					Piikoi Street Northbound					Waimanu Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	9	6	0	15	0	3	4	13	20	0	94	16	2	112	35	35	5	5	80	227
06:15 AM	0	18	2	0	20	0	1	1	6	8	0	87	26	4	117	32	30	16	3	81	226
06:30 AM	0	11	2	0	13	0	0	5	8	13	0	111	32	5	148	41	30	27	3	101	275
06:45 AM	0	21	6	0	27	0	2	4	10	16	0	154	8	8	170	57	25	24	10	116	329
Total	0	59	16	0	75	0	6	14	37	57	0	446	82	19	547	165	120	72	21	378	1057
07:00 AM	0	23	8	0	31	0	2	4	12	18	0	153	14	7	174	73	11	34	9	127	350
07:15 AM	0	26	9	0	35	0	3	4	14	21	0	175	15	7	197	95	14	32	9	150	403
07:30 AM	0	36	4	0	40	0	1	3	13	17	0	175	19	16	210	78	26	34	9	147	414
07:45 AM	0	29	15	0	44	0	8	8	6	22	0	179	17	5	201	80	36	35	7	158	425
Total	0	114	36	0	150	0	14	19	45	78	0	682	65	35	782	326	87	135	34	582	1592
08:00 AM	0	36	17	0	53	0	3	15	8	26	0	165	18	14	197	65	32	30	13	140	416
08:15 AM	0	38	5	0	43	0	6	10	21	37	0	162	22	10	194	67	36	45	10	158	432
08:30 AM	0	33	13	0	46	0	4	6	7	17	0	141	15	18	174	81	29	46	7	163	400
08:45 AM	0	35	12	0	47	0	2	8	13	23	0	164	20	18	202	83	32	34	4	153	425
Total	0	142	47	0	189	0	15	39	49	103	0	632	75	60	767	296	129	155	34	614	1673
Grand Total	0	315	99	0	414	0	35	72	131	238	0	1760	222	114	2096	787	336	362	89	1574	4322
Apprch %	0	76.1	23.9	0		0	14.7	30.3	55		0	84	10.6	5.4		50	21.3	23	5.7		
Total %	0	7.3	2.3	0	9.6	0	0.8	1.7	3	5.5	0	40.7	5.1	2.6	48.5	18.2	7.8	8.4	2.1	36.4	

	Piikoi Street Southbound				Ala Moana Ramp Westbound				Piikoi Street Northbound				Waimanu Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	0	36	4	40	0	1	3	4	0	175	19	194	78	26	34	138	376
07:45 AM	0	29	15	44	0	**8**	8	16	0	**179**	17	**196**	**80**	**36**	35	**151**	**407**
08:00 AM	0	36	**17**	**53**	0	3	**15**	**18**	0	165	18	183	65	32	30	127	381
08:15 AM	0	**38**	5	43	0	6	10	16	0	162	**22**	184	67	36	**45**	148	391
Total Volume	0	139	41	180	0	18	36	54	0	681	76	757	290	130	144	564	1555
% App. Total	0	77.2	22.8		0	33.3	66.7		0	90	10		51.4	23	25.5		
PHF	.000	.914	.603	.849	.000	.563	.600	.750	.000	.951	.864	.966	.906	.903	.800	.934	.955

Wilson Okamoto Corporation

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

Counted By:GC, KW
Counters:T-1841, D4-5673
Weather:Clear

File Name : PiiWai PM
Site Code : 00000001
Start Date : 3/11/2015
Page No : 1

Groups Printed- Unshifted

	Piikoi Street Southbound					Ala Moana Ramp Westbound					Piikoi Street Northbound					Waimanu Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	0	54	18	0	72	0	27	88	23	138	0	155	7	32	194	95	56	79	11	241	645
03:15 PM	0	62	15	0	77	0	26	53	37	116	0	172	16	38	226	92	58	69	10	229	648
03:30 PM	0	56	22	0	78	0	**61**	111	23	195	0	193	24	34	251	95	53	70	11	229	753
03:45 PM	0	70	9	0	79	0	28	51	29	108	0	182	18	32	232	91	59	53	14	217	636
Total	0	242	64	0	306	0	142	303	112	557	0	702	65	136	903	373	226	271	46	916	2682
04:00 PM	0	67	19	0	86	0	30	52	34	116	0	148	21	41	210	104	68	62	11	245	657
04:15 PM	0	68	14	0	82	0	22	45	28	95	0	165	19	43	227	100	63	58	10	231	635
04:30 PM	0	47	16	0	63	0	24	59	23	106	0	180	18	27	225	100	75	64	17	256	650
04:45 PM	0	75	19	0	94	0	21	48	34	103	0	193	22	32	247	104	72	62	32	270	714
Total	0	257	68	0	325	0	97	204	119	420	0	686	80	143	909	408	278	246	70	1002	2656
05:00 PM	0	61	16	0	77	0	38	77	56	171	0	191	15	52	258	104	81	70	18	273	779
05:15 PM	0	72	18	0	90	0	21	67	39	127	0	202	19	29	250	100	74	72	22	268	735
05:30 PM	0	57	5	0	62	0	29	80	21	130	0	170	21	36	227	101	66	60	15	242	661
05:45 PM	0	85	13	0	98	0	34	56	42	132	0	174	22	50	246	89	61	47	27	224	700
Total	0	275	52	0	327	0	122	280	158	560	0	737	77	167	981	394	282	249	82	1007	2875
Grand Total	0	774	184	0	958	0	361	787	389	1537	0	2125	222	446	2793	1175	786	766	198	2925	8213
Apprch %	0	80.8	19.2	0		0	23.5	51.2	25.3		0	76.1	7.9	16		40.2	26.9	26.2	6.8		
Total %	0	9.4	2.2	0	11.7	0	4.4	9.6	4.7	18.7	0	25.9	2.7	5.4	34	14.3	9.6	9.3	2.4	35.6	

	Piikoi Street Southbound				Ala Moana Ramp Westbound				Piikoi Street Northbound				Waimanu Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	**75**	**19**	**94**	0	21	48	69	0	193	**22**	215	**104**	72	62	238	616
05:00 PM	0	61	16	77	0	**38**	77	**115**	0	191	15	206	104	**81**	70	**255**	**653**
05:15 PM	0	72	18	90	0	21	67	88	0	**202**	19	**221**	100	74	**72**	246	645
05:30 PM	0	57	5	62	0	29	**80**	109	0	170	21	191	101	66	60	227	589
Total Volume	0	265	58	323	0	109	272	381	0	756	77	833	409	293	264	966	2503
% App. Total	0	82	18		0	28.6	71.4		0	90.8	9.2		42.3	30.3	27.3		
PHF	.000	.883	.763	.859	.000	.717	.850	.828	.000	.936	.875	.942	.983	.904	.917	.947	.958

Wilson Okamoto Corporation

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

Counted By:PA, JC
Counters:D4-3889. D4-5677
Weather:Clear

File Name : KamKaw AM
Site Code : 00000004
Start Date : 3/12/2015
Page No : 1

Groups Printed- Unshifted

	Kamakee Street Southbound					Kawaiahao (Church Parking Lot / Commercial Parking Lot) Westbound					Kamakee Street Northbound					Kawaiahao Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	3	21	7	2	33	0	0	0	0	0	2	6	1	0	9	2	1	2	8	13	55
06:15 AM	0	25	4	1	30	1	0	0	0	1	2	4	0	0	6	2	3	3	6	14	51
06:30 AM	0	48	7	1	56	0	0	1	0	1	6	16	0	0	22	4	0	12	14	30	109
06:45 AM	0	45	10	2	57	0	0	0	0	0	1	12	3	0	16	7	0	4	7	18	91
Total	3	139	28	6	176	1	0	1	0	2	11	38	4	0	53	15	4	21	35	75	306
07:00 AM	1	46	11	0	58	0	0	1	0	1	8	17	0	0	25	11	0	14	15	40	124
07:15 AM	0	58	19	2	79	0	0	0	0	0	5	19	0	0	24	6	0	7	14	27	130
07:30 AM	0	56	18	1	75	0	0	2	0	2	5	20	3	0	28	11	0	12	10	33	138
07:45 AM	0	52	11	4	67	1	0	1	0	2	7	24	0	0	31	6	1	10	10	27	127
Total	1	212	59	7	279	1	0	4	0	5	25	80	3	0	108	34	1	43	49	127	519
08:00 AM	1	62	17	0	80	0	1	1	0	2	13	28	0	0	41	7	0	10	8	25	148
08:15 AM	1	59	10	0	70	1	0	1	0	2	9	20	1	0	30	6	0	9	16	31	133
08:30 AM	2	52	13	2	69	2	0	1	0	3	1	33	2	0	36	11	0	10	20	41	149
08:45 AM	3	53	23	2	81	0	1	1	0	2	7	36	1	0	44	8	1	7	12	28	155
Total	7	226	63	4	300	3	2	4	0	9	30	117	4	0	151	32	1	36	56	125	585
Grand Total	11	577	150	17	755	5	2	9	0	16	66	235	11	0	312	81	6	100	140	327	1410
Apprch %	1.5	76.4	19.9	2.3		31.2	12.5	56.2	0		21.2	75.3	3.5	0		24.8	1.8	30.6	42.8		
Total %	0.8	40.9	10.6	1.2	53.5	0.4	0.1	0.6	0	1.1	4.7	16.7	0.8	0	22.1	5.7	0.4	7.1	9.9	23.2	

	Kamakee Street Southbound				Kawaiahao (Church Parking Lot / Commercial Parking Lot) Westbound				Kamakee Street Northbound				Kawaiahao Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	1	**62**	17	**80**	0	**1**	**1**	2	**13**	28	0	41	7	0	**10**	17	140
08:15 AM	1	59	10	70	1	0	1	2	9	20	**1**	30	6	0	9	15	117
08:30 AM	2	52	13	67	**2**	0	1	**3**	1	33	**2**	36	**11**	0	10	**21**	127
08:45 AM	**3**	53	**23**	79	0	1	1	2	7	**36**	1	**44**	8	**1**	7	16	**141**
Total Volume	7	226	63	296	3	2	4	9	30	117	4	151	32	1	36	69	525
% App. Total	2.4	76.4	21.3		33.3	22.2	44.4		19.9	77.5	2.6		46.4	1.4	52.2		
PHF	.583	.911	.685	.925	.375	.500	1.00	.750	.577	.813	.500	.858	.727	.250	.900	.821	.931

Wilson Okamoto Corporation

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

Counted By:PA, JC
Counters:D4-3889, D4-5677
Weather:Clear

File Name : KamKaw PM
Site Code : 00000000
Start Date : 3/12/2015
Page No : 1

Groups Printed- Unshifted

	Kamakee Street Southbound					Kamakee Street (Church Parking Lot / Commercial Parking Lot) Westbound					Kamakee Street Northbound					Kawaiahao Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	1	38	4	1	44	1	0	1	0	2	10	52	2	0	64	13	0	12	23	48	158
03:15 PM	2	53	9	2	66	1	0	3	0	4	3	43	1	0	47	6	1	12	26	45	162
03:30 PM	3	35	12	3	53	0	1	2	0	3	7	55	2	0	64	12	0	9	24	45	165
03:45 PM	1	28	9	1	39	3	0	0	0	3	9	72	3	0	84	12	0	12	23	47	173
Total	7	154	34	7	202	5	1	6	0	12	29	222	8	0	259	43	1	45	96	185	658
04:00 PM	1	27	13	2	43	3	0	1	0	4	15	63	5	0	83	8	1	12	19	40	170
04:15 PM	1	29	12	5	47	0	0	1	1	2	10	52	3	0	65	15	1	15	17	48	162
04:30 PM	0	42	20	0	62	1	0	2	0	3	10	62	2	0	74	17	1	22	24	64	203
04:45 PM	3	42	11	0	56	0	0	3	0	3	5	61	3	0	69	19	1	13	35	68	196
Total	5	140	56	7	208	4	0	7	1	12	40	238	13	0	291	59	4	62	95	220	731
05:00 PM	0	35	11	3	49	2	0	2	0	4	12	79	9	0	100	15	0	13	22	50	203
05:15 PM	3	35	15	2	55	0	0	2	0	2	4	65	3	0	72	16	0	20	18	54	183
05:30 PM	4	61	2	1	68	1	0	0	0	1	12	58	1	0	71	17	0	9	30	56	196
05:45 PM	1	50	3	4	58	0	0	0	0	0	14	55	5	0	74	11	0	8	18	37	169
Total	8	181	31	10	230	3	0	4	0	7	42	257	18	0	317	59	0	50	88	197	751
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4
Grand Total	20	475	121	24	640	12	1	17	1	31	111	717	39	0	867	161	5	157	283	606	2144
Apprch %	3.1	74.2	18.9	3.8		38.7	3.2	54.8	3.2		12.8	82.7	4.5	0		26.6	0.8	25.9	46.7		
Total %	0.9	22.2	5.6	1.1	29.9	0.6	0	0.8	0	1.4	5.2	33.4	1.8	0	40.4	7.5	0.2	7.3	13.2	28.3	

	Kamakee Street Southbound				Kamakee Street (Church Parking Lot / Commercial Parking Lot) Westbound				Kamakee Street Northbound				Kawaiahao Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	0	**42**	**20**	**62**	1	0	2	3	10	62	2	74	17	**1**	**22**	**40**	**179**
04:45 PM	**3**	42	11	56	0	0	**3**	3	5	61	3	69	**19**	1	13	33	161
05:00 PM	0	35	11	46	**2**	0	2	**4**	**12**	**79**	**9**	**100**	15	0	13	28	178
05:15 PM	3	35	15	53	0	0	2	2	4	65	3	72	16	0	20	36	163
Total Volume	6	154	57	217	3	0	9	12	31	267	17	315	67	2	68	137	681
% App. Total	2.8	71	26.3		25	0	75		9.8	84.8	5.4		48.9	1.5	49.6		
PHF	.500	.917	.713	.875	.375	.000	.750	.750	.646	.845	.472	.788	.882	.500	.773	.856	.951

Wilson Okamoto Corporation

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

Counted By:FC, AC
Counters:D4-5675, D4-5676
Weather:Clear

File Name : KamWai AM
Site Code : 00000003
Start Date : 3/12/2015
Page No : 1

Groups Printed- Unshifted

	Kamakee Street Southbound					Waimanu Street Westbound					Kamakee Street Northbound					Waimanu Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	24	2	2	29	2	2	1	5	10	0	8	5	1	14	1	3	3	1	8	61
06:15 AM	2	20	5	6	33	5	4	6	5	20	1	6	1	2	10	3	4	2	5	14	77
06:30 AM	3	38	8	6	55	4	5	5	10	24	7	10	5	3	25	7	2	7	13	29	133
06:45 AM	2	44	6	7	59	11	9	6	5	31	3	14	7	3	27	5	7	6	6	24	141
Total	8	126	21	21	176	22	20	18	25	85	11	38	18	9	76	16	16	18	25	75	412
07:00 AM	7	47	9	8	71	9	10	9	6	34	1	24	5	9	39	5	9	5	21	40	184
07:15 AM	4	61	11	10	86	8	8	16	10	42	3	18	5	5	31	5	7	7	11	30	189
07:30 AM	3	56	5	7	71	7	8	15	10	40	3	25	6	5	39	7	8	11	16	42	192
07:45 AM	2	56	13	15	86	4	6	18	10	38	5	19	8	4	36	14	11	7	14	46	206
Total	16	220	38	40	314	28	32	58	36	154	12	86	24	23	145	31	35	30	62	158	771
08:00 AM	3	62	20	7	92	10	13	12	8	43	2	29	5	4	40	8	12	12	13	45	220
08:15 AM	1	52	10	8	71	10	8	8	9	35	0	24	5	11	40	11	7	11	18	47	193
08:30 AM	1	55	13	6	75	13	10	13	10	46	3	32	5	11	51	7	9	13	18	47	219
08:45 AM	4	60	13	6	83	6	8	15	10	39	4	36	11	12	63	11	7	10	12	40	225
Total	9	229	56	27	321	39	39	48	37	163	9	121	26	38	194	37	35	46	61	179	857
Grand Total	33	575	115	88	811	89	91	124	98	402	32	245	68	70	415	84	86	94	148	412	2040
Apprch %	4.1	70.9	14.2	10.9		22.1	22.6	30.8	24.4		7.7	59	16.4	16.9		20.4	20.9	22.8	35.9		
Total %	1.6	28.2	5.6	4.3	39.8	4.4	4.5	6.1	4.8	19.7	1.6	12	3.3	3.4	20.3	4.1	4.2	4.6	7.3	20.2	

	Kamakee Street Southbound				Waimanu Street Westbound				Kamakee Street Northbound				Waimanu Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	3	**62**	**20**	**85**	10	**13**	12	35	2	29	5	36	8	**12**	12	**32**	**188**
08:15 AM	1	52	10	63	10	8	8	26	0	24	5	29	**11**	7	11	29	147
08:30 AM	1	55	13	69	**13**	10	13	**36**	3	32	5	40	7	9	**13**	29	174
08:45 AM	**4**	60	13	77	6	8	**15**	29	**4**	**36**	**11**	**51**	11	7	10	28	185
Total Volume	9	229	56	294	39	39	48	126	9	121	26	156	37	35	46	118	694
% App. Total	3.1	77.9	19		31	31	38.1		5.8	77.6	16.7		31.4	29.7	39		
PHF	.563	.923	.700	.865	.750	.750	.800	.875	.563	.840	.591	.765	.841	.729	.885	.922	.923

Wilson Okamoto Corporation

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

Counted By:AC, FC
Counters:D4-5676, D4-5675
Weather:Clear

File Name : KamWai PM
Site Code : 00000003
Start Date : 3/12/2015
Page No : 1

Groups Printed- Unshifted

	Kamakee Street Southbound					Waimanu Street Westbound					Kamakee Street Northbound					Waimanu Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	5	36	12	2	55	4	14	17	10	45	2	57	10	5	74	7	6	6	27	46	220
03:15 PM	4	47	4	10	65	9	11	15	19	54	5	38	5	6	54	11	7	9	33	60	233
03:30 PM	5	30	7	11	53	6	17	12	18	53	3	62	5	8	78	14	14	9	18	55	239
03:45 PM	6	24	16	4	50	7	16	7	5	35	6	66	6	8	86	15	8	10	18	51	222
Total	20	137	39	27	223	26	58	51	52	187	16	223	26	27	292	47	35	34	96	212	914
04:00 PM	8	26	5	8	47	6	17	26	11	60	5	51	13	3	72	13	12	7	23	55	234
04:15 PM	5	26	12	12	55	10	21	11	12	54	5	57	10	9	81	16	7	6	18	47	237
04:30 PM	5	35	9	11	60	13	11	14	7	45	6	62	7	10	85	23	13	13	26	75	265
04:45 PM	8	37	7	4	56	9	12	19	13	53	7	66	14	13	100	16	12	13	38	79	288
Total	26	124	33	35	218	38	61	70	43	212	23	236	44	35	338	68	44	39	105	256	1024
05:00 PM	7	29	11	12	59	10	15	22	8	55	6	80	5	6	97	20	16	9	30	75	286
05:15 PM	6	34	5	7	52	9	14	17	11	51	5	71	9	11	96	17	10	8	30	65	264
05:30 PM	8	56	21	5	90	7	14	11	6	38	3	59	9	6	77	10	8	6	25	49	254
05:45 PM	12	48	20	8	88	3	17	6	7	33	6	59	9	6	80	11	12	5	15	43	244
Total	33	167	57	32	289	29	60	56	32	177	20	269	32	29	350	58	46	28	100	232	1048
Grand Total	79	428	129	94	730	93	179	177	127	576	59	728	102	91	980	173	125	101	301	700	2986
Apprch %	10.8	58.6	17.7	12.9		16.1	31.1	30.7	22		6	74.3	10.4	9.3		24.7	17.9	14.4	43		
Total %	2.6	14.3	4.3	3.1	24.4	3.1	6	5.9	4.3	19.3	2	24.4	3.4	3	32.8	5.8	4.2	3.4	10.1	23.4	

	Kamakee Street Southbound					Waimanu Street Westbound					Kamakee Street Northbound					Waimanu Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. 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	5	35	9	11	**60**	**13**	11	14	7	45	6	62	7	10	85	**23**	13	**13**	26	75	265
04:45 PM	**8**	**37**	7	4	56	9	12	19	**13**	53	**7**	66	**14**	**13**	**100**	16	12	13	**38**	**79**	**288**
05:00 PM	7	29	**11**	**12**	59	10	**15**	**22**	8	**55**	6	**80**	5	6	97	20	**16**	9	30	75	286
05:15 PM	6	34	5	7	52	9	14	17	11	51	5	71	9	11	96	17	10	8	30	65	264
Total Volume	26	135	32	34	227	41	52	72	39	204	24	279	35	40	378	76	51	43	124	294	1103
% App. Total	11.5	59.5	14.1	15		20.1	25.5	35.3	19.1		6.3	73.8	9.3	10.6		25.9	17.3	14.6	42.2		
PHF	.813	.912	.727	.708	.946	.788	.867	.818	.750	.927	.857	.872	.625	.769	.945	.826	.797	.827	.816	.930	.957

Wilson Okamoto Corporation

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

Counted By:DY, CY
Counters:D4-3888, D4-3890
Weather:Clear

File Name : KamKon AM
Site Code : 00000005
Start Date : 3/12/2015
Page No : 1

Groups Printed- Unshifted

	Kamakee Street Southbound					Kona Street Westbound					Kamakee Street Northbound					Eastbound	
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Int. Total
06:00 AM	3	30	0	0	33	1	0	2	0	3	0	9	4	0	13	0	49
06:15 AM	0	28	0	1	29	3	0	1	2	6	0	13	0	0	13	0	48
06:30 AM	4	44	0	0	48	4	0	3	4	11	0	13	5	2	20	0	79
06:45 AM	6	49	0	3	58	3	0	2	1	6	0	18	4	0	22	0	86
Total	13	151	0	4	168	11	0	8	7	26	0	53	13	2	68	0	262
07:00 AM	5	55	0	2	62	3	0	1	5	9	0	33	6	1	40	0	111
07:15 AM	4	70	0	1	75	3	0	1	6	10	0	30	5	0	35	0	120
07:30 AM	1	58	0	0	59	7	0	2	8	17	0	39	8	0	47	0	123
07:45 AM	4	71	0	0	75	4	0	4	4	12	0	38	10	1	49	0	136
Total	14	254	0	3	271	17	0	8	23	48	0	140	29	2	171	0	490
08:00 AM	2	78	0	1	81	7	0	7	7	21	0	31	15	0	46	0	148
08:15 AM	2	57	0	0	59	6	0	8	2	16	0	33	10	0	43	0	118
08:30 AM	6	64	0	0	70	10	0	5	10	25	0	43	6	0	49	0	144
08:45 AM	4	69	0	0	73	10	0	9	6	25	0	48	10	0	58	0	156
Total	14	268	0	1	283	33	0	29	25	87	0	155	41	0	196	0	566
Grand Total	41	673	0	8	722	61	0	45	55	161	0	348	83	4	435	0	1318
Apprch %	5.7	93.2	0	1.1		37.9	0	28	34.2		0	80	19.1	0.9			
Total %	3.1	51.1	0	0.6	54.8	4.6	0	3.4	4.2	12.2	0	26.4	6.3	0.3	33	0	

	Kamakee Street Southbound				Kona Street Westbound				Kamakee Street Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 08:00 AM														
08:00 AM	2	**78**	0	**80**	7	0	7	14	0	31	**15**	46	0	140
08:15 AM	2	57	0	59	6	0	8	14	0	33	10	43	0	116
08:30 AM	**6**	64	0	70	**10**	0	5	15	0	43	6	49	0	134
08:45 AM	4	69	0	73	10	0	**9**	**19**	0	**48**	10	**58**	0	**150**
Total Volume	14	268	0	282	33	0	29	62	0	155	41	196	0	540
% App. Total	5	95	0		53.2	0	46.8		0	79.1	20.9			
PHF	.583	.859	.000	.881	.825	.000	.806	.816	.000	.807	.683	.845	.000	.900

Wilson Okamoto Corporation

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

Counted By:CY, DY
Counters:D4-3888, D4-3890
Weather:Clear

File Name : KamKon PM
Site Code : 00000005
Start Date : 3/12/2015
Page No : 1

Groups Printed- Unshifted

	Kamakee Street Southbound					Kona Street Westbound					Kamakee Street Northbound					Kona Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	5	48	0	0	53	8	0	11	13	32	0	78	6	1	85	0	0	0	0	0	170
03:15 PM	5	43	0	1	49	10	0	5	16	31	0	56	10	1	67	0	0	0	0	0	147
03:30 PM	1	35	0	2	38	11	0	23	9	43	0	79	9	2	90	0	0	0	0	0	171
03:45 PM	4	30	0	1	35	14	0	24	12	50	0	75	3	0	78	0	0	0	0	0	163
Total	15	156	0	4	175	43	0	63	50	156	0	288	28	4	320	0	0	0	0	0	651
04:00 PM	1	20	0	1	22	15	0	18	11	44	0	90	10	2	102	0	0	0	0	0	168
04:15 PM	2	31	0	2	35	10	0	17	7	34	0	69	10	1	80	0	0	0	0	0	149
04:30 PM	3	32	0	0	35	21	0	25	2	48	0	71	12	0	83	0	0	0	0	0	166
04:45 PM	4	35	0	0	39	15	0	15	5	35	0	72	12	0	84	0	0	0	0	0	158
Total	10	118	0	3	131	61	0	75	25	161	0	302	44	3	349	0	0	0	0	0	641
05:00 PM	3	38	0	0	41	16	0	22	3	41	0	102	14	1	117	0	0	0	0	0	199
05:15 PM	1	38	0	0	39	10	0	19	5	34	0	87	15	2	104	0	0	0	0	0	177
05:30 PM	1	68	0	1	70	16	0	6	9	31	0	71	9	2	82	0	0	0	0	0	183
05:45 PM	2	69	0	0	71	7	0	17	3	27	0	71	7	3	81	0	0	0	0	0	179
Total	7	213	0	1	221	49	0	64	20	133	0	331	45	8	384	0	0	0	0	0	738
Grand Total	32	487	0	8	527	153	0	202	95	450	0	921	117	15	1053	0	0	0	0	0	2030
Apprch %	6.1	92.4	0	1.5		34	0	44.9	21.1		0	87.5	11.1	1.4		0	0	0	0		
Total %	1.6	24	0	0.4	26	7.5	0	10	4.7	22.2	0	45.4	5.8	0.7	51.9	0	0	0	0	0	

	Kamakee Street Southbound					Kona Street Westbound					Kamakee Street Northbound					Kona Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**3**	38	0	0	41	**16**	0	**22**	3	**41**	0	**102**	14	1	**117**	0	0	0	0	0	**199**
05:15 PM	1	38	0	0	39	10	0	19	5	34	0	87	**15**	2	104	0	0	0	0	0	177
05:30 PM	1	68	0	**1**	70	16	0	6	**9**	31	0	71	9	2	82	0	0	0	0	0	183
05:45 PM	2	**69**	0	0	**71**	7	0	17	3	27	0	71	7	**3**	81	0	0	0	0	0	179
Total Volume	7	213	0	1	221	49	0	64	20	133	0	331	45	8	384	0	0	0	0	0	738
% App. Total	3.2	96.4	0	0.5		36.8	0	48.1	15		0	86.2	11.7	2.1		0	0	0	0		
PHF	.583	.772	.000	.250	.778	.766	.000	.727	.556	.811	.000	.811	.750	.667	.821	.000	.000	.000	.000	.000	.927

Wilson Okamoto Corporation

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

Counted By:RJ, JJ
Counters:TU-0654, TU-0653
Weather:Clear

File Name : KonPen AM
Site Code : 00000002
Start Date : 3/12/2015
Page No : 1

Groups Printed- Unshifted

	Pensacola Street Southbound					Kona Street Westbound					Pensacola Street Northbound					Kona Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	9	69	3	0	81	3	1	0	1	5	0	0	0	0	0	1	0	0	2	3	89
06:15 AM	4	60	3	1	68	1	3	0	2	6	0	0	0	0	0	0	0	0	4	4	78
06:30 AM	9	99	3	0	111	4	2	0	1	7	0	0	0	0	0	0	0	0	2	2	120
06:45 AM	15	98	7	1	121	9	3	0	0	12	0	0	0	1	1	0	0	1	2	3	137
Total	37	326	16	2	381	17	9	0	4	30	0	0	0	1	1	1	0	1	10	12	424
07:00 AM	14	105	3	0	122	2	2	0	0	4	0	0	0	0	0	0	0	0	2	2	128
07:15 AM	12	125	5	2	144	11	3	0	2	16	0	0	0	0	0	0	1	3	4	8	168
07:30 AM	11	163	7	1	182	11	1	0	0	12	0	0	0	0	0	0	1	1	3	5	199
07:45 AM	14	171	8	0	193	13	3	0	3	19	0	0	0	1	1	0	3	2	11	16	229
Total	51	564	23	3	641	37	9	0	5	51	0	0	0	1	1	0	5	6	20	31	724
08:00 AM	14	212	5	3	234	18	2	0	0	20	0	0	0	0	0	0	1	5	5	11	265
08:15 AM	18	195	5	2	220	11	2	0	1	14	0	0	0	0	0	0	3	2	1	6	240
08:30 AM	15	184	3	0	202	18	2	0	3	23	0	0	0	1	1	0	2	3	5	10	236
08:45 AM	18	182	6	4	210	15	6	0	7	28	0	0	0	0	0	0	1	1	5	7	245
Total	65	773	19	9	866	62	12	0	11	85	0	0	0	1	1	0	7	11	16	34	986
Grand Total	153	1663	58	14	1888	116	30	0	20	166	0	0	0	3	3	1	12	18	46	77	2134
Apprch %	8.1	88.1	3.1	0.7		69.9	18.1	0	12		0	0	0	100		1.3	15.6	23.4	59.7		
Total %	7.2	77.9	2.7	0.7	88.5	5.4	1.4	0	0.9	7.8	0	0	0	0.1	0.1	0	0.6	0.8	2.2	3.6	

	Pensacola Street Southbound				Kona Street Westbound				Pensacola Street Northbound				Kona Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	14	**212**	5	**231**	**18**	2	0	20	0	0	0	0	0	1	**5**	**6**	**257**
08:15 AM	**18**	195	5	218	11	2	0	13	0	0	0	0	0	**3**	2	5	236
08:30 AM	15	184	3	202	18	2	0	20	0	0	0	0	0	2	3	5	227
08:45 AM	18	182	**6**	206	15	**6**	0	**21**	0	0	0	0	0	1	1	2	229
Total Volume	65	773	19	857	62	12	0	74	0	0	0	0	0	7	11	18	949
% App. Total	7.6	90.2	2.2		83.8	16.2	0		0	0	0		0	38.9	61.1		
PHF	.903	.912	.792	.927	.861	.500	.000	.881	.000	.000	.000	.000	.000	.583	.550	.750	.923

Wilson Okamoto Corporation

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

Counted By:RJ, JJ
Counters:TU-0653, TU-0654
Weather:Clear

File Name : KonPen PM
Site Code : 00000002
Start Date : 3/12/2015
Page No : 1

Groups Printed- Unshifted

	Pensacola Street Southbound					Kona Street Westbound					Pensacola Street Northbound					Kona Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	13	182	3	0	198	18	8	0	4	30	0	0	0	0	0	0	1	3	3	7	235
03:15 PM	17	166	3	1	187	28	2	0	1	31	0	0	0	0	0	0	0	1	11	12	230
03:30 PM	17	194	9	0	220	23	7	0	11	41	0	0	0	3	3	0	2	4	5	11	275
03:45 PM	19	196	12	1	228	16	8	0	3	27	0	0	0	2	2	0	3	2	6	11	268
Total	66	738	27	2	833	85	25	0	19	129	0	0	0	5	5	0	6	10	25	41	1008
04:00 PM	15	195	6	0	216	26	12	0	5	43	0	0	0	0	0	0	5	4	4	13	272
04:15 PM	16	209	3	1	229	14	11	0	1	26	0	0	0	2	2	0	4	3	6	13	270
04:30 PM	24	203	11	2	240	29	13	0	4	46	0	0	0	4	4	0	0	1	5	6	296
04:45 PM	24	210	6	0	240	19	8	0	1	28	0	0	0	1	1	0	5	2	6	13	282
Total	79	817	26	3	925	88	44	0	11	143	0	0	0	7	7	0	14	10	21	45	1120
05:00 PM	24	204	5	2	235	27	9	0	1	37	0	0	0	1	1	0	2	1	9	12	285
05:15 PM	22	212	2	1	237	20	6	0	1	27	0	0	0	0	0	0	4	2	7	13	277
05:30 PM	14	202	9	3	228	22	6	0	1	29	0	0	0	0	0	0	2	5	6	13	270
05:45 PM	22	180	6	0	208	18	5	0	5	28	0	0	0	0	0	0	3	1	9	13	249
Total	82	798	22	6	908	87	26	0	8	121	0	0	0	1	1	0	11	9	31	51	1081
Grand Total	227	2353	75	11	2666	260	95	0	38	393	0	0	0	13	13	0	31	29	77	137	3209
Apprch %	8.5	88.3	2.8	0.4		66.2	24.2	0	9.7		0	0	0	100		0	22.6	21.2	56.2		
Total %	7.1	73.3	2.3	0.3	83.1	8.1	3	0	1.2	12.2	0	0	0	0.4	0.4	0	1	0.9	2.4	4.3	

	Pensacola Street Southbound				Kona Street Westbound				Pensacola Street Northbound				Kona Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	**24**	203	**11**	238	**29**	**13**	0	**42**	0	0	0	0	0	0	1	1	**281**
04:45 PM	24	210	6	**240**	19	8	0	27	0	0	0	0	0	**5**	**2**	**7**	274
05:00 PM	24	204	5	233	27	9	0	36	0	0	0	0	0	2	1	3	272
05:15 PM	22	**212**	2	236	20	6	0	26	0	0	0	0	0	4	2	6	268
Total Volume	94	829	24	947	95	36	0	131	0	0	0	0	0	11	6	17	1095
% App. Total	9.9	87.5	2.5		72.5	27.5	0		0	0	0		0	64.7	35.3		
PHF	.979	.978	.545	.986	.819	.692	.000	.780	.000	.000	.000	.000	.000	.550	.750	.607	.974

Wilson Okamoto Corporation

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

Counted By:GC, KW
Counters:D4-5671, D4-5674
Weather:Clear

File Name : KonPii AM
Site Code : 00000001
Start Date : 3/12/2015
Page No : 1

Groups Printed- Unshifted

	Piikoi Street Southbound					Kona Street Westbound					Piikoi Street Northbound					Kona Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	7	1	1	9	7	4	13	5	29	3	113	21	0	137	0	5	0	0	5	180
06:15 AM	0	9	0	0	9	10	3	7	9	29	4	107	25	0	136	0	5	0	0	5	179
06:30 AM	0	8	2	3	13	10	6	14	7	37	2	126	26	0	154	0	2	0	0	2	206
06:45 AM	0	16	2	3	21	5	10	10	5	30	4	141	44	0	189	0	4	1	1	6	246
Total	0	40	5	7	52	32	23	44	26	125	13	487	116	0	616	0	16	1	1	18	811
07:00 AM	0	10	3	7	20	14	3	18	12	47	1	210	29	0	240	0	3	2	8	13	320
07:15 AM	0	17	6	3	26	18	11	18	5	52	2	260	27	0	289	0	6	2	14	22	389
07:30 AM	0	17	1	8	26	14	9	23	11	57	1	233	37	0	271	0	8	0	6	14	368
07:45 AM	0	15	3	13	31	25	14	31	14	84	3	204	43	0	250	0	13	0	5	18	383
Total	0	59	13	31	103	71	37	90	42	240	7	907	136	0	1050	0	30	4	33	67	1460
08:00 AM	0	12	5	4	21	24	16	33	9	82	2	197	34	0	233	0	12	0	10	22	358
08:15 AM	0	19	3	4	26	24	11	28	12	75	4	216	41	0	261	0	19	1	4	24	386
08:30 AM	0	16	5	12	33	31	13	36	14	94	9	210	34	0	253	0	16	0	8	24	404
08:45 AM	0	16	6	11	33	27	14	24	16	81	6	203	39	0	248	0	18	2	11	31	393
Total	0	63	19	31	113	106	54	121	51	332	21	826	148	0	995	0	65	3	33	101	1541
Grand Total	0	162	37	69	268	209	114	255	119	697	41	2220	400	0	2661	0	111	8	67	186	3812
Apprch %	0	60.4	13.8	25.7		30	16.4	36.6	17.1		1.5	83.4	15	0		0	59.7	4.3	36		
Total %	0	4.2	1	1.8	7	5.5	3	6.7	3.1	18.3	1.1	58.2	10.5	0	69.8	0	2.9	0.2	1.8	4.9	

	Piikoi Street Southbound				Kona Street Westbound				Piikoi Street Northbound				Kona Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	12	5	17	24	**16**	33	73	2	197	34	233	0	12	0	12	335
08:15 AM	0	**19**	3	**22**	24	11	28	63	4	**216**	**41**	**261**	0	**19**	1	**20**	366
08:30 AM	0	16	5	21	**31**	13	**36**	**80**	**9**	210	34	253	0	16	0	16	**370**
08:45 AM	0	16	**6**	22	27	14	24	65	6	203	39	248	0	18	**2**	20	355
Total Volume	0	63	19	82	106	54	121	281	21	826	148	995	0	65	3	68	1426
% App. Total	0	76.8	23.2		37.7	19.2	43.1		2.1	83	14.9		0	95.6	4.4		
PHF	.000	.829	.792	.932	.855	.844	.840	.878	.583	.956	.902	.953	.000	.855	.375	.850	.964

Wilson Okamoto Corporation

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

Counted By:GC, KKW
Counters:D4-5671, D4-5674
Weather:Clear

File Name : KonPii PM
Site Code : 00000001
Start Date : 3/12/2015
Page No : 1

Groups Printed- Unshifted

	Piikoi Street Southbound					Kona Street Westbound					Piikoi Street Northbound					Kona Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	0	35	3	12	50	42	27	61	21	151	3	246	16	0	265	0	5	5	21	31	497
03:15 PM	0	32	6	28	66	35	18	67	28	148	6	268	32	0	306	0	17	1	23	41	561
03:30 PM	0	31	9	16	56	54	29	62	35	180	2	274	33	0	309	0	24	3	18	45	590
03:45 PM	0	39	2	17	58	39	9	48	20	116	5	335	36	0	376	0	11	4	9	24	574
Total	0	137	20	73	230	170	83	238	104	595	16	1123	117	0	1256	0	57	13	71	141	2222
04:00 PM	0	18	7	9	34	56	25	69	24	174	4	257	23	0	284	0	20	2	8	30	522
04:15 PM	0	40	3	23	66	45	25	50	21	141	9	295	30	0	334	0	16	4	15	35	576
04:30 PM	0	23	7	11	41	40	27	55	29	151	9	271	19	0	299	0	22	3	8	33	524
04:45 PM	0	29	3	15	47	43	21	73	38	175	2	286	36	0	324	0	26	3	20	49	595
Total	0	110	20	58	188	184	98	247	112	641	24	1109	108	0	1241	0	84	12	51	147	2217
05:00 PM	0	45	8	24	77	46	33	54	29	162	7	260	25	0	292	0	29	3	23	55	586
05:15 PM	0	29	4	16	49	39	21	43	22	125	2	317	28	0	347	0	27	1	20	48	569
05:30 PM	0	39	2	12	53	36	25	58	19	138	5	307	24	0	336	0	18	4	31	53	580
05:45 PM	0	42	5	17	64	42	17	45	36	140	2	309	25	0	336	0	18	2	12	32	572
Total	0	155	19	69	243	163	96	200	106	565	16	1193	102	0	1311	0	92	10	86	188	2307
Grand Total	0	402	59	200	661	517	277	685	322	1801	56	3425	327	0	3808	0	233	35	208	476	6746
Apprch %	0	60.8	8.9	30.3		28.7	15.4	38	17.9		1.5	89.9	8.6	0		0	48.9	7.4	43.7		
Total %	0	6	0.9	3	9.8	7.7	4.1	10.2	4.8	26.7	0.8	50.8	4.8	0	56.4	0	3.5	0.5	3.1	7.1	

	Piikoi Street Southbound				Kona Street Westbound				Piikoi Street Northbound				Kona Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	29	3	32	43	21	**73**	**137**	2	286	**36**	324	0	26	3	29	**522**
05:00 PM	0	**45**	**8**	**53**	**46**	**33**	54	133	**7**	260	25	292	0	**29**	3	**32**	510
05:15 PM	0	29	4	33	39	21	43	103	2	**317**	28	**347**	0	27	1	28	511
05:30 PM	0	39	2	41	36	25	58	119	5	307	24	336	0	18	4	22	518
Total Volume	0	142	17	159	164	100	228	492	16	1170	113	1299	0	100	11	111	2061
% App. Total	0	89.3	10.7		33.3	20.3	46.3		1.2	90.1	8.7		0	90.1	9.9		
PHF	.000	.789	.531	.750	.891	.758	.781	.898	.571	.923	.785	.936	.000	.862	.688	.867	.987

Wilson Okamoto Corporation

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

Counted By:DY, TO
Counters:D4-5676, D4-5675
Weather:Clear

File Name : KapCoo AM
Site Code : 00000003
Start Date : 4/7/2015
Page No : 1

Groups Printed- Unshifted

	Cooke Street Southbound					Kapiolani Boulevard Westbound					Cooke Street Northbound					Kapiolani Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	1	1	4	6	25	76	13	7	121	0	14	3	10	27	0	60	10	6	76	230
06:15 AM	1	3	2	7	13	51	70	24	13	158	3	23	1	14	41	0	73	10	6	89	301
06:30 AM	0	6	3	14	23	75	111	51	18	255	5	31	6	12	54	0	88	14	15	117	449
06:45 AM	0	11	7	7	25	105	140	41	11	297	7	38	5	8	58	0	93	20	9	122	502
Total	1	21	13	32	67	256	397	129	49	831	15	106	15	44	180	0	314	54	36	404	1482
07:00 AM	0	5	0	4	9	111	175	32	9	327	13	22	1	19	55	0	112	17	14	143	534
07:15 AM	1	8	2	3	14	116	222	42	13	393	13	42	9	11	75	0	116	23	18	157	639
07:30 AM	2	9	1	13	25	122	236	53	12	423	13	45	10	14	82	0	148	24	18	190	720
07:45 AM	3	19	5	9	36	122	230	57	12	421	8	49	12	13	82	0	144	28	19	191	730
Total	6	41	8	29	84	471	863	184	46	1564	47	158	32	57	294	0	520	92	69	681	2623
08:00 AM	2	10	8	2	22	105	219	51	17	392	9	32	9	13	63	0	188	25	6	219	696
08:15 AM	4	12	1	5	22	123	168	50	9	350	21	48	6	7	82	0	128	27	28	183	637
08:30 AM	4	21	3	2	30	100	120	28	11	259	8	35	13	12	68	0	129	36	7	172	529
08:45 AM	3	5	3	10	21	66	106	19	11	202	10	35	23	9	77	0	103	22	8	133	433
Total	13	48	15	19	95	394	613	148	48	1203	48	150	51	41	290	0	548	110	49	707	2295
Grand Total	20	110	36	80	246	1121	1873	461	143	3598	110	414	98	142	764	0	1382	256	154	1792	6400
Apprch %	8.1	44.7	14.6	32.5		31.2	52.1	12.8	4		14.4	54.2	12.8	18.6		0	77.1	14.3	8.6		
Total %	0.3	1.7	0.6	1.2	3.8	17.5	29.3	7.2	2.2	56.2	1.7	6.5	1.5	2.2	11.9	0	21.6	4	2.4	28	

	Cooke Street Southbound				Kapiolani Boulevard Westbound				Cooke Street Northbound				Kapiolani Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	8	2	11	116	222	42	380	**13**	42	9	64	0	116	23	139	594
07:30 AM	2	9	1	12	**122**	**236**	53	**411**	13	45	10	68	0	148	24	172	663
07:45 AM	**3**	**19**	5	**27**	122	230	**57**	409	8	**49**	**12**	**69**	0	144	**28**	172	**677**
08:00 AM	2	10	**8**	20	105	219	51	375	9	32	9	50	0	**188**	25	**213**	658
Total Volume	8	46	16	70	465	907	203	1575	43	168	40	251	0	596	100	696	2592
% App. Total	11.4	65.7	22.9		29.5	57.6	12.9		17.1	66.9	15.9		0	85.6	14.4		
PHF	.667	.605	.500	.648	.953	.961	.890	.958	.827	.857	.833	.909	.000	.793	.893	.817	.957

Wilson Okamoto Corporation

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

Counted By:DY, EV
Counters:D4-5676, D4-5675
Weather:Clear

File Name : KapCoo PM
Site Code : 00000003
Start Date : 4/7/2015
Page No : 1

Groups Printed- Unshifted

	Cooke Street Southbound					Kapiolani Boulevard Westbound					Cooke Street Northbound					Kapiolani Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	5	11	3	5	24	41	132	27	16	216	22	56	20	10	108	3	174	22	4	203	551
03:15 PM	0	5	5	4	14	74	171	30	12	287	8	56	17	16	97	1	210	16	9	236	634
03:30 PM	0	9	8	19	36	66	277	27	14	384	13	54	25	19	111	2	228	18	17	265	796
03:45 PM	1	6	14	7	28	74	196	26	15	311	13	64	45	12	134	2	252	19	17	290	763
Total	6	31	30	35	102	255	776	110	57	1198	56	230	107	57	450	8	864	75	47	994	2744
04:00 PM	2	7	7	6	22	76	210	36	26	348	19	62	38	16	135	2	277	14	23	316	821
04:15 PM	4	14	4	9	31	74	190	28	15	307	22	71	27	35	155	1	264	26	10	301	794
04:30 PM	4	13	8	8	33	72	210	38	24	344	20	81	54	24	179	1	324	8	27	360	916
04:45 PM	9	16	8	12	45	79	219	26	11	335	17	63	60	19	159	2	292	25	18	337	876
Total	19	50	27	35	131	301	829	128	76	1334	78	277	179	94	628	6	1157	73	78	1314	3407
05:00 PM	3	14	6	7	30	68	216	28	32	344	27	81	50	31	189	0	338	17	18	373	936
05:15 PM	3	11	11	9	34	75	167	32	11	285	23	71	42	36	172	1	301	25	6	333	824
05:30 PM	3	7	5	4	19	32	184	21	23	260	14	72	22	25	133	1	315	17	9	342	754
05:45 PM	3	2	5	6	16	51	121	18	6	196	12	59	26	15	112	1	242	20	9	272	596
Total	12	34	27	26	99	226	688	99	72	1085	76	283	140	107	606	3	1196	79	42	1320	3110
Grand Total	37	115	84	96	332	782	2293	337	205	3617	210	790	426	258	1684	17	3217	227	167	3628	9261
Apprch %	11.1	34.6	25.3	28.9		21.6	63.4	9.3	5.7		12.5	46.9	25.3	15.3		0.5	88.7	6.3	4.6		
Total %	0.4	1.2	0.9	1	3.6	8.4	24.8	3.6	2.2	39.1	2.3	8.5	4.6	2.8	18.2	0.2	34.7	2.5	1.8	39.2	

	Cooke Street Southbound				Kapiolani Boulevard Westbound				Cooke Street Northbound				Kapiolani Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	4	13	8	25	72	210	**38**	320	20	**81**	54	155	1	324	8	333	833
04:45 PM	**9**	**16**	8	**33**	**79**	**219**	26	**324**	17	63	**60**	140	**2**	292	**25**	319	816
05:00 PM	3	14	6	23	68	216	28	312	**27**	81	50	**158**	0	**338**	17	**355**	**848**
05:15 PM	3	11	**11**	25	75	167	32	274	23	71	42	136	1	301	25	327	762
Total Volume	19	54	33	106	294	812	124	1230	87	296	206	589	4	1255	75	1334	3259
% App. Total	17.9	50.9	31.1		23.9	66	10.1		14.8	50.3	35		0.3	94.1	5.6		
PHF	.528	.844	.750	.803	.930	.927	.816	.949	.806	.914	.858	.932	.500	.928	.750	.939	.961

Wilson Okamoto Corporation

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

Counted By:GC, KW
Counters:TU-0654, TU-0652
Weather:Clear

File Name : KapWar AM
Site Code : 00000002
Start Date : 4/7/2015
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Kapiolani Boulevard Westbound					Ward Avenue Northbound					Kapiolani Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	15	103	11	5	134	23	88	6	5	122	17	32	8	14	71	0	46	14	10	70	397
06:15 AM	26	141	25	15	207	21	100	16	15	152	24	53	13	16	106	0	56	17	7	80	545
06:30 AM	32	148	18	16	214	45	198	19	15	277	25	63	5	12	105	0	74	8	13	95	691
06:45 AM	28	140	27	18	213	66	224	13	13	316	27	67	13	13	120	0	84	18	7	109	758
Total	101	532	81	54	768	155	610	54	48	867	93	215	39	55	402	0	260	57	37	354	2391
07:00 AM	18	137	14	17	186	61	277	16	15	369	26	88	23	25	162	0	92	17	7	116	833
07:15 AM	30	146	25	12	213	69	322	16	23	430	37	112	6	18	173	0	100	21	17	138	954
07:30 AM	25	150	21	19	215	80	364	12	18	474	33	92	14	19	158	0	128	26	14	168	1015
07:45 AM	30	192	35	24	281	73	351	24	38	486	27	101	14	20	162	0	138	21	18	177	1106
Total	103	625	95	72	895	283	1314	68	94	1759	123	393	57	82	655	0	458	85	56	599	3908
08:00 AM	36	166	29	16	247	90	318	29	31	468	27	89	12	14	142	0	146	29	9	184	1041
08:15 AM	40	170	27	11	248	63	270	20	14	367	36	92	18	16	162	0	133	34	10	177	954
08:30 AM	45	165	17	11	238	65	194	15	15	289	35	85	23	19	162	0	122	27	7	156	845
08:45 AM	45	184	13	11	253	70	153	22	8	253	25	84	21	9	139	0	99	22	2	123	768
Total	166	685	86	49	986	288	935	86	68	1377	123	350	74	58	605	0	500	112	28	640	3608
Grand Total	370	1842	262	175	2649	726	2859	208	210	4003	339	958	170	195	1662	0	1218	254	121	1593	9907
Apprch %	14	69.5	9.9	6.6		18.1	71.4	5.2	5.2		20.4	57.6	10.2	11.7		0	76.5	15.9	7.6		
Total %	3.7	18.6	2.6	1.8	26.7	7.3	28.9	2.1	2.1	40.4	3.4	9.7	1.7	2	16.8	0	12.3	2.6	1.2	16.1	

	Ward Avenue Southbound				Kapiolani Boulevard Westbound				Ward Avenue Northbound				Kapiolani Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	25	150	21	196	80	**364**	12	**456**	33	92	14	139	0	128	26	154	945
07:45 AM	30	**192**	**35**	**257**	73	351	24	448	27	**101**	14	142	0	138	21	159	**1006**
08:00 AM	36	166	29	231	**90**	318	**29**	437	27	89	12	128	0	**146**	29	**175**	971
08:15 AM	**40**	170	27	237	63	270	20	353	**36**	92	**18**	**146**	0	133	**34**	167	903
Total Volume	131	678	112	921	306	1303	85	1694	123	374	58	555	0	545	110	655	3825
% App. Total	14.2	73.6	12.2		18.1	76.9	5		22.2	67.4	10.5		0	83.2	16.8		
PHF	.819	.883	.800	.896	.850	.895	.733	.929	.854	.926	.806	.950	.000	.933	.809	.936	.951

Wilson Okamoto Corporation

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

Counted By:GC, KW
Counters:TU-0652, TU-0654
Weather:Clear

File Name : KapWar PM
Site Code : 00000002
Start Date : 4/7/2015
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Kapiolani Boulevard Westbound					Ward Avenue Northbound					Kapiolani Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	54	155	14	7	230	51	153	30	13	247	36	146	30	8	220	0	166	37	5	208	905
03:15 PM	39	154	15	20	228	31	225	34	19	309	38	166	38	11	253	0	200	33	7	240	1030
03:30 PM	66	149	31	21	267	0	305	36	30	371	35	160	42	29	266	0	210	47	4	261	1165
03:45 PM	56	189	21	14	280	0	237	29	11	277	39	182	51	18	290	0	247	47	8	302	1149
Total	215	647	81	62	1005	82	920	129	73	1204	148	654	161	66	1029	0	823	164	24	1011	4249
04:00 PM	60	128	15	14	217	0	267	35	14	316	45	143	57	20	265	0	280	41	5	326	1124
04:15 PM	60	155	24	26	265	0	234	32	20	286	37	153	62	23	275	0	253	44	15	312	1138
04:30 PM	53	160	22	18	253	0	254	25	28	307	47	131	65	32	275	0	338	46	14	398	1233
04:45 PM	60	214	20	15	309	0	272	31	24	327	34	160	64	25	283	0	329	37	12	378	1297
Total	233	657	81	73	1044	0	1027	123	86	1236	163	587	248	100	1098	0	1200	168	46	1414	4792
05:00 PM	62	171	14	17	264	0	258	31	27	316	40	159	66	29	294	0	361	30	16	407	1281
05:15 PM	61	191	27	15	294	0	224	30	26	280	30	174	64	29	297	0	307	38	17	362	1233
05:30 PM	73	157	35	13	278	47	157	24	28	256	48	124	52	33	257	0	299	43	4	346	1137
05:45 PM	62	181	25	15	283	62	145	27	25	259	17	153	48	27	245	0	240	33	10	283	1070
Total	258	700	101	60	1119	109	784	112	106	1111	135	610	230	118	1093	0	1207	144	47	1398	4721
Grand Total	706	2004	263	195	3168	191	2731	364	265	3551	446	1851	639	284	3220	0	3230	476	117	3823	13762
Apprch %	22.3	63.3	8.3	6.2		5.4	76.9	10.3	7.5		13.9	57.5	19.8	8.8		0	84.5	12.5	3.1		
Total %	5.1	14.6	1.9	1.4	23	1.4	19.8	2.6	1.9	25.8	3.2	13.5	4.6	2.1	23.4	0	23.5	3.5	0.9	27.8	

	Ward Avenue Southbound				Kapiolani Boulevard Westbound				Ward Avenue Northbound				Kapiolani Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	53	160	22	235	0	254	25	279	47	131	65	243	0	338	**46**	384	1141
04:45 PM	60	**214**	20	**294**	0	**272**	**31**	**303**	34	160	64	258	0	329	37	366	**1221**
05:00 PM	**62**	171	14	247	0	258	31	289	40	159	**66**	265	0	**361**	30	**391**	1192
05:15 PM	61	191	**27**	279	0	224	30	254	30	**174**	64	**268**	0	307	38	345	1146
Total Volume	236	736	83	1055	0	1008	117	1125	151	624	259	1034	0	1335	151	1486	4700
% App. Total	22.4	69.8	7.9		0	89.6	10.4		14.6	60.3	25		0	89.8	10.2		
PHF	.952	.860	.769	.897	.000	.926	.944	.928	.803	.897	.981	.965	.000	.925	.821	.950	.962

Wilson Okamoto Corporation

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

Counted By:AC, PA
Counters::D4-3890, D4-5674
Weather:Clear

File Name : KapKam AM
Site Code : 00000001
Start Date : 4/7/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Kapiolani Boulevard Westbound					Kamakee Street Northbound					Kapiolani Boulevard Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	20	111	0	3	134	5	0	6	7	18	0	57	14	6	77	229
06:15 AM	0	30	137	0	4	171	5	0	12	8	25	0	80	13	4	97	293
06:30 AM	0	38	236	0	2	276	8	0	7	6	21	0	94	14	16	124	421
06:45 AM	0	29	301	0	0	330	10	0	17	5	32	0	118	5	10	133	495
Total	0	117	785	0	9	911	28	0	42	26	96	0	349	46	36	431	1438
07:00 AM	0	54	328	0	3	385	16	2	15	9	42	0	127	7	21	155	582
07:15 AM	0	46	390	0	3	439	22	0	17	11	50	0	120	16	38	174	663
07:30 AM	0	51	422	0	2	475	8	0	22	6	36	0	156	6	52	214	725
07:45 AM	0	50	449	0	6	505	22	0	17	13	52	0	168	16	67	251	808
Total	0	201	1589	0	14	1804	68	2	71	39	180	0	571	45	178	794	2778
08:00 AM	0	57	419	0	5	481	18	0	16	13	47	0	173	15	61	249	777
08:15 AM	0	52	333	0	10	395	19	0	29	11	59	0	176	16	50	242	696
08:30 AM	0	45	256	0	4	305	18	0	25	13	56	0	174	11	14	199	560
08:45 AM	0	52	223	0	7	282	20	0	28	12	60	0	138	21	9	168	510
Total	0	206	1231	0	26	1463	75	0	98	49	222	0	661	63	134	858	2543
Grand Total	0	524	3605	0	49	4178	171	2	211	114	498	0	1581	154	348	2083	6759
Apprch %		12.5	86.3	0	1.2		34.3	0.4	42.4	22.9		0	75.9	7.4	16.7		
Total %	0	7.8	53.3	0	0.7	61.8	2.5	0	3.1	1.7	7.4	0	23.4	2.3	5.1	30.8	

	Southbound	Kapiolani Boulevard Westbound				Kamakee Street Northbound				Kapiolani Boulevard Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	0	51	422	0	473	8	0	22	30	0	156	6	162	665
07:45 AM	0	50	**449**	0	**499**	**22**	0	17	39	0	168	**16**	184	**722**
08:00 AM	0	**57**	419	0	476	18	0	16	34	0	173	15	188	698
08:15 AM	0	52	333	0	385	19	0	**29**	**48**	0	**176**	16	**192**	625
Total Volume	0	210	1623	0	1833	67	0	84	151	0	673	53	726	2710
% App. Total		11.5	88.5	0		44.4	0	55.6		0	92.7	7.3		
PHF	.000	.921	.904	.000	.918	.761	.000	.724	.786	.000	.956	.828	.945	.938

Wilson Okamoto Corporation

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

Counted By:AC, PA
Counters:D4-3890, D4-5674
Weather:Clear

File Name : KapKam PM
Site Code : 00000001
Start Date : 4/7/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Kapiolani Boulevard Westbound					Kamakee Street Northbound					Kapiolani Boulevard Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	0	44	221	0	8	273	15	0	41	23	79	0	213	31	51	295	647
03:15 PM	0	17	266	0	5	288	23	0	63	18	104	0	257	32	27	316	708
03:30 PM	0	0	300	0	3	303	38	0	67	18	123	0	233	35	22	290	716
03:45 PM	0	0	233	0	6	239	34	0	62	23	119	0	312	42	41	395	753
Total	0	61	1020	0	22	1103	110	0	233	82	425	0	1015	140	141	1296	2824
04:00 PM	0	0	270	0	4	274	29	0	65	23	117	0	383	31	15	429	820
04:15 PM	0	0	231	0	4	235	34	0	70	18	122	0	347	29	36	412	769
04:30 PM	0	0	236	0	7	243	39	0	67	33	139	0	438	36	30	504	886
04:45 PM	0	0	265	0	11	276	37	0	79	31	147	0	426	44	38	508	931
Total	0	0	1002	0	26	1028	139	0	281	105	525	0	1594	140	119	1853	3406
05:00 PM	0	0	251	0	8	259	34	0	94	25	153	0	468	41	31	540	952
05:15 PM	0	0	232	0	2	234	39	0	67	21	127	0	407	52	35	494	855
05:30 PM	0	37	195	0	2	234	29	0	70	23	122	0	350	44	42	436	792
05:45 PM	0	42	196	0	3	241	38	0	55	21	114	0	339	26	42	407	762
Total	0	79	874	0	15	968	140	0	286	90	516	0	1564	163	150	1877	3361
Grand Total	0	140	2896	0	63	3099	389	0	800	277	1466	0	4173	443	410	5026	9591
Apprch %		4.5	93.4	0	2		26.5	0	54.6	18.9		0	83	8.8	8.2		
Total %	0	1.5	30.2	0	0.7	32.3	4.1	0	8.3	2.9	15.3	0	43.5	4.6	4.3	52.4	

	Southbound	Kapiolani Boulevard Westbound				Kamakee Street Northbound				Kapiolani Boulevard Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	0	0	236	0	236	**39**	0	67	106	0	438	36	474	816
04:45 PM	0	0	**265**	0	**265**	37	0	79	116	0	426	44	470	851
05:00 PM	0	0	251	0	251	34	0	**94**	**128**	0	**468**	41	**509**	**888**
05:15 PM	0	0	232	0	232	39	0	67	106	0	407	**52**	459	797
Total Volume	0	0	984	0	984	149	0	307	456	0	1739	173	1912	3352
% App. Total		0	100	0		32.7	0	67.3		0	91	9		
PHF	.000	.000	.928	.000	.928	.955	.000	.816	.891	.000	.929	.832	.939	.944

Wilson Okamoto Corporation

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

Counted By:RJ, JJ
Counters:TU-0649, TU-0651
Weather:Clear

File Name : KapPen AM
Site Code : 00000004
Start Date : 4/7/2015
Page No : 1

Groups Printed- Unshifted

	Pensacola Street Southbound					Kapiolani Boulevard Westbound					Pensacola Street Northbound					Kapiolani Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	22	71	24	5	122	7	102	0	0	109	0	0	0	5	5	0	53	8	3	64	300
06:15 AM	33	82	14	3	132	2	158	0	0	160	0	0	0	13	13	0	76	11	7	94	399
06:30 AM	28	101	8	8	145	8	272	0	0	280	0	0	0	8	8	0	84	18	9	111	544
06:45 AM	34	88	5	12	139	11	336	0	0	347	0	0	0	4	4	0	100	29	5	134	624
Total	117	342	51	28	538	28	868	0	0	896	0	0	0	30	30	0	313	66	24	403	1867
07:00 AM	34	90	13	11	148	12	372	0	0	384	0	0	0	10	10	0	119	23	7	149	691
07:15 AM	43	122	7	16	188	20	419	0	0	439	0	0	0	7	7	0	113	24	10	147	781
07:30 AM	72	155	18	10	255	22	461	0	0	483	0	0	0	10	10	0	154	23	3	180	928
07:45 AM	54	165	56	9	284	22	470	0	0	492	0	0	0	13	13	0	155	35	3	193	982
Total	203	532	94	46	875	76	1722	0	0	1798	0	0	0	40	40	0	541	105	23	669	3382
08:00 AM	65	181	67	11	324	21	414	0	0	435	0	0	0	6	6	0	167	31	15	213	978
08:15 AM	58	169	23	15	265	25	362	0	0	387	0	0	0	12	12	0	168	34	12	214	878
08:30 AM	67	176	39	10	292	19	241	0	0	260	0	0	0	12	12	0	155	43	5	203	767
08:45 AM	73	205	6	11	295	22	230	0	0	252	0	0	0	24	24	0	132	21	16	169	740
Total	263	731	135	47	1176	87	1247	0	0	1334	0	0	0	54	54	0	622	129	48	799	3363
Grand Total	583	1605	280	121	2589	191	3837	0	0	4028	0	0	0	124	124	0	1476	300	95	1871	8612
Apprch %	22.5	62	10.8	4.7		4.7	95.3	0	0		0	0	0	100		0	78.9	16	5.1		
Total %	6.8	18.6	3.3	1.4	30.1	2.2	44.6	0	0	46.8	0	0	0	1.4	1.4	0	17.1	3.5	1.1	21.7	

	Pensacola Street Southbound				Kapiolani Boulevard Westbound				Pensacola Street Northbound				Kapiolani Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	**72**	155	18	245	22	461	0	483	0	0	0	0	0	154	23	177	905
07:45 AM	54	165	56	275	22	**470**	**0**	**492**	0	0	0	0	0	155	**35**	190	**957**
08:00 AM	65	**181**	**67**	**313**	21	414	0	435	0	0	0	0	0	167	31	198	946
08:15 AM	58	169	23	250	**25**	362	0	387	0	0	0	0	0	**168**	34	**202**	839
Total Volume	249	670	164	1083	90	1707	0	1797	0	0	0	0	0	644	123	767	3647
% App. Total	23	61.9	15.1		5	95	0		0	0	0		0	84	16		
PHF	.865	.925	.612	.865	.900	.908	.000	.913	.000	.000	.000	.000	.000	.958	.879	.949	.953

Wilson Okamoto Corporation

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

Counted By:RJ, JJ
Counters:TU-0649, TU-0651
Weather:Clear

File Name : KapPen PM
Site Code : 00000004
Start Date : 4/7/2015
Page No : 1

Groups Printed- Unshifted

	Pensacola Street Southbound					Kapiolani Boulevard Westbound					Pensacola Street Northbound					Kapiolani Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	63	128	59	16	266	10	206	0	0	216	0	0	0	22	22	0	237	33	9	279	783
03:15 PM	65	177	85	7	334	6	196	0	0	202	0	0	0	18	18	0	260	30	8	298	852
03:30 PM	76	176	117	16	385	0	184	0	0	184	0	0	0	31	31	0	309	36	8	353	953
03:45 PM	83	184	39	13	319	0	190	0	0	190	0	0	0	21	21	0	313	35	9	357	887
Total	287	665	300	52	1304	16	776	0	0	792	0	0	0	92	92	0	1119	134	34	1287	3475
04:00 PM	84	193	78	14	369	0	193	0	0	193	0	0	0	27	27	0	384	38	6	428	1017
04:15 PM	70	183	26	21	300	0	207	0	0	207	0	0	0	27	27	0	369	52	16	437	971
04:30 PM	85	187	42	19	333	0	196	0	0	196	0	0	0	37	37	0	459	26	26	511	1077
04:45 PM	82	192	40	18	332	0	225	0	0	225	0	0	0	26	26	0	459	47	9	515	1098
Total	321	755	186	72	1334	0	821	0	0	821	0	0	0	117	117	0	1671	163	57	1891	4163
05:00 PM	89	192	48	16	345	0	203	0	0	203	0	0	0	29	29	0	503	50	15	568	1145
05:15 PM	82	196	18	9	305	0	216	0	0	216	0	0	0	29	29	0	444	46	10	500	1050
05:30 PM	64	184	43	18	309	14	187	0	0	201	0	0	0	26	26	0	390	38	21	449	985
05:45 PM	63	190	34	17	304	22	204	0	0	226	0	0	0	23	23	0	384	43	14	441	994
Total	298	762	143	60	1263	36	810	0	0	846	0	0	0	107	107	0	1721	177	60	1958	4174
Grand Total	906	2182	629	184	3901	52	2407	0	0	2459	0	0	0	316	316	0	4511	474	151	5136	11812
Apprch %	23.2	55.9	16.1	4.7		2.1	97.9	0	0		0	0	0	100		0	87.8	9.2	2.9		
Total %	7.7	18.5	5.3	1.6	33	0.4	20.4	0	0	20.8	0	0	0	2.7	2.7	0	38.2	4	1.3	43.5	

	Pensacola Street Southbound				Kapiolani Boulevard Westbound				Pensacola Street Northbound				Kapiolani Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	85	187	42	314	0	196	0	196	0	0	0	0	0	459	26	485	995
04:45 PM	82	192	40	314	0	**225**	0	**225**	0	0	0	0	0	459	47	506	1045
05:00 PM	89	192	48	**329**	0	203	0	203	0	0	0	0	0	503	**50**	**553**	**1085**
05:15 PM	82	**196**	18	296	0	216	0	216	0	0	0	0	0	444	46	490	1002
Total Volume	338	767	148	1253	0	840	0	840	0	0	0	0	0	1865	169	2034	4127
% App. Total	27	61.2	11.8		0	100	0		0	0	0		0	91.7	8.3		
PHF	.949	.978	.771	.952	.000	.933	.000	.933	.000	.000	.000	.000	.000	.927	.845	.920	.951

Wilson Okamoto Corporation

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

Counted By:FS, DM
Counters:TU-0653, TU-0650
Weather:Clear

File Name : KapPii AM
Site Code : 00000005
Start Date : 4/7/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Kapiolani Boulevard Westbound					Piikoi Street Northbound					Kapiolani Boulevard Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	5	102	10	5	122	3	105	7	8	123	0	75	3	7	85	330
06:15 AM	0	1	159	23	4	187	3	98	7	9	117	0	100	6	6	112	416
06:30 AM	0	4	273	30	5	312	3	130	11	8	152	0	109	3	9	121	585
06:45 AM	0	11	338	52	4	405	6	141	5	13	165	0	126	6	9	141	711
Total	0	21	872	115	18	1026	15	474	30	38	557	0	410	18	31	459	2042
07:00 AM	0	8	378	54	9	449	9	187	22	9	227	0	144	5	15	164	840
07:15 AM	0	2	423	56	6	487	9	189	17	13	228	0	149	8	15	172	887
07:30 AM	0	11	468	68	3	550	15	229	8	12	264	0	214	10	18	242	1056
07:45 AM	0	10	478	88	5	581	11	180	21	17	229	0	197	11	10	218	1028
Total	0	31	1747	266	23	2067	44	785	68	51	948	0	704	34	58	796	3811
08:00 AM	0	11	423	71	2	507	8	207	16	10	241	0	216	13	14	243	991
08:15 AM	0	8	371	67	8	454	11	178	22	19	230	0	215	8	11	234	918
08:30 AM	0	15	248	48	3	314	16	205	25	18	264	0	210	10	19	239	817
08:45 AM	0	9	239	46	2	296	11	165	23	17	216	0	197	9	13	219	731
Total	0	43	1281	232	15	1571	46	755	86	64	951	0	838	40	57	935	3457
Grand Total	0	95	3900	613	56	4664	105	2014	184	153	2456	0	1952	92	146	2190	9310
Apprch %		2	83.6	13.1	1.2		4.3	82	7.5	6.2		0	89.1	4.2	6.7		
Total %	0	1	41.9	6.6	0.6	50.1	1.1	21.6	2	1.6	26.4	0	21	1	1.6	23.5	

	Southbound	Kapiolani Boulevard Westbound				Piikoi Street Northbound				Kapiolani Boulevard Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	0	**11**	468	68	547	**15**	**229**	8	**252**	0	214	10	224	**1023**
07:45 AM	0	10	**478**	**88**	**576**	11	180	21	212	0	197	11	208	996
08:00 AM	0	11	423	71	505	8	207	16	231	0	**216**	**13**	**229**	965
08:15 AM	0	8	371	67	446	11	178	**22**	211	0	215	8	223	880
Total Volume	0	40	1740	294	2074	45	794	67	906	0	842	42	884	3864
% App. Total		1.9	83.9	14.2		5	87.6	7.4		0	95.2	4.8		
PHF	.000	.909	.910	.835	.900	.750	.867	.761	.899	.000	.975	.808	.965	.944

Wilson Okamoto Corporation

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

Counted By:FS, DM
Counters:TU-0653, TU-0650
Weather:Clear

File Name : KapPii PM
Site Code : 00000005
Start Date : 4/7/2015
Page No : 1

Groups Printed- Unshifted

	Piikoi Street Southbound					Kapiolani Boulevard Westbound					Piikoi Street Northbound					Kapiolani Boulevard Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	0	0	0	13	13	10	197	70	9	286	19	223	38	28	308	0	280	16	16	312	919
03:15 PM	0	0	0	28	28	8	181	70	5	264	19	232	36	34	321	0	311	13	15	339	952
03:30 PM	0	0	0	25	25	0	162	58	11	231	22	287	55	26	390	0	355	28	18	401	1047
03:45 PM	0	0	0	19	19	0	151	61	9	221	40	248	44	33	365	0	376	24	19	419	1024
Total	0	0	0	85	85	18	691	259	34	1002	100	990	173	121	1384	0	1322	81	68	1471	3942
04:00 PM	0	0	0	18	18	0	169	79	4	252	25	242	45	19	331	0	411	52	20	483	1084
04:15 PM	0	0	0	21	21	0	180	52	3	235	23	256	37	18	334	0	424	18	13	455	1045
04:30 PM	0	0	0	27	27	0	165	75	5	245	34	263	36	30	363	0	509	33	24	566	1201
04:45 PM	0	0	0	15	15	0	211	84	2	297	16	241	41	42	340	0	506	36	22	564	1216
Total	0	0	0	81	81	0	725	290	14	1029	98	1002	159	109	1368	0	1850	139	79	2068	4546
05:00 PM	0	0	0	36	36	0	174	61	3	238	28	288	44	19	379	0	558	37	19	614	1267
05:15 PM	0	0	0	24	24	0	193	51	5	249	29	283	46	39	397	0	486	36	16	538	1208
05:30 PM	0	0	0	21	21	17	154	55	1	227	47	293	34	49	423	0	423	26	22	471	1142
05:45 PM	0	0	0	17	17	26	200	49	6	281	26	245	34	34	339	0	435	27	39	501	1138
Total	0	0	0	98	98	43	721	216	15	995	130	1109	158	141	1538	0	1902	126	96	2124	4755
Grand Total	0	0	0	264	264	61	2137	765	63	3026	328	3101	490	371	4290	0	5074	346	243	5663	13243
Apprch %	0	0	0	100		2	70.6	25.3	2.1		7.6	72.3	11.4	8.6		0	89.6	6.1	4.3		
Total %	0	0	0	2	2	0.5	16.1	5.8	0.5	22.8	2.5	23.4	3.7	2.8	32.4	0	38.3	2.6	1.8	42.8	

	Southbound	Kapiolani Boulevard Westbound				Piikoi Street Northbound				Kapiolani Boulevard Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	0	0	165	75	240	**34**	263	36	333	0	509	33	542	1115
04:45 PM	0	0	**211**	**84**	**295**	16	241	41	298	0	506	36	542	1135
05:00 PM	0	0	174	61	235	28	**288**	44	**360**	0	**558**	**37**	**595**	**1190**
05:15 PM	0	0	193	51	244	29	283	**46**	358	0	486	36	522	1124
Total Volume	0	0	743	271	1014	107	1075	167	1349	0	2059	142	2201	4564
% App. Total		0	73.3	26.7		7.9	79.7	12.4		0	93.5	6.5		
PHF	.000	.000	.880	.807	.859	.787	.933	.908	.937	.000	.922	.959	.925	.959

Wilson Okamoto Corporation

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

Counted By:AC, DM
Counters:D4-5671, D4-5673
Weather:Clear

File Name : WarWai AM
Site Code : 00000001
Start Date : 4/8/2015
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Waimanu Street Westbound					Ward Avenue Northbound					Waimanu Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	152	2	0	155	2	2	18	3	25	0	41	2	2	45	2	0	0	0	2	227
06:15 AM	8	154	5	0	167	7	0	21	4	32	1	57	2	0	60	0	0	0	1	1	260
06:30 AM	14	165	4	0	183	4	1	17	4	26	0	73	1	1	75	2	0	4	1	7	291
06:45 AM	11	213	8	0	232	9	2	21	4	36	0	80	8	0	88	0	0	2	1	3	359
Total	34	684	19	0	737	22	5	77	15	119	1	251	13	3	268	4	0	6	3	13	1137
07:00 AM	13	200	6	0	219	5	2	30	7	44	0	129	4	0	133	0	0	0	0	0	396
07:15 AM	18	237	4	0	259	13	2	25	14	54	0	105	8	3	116	1	0	3	2	6	435
07:30 AM	17	241	7	0	265	5	2	39	11	57	0	124	3	1	128	0	0	2	0	2	452
07:45 AM	22	224	11	0	257	5	5	15	4	29	0	113	7	0	120	2	1	2	0	5	411
Total	70	902	28	0	1000	28	11	109	36	184	0	471	22	4	497	3	1	7	2	13	1694
08:00 AM	16	273	8	0	297	8	0	36	8	52	2	100	5	2	109	0	0	2	1	3	461
08:15 AM	8	205	15	0	228	4	0	21	13	38	3	104	9	3	119	0	2	4	0	6	391
08:30 AM	6	250	10	0	266	8	0	25	6	39	2	127	6	2	137	0	0	7	0	7	449
08:45 AM	15	247	11	0	273	7	0	12	4	23	1	102	1	3	107	1	1	1	0	3	406
Total	45	975	44	0	1064	27	0	94	31	152	8	433	21	10	472	1	3	14	1	19	1707
Grand Total	149	2561	91	0	2801	77	16	280	82	455	9	1155	56	17	1237	8	4	27	6	45	4538
Apprch %	5.3	91.4	3.2	0		16.9	3.5	61.5	18		0.7	93.4	4.5	1.4		17.8	8.9	60	13.3		
Total %	3.3	56.4	2	0	61.7	1.7	0.4	6.2	1.8	10	0.2	25.5	1.2	0.4	27.3	0.2	0.1	0.6	0.1	1	

	Ward Avenue Southbound				Waimanu Street Westbound				Ward Avenue Northbound				Waimanu Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	18	237	4	259	**13**	2	25	40	0	105	**8**	113	1	0	**3**	4	416
07:30 AM	17	241	7	265	5	2	**39**	**46**	0	**124**	3	**127**	0	0	2	2	440
07:45 AM	**22**	224	**11**	257	5	**5**	15	25	0	113	7	120	**2**	**1**	2	**5**	407
08:00 AM	16	**273**	8	**297**	8	0	36	44	**2**	100	5	107	0	0	2	2	**450**
Total Volume	73	975	30	1078	31	9	115	155	2	442	23	467	3	1	9	13	1713
% App. Total	6.8	90.4	2.8		20	5.8	74.2		0.4	94.6	4.9		23.1	7.7	69.2		
PHF	.830	.893	.682	.907	.596	.450	.737	.842	.250	.891	.719	.919	.375	.250	.750	.650	.952

Wilson Okamoto Corporation

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

Counted By:AC, DM
Counters:D4-5671, D4-5673
Weather:Clear

File Name : WarWai PM
Site Code : 00000001
Start Date : 4/8/2015
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Waimanu Street Westbound					Ward Avenue Northbound					Waimanu Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	9	214	6	0	229	4	1	19	5	29	1	188	11	3	203	2	2	6	0	10	471
03:15 PM	17	230	3	0	250	2	1	22	15	40	6	195	9	1	211	4	1	8	0	13	514
03:30 PM	8	180	4	0	192	10	3	25	15	53	2	213	8	2	225	1	3	2	0	6	476
03:45 PM	12	242	0	0	254	5	2	12	10	29	2	187	10	0	199	2	3	7	0	12	494
Total	46	866	13	0	925	21	7	78	45	151	11	783	38	6	838	9	9	23	0	41	1955
04:00 PM	11	198	3	0	212	5	0	15	20	40	3	250	18	4	275	2	4	8	0	14	541
04:15 PM	17	189	9	0	215	7	2	8	20	37	3	244	10	0	257	0	1	8	0	9	518
04:30 PM	14	217	5	0	236	7	4	15	21	47	1	239	15	1	256	5	0	14	4	23	562
04:45 PM	14	185	3	0	202	2	0	13	20	35	0	235	10	0	245	2	4	18	0	24	506
Total	56	789	20	0	865	21	6	51	81	159	7	968	53	5	1033	9	9	48	4	70	2127
05:00 PM	23	207	6	0	236	4	1	29	13	47	1	239	12	3	255	3	3	11	4	21	559
05:15 PM	18	228	11	0	257	4	1	13	19	37	2	203	11	4	220	1	0	16	1	18	532
05:30 PM	13	218	11	0	242	7	4	18	21	50	3	188	6	7	204	2	1	7	2	12	508
05:45 PM	21	200	5	0	226	4	8	14	21	47	2	205	5	0	212	3	0	7	1	11	496
Total	75	853	33	0	961	19	14	74	74	181	8	835	34	14	891	9	4	41	8	62	2095
Grand Total	177	2508	66	0	2751	61	27	203	200	491	26	2586	125	25	2762	27	22	112	12	173	6177
Apprch %	6.4	91.2	2.4	0		12.4	5.5	41.3	40.7		0.9	93.6	4.5	0.9		15.6	12.7	64.7	6.9		
Total %	2.9	40.6	1.1	0	44.5	1	0.4	3.3	3.2	7.9	0.4	41.9	2	0.4	44.7	0.4	0.4	1.8	0.2	2.8	

	Ward Avenue Southbound				Waimanu Street Westbound				Ward Avenue Northbound				Waimanu Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	14	217	5	236	**7**	**4**	15	26	1	**239**	**15**	**255**	**5**	0	14	19	536
04:45 PM	14	185	3	202	2	0	13	15	0	235	10	245	2	**4**	**18**	**24**	486
05:00 PM	**23**	207	6	236	4	1	**29**	**34**	1	239	12	252	3	3	11	17	**539**
05:15 PM	18	**228**	**11**	**257**	4	1	13	18	**2**	203	11	216	1	0	16	17	508
Total Volume	69	837	25	931	17	6	70	93	4	916	48	968	11	7	59	77	2069
% App. Total	7.4	89.9	2.7		18.3	6.5	75.3		0.4	94.6	5		14.3	9.1	76.6		
PHF	.750	.918	.568	.906	.607	.375	.603	.684	.500	.958	.800	.949	.550	.438	.819	.802	.960

Wilson Okamoto Corporation

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

Counted By:JJ, RJ
Counters:D4-5672, D4-5677
Weather:Clear

File Name : WarKaw AM
Site Code : 00000003
Start Date : 4/8/2015
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Kawaiahao Street Westbound					Ward Avenue Northbound					Kawaiahao Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	9	140	7	2	158	0	2	3	11	16	0	39	1	0	40	1	2	2	1	6	220
06:15 AM	13	142	7	0	162	2	0	6	11	19	0	52	3	2	57	0	0	3	10	13	251
06:30 AM	7	159	2	0	168	2	1	10	8	21	1	63	4	1	69	1	2	0	5	8	266
06:45 AM	17	197	11	0	225	1	2	10	12	25	2	75	7	0	84	2	2	1	7	12	346
Total	46	638	27	2	713	5	5	29	42	81	3	229	15	3	250	4	6	6	23	39	1083
07:00 AM	7	187	8	0	202	4	2	7	10	23	2	97	5	1	105	5	0	2	4	11	341
07:15 AM	20	222	9	0	251	2	2	7	22	33	5	130	4	2	141	1	0	4	12	17	442
07:30 AM	15	222	15	0	252	0	3	25	19	47	2	99	2	1	104	3	0	4	11	18	421
07:45 AM	7	208	20	0	235	0	1	14	12	27	5	99	5	0	109	7	0	5	8	20	391
Total	49	839	52	0	940	6	8	53	63	130	14	425	16	4	459	16	0	15	35	66	1595
08:00 AM	19	240	26	0	285	2	2	12	13	29	8	95	5	5	113	1	0	4	14	19	446
08:15 AM	13	184	16	0	213	1	1	13	14	29	3	95	5	2	105	8	18	3	7	36	383
08:30 AM	16	231	18	0	265	2	0	7	9	18	8	120	7	3	138	8	0	7	8	23	444
08:45 AM	11	233	15	0	259	6	1	8	10	25	4	90	4	1	99	5	0	3	8	16	399
Total	59	888	75	0	1022	11	4	40	46	101	23	400	21	11	455	22	18	17	37	94	1672
Grand Total	154	2365	154	2	2675	22	17	122	151	312	40	1054	52	18	1164	42	24	38	95	199	4350
Apprch %	5.8	88.4	5.8	0.1		7.1	5.4	39.1	48.4		3.4	90.5	4.5	1.5		21.1	12.1	19.1	47.7		
Total %	3.5	54.4	3.5	0	61.5	0.5	0.4	2.8	3.5	7.2	0.9	24.2	1.2	0.4	26.8	1	0.6	0.9	2.2	4.6	

	Ward Avenue Southbound				Kawaiahao Street Westbound				Ward Avenue Northbound				Kawaiahao Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**20**	222	**9**	251	**2**	2	7	11	5	**130**	4	**139**	1	0	4	5	406
07:30 AM	15	222	15	252	0	**3**	**25**	**28**	2	99	2	103	3	0	4	7	390
07:45 AM	7	208	20	235	0	1	14	15	5	99	**5**	109	**7**	0	**5**	**12**	371
08:00 AM	19	**240**	**26**	**285**	2	2	12	16	**8**	95	5	108	1	0	4	5	**414**
Total Volume	61	892	70	1023	4	8	58	70	20	423	16	459	12	0	17	29	1581
% App. Total	6	87.2	6.8		5.7	11.4	82.9		4.4	92.2	3.5		41.4	0	58.6		
PHF	.763	.929	.673	.897	.500	.667	.580	.625	.625	.813	.800	.826	.429	.000	.850	.604	.955

Wilson Okamoto Corporation

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

Counted By:JJ, RJ
Counters:D4-5672, D4-5677
Weather:Clear

File Name : WarKaw PM
Site Code : 00000003
Start Date : 4/8/2015
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Kawaiahao Street Westbound					Ward Avenue Northbound					Kawaiahao Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	14	203	9	0	226	4	8	15	19	46	8	187	2	3	200	1	5	5	7	18	490
03:15 PM	9	220	10	0	239	4	1	6	27	38	5	193	4	5	207	13	2	12	15	42	526
03:30 PM	11	178	7	0	196	5	4	17	21	47	3	210	3	3	219	7	7	16	11	41	503
03:45 PM	16	235	2	0	253	3	3	10	27	43	3	185	5	1	194	5	2	10	20	37	527
Total	50	836	28	0	914	16	16	48	94	174	19	775	14	12	820	26	16	43	53	138	2046
04:00 PM	14	188	9	0	211	1	2	11	26	40	4	227	5	2	238	12	4	14	6	36	525
04:15 PM	9	176	12	0	197	0	1	17	23	41	9	222	6	1	238	14	3	8	10	35	511
04:30 PM	12	222	6	2	242	0	2	18	26	46	2	231	8	3	244	7	7	7	22	43	575
04:45 PM	15	182	9	0	206	4	2	15	26	47	5	223	8	0	236	7	3	12	7	29	518
Total	50	768	36	2	856	5	7	61	101	174	20	903	27	6	956	40	17	41	45	143	2129
05:00 PM	10	205	8	0	223	4	2	23	18	47	2	224	6	1	233	8	4	13	13	38	541
05:15 PM	15	227	9	0	251	0	2	18	26	46	2	193	1	1	197	9	6	12	17	44	538
05:30 PM	8	217	9	0	234	1	0	11	24	36	2	183	2	4	191	3	7	9	23	42	503
05:45 PM	16	184	8	0	208	0	3	9	29	41	3	198	7	4	212	7	29	3	10	49	510
Total	49	833	34	0	916	5	7	61	97	170	9	798	16	10	833	27	46	37	63	173	2092
Grand Total	149	2437	98	2	2686	26	30	170	292	518	48	2476	57	28	2609	93	79	121	161	454	6267
Apprch %	5.5	90.7	3.6	0.1		5	5.8	32.8	56.4		1.8	94.9	2.2	1.1		20.5	17.4	26.7	35.5		
Total %	2.4	38.9	1.6	0	42.9	0.4	0.5	2.7	4.7	8.3	0.8	39.5	0.9	0.4	41.6	1.5	1.3	1.9	2.6	7.2	

	Ward Avenue Southbound				Kawaiahao Street Westbound				Ward Avenue Northbound				Kawaiahao Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	12	222	6	240	0	**2**	18	20	2	**231**	**8**	**241**	7	**7**	7	21	**522**
04:45 PM	**15**	182	**9**	206	**4**	2	15	21	**5**	223	8	236	7	3	12	22	485
05:00 PM	10	205	8	223	4	2	**23**	**29**	2	224	6	232	8	4	**13**	25	509
05:15 PM	15	**227**	9	**251**	0	2	18	20	2	193	1	196	**9**	6	12	**27**	494
Total Volume	52	836	32	920	8	8	74	90	11	871	23	905	31	20	44	95	2010
% App. Total	5.7	90.9	3.5		8.9	8.9	82.2		1.2	96.2	2.5		32.6	21.1	46.3		
PHF	.867	.921	.889	.916	.500	1.00	.804	.776	.550	.943	.719	.939	.861	.714	.846	.880	.963

Wilson Okamoto Corporation

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

Counted By:BE, FS
Counters:TU-0653, TU-1958
Weather:Clear

File Name : WarQue AM
Site Code : 00000003
Start Date : 4/13/2016
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Queen Street Westbound					Ward Avenue Northbound					Queen Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	3	142	23	1	169	2	6	2	3	13	8	33	7	2	50	1	10	12	3	26	258
06:15 AM	9	140	22	0	171	7	21	1	1	30	1	28	6	0	35	4	10	10	7	31	267
06:30 AM	6	123	33	4	166	5	31	1	4	41	7	67	8	2	84	5	14	7	7	33	324
06:45 AM	7	145	41	2	195	4	36	2	5	47	7	63	5	0	75	7	17	11	6	41	358
Total	25	550	119	7	701	18	94	6	13	131	23	191	26	4	244	17	51	40	23	131	1207
07:00 AM	5	121	23	3	152	15	61	7	12	95	9	70	7	2	88	14	14	6	3	37	372
07:15 AM	4	156	52	9	221	14	72	5	8	99	7	100	4	2	113	9	14	13	7	43	476
07:30 AM	11	151	46	1	209	7	69	6	5	87	8	85	7	0	100	11	23	15	3	52	448
07:45 AM	13	166	55	0	234	20	90	8	15	133	20	75	6	5	106	6	33	17	13	69	542
Total	33	594	176	13	816	56	292	26	40	414	44	330	24	9	407	40	84	51	26	201	1838
08:00 AM	11	151	47	9	218	16	76	4	11	107	14	83	9	4	110	11	26	18	13	68	503
08:15 AM	8	181	52	3	244	15	73	7	8	103	9	93	6	5	113	21	44	24	5	94	554
08:30 AM	15	170	39	9	233	21	65	11	9	106	10	74	6	0	90	12	30	19	7	68	497
08:45 AM	11	193	41	13	258	13	41	3	8	65	18	95	13	2	128	12	27	17	8	64	515
Total	45	695	179	34	953	65	255	25	36	381	51	345	34	11	441	56	127	78	33	294	2069
Grand Total	103	1839	474	54	2470	139	641	57	89	926	118	866	84	24	1092	113	262	169	82	626	5114
Apprch %	4.2	74.5	19.2	2.2		15	69.2	6.2	9.6		10.8	79.3	7.7	2.2		18.1	41.9	27	13.1		
Total %	2	36	9.3	1.1	48.3	2.7	12.5	1.1	1.7	18.1	2.3	16.9	1.6	0.5	21.4	2.2	5.1	3.3	1.6	12.2	

	Ward Avenue Southbound				Queen Street Westbound				Ward Avenue Northbound				Queen Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	13	166	**55**	234	20	**90**	8	**118**	**20**	75	6	101	6	33	17	56	509
08:00 AM	11	151	47	209	16	76	4	96	14	83	**9**	106	11	26	18	55	466
08:15 AM	8	**181**	52	**241**	15	73	7	95	9	**93**	6	**108**	**21**	**44**	**24**	**89**	**533**
08:30 AM	**15**	170	39	224	**21**	65	**11**	97	10	74	6	90	12	30	19	61	472
Total Volume	47	668	193	908	72	304	30	406	53	325	27	405	50	133	78	261	1980
% App. Total	5.2	73.6	21.3		17.7	74.9	7.4		13.1	80.2	6.7		19.2	51	29.9		
PHF	.783	.923	.877	.942	.857	.844	.682	.860	.663	.874	.750	.938	.595	.756	.813	.733	.929

Wilson Okamoto Corporation

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

Counted By:BE, FS
Counters:TU-1958, TU-0653
Weather:Clear

File Name : WarQue PM
Site Code : 00000003
Start Date : 4/13/2016
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Queen Street Westbound					Ward Avenue Northbound					Queen Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	11	149	19	9	188	20	55	10	3	88	10	145	22	0	177	22	51	21	9	103	556
03:15 PM	14	136	19	6	175	9	45	18	13	85	18	167	15	6	206	30	50	27	7	114	580
03:30 PM	14	160	33	5	212	22	55	17	17	111	27	168	11	3	209	20	31	20	12	83	615
03:45 PM	15	158	15	4	192	16	74	25	11	126	26	156	6	3	191	22	64	25	8	119	628
Total	54	603	86	24	767	67	229	70	44	410	81	636	54	12	783	94	196	93	36	419	2379
04:00 PM	8	150	18	4	180	24	54	11	12	101	24	195	14	2	235	23	34	22	3	82	598
04:15 PM	9	157	17	4	187	17	64	9	18	108	21	164	12	4	201	20	71	30	7	128	624
04:30 PM	14	160	20	10	204	23	60	8	25	116	15	185	15	4	219	33	84	17	15	149	688
04:45 PM	13	141	16	1	171	23	56	9	17	105	13	165	20	6	204	27	96	32	12	167	647
Total	44	608	71	19	742	87	234	37	72	430	73	709	61	16	859	103	285	101	37	526	2557
05:00 PM	19	164	19	8	210	14	61	16	12	103	14	172	19	5	210	24	84	35	12	155	678
05:15 PM	11	149	17	5	182	11	67	14	11	103	14	158	23	3	198	28	95	28	10	161	644
05:30 PM	11	152	27	3	193	9	58	17	17	101	15	173	17	2	207	29	96	29	5	159	660
05:45 PM	16	179	13	1	209	15	66	6	9	96	24	143	14	9	190	20	91	23	9	143	638
Total	57	644	76	17	794	49	252	53	49	403	67	646	73	19	805	101	366	115	36	618	2620
Grand Total	155	1855	233	60	2303	203	715	160	165	1243	221	1991	188	47	2447	298	847	309	109	1563	7556
Apprch %	6.7	80.5	10.1	2.6		16.3	57.5	12.9	13.3		9	81.4	7.7	1.9		19.1	54.2	19.8	7		
Total %	2.1	24.6	3.1	0.8	30.5	2.7	9.5	2.1	2.2	16.5	2.9	26.3	2.5	0.6	32.4	3.9	11.2	4.1	1.4	20.7	

	Ward Avenue Southbound				Queen Street Westbound				Ward Avenue Northbound				Queen Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	14	160	**20**	194	**23**	60	8	91	**15**	**185**	15	**215**	**33**	84	17	134	634
04:45 PM	13	141	16	170	23	56	9	88	13	165	20	198	27	**96**	32	**155**	611
05:00 PM	**19**	**164**	19	**202**	14	61	**16**	91	14	172	19	205	24	84	**35**	143	**641**
05:15 PM	11	149	**17**	177	11	**67**	14	**92**	14	158	**23**	195	28	95	28	151	615
Total Volume	57	614	72	743	71	244	47	362	56	680	77	813	112	359	112	583	2501
% App. Total	7.7	82.6	9.7		19.6	67.4	13		6.9	83.6	9.5		19.2	61.6	19.2		
PHF	.750	.936	.900	.920	.772	.910	.734	.984	.933	.919	.837	.945	.848	.935	.800	.940	.975

Wilson Okamoto Corporation

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

Counted By:DY, JC
Counters:TU-0652, TU-0654
Weather:Clear

File Name : WarQue AM
Site Code : 00000002
Start Date : 4/8/2015
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Queen Street Westbound					Ward Avenue Northbound					Queen Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	8	119	19	2	148	5	14	5	9	33	6	27	0	3	36	5	17	6	2	30	247
06:15 AM	11	121	18	2	152	3	22	4	6	35	7	49	3	2	61	2	10	11	9	32	280
06:30 AM	10	124	27	2	163	9	25	4	3	41	13	66	4	0	83	6	20	6	5	37	324
06:45 AM	11	149	34	3	197	10	46	4	14	74	7	77	5	3	92	7	15	11	3	36	399
Total	40	513	98	9	660	27	107	17	32	183	33	219	12	8	272	20	62	34	19	135	1250
07:00 AM	9	138	43	2	192	10	50	8	16	84	6	78	3	4	91	15	23	13	3	54	421
07:15 AM	4	154	40	3	201	9	76	13	15	113	9	121	7	7	144	11	28	14	12	65	523
07:30 AM	9	153	60	5	227	7	70	4	16	97	15	93	7	3	118	7	26	16	4	53	495
07:45 AM	3	160	50	6	219	13	82	5	11	111	24	94	10	1	129	9	33	19	8	69	528
Total	25	605	193	16	839	39	278	30	58	405	54	386	27	15	482	42	110	62	27	241	1967
08:00 AM	9	188	52	7	256	19	66	6	10	101	12	92	6	4	114	8	41	22	10	81	552
08:15 AM	6	150	37	2	195	12	72	6	10	100	15	94	13	2	124	10	45	18	7	80	499
08:30 AM	14	181	50	3	248	14	72	9	12	107	19	109	6	2	136	20	33	19	6	78	569
08:45 AM	13	181	46	2	242	15	52	8	9	84	16	77	6	1	100	9	26	17	7	59	485
Total	42	700	185	14	941	60	262	29	41	392	62	372	31	9	474	47	145	76	30	298	2105
Grand Total	107	1818	476	39	2440	126	647	76	131	980	149	977	70	32	1228	109	317	172	76	674	5322
Apprch %	4.4	74.5	19.5	1.6		12.9	66	7.8	13.4		12.1	79.6	5.7	2.6		16.2	47	25.5	11.3		
Total %	2	34.2	8.9	0.7	45.8	2.4	12.2	1.4	2.5	18.4	2.8	18.4	1.3	0.6	23.1	2	6	3.2	1.4	12.7	

	Ward Avenue Southbound				Queen Street Westbound				Ward Avenue Northbound				Queen Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	3	160	50	213	13	**82**	5	**100**	**24**	94	10	128	9	33	19	61	502
08:00 AM	9	**188**	**52**	**249**	**19**	66	6	91	12	92	6	110	8	41	**22**	71	521
08:15 AM	6	150	37	193	12	72	6	90	15	94	**13**	122	10	**45**	18	**73**	478
08:30 AM	**14**	181	50	245	14	72	**9**	95	19	**109**	6	**134**	**20**	33	19	72	**546**
Total Volume	32	679	189	900	58	292	26	376	70	389	35	494	47	152	78	277	2047
% App. Total	3.6	75.4	21		15.4	77.7	6.9		14.2	78.7	7.1		17	54.9	28.2		
PHF	.571	.903	.909	.904	.763	.890	.722	.940	.729	.892	.673	.922	.588	.844	.886	.949	.937

Wilson Okamoto Corporation

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

Counted By:DY, EV
Counters:TU-0652, TU-0654
Weather:Clear

File Name : WarQue PM
Site Code : 00000002
Start Date : 4/8/2015
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Queen Street Westbound					Ward Avenue Northbound					Queen Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	14	179	25	6	224	14	64	19	19	116	14	161	9	0	184	18	40	23	7	88	612
03:15 PM	23	181	32	3	239	10	64	20	28	122	14	160	9	11	194	16	37	29	7	89	644
03:30 PM	22	177	17	4	220	10	71	24	21	126	17	175	12	7	211	21	44	23	10	98	655
03:45 PM	20	176	29	7	232	24	89	22	35	170	21	150	20	7	198	23	58	26	18	125	725
Total	79	713	103	20	915	58	288	85	103	534	66	646	50	25	787	78	179	101	42	400	2636
04:00 PM	19	157	27	5	208	14	63	19	27	123	24	185	15	4	228	29	60	13	11	113	672
04:15 PM	18	146	24	1	189	15	57	10	17	99	30	198	23	6	257	28	57	31	6	122	667
04:30 PM	16	192	20	2	230	24	55	21	19	119	15	195	21	8	239	25	49	33	22	129	717
04:45 PM	18	160	23	3	204	14	77	16	24	131	16	196	22	5	239	22	96	35	14	167	741
Total	71	655	94	11	831	67	252	66	87	472	85	774	81	23	963	104	262	112	53	531	2797
05:00 PM	28	182	15	3	228	16	74	16	12	118	19	188	21	2	230	28	87	35	8	158	734
05:15 PM	26	185	19	4	234	16	67	17	28	128	16	156	17	6	195	22	83	37	15	157	714
05:30 PM	19	184	22	5	230	14	58	22	23	117	20	136	10	9	175	26	88	27	22	163	685
05:45 PM	23	145	24	3	195	15	60	11	25	111	19	173	23	2	217	16	65	22	7	110	633
Total	96	696	80	15	887	61	259	66	88	474	74	653	71	19	817	92	323	121	52	588	2766
Grand Total	246	2064	277	46	2633	186	799	217	278	1480	225	2073	202	67	2567	274	764	334	147	1519	8199
Apprch %	9.3	78.4	10.5	1.7		12.6	54	14.7	18.8		8.8	80.8	7.9	2.6		18	50.3	22	9.7		
Total %	3	25.2	3.4	0.6	32.1	2.3	9.7	2.6	3.4	18.1	2.7	25.3	2.5	0.8	31.3	3.3	9.3	4.1	1.8	18.5	

	Ward Avenue Southbound				Queen Street Westbound				Ward Avenue Northbound				Queen Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	16	**192**	20	228	**24**	55	**21**	100	15	195	21	231	25	49	33	107	666
04:45 PM	18	160	**23**	201	14	**77**	16	**107**	16	**196**	**22**	**234**	22	**96**	35	**153**	695
05:00 PM	**28**	182	15	225	16	74	16	106	**19**	188	21	228	**28**	87	35	150	**709**
05:15 PM	26	185	19	**230**	16	67	17	100	16	156	17	189	22	83	**37**	142	661
Total Volume	88	719	77	884	70	273	70	413	66	735	81	882	97	315	140	552	2731
% App. Total	10	81.3	8.7		16.9	66.1	16.9		7.5	83.3	9.2		17.6	57.1	25.4		
PHF	.786	.936	.837	.961	.729	.886	.833	.965	.868	.938	.920	.942	.866	.820	.946	.902	.963

Wilson Okamoto Corporation

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

Counted By:GC, KW
Counters:D4-3888, D4-3889
Weather:Clear

File Name : Warlla AM
Site Code : 00000004
Start Date : 4/8/2015
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Sports Authority Parking Lot - North Driveway Westbound					Ward Avenue Northbound					Ilaniwai Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	10	120	2	0	132	0	0	3	0	3	2	30	1	0	33	0	1	1	5	7	175
06:15 AM	4	126	3	4	137	2	0	8	0	10	3	52	1	2	58	0	0	1	2	3	208
06:30 AM	9	133	2	1	145	2	0	6	0	8	2	75	1	1	79	0	0	3	7	10	242
06:45 AM	6	165	2	2	175	1	0	1	10	12	2	86	1	3	92	0	0	1	3	4	283
Total	29	544	9	7	589	5	0	18	10	33	9	243	4	6	262	0	1	6	17	24	908
07:00 AM	11	141	5	3	160	0	0	1	7	8	4	101	2	3	110	1	0	2	4	7	285
07:15 AM	7	169	11	4	191	0	0	2	5	7	3	134	0	3	140	2	1	2	13	18	356
07:30 AM	8	161	7	2	178	0	0	4	5	9	0	108	0	0	108	2	1	2	0	5	300
07:45 AM	14	171	7	5	197	0	0	7	10	17	2	119	0	4	125	1	1	5	9	16	355
Total	40	642	30	14	726	0	0	14	27	41	9	462	2	10	483	6	3	11	26	46	1296
08:00 AM	10	208	9	1	228	0	0	3	12	15	5	104	2	1	112	2	0	0	3	5	360
08:15 AM	16	154	14	0	184	2	0	5	3	10	1	113	2	1	117	3	1	1	11	16	327
08:30 AM	15	186	12	3	216	0	0	14	7	21	4	116	3	5	128	2	0	0	8	10	375
08:45 AM	17	191	8	2	218	1	0	16	7	24	7	110	3	3	123	0	0	4	7	11	376
Total	58	739	43	6	846	3	0	38	29	70	17	443	10	10	480	7	1	5	29	42	1438
Grand Total	127	1925	82	27	2161	8	0	70	66	144	35	1148	16	26	1225	13	5	22	72	112	3642
Apprch %	5.9	89.1	3.8	1.2		5.6	0	48.6	45.8		2.9	93.7	1.3	2.1		11.6	4.5	19.6	64.3		
Total %	3.5	52.9	2.3	0.7	59.3	0.2	0	1.9	1.8	4	1	31.5	0.4	0.7	33.6	0.4	0.1	0.6	2	3.1	

	Ward Avenue Southbound				Sports Authority Parking Lot - North Driveway Westbound				Ward Avenue Northbound				Ilaniwai Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	10	**208**	9	**227**	0	0	3	3	5	104	2	111	2	0	0	2	343
08:15 AM	16	154	**14**	184	**2**	0	5	7	1	113	2	116	**3**	**1**	1	**5**	312
08:30 AM	15	186	12	213	0	0	14	14	4	**116**	**3**	**123**	2	0	0	2	352
08:45 AM	**17**	191	8	216	1	0	**16**	**17**	**7**	110	3	120	0	0	**4**	4	**357**
Total Volume	58	739	43	840	3	0	38	41	17	443	10	470	7	1	5	13	1364
% App. Total	6.9	88	5.1		7.3	0	92.7		3.6	94.3	2.1		53.8	7.7	38.5		
PHF	.853	.888	.768	.925	.375	.000	.594	.603	.607	.955	.833	.955	.583	.250	.313	.650	.955

Wilson Okamoto Corporation

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

Counted By:GC, KW
Counters:D4-3888, D4-3889
Weather:Clear

File Name : Warlla PM
Site Code : 00000004
Start Date : 4/8/2015
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Sports Authority Parking Lot - North Driveway Westbound					Ward Avenue Northbound					Ilaniwai Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	15	193	4	3	215	2	0	12	8	22	3	167	0	3	173	1	0	3	3	7	417
03:15 PM	27	184	3	1	215	1	0	5	12	18	2	173	0	1	176	4	0	2	9	15	424
03:30 PM	15	186	4	6	211	0	0	2	12	14	0	199	1	6	206	1	1	0	13	15	446
03:45 PM	19	205	7	5	236	0	0	4	13	17	4	184	0	5	193	3	0	8	14	25	471
Total	76	768	18	15	877	3	0	23	45	71	9	723	1	15	748	9	1	13	39	62	1758
04:00 PM	19	163	5	4	191	0	0	3	19	22	3	217	0	7	227	3	0	3	9	15	455
04:15 PM	19	169	5	2	195	0	0	3	5	8	0	248	0	0	248	1	0	3	8	12	463
04:30 PM	17	227	4	7	255	0	0	4	13	17	1	222	0	6	229	3	0	8	17	28	529
04:45 PM	19	188	3	1	211	0	0	16	9	25	3	224	0	1	228	2	0	8	12	22	486
Total	74	747	17	14	852	0	0	26	46	72	7	911	0	14	932	9	0	22	46	77	1933
05:00 PM	23	204	7	3	237	0	0	6	7	13	1	218	2	4	225	4	0	5	12	21	496
05:15 PM	23	216	2	7	248	1	0	10	15	26	1	175	0	8	184	1	0	7	16	24	482
05:30 PM	24	192	2	6	224	1	1	1	8	11	2	159	0	6	167	2	0	4	14	20	422
05:45 PM	13	169	2	3	187	0	0	3	10	13	1	207	0	1	209	0	0	0	7	7	416
Total	83	781	13	19	896	2	1	20	40	63	5	759	2	19	785	7	0	16	49	72	1816
Grand Total	233	2296	48	48	2625	5	1	69	131	206	21	2393	3	48	2465	25	1	51	134	211	5507
Apprch %	8.9	87.5	1.8	1.8		2.4	0.5	33.5	63.6		0.9	97.1	0.1	1.9		11.8	0.5	24.2	63.5		
Total %	4.2	41.7	0.9	0.9	47.7	0.1	0	1.3	2.4	3.7	0.4	43.5	0.1	0.9	44.8	0.5	0	0.9	2.4	3.8	

	Ward Avenue Southbound				Sports Authority Parking Lot - North Driveway Westbound				Ward Avenue Northbound				Ilaniwai Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	19	169	5	193	0	0	3	3	0	**248**	0	**248**	1	0	3	4	448
04:30 PM	17	**227**	4	**248**	0	0	4	4	1	222	0	223	3	0	**8**	**11**	**486**
04:45 PM	19	188	3	210	0	0	**16**	**16**	**3**	224	0	227	2	0	8	10	463
05:00 PM	**23**	204	7	234	0	0	6	6	1	218	**2**	221	**4**	0	5	9	470
Total Volume	78	788	19	885	0	0	29	29	5	912	2	919	10	0	24	34	1867
% App. Total	8.8	89	2.1		0	0	100		0.5	99.2	0.2		29.4	0	70.6		
PHF	.848	.868	.679	.892	.000	.000	.453	.453	.417	.919	.250	.926	.625	.000	.750	.773	.960

Wilson Okamoto Corporation

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

Counted By:PA, FS
Counters:TU-0650, TU-0653
Weather:Clear

File Name : WarHal AM
Site Code : 00000005
Start Date : 4/8/2015
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Westbound	Ward Avenue Northbound					Halekauwila Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	95	23	0	119	0	3	33	1	3	40	3	0	2	4	9	168
06:15 AM	4	93	34	0	131	0	4	52	0	3	59	8	0	0	2	10	200
06:30 AM	4	95	38	0	137	0	6	58	2	9	75	12	2	5	6	25	237
06:45 AM	1	118	48	0	167	0	8	63	0	6	77	18	1	4	5	28	272
Total	10	401	143	0	554	0	21	206	3	21	251	41	3	11	17	72	877
07:00 AM	4	100	38	0	142	0	7	81	1	7	96	26	3	3	5	37	275
07:15 AM	4	119	59	2	184	0	6	102	0	6	114	30	1	6	3	40	338
07:30 AM	1	105	62	0	168	0	10	108	0	10	128	24	3	5	5	37	333
07:45 AM	4	123	55	0	182	0	8	86	3	13	110	35	3	4	12	54	346
Total	13	447	214	2	676	0	31	377	4	36	448	115	10	18	25	168	1292
08:00 AM	6	142	62	0	210	0	7	90	0	4	101	20	5	5	4	34	345
08:15 AM	6	113	38	0	157	0	7	90	0	13	110	26	2	9	15	52	319
08:30 AM	1	147	39	0	187	0	4	100	0	14	118	24	4	8	8	44	349
08:45 AM	9	151	39	0	199	0	8	88	0	5	101	30	2	8	15	55	355
Total	22	553	178	0	753	0	26	368	0	36	430	100	13	30	42	185	1368
Grand Total	45	1401	535	2	1983	0	78	951	7	93	1129	256	26	59	84	425	3537
Apprch %	2.3	70.7	27	0.1			6.9	84.2	0.6	8.2		60.2	6.1	13.9	19.8		
Total %	1.3	39.6	15.1	0.1	56.1	0	2.2	26.9	0.2	2.6	31.9	7.2	0.7	1.7	2.4	12	

	Ward Avenue Southbound				Westbound	Ward Avenue Northbound				Halekauwila Street Eastbound				
Start Time	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:15 AM														
07:15 AM	4	119	59	182	0	6	102	0	108	30	1	**6**	37	327
07:30 AM	1	105	**62**	168	0	**10**	**108**	0	**118**	24	3	5	32	318
07:45 AM	4	123	55	182	0	8	86	**3**	97	**35**	3	4	**42**	321
08:00 AM	**6**	**142**	62	**210**	0	7	90	0	97	20	**5**	5	30	**337**
Total Volume	15	489	238	742	0	31	386	3	420	109	12	20	141	1303
% App. Total	2	65.9	32.1			7.4	91.9	0.7		77.3	8.5	14.2		
PHF	.625	.861	.960	.883	.000	.775	.894	.250	.890	.779	.600	.833	.839	.967

Wilson Okamoto Corporation

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

Counted By:FS, PA
Counters:TU-0650, TU-0653
Weather:Clear

File Name : WarHal PM
Site Code : 00000005
Start Date : 4/8/2015
Page No : 1

Groups Printed- Unshifted

	Ward Avenue Southbound					Westbound	Ward Avenue Northbound					Halekauwila Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	7	152	43	0	202	0	9	139	0	14	162	29	0	13	12	54	418
03:15 PM	5	149	35	0	189	0	6	137	3	16	162	38	5	13	7	63	414
03:30 PM	9	150	25	0	184	0	10	150	5	32	197	45	3	19	15	82	463
03:45 PM	12	170	27	0	209	0	7	150	3	20	180	38	9	8	13	68	457
Total	33	621	130	0	784	0	32	576	11	82	701	150	17	53	47	267	1752
04:00 PM	4	122	40	0	166	0	7	162	3	25	197	58	5	15	7	85	448
04:15 PM	2	136	34	0	172	0	6	185	3	24	218	63	4	18	9	94	484
04:30 PM	8	183	45	0	236	0	4	156	0	23	183	66	5	20	29	120	539
04:45 PM	11	151	34	0	196	0	10	167	3	13	193	58	4	22	2	86	475
Total	25	592	153	0	770	0	27	670	9	85	791	245	18	75	47	385	1946
05:00 PM	10	164	36	0	210	0	10	162	0	27	199	56	8	30	16	110	519
05:15 PM	4	175	31	0	210	0	8	115	1	25	149	60	6	17	16	99	458
05:30 PM	7	156	38	0	201	0	9	121	2	21	153	38	4	21	16	79	433
05:45 PM	6	138	28	0	172	0	13	152	1	18	184	50	4	18	5	77	433
Total	27	633	133	0	793	0	40	550	4	91	685	204	22	86	53	365	1843
Grand Total	85	1846	416	0	2347	0	99	1796	24	258	2177	599	57	214	147	1017	5541
Apprch %	3.6	78.7	17.7	0			4.5	82.5	1.1	11.9		58.9	5.6	21	14.5		
Total %	1.5	33.3	7.5	0	42.4	0	1.8	32.4	0.4	4.7	39.3	10.8	1	3.9	2.7	18.4	

	Ward Avenue Southbound				Westbound	Ward Avenue Northbound				Halekauwila Street Eastbound				
Start Time	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 04:15 PM														
04:15 PM	2	136	34	172	0	6	**185**	**3**	**194**	63	4	18	85	451
04:30 PM	8	**183**	**45**	**236**	0	4	156	0	160	**66**	5	20	91	**487**
04:45 PM	**11**	151	34	196	0	**10**	167	3	180	58	4	22	84	460
05:00 PM	10	164	36	210	0	10	162	0	172	56	**8**	**30**	**94**	476
Total Volume	31	634	149	814	0	30	670	6	706	243	21	90	354	1874
% App. Total	3.8	77.9	18.3			4.2	94.9	0.8		68.6	5.9	25.4		
PHF	.705	.866	.828	.862	.000	.750	.905	.500	.910	.920	.656	.750	.941	.962

Wilson Okamoto Corporation

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

Counted By:RJ, JJ
Counters:TU-0651, TU-0649
Weather:Clear

File Name : CooKaw AM
Site Code : 00000001
Start Date : 4/9/2015
Page No : 1

Groups Printed- Unshifted

	Cooke Street Southbound					Kawaiahao Street Westbound					Cooke Street Northbound					Kawaiahao Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	29	13	4	47	0	4	4	8	16	4	13	4	0	21	7	0	2	4	13	97
06:15 AM	2	29	17	5	53	2	2	5	13	22	3	19	2	0	24	1	0	1	7	9	108
06:30 AM	0	58	29	8	95	1	4	6	13	24	3	33	3	0	39	2	2	5	7	16	174
06:45 AM	3	88	44	7	142	3	10	9	19	41	8	34	2	1	45	3	2	3	10	18	246
Total	6	204	103	24	337	6	20	24	53	103	18	99	11	1	129	13	4	11	28	56	625
07:00 AM	5	75	45	11	136	1	6	15	4	26	9	52	5	1	67	6	0	5	8	19	248
07:15 AM	5	91	57	18	171	4	4	9	19	36	10	36	6	0	52	4	2	4	8	18	277
07:30 AM	5	86	43	16	150	4	14	14	18	50	12	56	15	0	83	7	1	6	8	22	305
07:45 AM	9	91	61	11	172	11	6	11	20	48	13	58	12	0	83	6	0	8	10	24	327
Total	24	343	206	56	629	20	30	49	61	160	44	202	38	1	285	23	3	23	34	83	1157
08:00 AM	9	90	46	13	158	4	4	20	19	47	12	48	7	0	67	7	2	6	14	29	301
08:15 AM	12	78	55	19	164	10	11	13	22	56	8	44	9	0	61	7	4	6	7	24	305
08:30 AM	11	72	26	27	136	8	6	17	18	49	8	41	13	0	62	4	5	7	3	19	266
08:45 AM	12	72	24	21	129	2	8	19	18	47	15	42	6	0	63	4	2	6	6	18	257
Total	44	312	151	80	587	24	29	69	77	199	43	175	35	0	253	22	13	25	30	90	1129
Grand Total	74	859	460	160	1553	50	79	142	191	462	105	476	84	2	667	58	20	59	92	229	2911
Apprch %	4.8	55.3	29.6	10.3		10.8	17.1	30.7	41.3		15.7	71.4	12.6	0.3		25.3	8.7	25.8	40.2		
Total %	2.5	29.5	15.8	5.5	53.3	1.7	2.7	4.9	6.6	15.9	3.6	16.4	2.9	0.1	22.9	2	0.7	2	3.2	7.9	

	Cooke Street Southbound				Kawaiahao Street Westbound				Cooke Street Northbound				Kawaiahao Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	5	86	43	134	4	**14**	14	32	12	56	**15**	**83**	**7**	1	6	14	263
07:45 AM	9	**91**	**61**	**161**	**11**	6	11	28	**13**	**58**	12	83	6	0	**8**	14	**286**
08:00 AM	9	90	46	145	4	4	**20**	28	12	48	7	67	7	2	6	15	255
08:15 AM	**12**	78	55	145	10	11	13	**34**	8	44	9	61	7	**4**	6	**17**	257
Total Volume	35	345	205	585	29	35	58	122	45	206	43	294	27	7	26	60	1061
% App. Total	6	59	35		23.8	28.7	47.5		15.3	70.1	14.6		45	11.7	43.3		
PHF	.729	.948	.840	.908	.659	.625	.725	.897	.865	.888	.717	.886	.964	.438	.813	.882	.927

Wilson Okamoto Corporation

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

Counted By:RJ, JJ
Counters:TU-0649, TU-0651
Weather:Clear

File Name : CooKaw PM
Site Code : 00000001
Start Date : 4/9/2015
Page No : 1

Groups Printed- Unshifted

	Cooke Street Southbound					Kawaiahao Street Westbound					Cooke Street Northbound					Kawaiahao Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	8	38	15	5	66	5	8	24	8	45	10	60	8	0	78	8	7	7	6	28	217
03:15 PM	5	64	14	6	89	3	8	11	18	40	8	56	16	0	80	7	4	8	8	27	236
03:30 PM	7	83	19	4	113	2	13	15	12	42	15	66	16	0	97	12	6	6	9	33	285
03:45 PM	7	78	25	6	116	5	4	21	8	38	7	99	12	0	118	6	1	8	5	20	292
Total	27	263	73	21	384	15	33	71	46	165	40	281	52	0	373	33	18	29	28	108	1030
04:00 PM	5	80	19	9	113	4	5	18	21	48	9	79	9	0	97	12	5	13	10	40	298
04:15 PM	9	64	16	17	106	2	5	24	20	51	6	88	13	0	107	7	3	6	13	29	293
04:30 PM	8	83	12	9	112	7	15	22	9	53	4	95	10	0	109	10	4	9	10	33	307
04:45 PM	9	80	15	14	118	8	5	15	18	46	8	84	8	0	100	9	6	8	12	35	299
Total	31	307	62	49	449	21	30	79	68	198	27	346	40	0	413	38	18	36	45	137	1197
05:00 PM	4	67	21	10	102	12	7	26	14	59	15	106	7	0	128	12	2	13	16	43	332
05:15 PM	8	66	14	9	97	5	7	25	15	52	6	87	17	0	110	12	3	8	7	30	289
05:30 PM	8	35	12	9	64	7	4	29	16	56	3	99	5	0	107	7	2	5	11	25	252
05:45 PM	7	41	15	5	68	6	5	17	6	34	7	61	8	0	76	12	1	4	8	25	203
Total	27	209	62	33	331	30	23	97	51	201	31	353	37	0	421	43	8	30	42	123	1076
Grand Total	85	779	197	103	1164	66	86	247	165	564	98	980	129	0	1207	114	44	95	115	368	3303
Apprch %	7.3	66.9	16.9	8.8		11.7	15.2	43.8	29.3		8.1	81.2	10.7	0		31	12	25.8	31.2		
Total %	2.6	23.6	6	3.1	35.2	2	2.6	7.5	5	17.1	3	29.7	3.9	0	36.5	3.5	1.3	2.9	3.5	11.1	

	Cooke Street Southbound				Kawaiahao Street Westbound				Cooke Street Northbound				Kawaiahao Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	8	**83**	12	103	7	**15**	22	44	4	95	10	109	10	4	9	23	279
04:45 PM	**9**	80	15	**104**	8	5	15	28	8	84	8	100	9	**6**	8	23	255
05:00 PM	4	67	**21**	92	**12**	7	**26**	**45**	**15**	**106**	7	**128**	**12**	2	**13**	**27**	**292**
05:15 PM	8	66	14	88	5	7	25	37	6	87	**17**	110	12	3	8	23	258
Total Volume	29	296	62	387	32	34	88	154	33	372	42	447	43	15	38	96	1084
% App. Total	7.5	76.5	16		20.8	22.1	57.1		7.4	83.2	9.4		44.8	15.6	39.6		
PHF	.806	.892	.738	.930	.667	.567	.846	.856	.550	.877	.618	.873	.896	.625	.731	.889	.928

Wilson Okamoto Corporation

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

Counted By:DY, JC
Counters:D4-5675, D4-5676
Weather:Clear

File Name : CooQue AM
Site Code : 00000002
Start Date : 4/9/2015
Page No : 1

Groups Printed- Unshifted

	Cooke Street Southbound					Queen Street Westbound					Cooke Street Northbound					Queen Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	3	18	9	3	33	5	25	5	8	43	3	11	2	6	22	5	27	10	7	49	147
06:15 AM	2	22	9	1	34	4	36	2	8	50	2	18	5	1	26	4	20	11	7	42	152
06:30 AM	3	35	27	4	69	10	50	6	15	81	8	19	2	1	30	5	37	4	6	52	232
06:45 AM	2	41	51	6	100	7	54	10	20	91	11	31	5	4	51	6	29	16	6	57	299
Total	10	116	96	14	236	26	165	23	51	265	24	79	14	12	129	20	113	41	26	200	830
07:00 AM	4	44	36	2	86	14	89	7	6	116	9	39	9	4	61	7	34	12	6	59	322
07:15 AM	4	53	41	4	102	10	91	10	25	136	6	37	4	8	55	6	46	11	4	67	360
07:30 AM	3	49	44	3	99	10	119	18	19	166	5	55	10	7	77	12	48	18	10	88	430
07:45 AM	3	52	54	7	116	13	122	12	15	162	3	66	8	5	82	6	50	10	5	71	431
Total	14	198	175	16	403	47	421	47	65	580	23	197	31	24	275	31	178	51	25	285	1543
08:00 AM	3	64	36	14	117	20	115	11	11	157	8	48	9	11	76	8	43	17	9	77	427
08:15 AM	3	47	41	2	93	12	94	7	11	124	9	43	11	7	70	13	47	16	7	83	370
08:30 AM	7	51	29	2	89	18	84	7	13	122	8	41	7	6	62	13	51	18	4	86	359
08:45 AM	5	50	26	7	88	22	76	15	8	121	9	43	10	4	66	6	57	21	7	91	366
Total	18	212	132	25	387	72	369	40	43	524	34	175	37	28	274	40	198	72	27	337	1522
Grand Total	42	526	403	55	1026	145	955	110	159	1369	81	451	82	64	678	91	489	164	78	822	3895
Apprch %	4.1	51.3	39.3	5.4		10.6	69.8	8	11.6		11.9	66.5	12.1	9.4		11.1	59.5	20	9.5		
Total %	1.1	13.5	10.3	1.4	26.3	3.7	24.5	2.8	4.1	35.1	2.1	11.6	2.1	1.6	17.4	2.3	12.6	4.2	2	21.1	

	Cooke Street Southbound				Queen Street Westbound				Cooke Street Northbound				Queen Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	**3**	49	44	96	10	119	**18**	**147**	5	55	10	70	12	48	**18**	**78**	391
07:45 AM	3	52	**54**	**109**	13	**122**	12	147	3	**66**	8	**77**	6	**50**	10	66	**399**
08:00 AM	3	**64**	36	103	**20**	115	11	146	8	48	9	65	8	43	17	68	382
08:15 AM	3	47	41	91	12	94	7	113	**9**	43	**11**	63	**13**	47	16	76	343
Total Volume	12	212	175	399	55	450	48	553	25	212	38	275	39	188	61	288	1515
% App. Total	3	53.1	43.9		9.9	81.4	8.7		9.1	77.1	13.8		13.5	65.3	21.2		
PHF	1.00	.828	.810	.915	.688	.922	.667	.940	.694	.803	.864	.893	.750	.940	.847	.923	.949

Wilson Okamoto Corporation

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

Counted By:DY, EV
Counters:D4-5675, D4-5676
Weather:Clear

File Name : CooQue PM
Site Code : 00000002
Start Date : 4/9/2015
Page No : 1

Groups Printed- Unshifted

	Cooke Street Southbound					Queen Street Westbound					Cooke Street Northbound					Queen Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	2	32	16	2	52	11	91	14	11	127	7	60	13	5	85	8	49	16	7	80	344
03:15 PM	9	46	20	5	80	18	76	14	9	117	7	50	17	5	79	16	58	22	5	101	377
03:30 PM	4	71	17	2	94	6	112	17	12	147	7	63	10	10	90	17	66	11	5	99	430
03:45 PM	9	60	22	7	98	22	100	21	10	153	7	84	7	8	106	15	61	21	6	103	460
Total	24	209	75	16	324	57	379	66	42	544	28	257	47	28	360	56	234	70	23	383	1611
04:00 PM	5	73	19	8	105	7	70	9	17	103	12	71	19	4	106	15	59	17	10	101	415
04:15 PM	4	50	18	1	73	18	79	20	20	137	6	68	9	8	91	20	78	22	7	127	428
04:30 PM	6	64	29	2	101	8	73	7	12	100	8	78	9	5	100	24	101	18	11	154	455
04:45 PM	11	63	22	3	99	11	67	12	12	102	3	66	14	11	94	25	107	15	9	156	451
Total	26	250	88	14	378	44	289	48	61	442	29	283	51	28	391	84	345	72	37	538	1749
05:00 PM	9	56	27	3	95	11	82	14	12	119	10	94	14	14	132	23	98	19	8	148	494
05:15 PM	7	55	18	0	80	11	80	17	16	124	9	75	12	5	101	19	94	20	3	136	441
05:30 PM	3	30	14	5	52	13	68	8	16	105	9	72	11	7	99	27	87	15	5	134	390
05:45 PM	1	25	25	7	58	11	74	7	14	106	13	63	10	8	94	6	84	15	9	114	372
Total	20	166	84	15	285	46	304	46	58	454	41	304	47	34	426	75	363	69	25	532	1697
Grand Total	70	625	247	45	987	147	972	160	161	1440	98	844	145	90	1177	215	942	211	85	1453	5057
Apprch %	7.1	63.3	25	4.6		10.2	67.5	11.1	11.2		8.3	71.7	12.3	7.6		14.8	64.8	14.5	5.8		
Total %	1.4	12.4	4.9	0.9	19.5	2.9	19.2	3.2	3.2	28.5	1.9	16.7	2.9	1.8	23.3	4.3	18.6	4.2	1.7	28.7	

	Cooke Street Southbound				Queen Street Westbound				Cooke Street Northbound				Queen Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	6	**64**	**29**	**99**	8	73	7	88	8	78	9	95	24	101	18	143	425
04:45 PM	**11**	63	22	96	**11**	67	12	90	3	66	**14**	83	**25**	**107**	15	**147**	416
05:00 PM	9	56	27	92	11	**82**	14	107	**10**	**94**	14	**118**	23	98	19	140	**457**
05:15 PM	7	55	18	80	11	80	**17**	**108**	9	75	12	96	19	94	**20**	133	417
Total Volume	33	238	96	367	41	302	50	393	30	313	49	392	91	400	72	563	1715
% App. Total	9	64.9	26.2		10.4	76.8	12.7		7.7	79.8	12.5		16.2	71	12.8		
PHF	.750	.930	.828	.927	.932	.921	.735	.910	.750	.832	.875	.831	.910	.935	.900	.957	.938

Wilson Okamoto Corporation

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

Counted By:GC, KW
Counters:D4-3890, D4-5674
Weather:Clear

File Name : CooHal AM
Site Code : 00000004
Start Date : 4/9/2015
Page No : 1

Groups Printed- Unshifted

	Cooke Street Southbound					Halekauwila Street Westbound					Cooke Street Northbound					Halekauwila Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	7	17	9	3	36	6	6	5	3	20	0	11	2	3	16	1	10	1	6	18	90
06:15 AM	6	27	3	3	39	3	2	5	5	15	2	15	0	5	22	5	5	8	5	23	99
06:30 AM	3	32	13	4	52	8	8	5	4	25	4	19	2	4	29	7	18	5	6	36	142
06:45 AM	5	55	5	1	66	4	15	4	9	32	3	31	4	5	43	8	12	2	3	25	166
Total	21	131	30	11	193	21	31	19	21	92	9	76	8	17	110	21	45	16	20	102	497
07:00 AM	11	38	19	4	72	3	21	7	6	37	4	39	2	6	51	10	15	2	6	33	193
07:15 AM	9	44	18	10	81	8	24	9	4	45	4	26	7	4	41	11	12	6	6	35	202
07:30 AM	14	51	12	8	85	13	21	9	5	48	3	51	9	2	65	13	23	10	7	53	251
07:45 AM	6	50	19	8	83	11	23	13	8	55	5	49	13	5	72	14	17	8	4	43	253
Total	40	183	68	30	321	35	89	38	23	185	16	165	31	17	229	48	67	26	23	164	899
08:00 AM	6	81	17	7	111	13	19	7	2	41	4	45	13	2	64	13	18	8	4	43	259
08:15 AM	8	53	12	1	74	14	9	4	0	27	3	49	8	2	62	10	11	5	6	32	195
08:30 AM	10	65	12	3	90	10	10	8	11	39	2	45	10	2	59	4	14	2	4	24	212
08:45 AM	6	77	10	10	103	7	15	3	4	29	2	48	5	3	58	10	13	10	4	37	227
Total	30	276	51	21	378	44	53	22	17	136	11	187	36	9	243	37	56	25	18	136	893
Grand Total	91	590	149	62	892	100	173	79	61	413	36	428	75	43	582	106	168	67	61	402	2289
Apprch %	10.2	66.1	16.7	7		24.2	41.9	19.1	14.8		6.2	73.5	12.9	7.4		26.4	41.8	16.7	15.2		
Total %	4	25.8	6.5	2.7	39	4.4	7.6	3.5	2.7	18	1.6	18.7	3.3	1.9	25.4	4.6	7.3	2.9	2.7	17.6	

	Cooke Street Southbound				Halekauwila Street Westbound				Cooke Street Northbound				Halekauwila Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	**14**	51	12	77	13	21	9	43	3	**51**	9	63	13	**23**	**10**	**46**	229
07:45 AM	6	50	**19**	75	11	**23**	**13**	**47**	**5**	49	**13**	**67**	**14**	17	8	39	228
08:00 AM	6	**81**	17	**104**	13	19	7	39	4	45	13	62	13	18	8	39	**244**
08:15 AM	8	53	12	73	**14**	9	4	27	3	49	8	60	10	11	5	26	186
Total Volume	34	235	60	329	51	72	33	156	15	194	43	252	50	69	31	150	887
% App. Total	10.3	71.4	18.2		32.7	46.2	21.2		6	77	17.1		33.3	46	20.7		
PHF	.607	.725	.789	.791	.911	.783	.635	.830	.750	.951	.827	.940	.893	.750	.775	.815	.909

Wilson Okamoto Corporation

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

Counted By:GC, KW
Counters:D4-5674, D4-3890
Weather:Clear

File Name : CooHal PM
Site Code : 00000004
Start Date : 4/9/2015
Page No : 1

Groups Printed- Unshifted

	Cooke Street Southbound					Halekauwila Street Westbound					Cooke Street Northbound					Halekauwila Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	5	50	7	3	65	5	12	4	7	28	4	69	3	6	82	5	20	8	1	34	209
03:15 PM	11	67	6	3	87	11	15	11	5	42	3	50	9	4	66	11	36	3	6	56	251
03:30 PM	8	71	6	4	89	8	15	4	5	32	7	61	13	2	83	11	20	10	6	47	251
03:45 PM	7	87	7	1	102	3	9	15	11	38	0	67	12	4	83	13	26	10	8	57	280
Total	31	275	26	11	343	27	51	34	28	140	14	247	37	16	314	40	102	31	21	194	991
04:00 PM	14	75	8	1	98	10	15	22	9	56	3	67	8	5	83	12	23	6	2	43	280
04:15 PM	7	69	13	1	90	7	18	7	5	37	4	56	12	6	78	17	27	8	4	56	261
04:30 PM	7	73	9	9	98	8	17	15	11	51	3	59	6	8	76	22	35	14	11	82	307
04:45 PM	8	69	11	9	97	10	12	15	12	49	7	52	10	7	76	24	31	15	8	78	300
Total	36	286	41	20	383	35	62	59	37	193	17	234	36	26	313	75	116	43	25	259	1148
05:00 PM	8	66	9	3	86	13	21	17	8	59	5	83	11	3	102	18	26	19	10	73	320
05:15 PM	9	71	11	6	97	10	22	20	4	56	3	58	6	2	69	16	30	10	11	67	289
05:30 PM	4	41	15	5	65	6	17	14	10	47	5	68	16	7	96	10	28	9	7	54	262
05:45 PM	3	37	7	1	48	9	20	16	9	54	7	58	18	13	96	10	22	10	7	49	247
Total	24	215	42	15	296	38	80	67	31	216	20	267	51	25	363	54	106	48	35	243	1118
Grand Total	91	776	109	46	1022	100	193	160	96	549	51	748	124	67	990	169	324	122	81	696	3257
Apprch %	8.9	75.9	10.7	4.5		18.2	35.2	29.1	17.5		5.2	75.6	12.5	6.8		24.3	46.6	17.5	11.6		
Total %	2.8	23.8	3.3	1.4	31.4	3.1	5.9	4.9	2.9	16.9	1.6	23	3.8	2.1	30.4	5.2	9.9	3.7	2.5	21.4	

	Cooke Street Southbound					Halekauwila Street Westbound					Cooke Street Northbound					Halekauwila Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. 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	7	**73**	9	**9**	**98**	8	17	15	11	51	3	59	6	**8**	76	22	**35**	14	**11**	**82**	307
04:45 PM	8	69	**11**	9	97	10	12	15	**12**	49	**7**	52	10	7	76	**24**	31	15	8	78	300
05:00 PM	8	66	9	3	86	**13**	21	17	8	**59**	5	**83**	11	3	**102**	18	26	**19**	10	73	**320**
05:15 PM	**9**	71	11	6	97	10	**22**	**20**	4	56	3	58	6	2	69	16	30	10	11	67	289
Total Volume	32	279	40	27	378	41	72	67	35	215	18	252	33	20	323	80	122	58	40	300	1216
% App. Total	8.5	73.8	10.6	7.1		19.1	33.5	31.2	16.3		5.6	78	10.2	6.2		26.7	40.7	19.3	13.3		
PHF	.889	.955	.909	.750	.964	.788	.818	.838	.729	.911	.643	.759	.750	.625	.792	.833	.871	.763	.909	.915	.950

Wilson Okamoto Corporation

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

Counted By:FS, PA
Counters:TU-0654, TU-0652
Weather:Clear

File Name : CooPoh AM
Site Code : 00000003
Start Date : 4/9/2015
Page No : 1

Groups Printed- Unshifted

	Cooke Street Southbound					Pohukaina Street Westbound					Cooke Street Northbound					Pohukaina Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	4	13	7	0	24	1	1	2	1	5	0	11	7	0	18	0	7	0	2	9	56
06:15 AM	4	24	10	1	39	4	3	3	1	11	2	16	4	1	23	0	2	1	3	6	79
06:30 AM	3	20	23	1	47	4	13	12	4	33	2	13	5	0	20	1	16	1	6	24	124
06:45 AM	13	29	18	4	64	6	20	4	2	32	3	27	9	1	40	6	10	3	5	24	160
Total	24	86	58	6	174	15	37	21	8	81	7	67	25	2	101	7	35	5	16	63	419
07:00 AM	2	28	14	1	45	6	15	4	2	27	6	25	15	4	50	8	10	4	3	25	147
07:15 AM	14	26	18	3	61	10	31	5	2	48	1	28	13	3	45	6	10	5	5	26	180
07:30 AM	5	52	18	0	75	7	42	14	3	66	3	42	4	4	53	8	9	4	1	22	216
07:45 AM	6	44	17	1	68	11	30	12	2	55	8	46	11	1	66	12	18	4	1	35	224
Total	27	150	67	5	249	34	118	35	9	196	18	141	43	12	214	34	47	17	10	108	767
08:00 AM	10	72	19	1	102	9	17	11	3	40	5	42	13	4	64	9	7	7	2	25	231
08:15 AM	8	37	27	3	75	6	24	9	2	41	0	39	16	4	59	12	14	5	4	35	210
08:30 AM	8	48	21	0	77	8	26	8	5	47	5	36	15	1	57	13	19	4	1	37	218
08:45 AM	8	68	17	3	96	13	17	9	6	45	4	32	14	7	57	13	12	4	1	30	228
Total	34	225	84	7	350	36	84	37	16	173	14	149	58	16	237	47	52	20	8	127	887
Grand Total	85	461	209	18	773	85	239	93	33	450	39	357	126	30	552	88	134	42	34	298	2073
Apprch %	11	59.6	27	2.3		18.9	53.1	20.7	7.3		7.1	64.7	22.8	5.4		29.5	45	14.1	11.4		
Total %	4.1	22.2	10.1	0.9	37.3	4.1	11.5	4.5	1.6	21.7	1.9	17.2	6.1	1.4	26.6	4.2	6.5	2	1.6	14.4	

	Cooke Street Southbound				Pohukaina Street Westbound				Cooke Street Northbound				Pohukaina Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	6	44	17	67	**11**	**30**	**12**	**53**	**8**	**46**	11	**65**	12	18	4	34	219
08:00 AM	**10**	**72**	19	**101**	9	17	11	37	5	42	13	60	9	7	**7**	23	**221**
08:15 AM	8	37	**27**	72	6	24	9	39	0	39	**16**	55	12	14	5	31	197
08:30 AM	8	48	21	77	8	26	8	42	5	36	15	56	**13**	**19**	4	**36**	211
Total Volume	32	201	84	317	34	97	40	171	18	163	55	236	46	58	20	124	848
% App. Total	10.1	63.4	26.5		19.9	56.7	23.4		7.6	69.1	23.3		37.1	46.8	16.1		
PHF	.800	.698	.778	.785	.773	.808	.833	.807	.563	.886	.859	.908	.885	.763	.714	.861	.959

Wilson Okamoto Corporation

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

Counted By:PA, FS
Counters:TU-0654, TU-0652
Weather:Clear

File Name : CooPoh PM
Site Code : 00000003
Start Date : 4/9/2015
Page No : 1

Groups Printed- Unshifted

	Cooke Street Southbound					Pohukaina Street Westbound					Cooke Street Northbound					Pohukaina Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	16	37	7	2	62	9	19	10	2	40	4	52	6	2	64	14	21	6	2	43	209
03:15 PM	7	58	15	5	85	9	18	12	5	44	5	37	17	2	61	13	27	5	5	50	240
03:30 PM	15	65	7	0	87	13	27	22	5	67	0	39	11	0	50	18	23	7	5	53	257
03:45 PM	20	66	15	5	106	6	33	12	10	61	5	45	12	3	65	21	29	6	5	61	293
Total	58	226	44	12	340	37	97	56	22	212	14	173	46	7	240	66	100	24	17	207	999
04:00 PM	16	54	14	0	84	19	24	11	2	56	0	41	5	6	52	26	19	6	8	59	251
04:15 PM	15	58	11	3	87	13	26	9	4	52	0	46	3	6	55	15	15	7	2	39	233
04:30 PM	20	59	15	5	99	4	22	12	8	46	3	39	12	8	62	17	49	7	3	76	283
04:45 PM	19	64	13	4	100	10	15	8	3	36	1	40	3	9	53	19	31	9	2	61	250
Total	70	235	53	12	370	46	87	40	17	190	4	166	23	29	222	77	114	29	15	235	1017
05:00 PM	20	65	12	11	108	13	22	22	7	64	5	51	14	10	80	25	22	6	8	61	313
05:15 PM	14	54	19	3	90	12	21	15	8	56	8	40	16	11	75	12	26	6	4	48	269
05:30 PM	15	27	13	4	59	18	17	15	6	56	2	40	20	10	72	31	21	8	62	122	309
05:45 PM	10	30	15	4	59	12	27	24	7	70	4	42	6	11	63	16	18	5	8	47	239
Total	59	176	59	22	316	55	87	76	28	246	19	173	56	42	290	84	87	25	82	278	1130
Grand Total	187	637	156	46	1026	138	271	172	67	648	37	512	125	78	752	227	301	78	114	720	3146
Apprch %	18.2	62.1	15.2	4.5		21.3	41.8	26.5	10.3		4.9	68.1	16.6	10.4		31.5	41.8	10.8	15.8		
Total %	5.9	20.2	5	1.5	32.6	4.4	8.6	5.5	2.1	20.6	1.2	16.3	4	2.5	23.9	7.2	9.6	2.5	3.6	22.9	

	Cooke Street Southbound				Pohukaina Street Westbound				Cooke Street Northbound				Pohukaina Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	**20**	59	15	94	4	**22**	12	38	3	39	12	54	17	**49**	7	**73**	259
04:45 PM	19	64	13	96	10	15	8	33	1	40	3	44	19	31	**9**	59	232
05:00 PM	20	**65**	12	**97**	**13**	22	**22**	**57**	5	**51**	14	**70**	**25**	22	6	53	**277**
05:15 PM	14	54	**19**	87	12	21	15	48	**8**	40	**16**	64	12	26	6	44	243
Total Volume	73	242	59	374	39	80	57	176	17	170	45	232	73	128	28	229	1011
% App. Total	19.5	64.7	15.8		22.2	45.5	32.4		7.3	73.3	19.4		31.9	55.9	12.2		
PHF	.913	.931	.776	.964	.750	.909	.648	.772	.531	.833	.703	.829	.730	.653	.778	.784	.912

Wilson Okamoto Corporation

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

Counted By:AC, DM
Counters:TU-0653, TU-0650
Weather:Clear

File Name : HalKam AM
Site Code : 00000005
Start Date : 4/9/2015
Page No : 1

Groups Printed- Unshifted

	Kauhale Kakaako Drive Thru Southbound					Halekauwila Street Westbound					Kamani Street Northbound					Halekauwila Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	3	3	1	29	0	3	33	4	0	0	0	4	0	6	0	0	6	46
06:15 AM	0	0	0	0	0	4	27	1	2	34	3	0	2	3	8	1	5	3	0	9	51
06:30 AM	0	0	0	1	1	6	35	0	7	48	5	0	4	2	11	1	9	3	0	13	73
06:45 AM	0	0	0	1	1	6	39	0	6	51	3	0	2	2	7	3	20	2	1	26	85
Total	0	0	0	5	5	17	130	1	18	166	15	0	8	7	30	5	40	8	1	54	255
07:00 AM	0	0	0	1	1	9	49	1	6	65	3	0	7	3	13	0	7	1	0	8	87
07:15 AM	0	0	0	1	1	8	55	1	1	65	5	0	5	5	15	0	9	2	0	11	92
07:30 AM	0	0	0	1	1	17	55	3	2	77	2	0	0	1	3	0	30	4	1	35	116
07:45 AM	0	0	0	0	0	11	63	1	1	76	2	0	10	1	13	0	16	5	0	21	110
Total	0	0	0	3	3	45	222	6	10	283	12	0	22	10	44	0	62	12	1	75	405
08:00 AM	0	0	0	3	3	12	41	1	2	56	3	0	9	1	13	1	20	3	1	25	97
08:15 AM	0	0	0	1	1	10	34	1	3	48	13	0	10	4	27	0	13	1	1	15	91
08:30 AM	0	0	0	0	0	15	28	0	2	45	7	0	11	3	21	1	22	3	6	32	98
08:45 AM	0	0	0	0	0	16	24	1	0	41	2	0	6	1	9	1	8	0	0	9	59
Total	0	0	0	4	4	53	127	3	7	190	25	0	36	9	70	3	63	7	8	81	345
Grand Total	0	0	0	12	12	115	479	10	35	639	52	0	66	26	144	8	165	27	10	210	1005
Apprch %	0	0	0	100		18	75	1.6	5.5		36.1	0	45.8	18.1		3.8	78.6	12.9	4.8		
Total %	0	0	0	1.2	1.2	11.4	47.7	1	3.5	63.6	5.2	0	6.6	2.6	14.3	0.8	16.4	2.7	1	20.9	

	Kauhale Kakaako Drive Thru Southbound				Halekauwila Street Westbound				Kamani Street Northbound				Halekauwila Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	8	55	1	64	**5**	0	5	10	0	9	2	11	85
07:30 AM	0	0	0	0	**17**	55	**3**	**75**	2	0	0	2	0	**30**	4	**34**	**111**
07:45 AM	0	0	0	0	11	**63**	1	75	2	0	**10**	**12**	0	16	**5**	21	108
08:00 AM	0	0	0	0	12	41	1	54	3	0	9	12	**1**	20	3	24	90
Total Volume	0	0	0	0	48	214	6	268	12	0	24	36	1	75	14	90	394
% App. Total	0	0	0		17.9	79.9	2.2		33.3	0	66.7		1.1	83.3	15.6		
PHF	.000	.000	.000	.000	.706	.849	.500	.893	.600	.000	.600	.750	.250	.625	.700	.662	.887

Wilson Okamoto Corporation

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

Counted By:AC, DM
Counters:TU-0653, TU-0650
Weather:Clear

File Name : HalKam PM
Site Code : 00000005
Start Date : 4/9/2015
Page No : 1

Groups Printed- Unshifted

	Kauhale Kakaako Drive Thru Southbound					Halekauwila Street Westbound					Kamani Street Northbound					Halekauwila Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	0	0	0	0	0	8	14	2	2	26	2	0	16	0	18	0	14	3	0	17	61
03:15 PM	0	0	0	0	0	9	23	2	1	35	10	1	19	1	31	6	24	2	0	32	98
03:30 PM	0	0	0	0	0	7	14	0	1	22	3	0	12	5	20	1	23	1	2	27	69
03:45 PM	0	0	0	0	0	9	17	2	0	28	4	0	20	1	25	2	26	2	1	31	84
Total	0	0	0	0	0	33	68	6	4	111	19	1	67	7	94	9	87	8	3	107	312
04:00 PM	0	0	0	0	0	8	29	3	7	47	3	0	11	2	16	0	18	1	0	19	82
04:15 PM	0	0	0	8	8	8	15	0	3	26	2	0	19	2	23	3	60	5	2	70	127
04:30 PM	0	0	0	1	1	9	22	1	1	33	5	0	18	5	28	2	52	2	3	59	121
04:45 PM	0	0	0	1	1	5	18	0	0	23	4	0	15	2	21	2	29	1	2	34	79
Total	0	0	0	10	10	30	84	4	11	129	14	0	63	11	88	7	159	9	7	182	409
05:00 PM	0	0	0	6	6	8	42	2	1	53	2	0	17	1	20	4	17	4	3	28	107
05:15 PM	0	0	0	1	1	5	32	1	0	38	7	1	14	1	23	5	37	2	3	47	109
05:30 PM	0	0	0	1	1	7	31	2	1	41	5	0	15	4	24	4	37	2	3	46	112
05:45 PM	0	0	0	1	1	1	18	1	0	20	8	0	8	9	25	1	16	6	1	24	70
Total	0	0	0	9	9	21	123	6	2	152	22	1	54	15	92	14	107	14	10	145	398
Grand Total	0	0	0	19	19	84	275	16	17	392	55	2	184	33	274	30	353	31	20	434	1119
Apprch %	0	0	0	100		21.4	70.2	4.1	4.3		20.1	0.7	67.2	12		6.9	81.3	7.1	4.6		
Total %	0	0	0	1.7	1.7	7.5	24.6	1.4	1.5	35	4.9	0.2	16.4	2.9	24.5	2.7	31.5	2.8	1.8	38.8	

	Kauhale Kakaako Drive Thru Southbound					Halekauwila Street Westbound				Kamani Street Northbound				Halekauwila Street Eastbound				
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 04:15 PM																		
04:15 PM	0	0	0	**8**	**8**	8	15	0	23	2	0	**19**	21	3	**60**	**5**	**68**	**120**
04:30 PM	0	0	0	1	1	**9**	22	1	32	**5**	0	18	**23**	2	52	2	56	112
04:45 PM	0	0	0	1	1	5	18	0	23	4	0	15	19	2	29	1	32	75
05:00 PM	0	0	0	6	6	8	**42**	**2**	**52**	2	0	17	19	**4**	17	4	25	102
Total Volume	0	0	0	16	16	30	97	3	130	13	0	69	82	11	158	12	181	409
% App. Total	0	0	0	100		23.1	74.6	2.3		15.9	0	84.1		6.1	87.3	6.6		
PHF	.000	.000	.000	.500	.500	.833	.577	.375	.625	.650	.000	.908	.891	.688	.658	.600	.665	.852

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.

"Highway Capacity Manual," Transportation Research Board, 2000.

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

"Highway Capacity Manual," Transportation Research Board, 2000.

APPENDIX C

CAPACITY ANALYSIS CALCULATIONS
BASELINE PEAK PERIOD TRAFFIC ANALYSIS

HCM Signalized Intersection Capacity Analysis
15: Ward Ave & Queen St 8/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	193	83	75	355	61	83	449	60	53	717	200
Future Volume (vph)	50	193	83	75	355	61	83	449	60	53	717	200
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	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.98		1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.97	
Flt Protected		0.99	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1841	1545		1844	1538	1770	3439		1770	3377	
Flt Permitted		0.65	1.00		0.88	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1201	1545		1636	1538	1770	3439		1770	3377	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	53	205	88	80	378	65	88	478	64	56	763	213
RTOR Reduction (vph)	0	0	56	0	0	42	0	11	0	0	28	0
Lane Group Flow (vph)	0	258	32	0	458	23	88	531	0	56	948	0
Confl. Peds. (#/hr)	21		15	15		21			58			34
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)		26.3	26.3		26.3	26.3	5.1	31.0		3.6	29.5	
Effective Green, g (s)		26.3	26.3		26.3	26.3	5.1	31.0		3.6	29.5	
Actuated g/C Ratio	0.35	0.35		0.35	0.35	0.07	0.41		0.05	0.39		
Clearance Time (s)	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		
Lane Grp Cap (vph)	416	535		566	532	118	1404		83	1312		
v/s Ratio Prot						c0.05	0.15		0.03	c0.28		
v/s Ratio Perm	0.21	0.02		c0.28	0.01							
v/c Ratio	0.62	0.06		0.81	0.04	0.75	0.38		0.67	0.72		
Uniform Delay, d1	20.6	16.6		22.5	16.4	34.8	15.7		35.6	19.7		
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		
Incremental Delay, d2	2.9	0.0		8.4	0.0	22.3	0.2		19.5	2.0		
Delay (s)	23.5	16.6		30.9	16.5	57.1	15.9		55.1	21.7		
Level of Service	C	B		C	B	E	B		E	C		
Approach Delay (s)	21.7			29.1			21.6			23.5		
Approach LOS	C			C			C			C		

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	75.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

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

8/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	416	147	90	409	86	72	775	149	126	803	81
Future Volume (vph)	101	416	147	90	409	86	72	775	149	126	803	81
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	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.96		1.00	0.98	1.00	0.98		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected		0.99	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1843	1528		1843	1548	1770	3372		1770	3457	
Flt Permitted		0.57	1.00		0.58	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1059	1528		1072	1548	1770	3372		1770	3457	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	105	433	153	94	426	90	75	807	155	131	836	84
RTOR Reduction (vph)	0	0	47	0	0	47	0	18	0	0	9	0
Lane Group Flow (vph)	0	538	106	0	520	43	75	944	0	131	911	0
Confl. Peds. (#/hr)	11		25	25		11			88			59
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)		39.0	39.0		39.0	39.0	4.0	29.3		5.0	30.3	
Effective Green, g (s)		39.0	39.0		39.0	39.0	4.0	29.3		5.0	30.3	
Actuated g/C Ratio		0.44	0.44		0.44	0.44	0.05	0.33		0.06	0.34	
Clearance Time (s)		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	
Lane Grp Cap (vph)		467	674		473	683	80	1118		100	1186	
v/s Ratio Prot							0.04	c0.28		c0.07	0.26	
v/s Ratio Perm		c0.51	0.07		0.48	0.03						
v/c Ratio		1.15	0.16		1.10	0.06	0.94	0.84		1.31	0.77	
Uniform Delay, d1		24.6	14.8		24.6	14.2	42.0	27.4		41.6	25.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		90.5	0.1		71.2	0.0	78.8	6.0		194.2	3.1	
Delay (s)		115.1	14.9		95.8	14.2	120.8	33.4		235.8	28.9	
Level of Service		F	B		F	B	F	C		F	C	
Approach Delay (s)		92.9			83.8			39.7			54.7	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	63.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
16: Kamakee St & Queen St

8/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	192	12	180	286	28	16	116	58	38	194	106
Future Volume (vph)	40	192	12	180	286	28	16	116	58	38	194	106
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	
Lane Util. Factor		0.95		1.00	0.95			0.95			0.95	
Frt		0.99		1.00	0.99			0.95			0.95	
Flt Protected		0.99		0.95	1.00			1.00			0.99	
Satd. Flow (prot)		3484		1770	3492			3362			3353	
Flt Permitted		0.84		0.95	1.00			0.91			0.90	
Satd. Flow (perm)		2965		1770	3492			3078			3040	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	43	204	13	191	304	30	17	123	62	40	206	113
RTOR Reduction (vph)	0	5	0	0	10	0	0	42	0	0	69	0
Lane Group Flow (vph)	0	255	0	191	324	0	0	160	0	0	290	0
Turn Type	Perm	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2						8			4		
Actuated Green, G (s)		12.6		9.1	26.7			17.1			17.1	
Effective Green, g (s)		12.6		9.1	26.7			17.1			17.1	
Actuated g/C Ratio		0.23		0.17	0.50			0.32			0.32	
Clearance Time (s)		5.0		5.0	5.0			5.0			5.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		694		299	1733			978			966	
v/s Ratio Prot				c0.11	0.09							
v/s Ratio Perm	c0.09							0.05			c0.10	
v/c Ratio	0.37	0.64		0.19	0.16			0.16			0.30	
Uniform Delay, d1	17.3	20.8		7.5	13.2			13.2			13.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.3	4.4		0.1	0.1			0.1			0.2	
Delay (s)	17.6	25.3		7.6	13.3			13.3			14.0	
Level of Service	B	C		A	B			B			B	
Approach Delay (s)	17.6			14.0				13.3			14.0	
Approach LOS	B			B				B			B	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
16: Kamakee St & Queen St

8/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	104	478	48	288	477	52	43	170	73	65	133	51
Future Volume (vph)	104	478	48	288	477	52	43	170	73	65	133	51
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	
Lane Util. Factor		0.95		1.00	0.95			0.95			0.95	
Frt		0.99		1.00	0.99			0.96			0.97	
Flt Protected		0.99		0.95	1.00			0.99			0.99	
Satd. Flow (prot)		3470		1770	3487			3378			3387	
Flt Permitted		0.76		0.95	1.00			0.86			0.76	
Satd. Flow (perm)		2647		1770	3487			2923			2598	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	108	498	50	300	497	54	45	177	76	68	139	53
RTOR Reduction (vph)	0	6	0	0	9	0	0	27	0	0	18	0
Lane Group Flow (vph)	0	650	0	300	542	0	0	271	0	0	242	0
Turn Type	Perm	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2						8			4		
Actuated Green, G (s)		28.1		19.7	52.8			15.6			15.6	
Effective Green, g (s)		28.1		19.7	52.8			15.6			15.6	
Actuated g/C Ratio		0.36		0.25	0.67			0.20			0.20	
Clearance Time (s)		5.0		5.0	5.0			5.0			5.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		948		444	2348			581			516	
v/s Ratio Prot				c0.17	0.16							
v/s Ratio Perm		c0.25						0.09			c0.09	
v/c Ratio		0.69		0.68	0.23			0.47			0.47	
Uniform Delay, d1		21.4		26.5	4.9			27.7			27.7	
Progression Factor		1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2		2.1		4.0	0.1			0.6			0.7	
Delay (s)		23.5		30.5	5.0			28.3			28.4	
Level of Service		C		C	A			C			C	
Approach Delay (s)		23.5			14.0			28.3			28.4	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	78.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
17: Queens Ln & Queen St

8/5/2016

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↕		
Traffic Volume (veh/h)	283	21	97	475	24	72
Future Volume (Veh/h)	283	21	97	475	24	72
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	298	22	102	500	25	76
Pedestrians					19	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					2	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)	564			680		
pX, platoon unblocked						
vC, conflicting volume			339		782	179
vC1, stage 1 conf vol					328	
vC2, stage 2 conf vol					454	
vCu, unblocked vol			339		782	179
tC, single (s)			4.1		*5.8	*5.9
tC, 2 stage (s)					4.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			91		96	91
cM capacity (veh/h)			1198		564	863

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	199	121	102	250	250	101
Volume Left	0	0	102	0	0	25
Volume Right	0	22	0	0	0	76
cSH	1700	1700	1198	1700	1700	763
Volume to Capacity	0.12	0.07	0.09	0.15	0.15	0.13
Queue Length 95th (ft)	0	0	7	0	0	11
Control Delay (s)	0.0	0.0	8.3	0.0	0.0	10.4
Lane LOS			A			B
Approach Delay (s)	0.0		1.4			10.4
Approach LOS						B

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
17: Queens Ln & Queen St

8/5/2016

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	578	10	75	759	47	193
Future Volume (Veh/h)	578	10	75	759	47	193
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	649	11	84	853	53	217
Pedestrians					19	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					2	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)	564			687		
pX, platoon unblocked			0.92		0.92	0.92
vC, conflicting volume			679		1268	349
vC1, stage 1 conf vol					674	
vC2, stage 2 conf vol					594	
vCu, unblocked vol			469		1111	109
tC, single (s)			4.1		*5.8	*5.9
tC, 2 stage (s)					4.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			91		88	75
cM capacity (veh/h)			983		456	860

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	433	227	84	426	426	270
Volume Left	0	0	84	0	0	53
Volume Right	0	11	0	0	0	217
cSH	1700	1700	983	1700	1700	733
Volume to Capacity	0.25	0.13	0.09	0.25	0.25	0.37
Queue Length 95th (ft)	0	0	7	0	0	42
Control Delay (s)	0.0	0.0	9.0	0.0	0.0	12.7
Lane LOS			A			B
Approach Delay (s)	0.0		0.8			12.7
Approach LOS						B

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

HCM Signalized Intersection Capacity Analysis
24: Ward Ave & Halekauwila St

8/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	13	9	0	0	0	42	431	3	16	549	249
Future Volume (vph)	105	13	9	0	0	0	42	431	3	16	549	249
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
Lane Util. Factor		1.00					1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00					1.00	1.00		1.00	1.00	0.93
Flpb, ped/bikes		1.00					0.98	1.00		1.00	1.00	1.00
Frt		0.99					1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96					0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1765					1726	3536		1770	3539	1469
Flt Permitted		0.96					0.44	1.00		0.49	1.00	1.00
Satd. Flow (perm)		1765					799	3536		919	3539	1469
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	108	13	9	0	0	0	43	444	3	16	566	257
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	126
Lane Group Flow (vph)	0	127	0	0	0	0	43	447	0	16	566	131
Confl. Peds. (#/hr)	2		44				42					42
Turn Type	Perm	NA					Perm	NA		Perm	NA	Perm
Protected Phases		4						2			6	
Permitted Phases	4						2			6		6
Actuated Green, G (s)		15.0					26.0	26.0		26.0	26.0	26.0
Effective Green, g (s)		15.0					26.0	26.0		26.0	26.0	26.0
Actuated g/C Ratio		0.29					0.51	0.51		0.51	0.51	0.51
Clearance Time (s)		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
Lane Grp Cap (vph)	519						407	1802		468	1804	748
v/s Ratio Prot								0.13			c0.16	
v/s Ratio Perm	0.07						0.05			0.02		0.09
v/c Ratio	0.25						0.11	0.25		0.03	0.31	0.18
Uniform Delay, d1	13.7						6.5	7.0		6.2	7.3	6.7
Progression Factor	1.00						1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2						0.1	0.1		0.0	0.1	0.1
Delay (s)	13.9						6.6	7.1		6.3	7.4	6.8
Level of Service	B						A	A		A	A	A
Approach Delay (s)	13.9		0.0					7.0			7.2	
Approach LOS	B		A					A			A	

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	51.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
24: Ward Ave & Halekauwila St/Driveway

8/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	22	85	0	0	0	19	746	6	32	694	156
Future Volume (vph)	243	22	85	0	0	0	19	746	6	32	694	156
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	
Lane Util. Factor		1.00					1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.98					1.00	1.00		1.00	0.98	
Flpb, ped/bikes		1.00					0.98	1.00		1.00	1.00	
Frt		0.97					1.00	1.00		1.00	0.97	
Flt Protected		0.97					0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1712					1732	3535		1770	3375	
Flt Permitted		0.97					0.23	1.00		0.28	1.00	
Satd. Flow (perm)		1712					423	3535		528	3375	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	253	23	89	0	0	0	20	777	6	33	723	162
RTOR Reduction (vph)	0	13	0	0	0	0	0	1	0	0	24	0
Lane Group Flow (vph)	0	352	0	0	0	0	20	782	0	33	862	0
Confl. Peds. (#/hr)			91				63					63
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		22.4					22.8	22.8		22.8	22.8	
Effective Green, g (s)		22.4					22.8	22.8		22.8	22.8	
Actuated g/C Ratio		0.41					0.41	0.41		0.41	0.41	
Clearance Time (s)		5.0					5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0					3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		694					174	1460		218	1394	
v/s Ratio Prot								0.22			c0.26	
v/s Ratio Perm		0.21					0.05			0.06		
v/c Ratio		0.51					0.11	0.54		0.15	0.62	
Uniform Delay, d1		12.3					10.0	12.2		10.1	12.8	
Progression Factor		1.00					1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6					0.3	0.4		0.3	0.8	
Delay (s)		12.9					10.3	12.6		10.5	13.6	
Level of Service		B					B	B		B	B	
Approach Delay (s)		12.9		0.0				12.5			13.5	
Approach LOS		B		A				B			B	

Intersection Summary			
HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
34: Ward Ave & Auahi St

8/5/2016

Movement	EBL	EBT	EBR	WBL	WET	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	71	35	89	100	140	59	313	76	94	441	68
Future Volume (vph)	25	71	35	89	100	140	59	313	76	94	441	68
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	
Lane Util. Factor		0.95	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.98		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		0.99	1.00		0.98	1.00	
Frt		1.00	0.85	1.00	0.91		1.00	0.97		1.00	0.98	
Flt Protected		0.99	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3483	1583	1770	1672		1747	3406		1739	3446	
Flt Permitted		0.86	1.00	0.69	1.00		0.45	1.00		0.51	1.00	
Satd. Flow (perm)		3022	1583	1279	1672		818	3406		924	3446	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	77	38	97	109	152	64	340	83	102	479	74
RTOR Reduction (vph)	0	0	25	0	65	0	0	24	0	0	14	0
Lane Group Flow (vph)	0	104	13	97	196	0	64	399	0	102	539	0
Confl. Peds. (#/hr)	37					37	34		63	63		34
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		15.5	15.5	15.5	15.5		20.7	20.7		20.7	20.7	
Effective Green, g (s)		15.5	15.5	15.5	15.5		20.7	20.7		20.7	20.7	
Actuated g/C Ratio	0.34	0.34	0.34	0.34			0.45	0.45		0.45	0.45	
Clearance Time (s)	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	
Lane Grp Cap (vph)	1013	531	429	560			366	1526		414	1543	
v/s Ratio Prot				c0.12				0.12			c0.16	
v/s Ratio Perm	0.03	0.01	0.08				0.08			0.11		
v/c Ratio	0.10	0.02	0.23	0.35			0.17	0.26		0.25	0.35	
Uniform Delay, d1	10.6	10.3	11.0	11.6			7.6	8.0		7.9	8.3	
Progression Factor	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0	0.3	0.4			0.2	0.1		0.3	0.1	
Delay (s)	10.6	10.3	11.3	11.9			7.9	8.1		8.2	8.5	
Level of Service	B	B	B	B			A	A		A	A	
Approach Delay (s)	10.5			11.8				8.0			8.4	
Approach LOS	B			B				A			A	

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	46.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
34: Ward Ave & Auahi St

8/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	168	65	135	93	273	47	430	188	309	426	69
Future Volume (vph)	30	168	65	135	93	273	47	430	188	309	426	69
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	
Lane Util. Factor		0.95	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	0.95		1.00	0.98		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	0.98	1.00		0.97	1.00		0.97	1.00	
Frt		1.00	0.85	1.00	0.89		1.00	0.95		1.00	0.98	
Flt Protected		0.99	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3499	1518	1730	1578		1720	3294		1721	3428	
Flt Permitted		0.85	1.00	0.62	1.00		0.45	1.00		0.38	1.00	
Satd. Flow (perm)		2997	1518	1136	1578		820	3294		692	3428	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	31	173	67	139	96	281	48	443	194	319	439	71
RTOR Reduction (vph)	0	0	46	0	120	0	0	56	0	0	14	0
Lane Group Flow (vph)	0	204	21	139	257	0	48	581	0	319	496	0
Confl. Peds. (#/hr)	67		39	39		67	43		87	87		43
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		24.2	24.2	24.2	24.2		41.6	41.6		41.6	41.6	
Effective Green, g (s)		24.2	24.2	24.2	24.2		41.6	41.6		41.6	41.6	
Actuated g/C Ratio		0.32	0.32	0.32	0.32		0.55	0.55		0.55	0.55	
Clearance Time (s)		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	
Lane Grp Cap (vph)		956	484	362	503		450	1807		379	1881	
v/s Ratio Prot					c0.16			0.18			0.14	
v/s Ratio Perm		0.07	0.01	0.12			0.06			c0.46		
v/c Ratio		0.21	0.04	0.38	0.51		0.11	0.32		0.84	0.26	
Uniform Delay, d1		18.8	17.8	20.0	21.0		8.2	9.4		14.3	9.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.0	0.7	0.9		0.1	0.1		15.4	0.1	
Delay (s)		19.0	17.9	20.7	21.9		8.3	9.5		29.8	9.1	
Level of Service		B	B	C	C		A	A		C	A	
Approach Delay (s)		18.7			21.6			9.4			17.1	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	75.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
35: Kamakee St & Auahi St

8/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	93	27	24	102	54	40	108	28	25	200	149
Future Volume (vph)	54	93	27	24	102	54	40	108	28	25	200	149
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
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.98	1.00		0.98	1.00	1.00
Frt	1.00	0.97		1.00	0.95		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3392		1770	3356		1737	3409		1742	1863	1526
Flt Permitted	0.95	1.00		0.95	1.00		0.62	1.00		0.66	1.00	1.00
Satd. Flow (perm)	1770	3392		1770	3356		1140	3409		1209	1863	1526
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	58	100	29	26	110	58	43	116	30	27	215	160
RTOR Reduction (vph)	0	21	0	0	43	0	0	18	0	0	0	93
Lane Group Flow (vph)	58	108	0	26	125	0	43	128	0	27	215	67
Confl. Peds. (#/hr)			34	34			43		33	33		43
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		4
Actuated Green, G (s)	2.1	13.4		1.6	12.9		21.4	21.4		21.4	21.4	21.4
Effective Green, g (s)	2.1	13.4		1.6	12.9		21.4	21.4		21.4	21.4	21.4
Actuated g/C Ratio	0.04	0.26		0.03	0.25		0.42	0.42		0.42	0.42	0.42
Clearance Time (s)	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
Lane Grp Cap (vph)	72	884		55	842		474	1419		503	775	635
v/s Ratio Prot	c0.03	0.03		0.01	c0.04			0.04			c0.12	
v/s Ratio Perm							0.04			0.02		0.04
v/c Ratio	0.81	0.12		0.47	0.15		0.09	0.09		0.05	0.28	0.10
Uniform Delay, d1	24.4	14.5		24.5	15.0		9.1	9.1		9.0	9.9	9.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	46.1	0.1		6.3	0.1		0.1	0.0		0.0	0.2	0.1
Delay (s)	70.6	14.6		30.8	15.1		9.2	9.1		9.0	10.1	9.2
Level of Service	E	B		C	B		A	A		A	B	A
Approach Delay (s)		31.9			17.2			9.1			9.7	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	51.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
35: Kamakee St & Auahi St

8/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	310	130	9	161	76	77	143	45	98	246	161
Future Volume (vph)	99	310	130	9	161	76	77	143	45	98	246	161
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
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.95		1.00	0.95		1.00	0.97		1.00	1.00	0.89
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.94	1.00		0.90	1.00	1.00
Frt	1.00	0.96		1.00	0.95		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3199		1770	3212		1656	3304		1601	1863	1409
Flt Permitted	0.95	1.00		0.95	1.00		0.49	1.00		0.63	1.00	1.00
Satd. Flow (perm)	1770	3199		1770	3212		854	3304		1057	1863	1409
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)	104	326	137	9	169	80	81	151	47	103	259	169
RTOR Reduction (vph)	0	51	0	0	47	0	0	33	0	0	0	121
Lane Group Flow (vph)	104	412	0	9	202	0	81	165	0	103	259	48
Confl. Peds. (#/hr)			167			209	105		137	137		105
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		4
Actuated Green, G (s)	7.3	36.7		0.7	30.1		20.9	20.9		20.9	20.9	20.9
Effective Green, g (s)	7.3	36.7		0.7	30.1		20.9	20.9		20.9	20.9	20.9
Actuated g/C Ratio	0.10	0.50		0.01	0.41		0.29	0.29		0.29	0.29	0.29
Clearance Time (s)	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
Lane Grp Cap (vph)	176	1601		16	1318		243	942		301	531	401
v/s Ratio Prot	c0.06	c0.13		0.01	0.06			0.05			c0.14	
v/s Ratio Perm							0.09			0.10		0.03
v/c Ratio	0.59	0.26		0.56	0.15		0.33	0.18		0.34	0.49	0.12
Uniform Delay, d1	31.6	10.5		36.1	13.6		20.7	19.7		20.8	21.8	19.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.2	0.1		38.3	0.1		0.8	0.1		0.7	0.7	0.1
Delay (s)	36.8	10.6		74.4	13.6		21.5	19.8		21.4	22.5	19.5
Level of Service	D	B		E	B		C	B		C	C	B
Approach Delay (s)		15.4			15.8			20.3			21.3	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
36: Queens Lane/Queens Ln & Auahi St

8/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	7	52	0	0	0	93	75	6	21	41	51
Future Volume (vph)	45	7	52	0	0	0	93	75	6	21	41	51
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	
Lane Util. Factor		1.00	1.00				1.00	1.00			1.00	
Frpb, ped/bikes		1.00	0.96				1.00	1.00			0.97	
Flpb, ped/bikes		0.99	1.00				1.00	1.00			1.00	
Frt		1.00	0.85				1.00	0.99			0.94	
Flt Protected		0.96	1.00				0.95	1.00			0.99	
Satd. Flow (prot)		1760	1521				1770	1836			1678	
Flt Permitted		0.96	1.00				0.95	1.00			0.95	
Satd. Flow (perm)		1760	1521				1770	1836			1603	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	52	8	60	0	0	0	107	86	7	24	47	59
RTOR Reduction (vph)	0	0	50	0	0	0	0	3	0	0	30	0
Lane Group Flow (vph)	0	60	10	0	0	0	107	90	0	0	100	0
Confl. Peds. (#/hr)	12		34	34		12			16	16		62
Turn Type	Perm	NA	Perm				Prot	NA		Perm	NA	
Protected Phases		4					5	2			6	
Permitted Phases	4		4							6		
Actuated Green, G (s)		8.4	8.4				6.9	30.5			18.6	
Effective Green, g (s)		8.4	8.4				6.9	30.5			18.6	
Actuated g/C Ratio	0.17	0.17					0.14	0.62			0.38	
Clearance Time (s)	5.0	5.0					5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0			3.0	
Lane Grp Cap (vph)	302	261					249	1145			609	
v/s Ratio Prot							c0.06	0.05				
v/s Ratio Perm	0.03	0.01									c0.06	
v/c Ratio	0.20	0.04					0.43	0.08			0.16	
Uniform Delay, d1	17.4	16.9					19.2	3.6			10.0	
Progression Factor	1.00	1.00					1.00	1.00			1.00	
Incremental Delay, d2	0.3	0.1					1.2	0.0			0.1	
Delay (s)	17.7	16.9					20.4	3.7			10.1	
Level of Service	B	B					C	A			B	
Approach Delay (s)	17.3		0.0					12.6			10.1	
Approach LOS	B		A					B			B	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	48.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
36: Queens Lane/Queens Ln & Auahi St

8/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	9	176	0	0	0	183	100	10	18	77	51
Future Volume (vph)	91	9	176	0	0	0	183	100	10	18	77	51
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	
Lane Util. Factor		1.00	1.00				1.00	1.00			1.00	
Frpb, ped/bikes		1.00	0.92				1.00	0.99			0.96	
Flpb, ped/bikes		0.92	1.00				1.00	1.00			0.99	
Frt		1.00	0.85				1.00	0.99			0.95	
Flt Protected		0.96	1.00				0.95	1.00			0.99	
Satd. Flow (prot)		1632	1454				1770	1822			1686	
Flt Permitted		0.96	1.00				0.95	1.00			0.96	
Satd. Flow (perm)		1632	1454				1770	1822			1628	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	100	10	193	0	0	0	201	110	11	20	85	56
RTOR Reduction (vph)	0	0	147	0	0	0	0	5	0	0	20	0
Lane Group Flow (vph)	0	110	46	0	0	0	201	116	0	0	141	0
Confl. Peds. (#/hr)	60		77	77		60			48	48		104
Turn Type	Perm	NA	Perm				Prot	NA		Perm	NA	
Protected Phases		4					5	2			6	
Permitted Phases	4		4							6		
Actuated Green, G (s)		13.2	13.2				9.6	32.2			17.6	
Effective Green, g (s)		13.2	13.2				9.6	32.2			17.6	
Actuated g/C Ratio		0.24	0.24				0.17	0.58			0.32	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Vehicle Extension (s)		3.0	3.0				3.0	3.0			3.0	
Lane Grp Cap (vph)		388	346				306	1058			517	
v/s Ratio Prot							c0.11	0.06				
v/s Ratio Perm		0.07	0.03								c0.09	
v/c Ratio		0.28	0.13				0.66	0.11			0.27	
Uniform Delay, d1		17.2	16.6				21.4	5.2			14.1	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		0.4	0.2				5.0	0.0			0.3	
Delay (s)		17.6	16.8				26.4	5.2			14.4	
Level of Service		B	B				C	A			B	
Approach Delay (s)		17.1			0.0			18.4			14.4	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	55.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX D

TRIP GENERATIONS CALCULATIONS

Trip Generation
Block N East - Phase 2A

Land Use No./Type	Number of Units	Units	Land Use Number	Weekday Trip Rate per Unit	Weekday Total Trips	AM PEAK In %	AM PEAK In Rate	AM PEAK In Trips	AM PEAK Out %	AM PEAK Out Rate	AM PEAK Out Trips	PM PEAK Trip Rate per Unit	PM PEAK Number of Trips	PM PEAK In %	PM PEAK In Rate	PM PEAK In Trips	PM PEAK Out %	PM PEAK Out Rate	PM PEAK Out Trips
Existing																			
Shopping Center	22.11275	ksf	820	42.70	944	62	0.60	13	38	0.36	8	3.71	82	48	1.78	39	52	1.93	43
High-Turnover (Sit-Down) Restaurant {formerly #832}	1.93975	ksf	932	127.15	247	55	5.95	12	45	4.86	9	9.85	19	60	5.91	11	40	3.94	8
Existing Subtotal					*1191*			*25*			*17*		*101*			*50*			*51*
Internal Capture					*-487*			*-9*			*-5*		*-50*			*-22*			*-28*
Existing Total					*704*			*16*			*12*		*51*			*28*			*23*
Proposed (Residential)																			
Residential Condominium/Townhouse	750	units	230	5.81	4358	17	0.07	56	83	0.37	274	0.52	390	67	0.35	261	33	0.17	129
Residential Alt Mode Trip Reduction								*-12*			**-62**		*-69*			*-49*			*-20*
P1-2								*-14*			**-74**		*-78*			*-56*			*-22*
Residential Total (with reduction for Existing)								*10*			*111*		*137*			*96*			*41*
P1-2					*1336*			*9*			*104*		*130*			*91*			*39*
P1-5					*1249*														
Proposed (Retail/Restaurant)																			
Shopping Center	15	ksf	820	42.70	641	62	0.60	9	38	0.36	5	3.71	56	48	1.78	27	52	1.93	29
High-Turnover (Sit-Down) Restaurant {formerly #832}	5	ksf	932	127.15	636	55	5.95	30	45	4.86	24	9.85	49	60	5.91	30	40	3.94	19
Retail SubTotal (no reductions)					*1277*			*39*			*29*		*105*			*57*			*48*
Trip Reduction					-2306			-36			-96		-236			-139			-97
P1-2					-2601			-40			-111		-264			-158			-106
P1-5																			
Retail Trip Reduction					-1449			-24			-34		-167			-90			-77
P1-2					-1595			-26			-37		-186			-102			-84
P1-5																			
Retail Total (to Block M District Parking)								*15*			*-5*		*-62*			*-33*			*-29*
P1-2					*-172*			*13*			*-8*		*-81*			*-45*			*-36*
P1-5					*-318*														

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Ward Master Plan	**Organization:**	W-Trans
Project Location:	Hawaii	**Performed By:**	Sam Lam
Scenario Description:		**Date:**	10/15/2015
Analysis Year:		**Checked By:**	
Analysis Period:	PM Street Peak Hour	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	163	ksf	606	291	315
Restaurant	932	78	ksf	769	461	308
Cinema/Entertainment				0		
Residential	230	2,860	du	1,487	996	491
Hotel				0		
All Other Land Uses[2]				0		
				2,862	1,748	1,114

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail	1.05	5%	20%	1.05	5%	20%
Restaurant	1.05	5%	20%	1.05	5%	20%
Cinema/Entertainment						
Residential	1.05	5%	20%	1.05	5%	20%
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail					500	
Restaurant					500	
Cinema/Entertainment						
Residential		500	500			
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		96	0	86	0
Restaurant	0	132		0	58	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	28	62	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	3,006	1,836	1,170
Internal Capture Percentage	31%	25%	39%
External Vehicle-Trips[5]	1,489	983	506
External Transit-Trips[6]	103	68	35
External Non-Motorized Trips[6]	416	274	142

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	52%	55%
Restaurant	33%	59%
Cinema/Entertainment	N/A	N/A
Residential	14%	17%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.
[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).
[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be
[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.
[6]Person-Trips
*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

APPENDIX E

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2020 PEAK PERIOD TRAFFIC ANALYSIS WITHOUT PROJECT

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	193	83	76	355	61	83	450	60	53	718	201
Future Volume (vph)	50	193	83	76	355	61	83	450	60	53	718	201
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	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.98		1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.97	
Flt Protected		0.99	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1841	1545		1844	1538	1770	3439		1770	3376	
Flt Permitted		0.65	1.00		0.88	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1201	1545		1631	1538	1770	3439		1770	3376	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	53	205	88	81	378	65	88	479	64	56	764	214
RTOR Reduction (vph)	0	0	55	0	0	42	0	11	0	0	28	0
Lane Group Flow (vph)	0	258	33	0	459	23	88	532	0	56	950	0
Confl. Peds. (#/hr)	21		15	15		21			58			34
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)		26.4	26.4		26.4	26.4	5.1	31.0		3.6	29.5	
Effective Green, g (s)		26.4	26.4		26.4	26.4	5.1	31.0		3.6	29.5	
Actuated g/C Ratio		0.35	0.35		0.35	0.35	0.07	0.41		0.05	0.39	
Clearance Time (s)		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	
Lane Grp Cap (vph)		417	536		566	534	118	1402		83	1310	
v/s Ratio Prot							c0.05	0.15		0.03	c0.28	
v/s Ratio Perm		0.21	0.02		c0.28	0.01						
v/c Ratio		0.62	0.06		0.81	0.04	0.75	0.38		0.67	0.73	
Uniform Delay, d1		20.6	16.5		22.5	16.4	34.8	15.8		35.6	19.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.7	0.0		8.6	0.0	22.3	0.2		19.5	2.0	
Delay (s)		23.3	16.6		31.2	16.5	57.1	15.9		55.1	21.8	
Level of Service		C	B		C	B	E	B		E	C	
Approach Delay (s)		21.6			29.3			21.7			23.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	421	150	91	414	87	73	786	150	127	814	82
Future Volume (vph)	103	421	150	91	414	87	73	786	150	127	814	82
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	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.96		1.00	0.98	1.00	0.98		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected		0.99	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1843	1528		1843	1548	1770	3373		1770	3457	
Flt Permitted		0.56	1.00		0.56	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1037	1528		1049	1548	1770	3373		1770	3457	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	107	439	156	95	431	91	76	819	156	132	848	85
RTOR Reduction (vph)	0	0	47	0	0	47	0	18	0	0	9	0
Lane Group Flow (vph)	0	546	109	0	526	44	76	957	0	132	924	0
Confl. Peds. (#/hr)	11		25	25		11			88			59
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)		39.0	39.0		39.0	39.0	4.0	29.3		5.0	30.3	
Effective Green, g (s)		39.0	39.0		39.0	39.0	4.0	29.3		5.0	30.3	
Actuated g/C Ratio		0.44	0.44		0.44	0.44	0.05	0.33		0.06	0.34	
Clearance Time (s)		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	
Lane Grp Cap (vph)		458	674		463	683	80	1119		100	1186	
v/s Ratio Prot							0.04	c0.28		c0.07	0.27	
v/s Ratio Perm		c0.53	0.07		0.50	0.03						
v/c Ratio		1.19	0.16		1.14	0.06	0.95	0.86		1.32	0.78	
Uniform Delay, d1		24.6	14.8		24.6	14.2	42.1	27.5		41.6	26.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		106.3	0.1		84.7	0.0	82.7	6.6		198.0	3.3	
Delay (s)		130.9	14.9		109.3	14.2	124.7	34.1		239.7	29.3	
Level of Service		F	B		F	B	F	C		F	C	
Approach Delay (s)		105.2			95.3			40.6			55.4	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	68.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	105.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
16: Kamakee St & Queen St

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	194	12	183	290	29	16	117	58	38	196	107
Future Volume (vph)	41	194	12	183	290	29	16	117	58	38	196	107
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	
Lane Util. Factor		0.95		1.00	0.95			0.95			0.95	
Frt		0.99		1.00	0.99			0.95			0.95	
Flt Protected		0.99		0.95	1.00			1.00			0.99	
Satd. Flow (prot)		3484		1770	3491			3363			3354	
Flt Permitted		0.84		0.95	1.00			0.91			0.90	
Satd. Flow (perm)		2955		1770	3491			3078			3042	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	44	206	13	195	309	31	17	124	62	40	209	114
RTOR Reduction (vph)	0	5	0	0	10	0	0	42	0	0	69	0
Lane Group Flow (vph)	0	258	0	195	330	0	0	161	0	0	294	0
Turn Type	Perm	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2						8			4		
Actuated Green, G (s)		12.7		9.2	26.9			17.1			17.1	
Effective Green, g (s)		12.7		9.2	26.9			17.1			17.1	
Actuated g/C Ratio		0.24		0.17	0.50			0.32			0.32	
Clearance Time (s)		5.0		5.0	5.0			5.0			5.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		694		301	1739			974			963	
v/s Ratio Prot				c0.11	0.09							
v/s Ratio Perm	c0.09							0.05			c0.10	
v/c Ratio	0.37	0.65		0.19	0.16			0.31				
Uniform Delay, d1	17.3	20.9		7.5	13.3			14.0				
Progression Factor	1.00	1.00		1.00	1.00			1.00				
Incremental Delay, d2	0.3	4.7		0.1	0.1			0.2				
Delay (s)	17.6	25.6		7.6	13.4			14.1				
Level of Service	B	C		A	B			B				
Approach Delay (s)	17.6			14.1	13.4			14.1				
Approach LOS	B			B	B			B				

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
16: Kamakee St & Queen St

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	484	49	291	481	53	43	172	74	66	135	52
Future Volume (vph)	106	484	49	291	481	53	43	172	74	66	135	52
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	
Lane Util. Factor		0.95		1.00	0.95			0.95			0.95	
Frt		0.99		1.00	0.99			0.96			0.97	
Flt Protected		0.99		0.95	1.00			0.99			0.99	
Satd. Flow (prot)		3470		1770	3487			3378			3386	
Flt Permitted		0.75		0.95	1.00			0.86			0.75	
Satd. Flow (perm)		2635		1770	3487			2921			2580	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	110	504	51	303	501	55	45	179	77	69	141	54
RTOR Reduction (vph)	0	6	0	0	9	0	0	28	0	0	18	0
Lane Group Flow (vph)	0	659	0	303	547	0	0	273	0	0	246	0
Turn Type	Perm	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2						8			4		
Actuated Green, G (s)		28.9		20.2	54.1			15.7			15.7	
Effective Green, g (s)		28.9		20.2	54.1			15.7			15.7	
Actuated g/C Ratio		0.36		0.25	0.68			0.20			0.20	
Clearance Time (s)		5.0		5.0	5.0			5.0			5.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		954		448	2363			574			507	
v/s Ratio Prot				c0.17	0.16							
v/s Ratio Perm	c0.25							0.09			c0.10	
v/c Ratio	0.69	0.68		0.23	0.48			0.48				
Uniform Delay, d1	21.7	26.9		4.9	28.4			28.5				
Progression Factor	1.00	1.00		1.00	1.00			1.00				
Incremental Delay, d2	2.2	4.0		0.1	0.6			0.7				
Delay (s)	23.8	30.9		5.0	29.0			29.2				
Level of Service	C	C		A	C			C				
Approach Delay (s)	23.8			14.1	29.0			29.2				
Approach LOS	C			B	C			C				

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	285	21	99	482	24	73
Future Volume (Veh/h)	285	21	99	482	24	73
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	300	22	104	507	25	77
Pedestrians					19	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					2	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)	564			680		
pX, platoon unblocked						
vC, conflicting volume			341		792	180
vC1, stage 1 conf vol					330	
vC2, stage 2 conf vol					462	
vCu, unblocked vol			341		792	180
tC, single (s)			4.1		*5.8	*5.9
tC, 2 stage (s)					4.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			91		96	91
cM capacity (veh/h)			1196		559	862

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	200	122	104	254	254	102
Volume Left	0	0	104	0	0	25
Volume Right	0	22	0	0	0	77
cSH	1700	1700	1196	1700	1700	761
Volume to Capacity	0.12	0.07	0.09	0.15	0.15	0.13
Queue Length 95th (ft)	0	0	7	0	0	12
Control Delay (s)	0.0	0.0	8.3	0.0	0.0	10.5
Lane LOS			A			B
Approach Delay (s)	0.0		1.4			10.5
Approach LOS						B

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	32.2%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	585	10	76	767	48	196
Future Volume (Veh/h)	585	10	76	767	48	196
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	657	11	85	862	54	220
Pedestrians					19	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					2	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)	564			687		
pX, platoon unblocked			0.91		0.91	0.91
vC, conflicting volume			687		1282	353
vC1, stage 1 conf vol					682	
vC2, stage 2 conf vol					601	
vCu, unblocked vol			470		1121	104
tC, single (s)			4.1		*5.8	*5.9
tC, 2 stage (s)					4.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			91		88	74
cM capacity (veh/h)			979		453	862

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	438	230	85	431	431	274
Volume Left	0	0	85	0	0	54
Volume Right	0	11	0	0	0	220
cSH	1700	1700	979	1700	1700	732
Volume to Capacity	0.26	0.14	0.09	0.25	0.25	0.37
Queue Length 95th (ft)	0	0	7	0	0	44
Control Delay (s)	0.0	0.0	9.0	0.0	0.0	12.8
Lane LOS			A			B
Approach Delay (s)	0.0		0.8			12.8
Approach LOS						B

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

HCM Signalized Intersection Capacity Analysis
24: Ward Ave & Halekauwila St

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	13	9	0	0	0	43	437	3	16	557	253
Future Volume (vph)	107	13	9	0	0	0	43	437	3	16	557	253
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	
Lane Util. Factor		1.00					1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00					1.00	1.00		1.00	0.98	
Flpb, ped/bikes		1.00					0.98	1.00		1.00	1.00	
Frt		0.99					1.00	1.00		1.00	0.95	
Flt Protected		0.96					0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1765					1740	3536		1770	3293	
Flt Permitted		0.96					0.30	1.00		0.49	1.00	
Satd. Flow (perm)		1765					553	3536		913	3293	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	110	13	9	0	0	0	44	451	3	16	574	261
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	51	0
Lane Group Flow (vph)	0	130	0	0	0	0	44	454	0	16	784	0
Confl. Peds. (#/hr)	2		44				42					42
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		15.1					29.4	29.4		29.4	29.4	
Effective Green, g (s)		15.1					29.4	29.4		29.4	29.4	
Actuated g/C Ratio	0.28						0.54	0.54		0.54	0.54	
Clearance Time (s)	5.0						5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0						3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	489						298	1907		492	1776	
v/s Ratio Prot								0.13			c0.24	
v/s Ratio Perm	0.07						0.08			0.02		
v/c Ratio	0.27						0.15	0.24		0.03	0.44	
Uniform Delay, d1	15.4						6.3	6.6		5.9	7.6	
Progression Factor	1.00						1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3						0.2	0.1		0.0	0.2	
Delay (s)	15.7						6.5	6.7		5.9	7.8	
Level of Service	B						A	A		A	A	
Approach Delay (s)	15.7		0.0					6.7			7.7	
Approach LOS	B		A					A			A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	54.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
24: Ward Ave & Halekauwila St/Driveway

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	22	87	0	0	0	20	756	6	33	704	158
Future Volume (vph)	247	22	87	0	0	0	20	756	6	33	704	158
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	
Lane Util. Factor		1.00					1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.98					1.00	1.00		1.00	0.98	
Flpb, ped/bikes		1.00					0.98	1.00		1.00	1.00	
Frt		0.97					1.00	1.00		1.00	0.97	
Flt Protected		0.97					0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1711					1732	3535		1770	3375	
Flt Permitted		0.97					0.23	1.00		0.28	1.00	
Satd. Flow (perm)		1711					412	3535		516	3375	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	257	23	91	0	0	0	21	788	6	34	733	165
RTOR Reduction (vph)	0	13	0	0	0	0	0	1	0	0	24	0
Lane Group Flow (vph)	0	358	0	0	0	0	21	793	0	34	874	0
Confl. Peds. (#/hr)			91				63					63
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		22.6					23.0	23.0		23.0	23.0	
Effective Green, g (s)		22.6					23.0	23.0		23.0	23.0	
Actuated g/C Ratio	0.41						0.41	0.41		0.41	0.41	
Clearance Time (s)	5.0						5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0						3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	695						170	1462		213	1396	
v/s Ratio Prot								0.22			c0.26	
v/s Ratio Perm	0.21						0.05			0.07		
v/c Ratio	0.52						0.12	0.54		0.16	0.63	
Uniform Delay, d1	12.4						10.1	12.3		10.2	12.9	
Progression Factor	1.00						1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6						0.3	0.4		0.4	0.9	
Delay (s)	13.0						10.4	12.7		10.6	13.8	
Level of Service	B						B	B		B	B	
Approach Delay (s)	13.0		0.0					12.7			13.7	
Approach LOS	B		A					B			B	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	55.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
34: Ward Ave & Auahi St

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	72	35	90	101	141	59	317	77	95	448	69
Future Volume (vph)	25	72	35	90	101	141	59	317	77	95	448	69
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	
Lane Util. Factor		0.95	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.98		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		0.99	1.00		0.98	1.00	
Frt		1.00	0.85	1.00	0.91		1.00	0.97		1.00	0.98	
Flt Protected		0.99	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3484	1583	1770	1672		1747	3407		1739	3446	
Flt Permitted		0.86	1.00	0.69	1.00		0.44	1.00		0.50	1.00	
Satd. Flow (perm)		3024	1583	1277	1672		811	3407		919	3446	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	78	38	98	110	153	64	345	84	103	487	75
RTOR Reduction (vph)	0	0	25	0	65	0	0	24	0	0	14	0
Lane Group Flow (vph)	0	105	13	98	198	0	64	405	0	103	548	0
Confl. Peds. (#/hr)	37					37	34		63	63		34
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		15.5	15.5	15.5	15.5		20.7	20.7		20.7	20.7	
Effective Green, g (s)		15.5	15.5	15.5	15.5		20.7	20.7		20.7	20.7	
Actuated g/C Ratio		0.34	0.34	0.34	0.34		0.45	0.45		0.45	0.45	
Clearance Time (s)		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	
Lane Grp Cap (vph)		1014	531	428	560		363	1526		411	1543	
v/s Ratio Prot					c0.12			0.12			c0.16	
v/s Ratio Perm		0.03	0.01	0.08			0.08			0.11		
v/c Ratio		0.10	0.02	0.23	0.35		0.18	0.27		0.25	0.36	
Uniform Delay, d1		10.6	10.3	11.0	11.6		7.6	8.0		7.9	8.4	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.0	0.3	0.4		0.2	0.1		0.3	0.1	
Delay (s)		10.6	10.3	11.3	12.0		7.9	8.1		8.2	8.5	
Level of Service		B	B	B	B		A	A		A	A	
Approach Delay (s)		10.5			11.8			8.1			8.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	46.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
34: Ward Ave & Auahi St

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	171	66	137	94	277	48	436	191	313	433	70
Future Volume (vph)	31	171	66	137	94	277	48	436	191	313	433	70
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	
Lane Util. Factor		0.95	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	0.95		1.00	0.97		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	0.98	1.00		0.97	1.00		0.97	1.00	
Frt		1.00	0.85	1.00	0.89		1.00	0.95		1.00	0.98	
Flt Protected		0.99	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3498	1518	1730	1577		1720	3293		1721	3428	
Flt Permitted		0.83	1.00	0.62	1.00		0.45	1.00		0.38	1.00	
Satd. Flow (perm)		2940	1518	1131	1577		812	3293		685	3428	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	32	176	68	141	97	286	49	449	197	323	446	72
RTOR Reduction (vph)	0	0	47	0	121	0	0	55	0	0	14	0
Lane Group Flow (vph)	0	208	21	141	262	0	49	591	0	323	504	0
Confl. Peds. (#/hr)	67		39	39		67	43		87	87		43
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		24.3	24.3	24.3	24.3		42.7	42.7		42.7	42.7	
Effective Green, g (s)		24.3	24.3	24.3	24.3		42.7	42.7		42.7	42.7	
Actuated g/C Ratio		0.32	0.32	0.32	0.32		0.55	0.55		0.55	0.55	
Clearance Time (s)		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	
Lane Grp Cap (vph)		927	479	356	497		450	1826		379	1900	
v/s Ratio Prot					c0.17			0.18			0.15	
v/s Ratio Perm		0.07	0.01	0.12			0.06			c0.47		
v/c Ratio		0.22	0.04	0.40	0.53		0.11	0.32		0.85	0.27	
Uniform Delay, d1		19.4	18.3	20.6	21.6		8.1	9.3		14.5	9.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.0	0.7	1.0		0.1	0.1		16.6	0.1	
Delay (s)		19.5	18.3	21.3	22.6		8.2	9.4		31.1	9.0	
Level of Service		B	B	C	C		A	A		C	A	
Approach Delay (s)		19.2			22.3			9.3			17.5	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	77.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	94	28	25	103	54	40	109	28	25	202	152
Future Volume (vph)	54	94	28	25	103	54	40	109	28	25	202	152
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
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.98	1.00		0.98	1.00	1.00
Frt	1.00	0.97		1.00	0.95		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3389		1770	3357		1737	3410		1742	1863	1526
Flt Permitted	0.95	1.00		0.95	1.00		0.62	1.00		0.66	1.00	1.00
Satd. Flow (perm)	1770	3389		1770	3357		1138	3410		1208	1863	1526
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	58	101	30	27	111	58	43	117	30	27	217	163
RTOR Reduction (vph)	0	22	0	0	43	0	0	18	0	0	0	95
Lane Group Flow (vph)	58	109	0	27	126	0	43	129	0	27	217	68
Confl. Peds. (#/hr)			34	34			43		33	33		43
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		4
Actuated Green, G (s)	2.1	13.5		1.6	13.0		21.4	21.4		21.4	21.4	21.4
Effective Green, g (s)	2.1	13.5		1.6	13.0		21.4	21.4		21.4	21.4	21.4
Actuated g/C Ratio	0.04	0.26		0.03	0.25		0.42	0.42		0.42	0.42	0.42
Clearance Time (s)	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
Lane Grp Cap (vph)	72	888		54	847		472	1416		501	774	634
v/s Ratio Prot	c0.03	0.03		0.02	c0.04			0.04			c0.12	
v/s Ratio Perm							0.04			0.02		0.04
v/c Ratio	0.81	0.12		0.50	0.15		0.09	0.09		0.05	0.28	0.11
Uniform Delay, d1	24.5	14.5		24.6	15.0		9.1	9.1		9.0	10.0	9.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	46.1	0.1		7.1	0.1		0.1	0.0		0.0	0.2	0.1
Delay (s)	70.6	14.5		31.7	15.0		9.2	9.2		9.0	10.2	9.3
Level of Service	E	B		C	B		A	A		A	B	A
Approach Delay (s)		31.8			17.3			9.2			9.7	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	51.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	315	132	9	163	77	78	144	46	99	249	163
Future Volume (vph)	100	315	132	9	163	77	78	144	46	99	249	163
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
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.95		1.00	0.95		1.00	0.97		1.00	1.00	0.89
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.94	1.00		0.90	1.00	1.00
Frt	1.00	0.96		1.00	0.95		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3199		1770	3213		1657	3301		1601	1863	1408
Flt Permitted	0.95	1.00		0.95	1.00		0.48	1.00		0.63	1.00	1.00
Satd. Flow (perm)	1770	3199		1770	3213		845	3301		1055	1863	1408
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)	105	332	139	9	172	81	82	152	48	104	262	172
RTOR Reduction (vph)	0	51	0	0	48	0	0	34	0	0	0	123
Lane Group Flow (vph)	105	420	0	9	205	0	82	166	0	104	262	49
Confl. Peds. (#/hr)			167			209	105		137	137		105
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		4
Actuated Green, G (s)	7.3	36.8		0.7	30.2		20.9	20.9		20.9	20.9	20.9
Effective Green, g (s)	7.3	36.8		0.7	30.2		20.9	20.9		20.9	20.9	20.9
Actuated g/C Ratio	0.10	0.50		0.01	0.41		0.28	0.28		0.28	0.28	0.28
Clearance Time (s)	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
Lane Grp Cap (vph)	176	1603		16	1321		240	939		300	530	400
v/s Ratio Prot	c0.06	c0.13		0.01	0.06			0.05			c0.14	
v/s Ratio Perm							0.10			0.10		0.03
v/c Ratio	0.60	0.26		0.56	0.16		0.34	0.18		0.35	0.49	0.12
Uniform Delay, d1	31.6	10.5		36.2	13.6		20.8	19.8		20.8	21.9	19.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.3	0.1		38.3	0.1		0.9	0.1		0.7	0.7	0.1
Delay (s)	37.0	10.6		74.5	13.6		21.7	19.9		21.5	22.6	19.6
Level of Service	D	B		E	B		C	B		C	C	B
Approach Delay (s)		15.4			15.7			20.4			21.4	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	73.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	7	53	0	0	0	94	76	6	21	42	52
Future Volume (vph)	46	7	53	0	0	0	94	76	6	21	42	52
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	
Lane Util. Factor		1.00	1.00				1.00	1.00			1.00	
Frpb, ped/bikes		1.00	0.96				1.00	1.00			0.97	
Flpb, ped/bikes		0.99	1.00				1.00	1.00			1.00	
Frt		1.00	0.85				1.00	0.99			0.94	
Flt Protected		0.96	1.00				0.95	1.00			0.99	
Satd. Flow (prot)		1760	1521				1770	1836			1678	
Flt Permitted		0.96	1.00				0.95	1.00			0.95	
Satd. Flow (perm)		1760	1521				1770	1836			1603	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	53	8	61	0	0	0	108	87	7	24	48	60
RTOR Reduction (vph)	0	0	50	0	0	0	0	3	0	0	30	0
Lane Group Flow (vph)	0	61	11	0	0	0	108	91	0	0	102	0
Confl. Peds. (#/hr)	12		34	34		12			16	16		62
Turn Type	Perm	NA	Perm				Prot	NA		Perm	NA	
Protected Phases		4					5	2			6	
Permitted Phases	4		4							6		
Actuated Green, G (s)		8.5	8.5				6.9	30.4			18.5	
Effective Green, g (s)		8.5	8.5				6.9	30.4			18.5	
Actuated g/C Ratio	0.17	0.17					0.14	0.62			0.38	
Clearance Time (s)	5.0	5.0					5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0			3.0	
Lane Grp Cap (vph)	305	264					249	1141			606	
v/s Ratio Prot							c0.06	0.05				
v/s Ratio Perm	0.03	0.01									c0.06	
v/c Ratio	0.20	0.04					0.43	0.08			0.17	
Uniform Delay, d1	17.3	16.8					19.2	3.7			10.1	
Progression Factor	1.00	1.00					1.00	1.00			1.00	
Incremental Delay, d2	0.3	0.1					1.2	0.0			0.1	
Delay (s)	17.6	16.9					20.4	3.7			10.2	
Level of Service	B	B					C	A			B	
Approach Delay (s)	17.2		0.0					12.6			10.2	
Approach LOS	B		A					B			B	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	48.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	10	178	0	0	0	186	102	11	18	78	52
Future Volume (vph)	92	10	178	0	0	0	186	102	11	18	78	52
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	
Lane Util. Factor		1.00	1.00				1.00	1.00			1.00	
Frpb, ped/bikes		1.00	0.92				1.00	0.99			0.96	
Flpb, ped/bikes		0.92	1.00				1.00	1.00			0.99	
Frt		1.00	0.85				1.00	0.99			0.95	
Flt Protected		0.96	1.00				0.95	1.00			0.99	
Satd. Flow (prot)		1632	1453				1770	1819			1685	
Flt Permitted		0.96	1.00				0.95	1.00			0.96	
Satd. Flow (perm)		1632	1453				1770	1819			1623	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	101	11	196	0	0	0	204	112	12	20	86	57
RTOR Reduction (vph)	0	0	150	0	0	0	0	5	0	0	22	0
Lane Group Flow (vph)	0	112	46	0	0	0	204	119	0	0	141	0
Confl. Peds. (#/hr)	60		77	77		60			48	48		104
Turn Type	Perm	NA	Perm				Prot	NA		Perm	NA	
Protected Phases		4					5	2			6	
Permitted Phases	4		4							6		
Actuated Green, G (s)		13.1	13.1				12.2	32.9			15.7	
Effective Green, g (s)		13.1	13.1				12.2	32.9			15.7	
Actuated g/C Ratio	0.23	0.23					0.22	0.59			0.28	
Clearance Time (s)	5.0	5.0					5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0			3.0	
Lane Grp Cap (vph)	381	339					385	1068			455	
v/s Ratio Prot							c0.12	0.07				
v/s Ratio Perm	0.07	0.03									c0.09	
v/c Ratio	0.29	0.14					0.53	0.11			0.31	
Uniform Delay, d1	17.6	17.0					19.4	5.1			15.9	
Progression Factor	1.00	1.00					1.00	1.00			1.00	
Incremental Delay, d2	0.4	0.2					1.3	0.0			0.4	
Delay (s)	18.1	17.2					20.7	5.1			16.3	
Level of Service	B	B					C	A			B	
Approach Delay (s)	17.5		0.0					14.8			16.3	
Approach LOS	B		A					B			B	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX F

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2020 PEAK PERIOD TRAFFIC
ANALYSIS WITH PROJECT

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

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	202	83	90	407	95	83	450	64	62	718	201
Future Volume (vph)	50	202	83	90	407	95	83	450	64	62	718	201
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	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.97		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1759	1769		1756	1800		1770	3433		1770	3376	
Flt Permitted	0.19	1.00		0.47	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	357	1769		866	1800		1770	3433		1770	3376	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	53	215	88	96	433	101	88	479	68	66	764	214
RTOR Reduction (vph)	0	17	0	0	10	0	0	13	0	0	29	0
Lane Group Flow (vph)	53	286	0	96	524	0	88	534	0	66	949	0
Confl. Peds. (#/hr)	21		15	15		21			58			34
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	27.4	27.4		27.4	27.4		5.8	28.9		6.0	29.1	
Effective Green, g (s)	27.4	27.4		27.4	27.4		5.8	28.9		6.0	29.1	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.08	0.37		0.08	0.38	
Clearance Time (s)	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	
Lane Grp Cap (vph)	126	627		306	638		132	1283		137	1270	
v/s Ratio Prot		0.16			c0.29		c0.05	0.16		0.04	c0.28	
v/s Ratio Perm	0.15			0.11								
v/c Ratio	0.42	0.46		0.31	0.82		0.67	0.42		0.48	0.75	
Uniform Delay, d1	18.9	19.2		18.1	22.7		34.8	17.9		34.2	20.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.3	0.5		0.6	8.4		12.0	0.2		2.7	2.4	
Delay (s)	21.2	19.7		18.7	31.1		46.8	18.2		36.8	23.4	
Level of Service	C	B		B	C		D	B		D	C	
Approach Delay (s)		20.0			29.2			22.1			24.2	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	77.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

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

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	465	150	97	434	100	73	786	159	175	814	82
Future Volume (vph)	103	465	150	97	434	100	73	786	159	175	814	82
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	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.97		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.97		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1764	1779		1760	1803		1770	3363		1770	3457	
Flt Permitted	0.22	1.00		0.13	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	402	1779		249	1803		1770	3363		1770	3457	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	107	484	156	101	452	104	76	819	166	182	848	85
RTOR Reduction (vph)	0	13	0	0	9	0	0	19	0	0	8	0
Lane Group Flow (vph)	107	627	0	101	547	0	76	966	0	182	925	0
Confl. Peds. (#/hr)	11		25	25		11			88			59
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	36.0	36.0		36.0	36.0		4.7	30.5		8.0	33.8	
Effective Green, g (s)	36.0	36.0		36.0	36.0		4.7	30.5		8.0	33.8	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.05	0.34		0.09	0.38	
Clearance Time (s)	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	
Lane Grp Cap (vph)	161	715		100	725		92	1146		158	1305	
v/s Ratio Prot		0.35			0.30		0.04	c0.29		c0.10	c0.27	
v/s Ratio Perm	0.27			c0.41								
v/c Ratio	0.66	0.88		1.01	0.75		0.83	0.84		1.15	0.71	
Uniform Delay, d1	21.8	24.7		26.8	23.0		42.0	27.3		40.8	23.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.9	11.8		92.7	4.5		42.8	5.8		118.3	1.8	
Delay (s)	31.7	36.5		119.5	27.4		84.8	33.1		159.0	25.5	
Level of Service	C	D		F	C		F	C		F	C	
Approach Delay (s)		35.8			41.6			36.8			47.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
16: Kamakee St & Queen St

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	231	11	185	296	29	16	117	57	38	199	108
Future Volume (vph)	64	231	11	185	296	29	16	117	57	38	199	108
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	
Lane Util. Factor		0.95		1.00	0.95			0.95			0.95	
Frt		0.99		1.00	0.99			0.95			0.95	
Flt Protected		0.99		0.95	1.00			1.00			0.99	
Satd. Flow (prot)		3483		1770	3492			3365			3355	
Flt Permitted		0.80		0.95	1.00			0.91			0.90	
Satd. Flow (perm)		2828		1770	3492			3077			3043	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	68	246	12	197	315	31	17	124	61	40	212	115
RTOR Reduction (vph)	0	4	0	0	10	0	0	42	0	0	69	0
Lane Group Flow (vph)	0	322	0	197	336	0	0	160	0	0	298	0
Turn Type	Perm	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2						8			4		
Actuated Green, G (s)		14.1		9.3	28.4			17.2			17.2	
Effective Green, g (s)		14.1		9.3	28.4			17.2			17.2	
Actuated g/C Ratio		0.25		0.17	0.51			0.31			0.31	
Clearance Time (s)		5.0		5.0	5.0			5.0			5.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		717		296	1783			951			941	
v/s Ratio Prot				c0.11	0.10							
v/s Ratio Perm	c0.11							0.05			c0.10	
v/c Ratio	0.45			0.67	0.19			0.17			0.32	
Uniform Delay, d1	17.5			21.7	7.4			14.0			14.7	
Progression Factor	1.00			1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5			5.6	0.1			0.1			0.2	
Delay (s)	17.9			27.2	7.4			14.1			14.9	
Level of Service	B			C	A			B			B	
Approach Delay (s)	17.9				14.6			14.1			14.9	
Approach LOS	B				B			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	55.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
16: Kamakee St & Queen St

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↑↑			↕			↕	
Traffic Volume (vph)	112	497	44	282	514	53	43	169	71	66	133	52
Future Volume (vph)	112	497	44	282	514	53	43	169	71	66	133	52
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	
Lane Util. Factor		0.95		1.00	0.95			0.95			0.95	
Frt		0.99		1.00	0.99			0.96			0.97	
Flt Protected		0.99		0.95	1.00			0.99			0.99	
Satd. Flow (prot)		3474		1770	3490			3380			3385	
Flt Permitted		0.74		0.95	1.00			0.86			0.75	
Satd. Flow (perm)		2579		1770	3490			2918			2587	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	117	518	46	294	535	55	45	176	74	69	139	54
RTOR Reduction (vph)	0	5	0	0	8	0	0	27	0	0	19	0
Lane Group Flow (vph)	0	676	0	294	582	0	0	268	0	0	243	0
Turn Type	Perm	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2						8			4		
Actuated Green, G (s)		30.1		19.8	54.9			15.6			15.6	
Effective Green, g (s)		30.1		19.8	54.9			15.6			15.6	
Actuated g/C Ratio		0.37		0.25	0.68			0.19			0.19	
Clearance Time (s)		5.0		5.0	5.0			5.0			5.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		964		435	2380			565			501	
v/s Ratio Prot				c0.17	0.17							
v/s Ratio Perm	c0.26							0.09			c0.09	
v/c Ratio	0.70		0.68	0.24				0.48			0.49	
Uniform Delay, d1	21.4		27.4	4.9				28.8			28.9	
Progression Factor	1.00		1.00	1.00				1.00			1.00	
Incremental Delay, d2	2.3		4.1	0.1				0.6			0.7	
Delay (s)	23.7		31.6	4.9				29.4			29.6	
Level of Service	C		C	A				C			C	
Approach Delay (s)	23.7			13.8				29.4			29.6	
Approach LOS	C			B				C			C	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
17: Queens Ln & Queen St

7/19/2016

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↰	↑↑	↕	
Traffic Volume (veh/h)	321	21	99	489	24	73
Future Volume (Veh/h)	321	21	99	489	24	73
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	338	22	104	515	25	77
Pedestrians					19	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					2	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)	564			680		
pX, platoon unblocked						
vC, conflicting volume			379		834	199
vC1, stage 1 conf vol					368	
vC2, stage 2 conf vol					466	
vCu, unblocked vol			379		834	199
tC, single (s)			4.1		*5.8	*5.9
tC, 2 stage (s)					4.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			91		95	91
cM capacity (veh/h)			1157		547	843

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	225	135	104	258	258	102
Volume Left	0	0	104	0	0	25
Volume Right	0	22	0	0	0	77
cSH	1700	1700	1157	1700	1700	744
Volume to Capacity	0.13	0.08	0.09	0.15	0.15	0.14
Queue Length 95th (ft)	0	0	7	0	0	12
Control Delay (s)	0.0	0.0	8.4	0.0	0.0	10.6
Lane LOS			A			B
Approach Delay (s)	0.0		1.4			10.6
Approach LOS						B

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
17: Queens Ln & Queen St

7/19/2016

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	595	10	76	792	48	196
Future Volume (Veh/h)	595	10	76	792	48	196
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	669	11	85	890	54	220
Pedestrians					19	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					2	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)	564			687		
pX, platoon unblocked			0.91		0.91	0.91
vC, conflicting volume			699		1308	359
vC1, stage 1 conf vol					694	
vC2, stage 2 conf vol					615	
vCu, unblocked vol			473		1142	100
tC, single (s)			4.1		*5.8	*5.9
tC, 2 stage (s)					4.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			91		88	75
cM capacity (veh/h)			973		446	864

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	446	234	85	445	445	274
Volume Left	0	0	85	0	0	54
Volume Right	0	11	0	0	0	220
cSH	1700	1700	973	1700	1700	729
Volume to Capacity	0.26	0.14	0.09	0.26	0.26	0.38
Queue Length 95th (ft)	0	0	7	0	0	44
Control Delay (s)	0.0	0.0	9.1	0.0	0.0	12.9
Lane LOS			A			B
Approach Delay (s)	0.0		0.8			12.9
Approach LOS						B

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

HCM Signalized Intersection Capacity Analysis
24: Ward Ave & Halekauwila St

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	13	9	0	0	0	42	439	3	16	571	253
Future Volume (vph)	108	13	9	0	0	0	42	439	3	16	571	253
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
Lane Util. Factor		1.00					1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00					1.00	1.00		1.00	1.00	0.93
Flpb, ped/bikes		1.00					0.98	1.00		1.00	1.00	1.00
Frt		0.99					1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96					0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1766					1728	3536		1770	3539	1468
Flt Permitted		0.96					0.43	1.00		0.49	1.00	1.00
Satd. Flow (perm)		1766					776	3536		911	3539	1468
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	111	13	9	0	0	0	43	453	3	16	589	261
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	127
Lane Group Flow (vph)	0	131	0	0	0	0	43	456	0	16	589	134
Confl. Peds. (#/hr)	2		44				42					42
Turn Type	Perm	NA					Perm	NA		Perm	NA	Perm
Protected Phases		4						2			6	
Permitted Phases	4						2			6		6
Actuated Green, G (s)		15.0					26.2	26.2		26.2	26.2	26.2
Effective Green, g (s)		15.0					26.2	26.2		26.2	26.2	26.2
Actuated g/C Ratio		0.29					0.51	0.51		0.51	0.51	0.51
Clearance Time (s)		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
Lane Grp Cap (vph)	517						397	1809		466	1810	751
v/s Ratio Prot								0.13			c0.17	
v/s Ratio Perm	0.07						0.06			0.02		0.09
v/c Ratio	0.25						0.11	0.25		0.03	0.33	0.18
Uniform Delay, d1	13.8						6.5	7.0		6.2	7.3	6.7
Progression Factor	1.00						1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3						0.1	0.1		0.0	0.1	0.1
Delay (s)	14.1						6.6	7.1		6.2	7.4	6.8
Level of Service	B						A	A		A	A	A
Approach Delay (s)	14.1		0.0					7.0			7.2	
Approach LOS	B		A					A			A	

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	51.2	Sum of ost time (s)	10.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
24: Ward Ave & Halekauwila St/Driveway

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	22	87	0	0	0	18	767	6	33	710	158
Future Volume (vph)	244	22	87	0	0	0	18	767	6	33	710	158
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	
Lane Util. Factor		1.00					1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.98					1.00	1.00		1.00	0.98	
Flpb, ped/bikes		1.00					0.98	1.00		1.00	1.00	
Frt		0.97					1.00	1.00		1.00	0.97	
Flt Protected		0.97					0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1711					1733	3535		1770	3376	
Flt Permitted		0.97					0.22	1.00		0.27	1.00	
Satd. Flow (perm)		1711					408	3535		507	3376	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	254	23	91	0	0	0	19	799	6	34	740	165
RTOR Reduction (vph)	0	13	0	0	0	0	0	1	0	0	24	0
Lane Group Flow (vph)	0	355	0	0	0	0	19	804	0	34	881	0
Confl. Peds. (#/hr)			91				63					63
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)		22.5					23.1	23.1		23.1	23.1	
Effective Green, g (s)		22.5					23.1	23.1		23.1	23.1	
Actuated g/C Ratio		0.40					0.42	0.42		0.42	0.42	
Clearance Time (s)		5.0					5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0					3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		692					169	1468		210	1402	
v/s Ratio Prot								0.23			c0.26	
v/s Ratio Perm		0.21					0.05			0.07		
v/c Ratio		0.51					0.11	0.55		0.16	0.63	
Uniform Delay, d1		12.4					10.0	12.3		10.2	12.9	
Progression Factor		1.00					1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6					0.3	0.4		0.4	0.9	
Delay (s)		13.1					10.3	12.7		10.5	13.7	
Level of Service		B					B	B		B	B	
Approach Delay (s)		13.1		0.0				12.7			13.6	
Approach LOS		B		A				B			B	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	55.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
34: Ward Ave & Auahi St

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	72	35	90	100	141	59	319	77	95	462	69
Future Volume (vph)	25	72	35	90	100	141	59	319	77	95	462	69
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	
Lane Util. Factor		0.95	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.98		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		0.99	1.00		0.98	1.00	
Frt		1.00	0.85	1.00	0.91		1.00	0.97		1.00	0.98	
Flt Protected		0.99	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3484	1583	1770	1671		1747	3407		1739	3449	
Flt Permitted		0.86	1.00	0.69	1.00		0.43	1.00		0.50	1.00	
Satd. Flow (perm)		3024	1583	1277	1671		793	3407		917	3449	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	78	38	98	109	153	64	347	84	103	502	75
RTOR Reduction (vph)	0	0	25	0	66	0	0	24	0	0	13	0
Lane Group Flow (vph)	0	105	13	98	196	0	64	407	0	103	564	0
Confl. Peds. (#/hr)	37					37	34		63	63		34
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		15.5	15.5	15.5	15.5		20.8	20.8		20.8	20.8	
Effective Green, g (s)		15.5	15.5	15.5	15.5		20.8	20.8		20.8	20.8	
Actuated g/C Ratio		0.33	0.33	0.33	0.33		0.45	0.45		0.45	0.45	
Clearance Time (s)		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	
Lane Grp Cap (vph)		1012	529	427	559		356	1530		411	1549	
v/s Ratio Prot					c0.12			0.12			c0.16	
v/s Ratio Perm		0.03	0.01	0.08			0.08			0.11		
v/c Ratio		0.10	0.02	0.23	0.35		0.18	0.27		0.25	0.36	
Uniform Delay, d1		10.6	10.3	11.1	11.6		7.6	8.0		7.9	8.4	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.0	0.3	0.4		0.2	0.1		0.3	0.1	
Delay (s)		10.7	10.3	11.4	12.0		7.9	8.1		8.2	8.5	
Level of Service		B	B	B	B		A	A		A	A	
Approach Delay (s)		10.6			11.8			8.0			8.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	46.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
34: Ward Ave & Auahi St

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	171	66	137	92	275	48	448	191	313	439	70
Future Volume (vph)	31	171	66	137	92	275	48	448	191	313	439	70
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	
Lane Util. Factor		0.95	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	0.95		1.00	0.98		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	0.98	1.00		0.97	1.00		0.97	1.00	
Frt		1.00	0.85	1.00	0.89		1.00	0.96		1.00	0.98	
Flt Protected		0.99	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3498	1517	1730	1575		1720	3297		1721	3429	
Flt Permitted		0.83	1.00	0.62	1.00		0.44	1.00		0.37	1.00	
Satd. Flow (perm)		2937	1517	1131	1575		805	3297		674	3429	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	32	176	68	141	95	284	49	462	197	323	453	72
RTOR Reduction (vph)	0	0	47	0	123	0	0	52	0	0	14	0
Lane Group Flow (vph)	0	208	21	141	256	0	49	607	0	323	511	0
Confl. Peds. (#/hr)	67		39	39		67	43		87	87		43
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		24.2	24.2	24.2	24.2		43.3	43.3		43.3	43.3	
Effective Green, g (s)		24.2	24.2	24.2	24.2		43.3	43.3		43.3	43.3	
Actuated g/C Ratio		0.31	0.31	0.31	0.31		0.56	0.56		0.56	0.56	
Clearance Time (s)		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	
Lane Grp Cap (vph)		917	473	353	491		449	1842		376	1915	
v/s Ratio Prot					c0.16			0.18			0.15	
v/s Ratio Perm		0.07	0.01	0.12			0.06			c0.48		
v/c Ratio		0.23	0.04	0.40	0.52		0.11	0.33		0.86	0.27	
Uniform Delay, d1		19.7	18.6	20.9	21.9		8.0	9.2		14.5	8.9	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.0	0.7	1.0		0.1	0.1		17.4	0.1	
Delay (s)		19.9	18.6	21.7	22.9		8.1	9.4		31.9	8.9	
Level of Service		B	B	C	C		A	A		C	A	
Approach Delay (s)		19.6			22.6			9.3			17.7	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	77.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
35: Kamakee St & Auahi St

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	94	28	25	103	54	40	118	28	25	239	152
Future Volume (vph)	54	94	28	25	103	54	40	118	28	25	239	152
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
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.98	1.00		0.98	1.00	1.00
Frt	1.00	0.97		1.00	0.95		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3389		1770	3357		1739	3418		1742	1863	1526
Flt Permitted	0.95	1.00		0.95	1.00		0.60	1.00		0.65	1.00	1.00
Satd. Flow (perm)	1770	3389		1770	3357		1099	3418		1197	1863	1526
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	58	101	30	27	111	58	43	127	30	27	257	163
RTOR Reduction (vph)	0	22	0	0	44	0	0	17	0	0	0	94
Lane Group Flow (vph)	58	109	0	27	125	0	43	140	0	27	257	69
Confl. Peds. (#/hr)			34	34			43		33	33		43
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		4
Actuated Green, G (s)	2.1	13.4		1.6	12.9		22.0	22.0		22.0	22.0	22.0
Effective Green, g (s)	2.1	13.4		1.6	12.9		22.0	22.0		22.0	22.0	22.0
Actuated g/C Ratio	0.04	0.26		0.03	0.25		0.42	0.42		0.42	0.42	0.42
Clearance Time (s)	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
Lane Grp Cap (vph)	71	873		54	832		464	1446		506	788	645
v/s Ratio Prot	c0.03	0.03		0.02	c0.04			0.04			c0.14	
v/s Ratio Perm							0.04			0.02		0.05
v/c Ratio	0.82	0.12		0.50	0.15		0.09	0.10		0.05	0.33	0.11
Uniform Delay, d1	24.8	14.8		24.8	15.3		9.0	9.0		8.9	10.0	9.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	49.3	0.1		7.1	0.1		0.1	0.0		0.0	0.2	0.1
Delay (s)	74.0	14.9		31.9	15.4		9.1	9.1		8.9	10.3	9.1
Level of Service	E	B		C	B		A	A		A	B	A
Approach Delay (s)		33.0			17.6			9.1			9.8	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	52.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
35: Kamakee St & Auahi St

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	315	132	9	163	77	78	172	46	99	257	161
Future Volume (vph)	100	315	132	9	163	77	78	172	46	99	257	161
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
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.95		1.00	0.95		1.00	0.97		1.00	1.00	0.89
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.94	1.00		0.91	1.00	1.00
Frt	1.00	0.96		1.00	0.95		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3199		1770	3213		1659	3331		1607	1863	1408
Flt Permitted	0.95	1.00		0.95	1.00		0.47	1.00		0.61	1.00	1.00
Satd. Flow (perm)	1770	3199		1770	3213		823	3331		1030	1863	1408
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)	105	332	139	9	172	81	82	181	48	104	271	169
RTOR Reduction (vph)	0	51	0	0	48	0	0	26	0	0	0	121
Lane Group Flow (vph)	105	420	0	9	205	0	82	203	0	104	271	48
Confl. Peds. (#/hr)			167			209	105		137	137		105
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		4
Actuated Green, G (s)	7.3	36.8		0.7	30.2		21.1	21.1		21.1	21.1	21.1
Effective Green, g (s)	7.3	36.8		0.7	30.2		21.1	21.1		21.1	21.1	21.1
Actuated g/C Ratio	0.10	0.50		0.01	0.41		0.29	0.29		0.29	0.29	0.29
Clearance Time (s)	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
Lane Grp Cap (vph)	175	1599		16	1318		235	954		295	534	403
v/s Ratio Prot	c0.06	c0.13		0.01	0.06			0.06			c0.15	
v/s Ratio Perm							0.10			0.10		0.03
v/c Ratio	0.60	0.26		0.56	0.16		0.35	0.21		0.35	0.51	0.12
Uniform Delay, d1	31.8	10.6		36.3	13.7		20.8	19.9		20.8	21.9	19.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.5	0.1		38.3	0.1		0.9	0.1		0.7	0.8	0.1
Delay (s)	37.2	10.7		74.6	13.7		21.7	20.1		21.6	22.7	19.5
Level of Service	D	B		E	B		C	C		C	C	B
Approach Delay (s)		15.5			15.8			20.5			21.5	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	73.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
36: Queens Lane/Queens Ln & Auahi St

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	7	53	0	0	0	94	76	6	21	42	52
Future Volume (vph)	46	7	53	0	0	0	94	76	6	21	42	52
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	
Lane Util. Factor		1.00	1.00				1.00	1.00			1.00	
Frpb, ped/bikes		1.00	0.96				1.00	1.00			0.97	
Flpb, ped/bikes		0.99	1.00				1.00	1.00			1.00	
Frt		1.00	0.85				1.00	0.99			0.94	
Flt Protected		0.96	1.00				0.95	1.00			0.99	
Satd. Flow (prot)		1760	1521				1770	1836			1678	
Flt Permitted		0.96	1.00				0.95	1.00			0.95	
Satd. Flow (perm)		1760	1521				1770	1836			1603	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	53	8	61	0	0	0	108	87	7	24	48	60
RTOR Reduction (vph)	0	0	50	0	0	0	0	3	0	0	30	0
Lane Group Flow (vph)	0	61	11	0	0	0	108	91	0	0	102	0
Confl. Peds. (#/hr)	12		34	34		12			16	16		62
Turn Type	Perm	NA	Perm				Prot	NA		Perm	NA	
Protected Phases		4					5	2			6	
Permitted Phases	4		4							6		
Actuated Green, G (s)		8.5	8.5				6.9	30.4			18.5	
Effective Green, g (s)		8.5	8.5				6.9	30.4			18.5	
Actuated g/C Ratio		0.17	0.17				0.14	0.62			0.38	
Clearance Time (s)	5.0	5.0					5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0			3.0	
Lane Grp Cap (vph)	305	264					249	1141			606	
v/s Ratio Prot							c0.06	0.05				
v/s Ratio Perm	0.03	0.01									c0.06	
v/c Ratio	0.20	0.04					0.43	0.08			0.17	
Uniform Delay, d1	17.3	16.8					19.2	3.7			10.1	
Progression Factor	1.00	1.00					1.00	1.00			1.00	
Incremental Delay, d2	0.3	0.1					1.2	0.0			0.1	
Delay (s)	17.6	16.9					20.4	3.7			10.2	
Level of Service	B	B					C	A			B	
Approach Delay (s)	17.2		0.0					12.6			10.2	
Approach LOS	B		A					B			B	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	48.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
36: Queens Lane/Queens Ln & Auahi St

7/19/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	10	178	0	0	0	186	102	11	18	78	52
Future Volume (vph)	92	10	178	0	0	0	186	102	11	18	78	52
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	
Lane Util. Factor		1.00	1.00				1.00	1.00			1.00	
Frpb, ped/bikes		1.00	0.92				1.00	0.99			0.96	
Flpb, ped/bikes		0.92	1.00				1.00	1.00			0.99	
Frt		1.00	0.85				1.00	0.99			0.95	
Flt Protected		0.96	1.00				0.95	1.00			0.99	
Satd. Flow (prot)		1632	1453				1770	1819			1685	
Flt Permitted		0.96	1.00				0.95	1.00			0.96	
Satd. Flow (perm)		1632	1453				1770	1819			1623	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	101	11	196	0	0	0	204	112	12	20	86	57
RTOR Reduction (vph)	0	0	150	0	0	0	0	5	0	0	22	0
Lane Group Flow (vph)	0	112	46	0	0	0	204	119	0	0	141	0
Confl. Peds. (#/hr)	60		77	77		60			48	48		104
Turn Type	Perm	NA	Perm				Prot	NA		Perm	NA	
Protected Phases		4					5	2			6	
Permitted Phases	4		4							6		
Actuated Green, G (s)		13.1	13.1				12.2	32.9			15.7	
Effective Green, g (s)		13.1	13.1				12.2	32.9			15.7	
Actuated g/C Ratio		0.23	0.23				0.22	0.59			0.28	
Clearance Time (s)		5.0	5.0				5.0	5.0			5.0	
Vehicle Extension (s)		3.0	3.0				3.0	3.0			3.0	
Lane Grp Cap (vph)		381	339				385	1068			455	
v/s Ratio Prot							c0.12	0.07				
v/s Ratio Perm		0.07	0.03								c0.09	
v/c Ratio		0.29	0.14				0.53	0.11			0.31	
Uniform Delay, d1		17.6	17.0				19.4	5.1			15.9	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		0.4	0.2				1.3	0.0			0.4	
Delay (s)		18.1	17.2				20.7	5.1			16.3	
Level of Service		B	B				C	A			B	
Approach Delay (s)		17.5			0.0			14.8			16.3	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

City and County of Honolulu

Department of Planning and Permitting - Traffic Review Branch

email concurring with the results and conclusions of the

Traffic Impact Report

From: Hirayama, Mel J. [mailto:mhirayama@honolulu.gov]
Sent: Friday, September 02, 2016 10:23 AM
To: 'dneupane@dbedt.hawaii.gov'; Pete Pascua
Cc: Sugiura, Jean
Subject: Victoria Ward - Block N TIAR

The Traffic Review Branch concurs with the results and conclusions contained in the study.

However, as part of the completion of the study, the preparer should include:

1. A schematic diagram of the roadway improvements proposed at Queen Street and Ward Avenue.

2. The LOS of the intersection of the private drive and Halekauwila Extension and at Queen Street, since Block "N" will proportionally influence the LOS at these locations.

3. A description or narrative of when the Halekauwila Extension will be completed to Ward Avenue and the reason why it cannot be completed sooner. I would imagine it may be due to lease agreements with Ross's, but not Sports Authority.

Mel H. – Traffic Review Branch

From: Cathy Leong [mailto:cleong@wilsonokamoto.com]
Sent: Wednesday, September 07, 2016 1:29 PM
To: 'Hirayama, Mel J.'
Cc: Andrade, Kamakaokalani M; Sugiura, Jean; Watanabe, Lance K.; Pete Pascua
Subject: RE: Ward Block N TIAR

Mel,

The following is the additional information that you requested for the Ward Block N-East TIAR:

1. See attached schematic layout for the Queen/Ward intersection.
2. At the intersection of Queen Street and the new Private Drive between Block M and Block N-East, the critical movement on Queen Street is the westbound approach which operates at LOS "A" during both peak periods with the Block N-East project. The northbound approach from the Private Drive is expected to operate at LOS "B" and LOS "C" during the AM and PM peak periods, respectively, with Block N-East.
3. The Halekauwila Street Extension is expected to be completed in 2 major phases with the development of the sites adjacent to the new roadway. The segment of the roadway between Block N-East and Kamakee Street is expected to be completed in conjunction with Blocks M and N-East. The remainder of the roadway between Ward Avenue and Block N-East is expected to be constructed at grade with Blocks H and N-West bridging over the new roadway. As such, the phasing of the roadway construction of that segment was anticipated in advance of these 2 phases. In addition, Howard Hughes has indicated that the "timing of Private Drive 2 connection to Ward Ave. supports the expected Ward Gateway Center operations and timing of the future rail station."

Please feel free to contact me if you need further clarification or information.

Cathy A. Leong, P.E.

Senior Project Manager

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

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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APPENDIX D

INFRASTRUCTURE AVAILABILITY REPORT

Block N East
Infrastructure Availability Report

Honolulu, Oahu, Hawaii
Tax Map Key: 2-3-002:106

Prepared for
The Howard Hughes Corporation
1240 Ala Moana Boulevard, Suite 202
Honolulu, HI 96814

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

September 21, 2016

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	1.4 Flood Hazard	1-1
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APPENDIX A

- City and County of Honolulu - Department of Planning and Permitting, Wastewater Branch: Sewer Connection Application and Approved Sewer Connection Application
- Honolulu Board of Water Supply: Request Letter, Adequacy Letter and Email Correspondence
- Honolulu Fire Department: Meeting Minutes
- City and County of Honolulu - Department of Planning and Permitting, Civil Engineering Branch: LID Email Correspondence
- Hawaiian Electric Company: Request Letter and Will Serve Letter
- Hawaiian Telcom: Request Letter and Assessment Letter
- Charter Communications: Utility Assessment Request Letter and Email Correspondence
- Hawaii Gas – Capacity 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

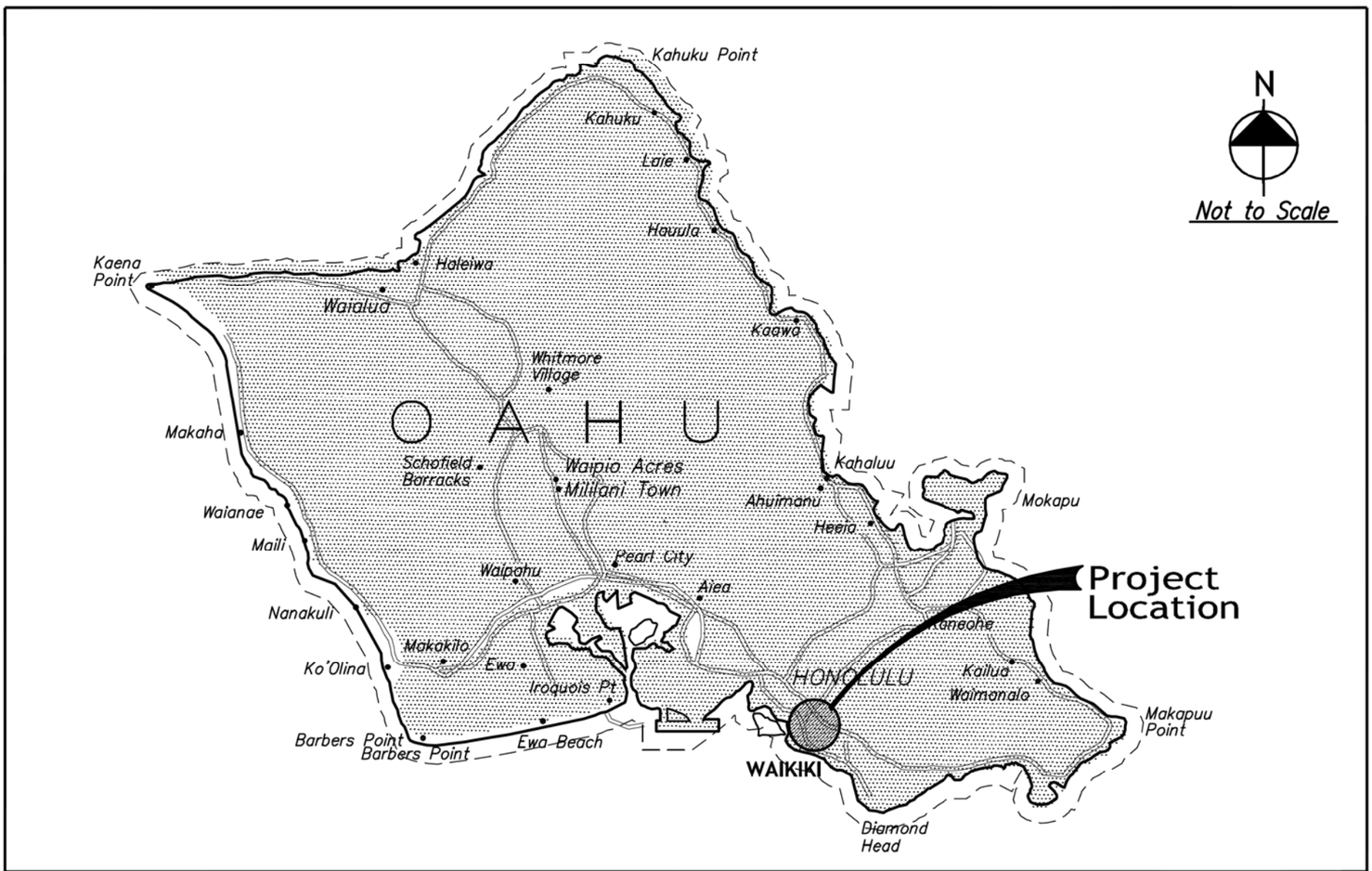
The Howard Hughes Corporation (HHC) proposes the development of a 751 unit high-rise condominium tower with mixed use commercial in Kakaako Mauka on the island of Oahu (see Figures 1-1 and 1-2). The project site is approximately 2.1 acres, generally located at TMK: 2-3-002:106. The project site will be bounded by Queen Street to the north, a private drive to the east and south, and existing structures and pavement to the west. The Block M (Ae`o) project is currently under construction and located east of the Block N East site.

1.3 Existing Topography

The project site is currently being used as a construction staging area for the Ae`o project. The site surface consists of asphalt pavement and two remnant concrete building foundations from warehouse buildings which were demolished under the Ae`o project. The site generally slopes from northeast to southwest but is primarily flat with sumps throughout the site. Drain inlets are located in the sump areas to collect and convey storm water runoff. See Figures 1-3 for topographic survey prepared October 2012 by Control Point Surveying Inc., which has been modified to depict the site after the Ae`o project has been completed. See Figure 1-4 for ALTA survey prepared August 2011 by Engineers Surveyors Hawaii, Inc.

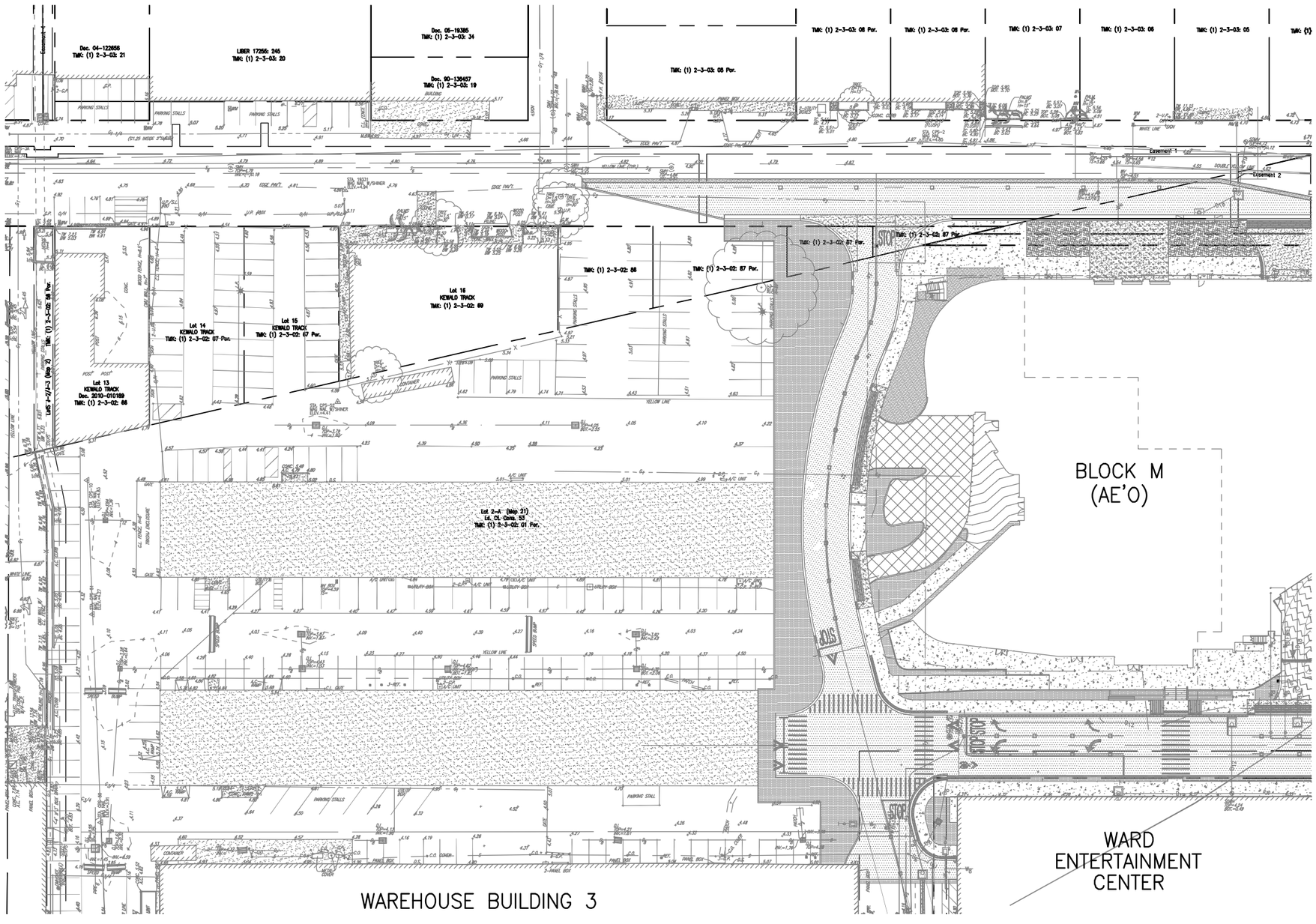
1.4 Flood Hazard

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. Zone AE is characterized as a special flood hazard area, where the annual chance of flooding (100 year flood) is determined as 1%. The properties Flood Base Elevation is 7 feet (see Figure 1-5). The proposed finish floor elevation at Level 1 for the project is 7.25 feet.



WILSON OKAMOTO CORPORATION	BLOCK N EAST INFRASTRUCTURE AVAILABILITY REPORT VICINITY MAP	FIGURE 1-1

WILSON OKAMOTO CORPORATION	BLOCK N EAST INFRASTRUCTURE AVAILABILITY REPORT LOCATION MAP	FIGURE 1-2



NOTE: EXISTING IMPROVEMENTS SHOWN REFLECT SITE CONDITION AFTER COMPLETION OF THE AE'O PROJECT.

BENCHMARK

AZIMUTHS ARE REFERRED TO GOVERNMENT TRIANGULATION STATION "PUNCHBOWL" ⧋.

ELEVATIONS ARE REFERRED TO C&GS BENCHMARK DISK "B 5" AT THE KEWALO BASIN BOAT HARBOR TOP OF BRASS DISK ELEV.=6.03 FT., MSL.

LEGEND

A.C.	ASPHALT CONCRETE	INV.	INVERT
A/C	AIR CONDITIONING	J/S	JOINT TRUNKING SYSTEM
APPROX.	APPROXIMATE	L.L.	LANDSCAPE LIGHT
ARV	AIR RELEASE VALVE	L.P.	LAMP POLE
BC	BOTTOM CURB	M.B.	MAIL BOX
BFP	BACK FLOW PREVENTER	MH	MANHOLE
BOT.	BOTTOM	O/H	OVERHEAD
BW	BOTTOM WALL	PAV'T.	PAVEMENT
CATV	CABLE TELEVISION	P.M.	PARKING METER
C.B.	CATCH BASIN	P.P.	POWER POLE
C.L.	CHAIN LINK	PSL	PEDESTRIAN SIGNAL LIGHT
CMU	CONCRETE MASONRY UNIT	REF.	REFLECTOR
C.O.	CLEAN OUT	S	SEWER OR SPREAD
COL.	COLUMN	SC	SIGNAL CORPS
COMM.	COMMUNICATION	SCMH	SIGNAL CORPS MANHOLE
CONC.	CONCRETE	SDMH	STORM DRAIN MANHOLE
CRM	CONCRETE RUBBLE MASONRY	S.L.	STREET LIGHT
D	DIAMETER OR DRAIN	SLB	STREET LIGHT BOX
D.I.	DRAIN INLET	SMH	SEWER MANHOLE
D.S.	DOWN SPOUT	SPR.	SPRINKLER
DSP	DRY STAND PIPE	ST. NAME	STREET NAME
DWY.	DRIVEWAY	STA.	STATION
E/ELEC.	ELECTRIC	TC	TOP CURB
E.O.	ELECTRIC OUTLET	TDC	TOP DROP CURB
ELEV./EL.	ELEVATION	T/TEL.	TELEPHONE
F.A.	FIRE ALARM	TL	TONE LINE
F.H.	FIRE HYDRANT	TP	TOP PIPE
FL	FLOW LINE	TRC	TOP ROLLED CURB
FLR.	FLOOR	TS	TOP STEM
FM	FORCE MAIN	TSL	TRAFFIC SIGNAL LIGHT
G	GAS	TSLB	TRAFFIC SIGNAL LIGHT BOX
G.I.	GRATED INLET	TV	TOP VALVE
GM	GAS METER	TW	TOP WALL
GMH	GAS MANHOLE	TYP.	TYPICAL
GND.	GROUND	U.P.	UTILITY POLE
G.P.	GUARD POST/GUY POLE/GATE POST	U.P./S.L.	UTILITY POLE W/STREET LIGHT
GV	GAS VALVE	W	WATER
G.W.	GUY WIRE	WM	WATER METER
H	HEIGHT	WMH	WATER MANHOLE
H.B.	HOSE BIB	WV	WATER VALVE BOX
ICV	IRRIGATION CONTROL VALVE	X-WALK	CROSS WALK

- AT&T MH
- AT&T BOX
- BACK FLOW PREVENTER
- CATV BOX
- C.B./MH OR SDMH
- CLEAN OUT
- COLUMN
- COMM. BOX
- DRAIN INLET
- DRY STAND PIPE
- ELEC. BOX
- ELEC. MH
- FIRE ALARM BOX
- FIRE HYDRANT
- GAS MH
- GAS VALVE
- GUARD RAIL
- GUY WIRE
- HOSE BIB
- ICV BOX
- ICV
- LAMP POLE
- MTCo. MH
- PEDESTRIAN SIGNAL LIGHT
- RESIDENTIAL MAILBOX
- SEWER MH
- SIGNAL CORPS MH
- SIGN
- STREET LIGHT
- STREET LIGHT BOX
- SPRINKLER
- TEL. BOX
- TEL. MH
- TRAFFIC SENSOR
- TRAFFIC SIGNAL LIGHT
- TRAFFIC/PEDESTRIAN SIGNAL LIGHT
- TRAFFIC SIGNAL LIGHT BOX
- UTILITY POLE W/STREET LIGHT
- U.S. POSTAL MAILBOX
- WATER MH
- WATER METER
- WATER VALVE
- DENOTES ACCESS PERMITTED
- DENOTES NO VEHICLE ACCESS PERMITTED
- DENOTES NO ACCESS PERMITTED
- DENOTES LIMITED ACCESS AS NOTED ON PLAN

NOTE

UNDERGROUND UTILITY LINES AND/OR STRUCTURES, IF SHOWN, ARE PROVIDED FOR INFORMATION ONLY AND ARE BASED ON INFORMATION SHOWN ON PLANS/MAPS PREPARED BY OTHERS. THE INFORMATION SHOWN, THEREFORE, MAY OR MAY NOT BY REPRESENTATIVE OF ACTUAL FIELD CONDITIONS. THE UNDERGROUND UTILITY LINES AND/OR STRUCTURES MAY OR MAY NOT BE PRESENT AT THE LOCATIONS SHOWN OR OTHER UNDERGROUND UTILITY LINES AND/OR STRUCTURES NOT SHOWN MAY BE PRESENT.

UNLESS OTHERWISE NOTED, ALL LOCATIONS OF UNDERGROUND UTILITY LINES AND/OR STRUCTURES ARE APPROXIMATE. NO GUARANTEE IS MADE ON THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE USER(S) OF THIS TOPOGRAPHIC SURVEY MAP SHALL VERIFY THE INFORMATION, AS NEEDED, DURING DESIGN AND CONSTRUCTION.

NORTH

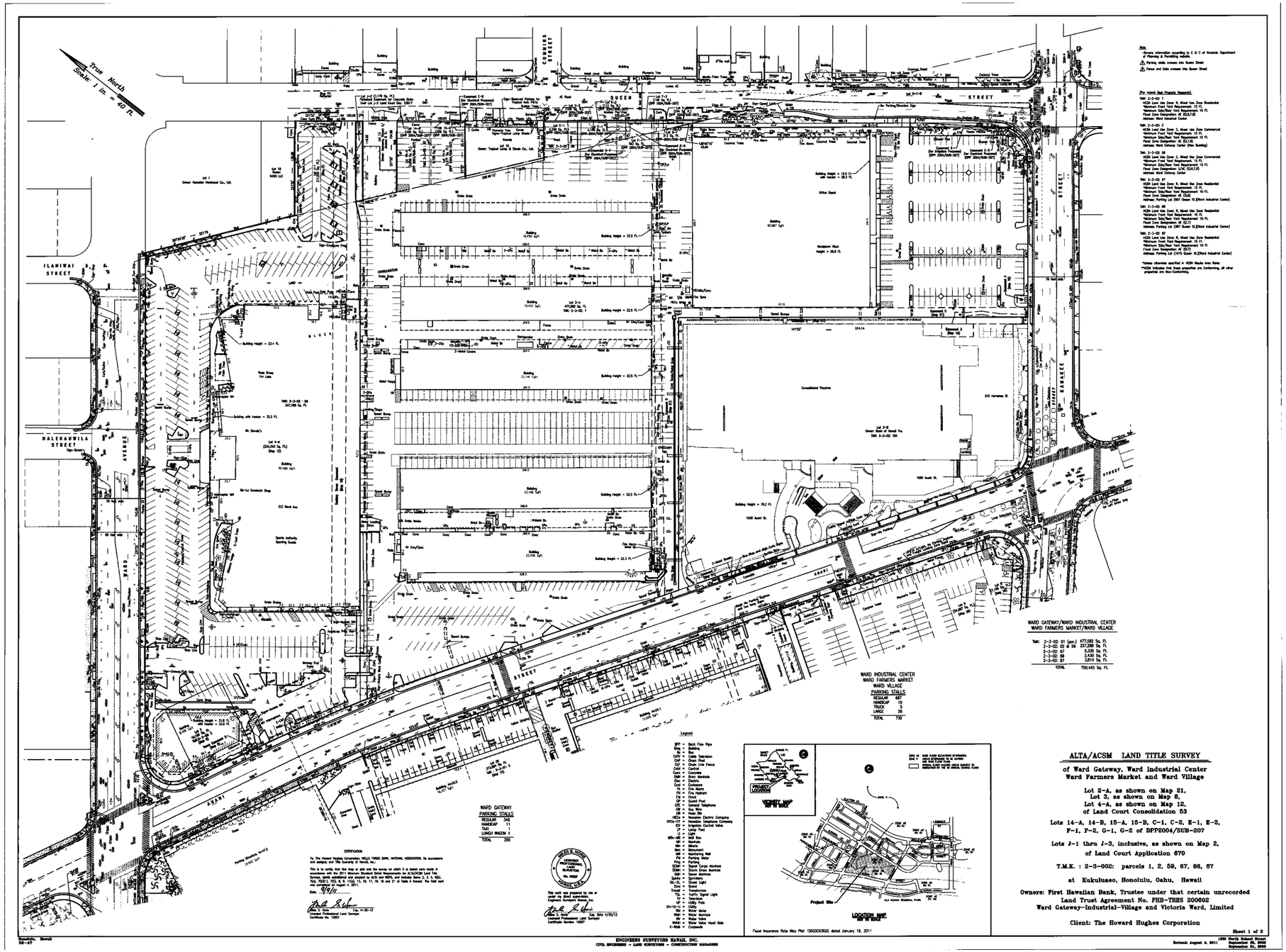
0 30 60 FT

WILSON OKAMOTO CORPORATION

BLOCK N EAST INFRASTRUCTURE AVAILABILITY REPORT

TOPOGRAPHIC SURVEY

Figure 1-3

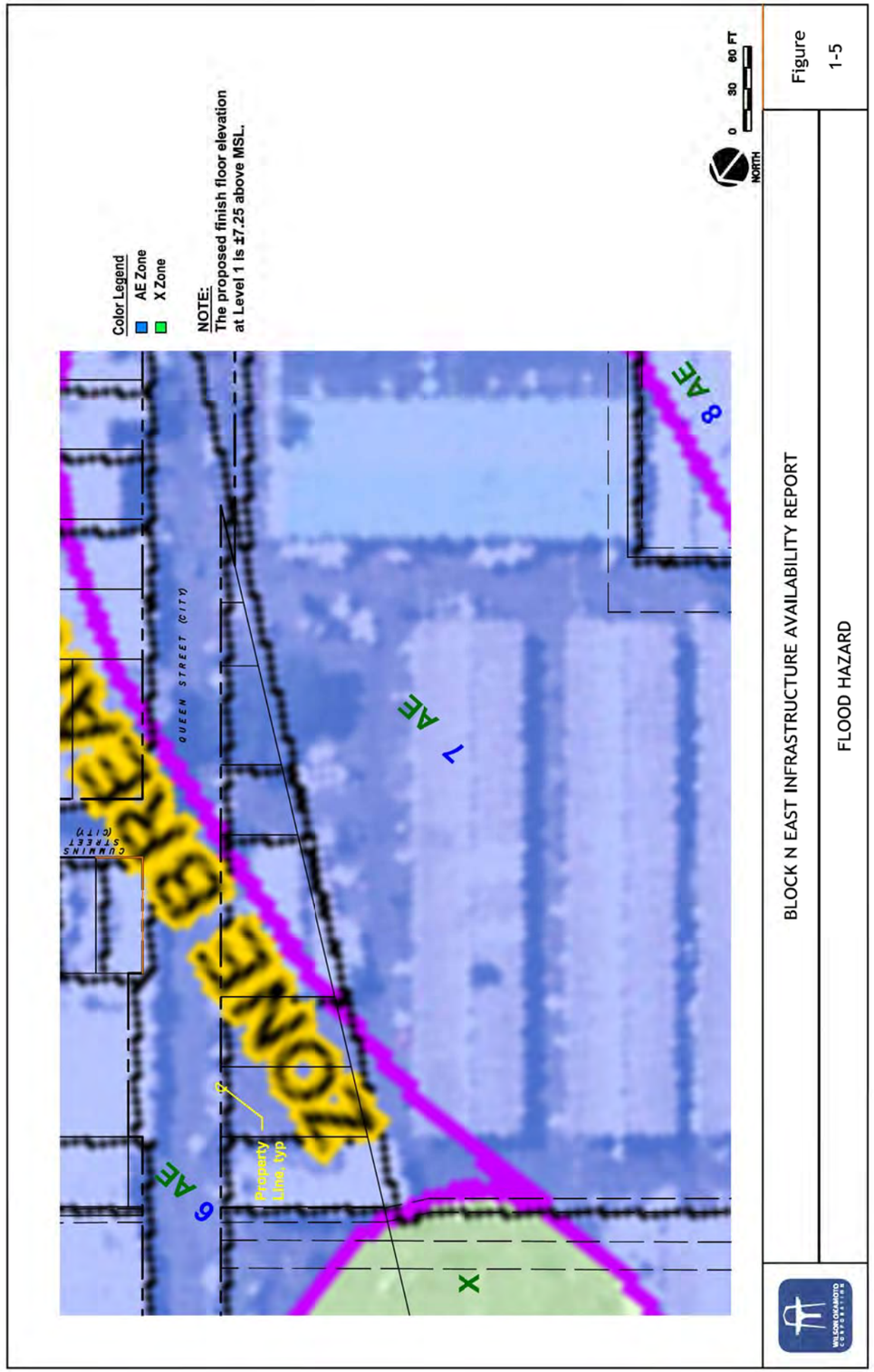


WILSON OKAMOTO CORPORATION

BLOCK N EAST INFRASTRUCTURE AVAILABILITY REPORT

ALTA SURVEY

Figure 1-4



2 UTILITIES

2.1 Sanitary Sewer System

Sanitary sewer system servicing the Kakaako Mauka 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 project area is located within the Sand Island collection system where wastewater flow is discharged into the Ala Moana Wastewater Pump Station and conveyed to the City's Sand Island Wastewater Treatment Plant, which serves the Honolulu area from Kuliouou to Moanalua.

The project proposes connection to an existing 48-inch sewer main located north of the project site at the intersection of Cummins Street and Queen Street. A 12-inch lateral is anticipated for the project and will be confirmed during the final design phase. See Figure 2-1 which identifies the existing sewer system within the project vicinity.

A sewer connection application was submitted on April 13, 2016 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 was received September 21, 2016 confirming available capacity (see Appendix A).

WILSON OKAMOTO CORPORATION

BLOCK N EAST INFRASTRUCTURE AVAILABILITY REPORT

EXISTING SANITARY SEWER SYSTEM

FIGURE 2-1

2.2 Water System

2.2.1 Potable Water

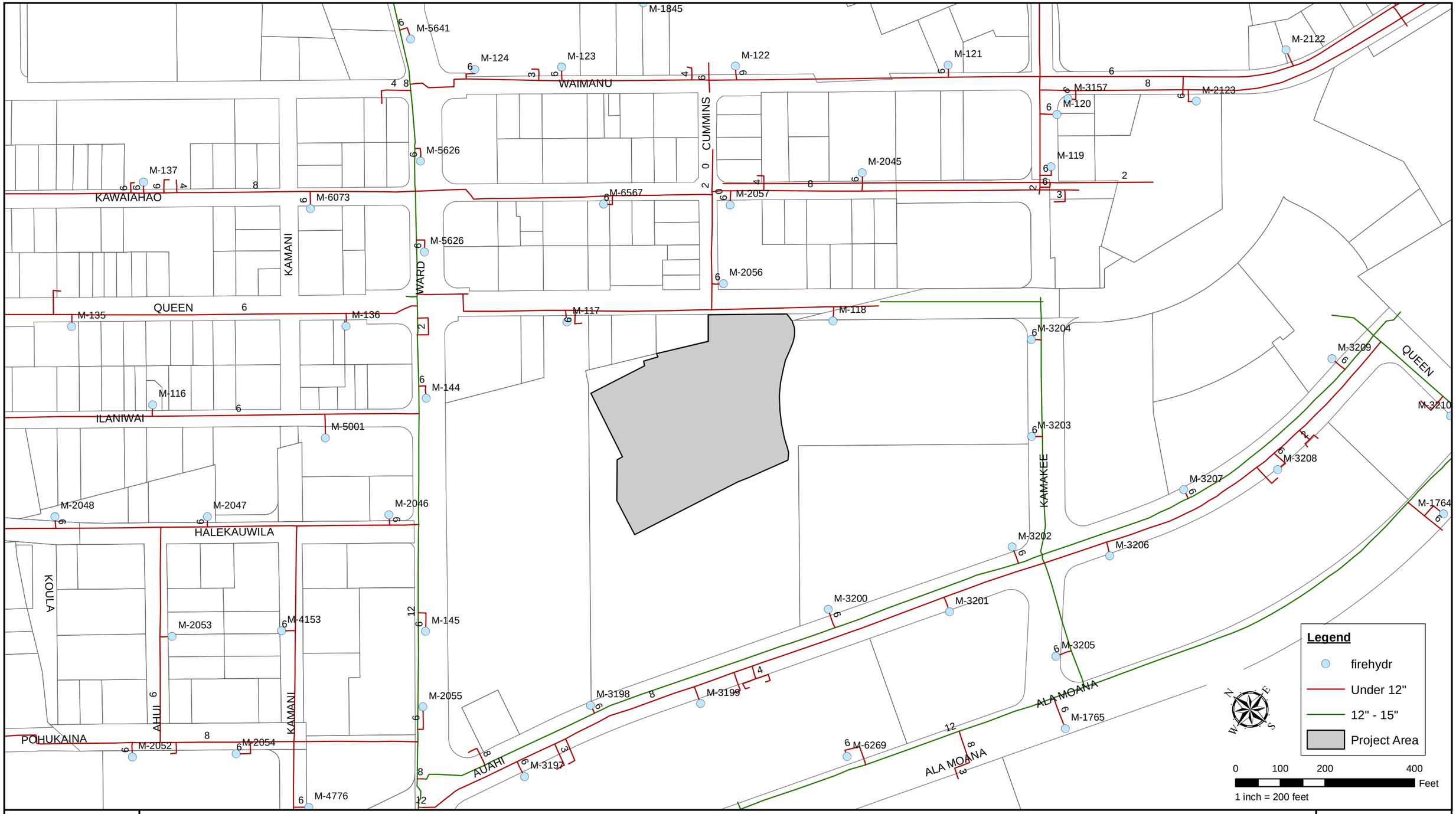
Potable water service for the project will be provided by the City and County of Honolulu's Board of Water Supply (BWS). The BWS's water system in the project area consists of a system of looped transmission mains, fire hydrants and water meters.

The project proposes connection to an existing 12-inch water main located northeast of the project site within Queen Street. The 12-inch main will be extended to the project frontage. A 12-inch lateral is anticipated for the project and will be confirmed during the final design phase. See Figure 2-2 which identifies the existing water system within the project vicinity.

A meeting on April 28, 2016 with Robert Chun, BWS – Project Review Section was conducted to discuss the proposed project. A letter request to BWS initiating water system analysis for the project was submitted to confirm that the existing BWS water system can accommodate the project. An adequacy letter was received August 22, 2016 confirming available capacity (see Appendix A). It was confirmed via phone conversation and email correspondence with BWS staff that the request noted in the letter to provide waterline upgrades on Queen Street only needs to occur prior to Phase 3 of the Ward Village Master Plan and is not required as part of the Block N East project (see Appendix A).

2.2.2 Fire Protection

Fire protection will be provided by both private and public fire hydrants located within 450-ft from the furthest point of the building. Additionally, a fire sprinkler system will be provided within the building. The sprinkler system will be supplied by the 12-inch water main describe in section 2.2.1. The Honolulu Fire Department (HFD) was consulted on July 28, 2016 to discuss project and proposed fire protection method. Minutes from that meeting are provided in Appendix A. Recommendations provided by HFD will be maintained during the final design phase.



WILSON OKAMOTO CORPORATION

BLOCK N EAST INFRASTRUCTURE AVAILABILITY REPORT

EXISTING WATER SYSTEM

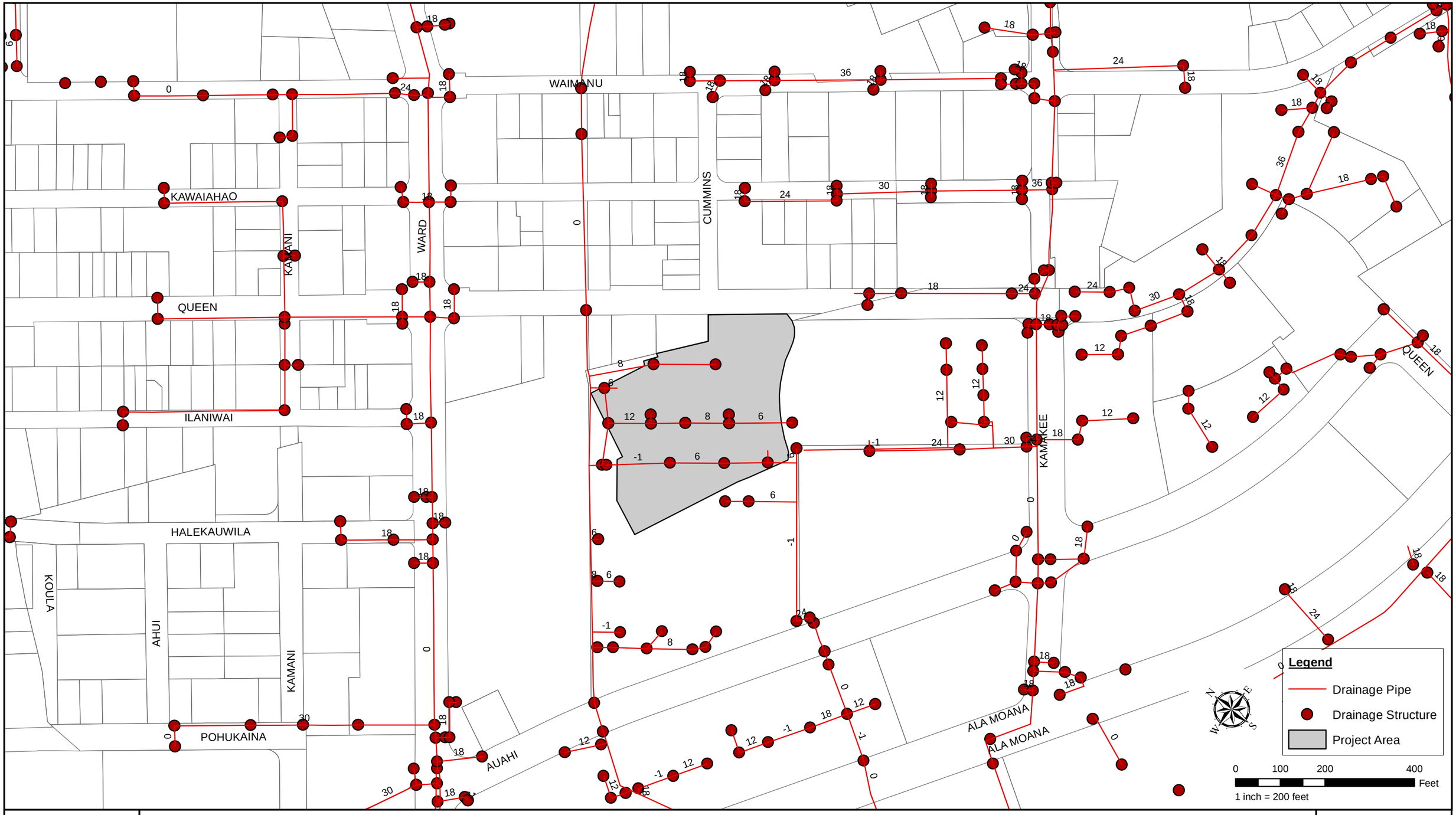
FIGURE
2-2

2.3 Drainage System and Low Impact Development

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

It has been determined that runoff from the project site generally collects within a private drainage system owned and maintained by HHC and discharges into a City owned and maintained box drain located west of the project site. It is anticipated the project will maintain this drainage pattern and will not increase runoff peak flow rate and volume. For this reason, the project will not adversely impact the existing performance of the City system. See Figure 2-3 which identifies the existing drainage system within the project vicinity.

DPP Civil Engineering Branch (CEB) was consulted on July 21, 2016 to discuss the projects Low Impact Development (LID) design concept (see Appendix A). The project proposes to provide a portion of required LID treatment on-site by means of bio-filtration and equivalently treat the remaining amount off-site at the proposed Victoria Park. This methodology is acceptable to CEB and had been further clarified that an interim means of treatment will be required should the park be completed after Block N East.



WILSON OKAMOTO CORPORATION

BLOCK N EAST INFRASTRUCTURE AVAILABILITY REPORT

EXISTING DRAINAGE SYSTEM

FIGURE 2-3

2.4 Electrical Power Facilities
Hawaiian Electric Company (HECO) was consulted to confirm the existing electrical system can accommodate the project. A Will Serve letter was received on September 13, 2016 stating that distribution circuits upgrades along Kamakee Street will need to be initiated to serve both the proposed project and the other Howard Hughes developments within the vicinity of the Ward area (see Appendix A).

2.5 Telephone System
Hawaiian Telcom Incorporated was consulted to confirm the existing communication system can accommodate the project. A utility assessment letter was received August 1, 2016 confirming available capacity (see Appendix A).

2.6 Cable Television System
Charter Communications (CC) was consulted on June 30, 2016 to confirm the existing cable system can accommodate the project (see Appendix A). RHA contacted CC on July 26, 2016 to determine if cable facilities required for Block N East could be installed with the Block M (Ae`o) project which is currently under construction. CC agreed to the proposal and provided recommendations for the required facilities. See email correspondence in Appendix A.

2.7 Gas System
Hawaii Gas was consulted to confirm the existing gas system can accommodate the project. An email was received June 28, 2016 confirming available capacity (see Appendix A).

APPENDIX A

- City and County of Honolulu - Department of Planning and Permitting, Wastewater Branch: Sewer Connection Application and Approved Sewer Connection Application
- Honolulu Board of Water Supply: Request Letter, Adequacy Letter and Email Correspondence
- Honolulu Fire Department: Meeting Minutes
- City and County of Honolulu - Department of Planning and Permitting, Civil Engineering Branch: LID Email Correspondence
- Hawaiian Electric Company: Request Letter and Will Serve Letter
- Hawaiian Telcom: Request Letter and Utility Assessment Letter
- Charter Communications: Utility Assessment Request Letter and Email Correspondence
- Hawaii Gas: Capacity Email Correspondence

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

Sewer Connection Application
Approved Sewer Connection Application

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.: **2016/SCA-0511** STATUS: **Approved with conditions**
DATE RECEIVED: **04/14/2016** IWDP APP. NO.:
PROJECT NAME: **2016/SCA-0511 Ward Village - Block N East**

$3,478,031.20
Estimated Wastewater System Facility Charge*

LOCATION:

Zone	Section	Plat	Parcel	
2	3	002	106	**388 KAMAKEE ST Honolulu / Down** **477,389** Sq. Ft.

SPECIFIC LOCATION: **1001 Queen St.**

APPLICANT: **HOWARD HUGHES CORP**
Lee R. Cranmer
1240 ALA MOANA BLVD #200
HONOLULU, HI 96814

DEVELOPMENT TYPE: **Dwelling, Multi-family** SEWER CONNECTION WORK DESIRED: **New**
OTHER USES: **Retail, 15,000 SF**
Restaurant, 2,250 customers per day
NON-RESIDENTIAL AREA: s.f. APPROXIMATE DATE OF CONNECTION: **06/01/2018**

PROPOSED UNITS		EXISTING UNITS		UNITS TO BE DEMOLISHED	
No. of New Units:	**751**	No. of Existing Units:	**0**	No. of Units to be Demolished:	**0**
Studios:	**300**	Studios:		Studios:	
1-Bedroom:	**300**	1-Bedroom:		1-Bedroom:	
2-Bedroom:	**128**	2-Bedroom:		2-Bedroom:	
3-Bedroom:	**23**	3-Bedroom:		3-Bedroom:	
4-Bedroom:		4-Bedroom:		4-Bedroom:	
5-Bedroom:		5-Bedroom:		5-Bedroom:	
6-Bedroom:		6-Bedroom:		6-Bedroom:	

REMARKS **A sewerline connecting to the existing SMH379795 on the 48-inch East End Relief is required. Submit construction plans for review and approval. An IWDP may be required. Sewer connection to be made after July 1, 2017. The Victoria Ward Sewer Master Plan is projected to be completed and approved prior to submittal of the building permit application. Additional WSFC will be assessed for the nonresidential portions of this project.**

APPROVAL DATE: **09/21/2016**

EXPIRATION DATE: **05/09/2018**

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.
** 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-D.*

REVIEWED BY: ***Keith Miyashiro***

Site Development Division, Wastewater Branch

ExternalID: **057405057-001** JobId: **57405057**

Initial Print Date: Wednesday September 21, 2016 11

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF PLANNING & PERMITTING
650 South King Street, Honolulu, Hawaii 96813

SITE DEVELOPMENT DIVISION MASTER APPLICATION FORM

Additional data, drawings/plans, and fee requirements are listed on a separate sheet titled "Instructions for Filing" and are available at your request. All specified materials described in the "Instructions for Filing" and required fees must accompany this form. You are encouraged to consult with Site Development Division (SDD) staff in completing the application to avoid processing delays. For other applications, procedures, instructions, and a fillable version of this form, please visit www.honoluludpp.org

I. APPROVAL PERMIT VARIANCE AGREEMENT/LICENSE

Check one or more as appropriate:

☐ Subdivision	☐ Grading	☐ Flood Hazard District Variance	☐ Driveway Crossing Existing Retaining Wall Agreement
☐ Easement(s)	☐ Grubbing	☐ Slope Easement Variance	☐ Sewer Easement Agreement
☐ Lot Consolidation	☐ Stockpiling	☐ Non-Standard Driveway Variance	☐ Drainage Connection License
☐ Park Dedication	☐ Trenching	☐ Non-Standard Sidewalk Finish Variance	
☐ Site Development	☐ Dewatering	☐ Surface Encroachment Variance	
☐ Flood Determination	☑ Sewer Connection	☐ Surface Encroachment Variance for Planting Strip	

NOTE: Sections II & III must be filled in completely for all applications. Please type or print legibly.

II. LOT AND LAND USE INFORMATION

TAX MAP KEY(S): **2-3-002:106, Lot 1** Lot Area: **109,213.00** sq.ft./ac.

Zoning District: **Kak** Development Plan Designation: **HCDA Kakaako Dev. District Mauka Area** State Land Use District: **Urban**

Street Address/Location of Property: **1001 Queen Street, Honolulu, Hawaii, 96814**

Present Use of Property/Building: **Business/Retail**

Project Name (if any): **Ward Village - Block N-East**

Request/Proposal (describe the nature of the request, proposed activity or project):

Confirmation of available sewer capacity is requested for the proposed redevelopment of the subject property.

Note, existing buildings will be completely demolished and a new sewer lateral is proposed.

III. APPLICANT INFORMATION

	Recorded Fee Owner/Applicant	Engineer/Architect/Surveyor	Contractor/Authorized Agent/Contact
Name (& title)	**Victoria Ward Limited**	**Wilson Okamoto Corp.**	
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) 591-8411**	**808-946-2277**	

APPLICANT **Lee R. Cranmer** (Print NAME of applicant) **Howard Hughes Corp. / Director, Site Development** (Print COMPANY NAME and TITLE of applicant) (Signature of applicant)

IV. FOR GRADING/GRUBBING/STOCKPILING INFORMATION ONLY

Estimated Dates: Start: Completion: Borrow Material:

Area of work (sf): Borrow Site:

Dimensions of work: Length: Width: Height*: Disposal Material:

Estimated Quantity (cy): Cut: Fill: Disposal Site:

*Stockpile Only

AUTHORIZATION CLEARANCE

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

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

(Signature of Owner/Developer giving authority)

FOR DIVISION USE ONLY:

Date of Application: Received By: Application No.:

SEE REVERSE FOR APPLICATIONS FOR TRENCHING AND SEWER CONNECTION

SITE DEVELOPMENT DIVISION MASTER APPLICATION FORM

(REVERSE SIDE)

V. FOR TRENCHING INFORMATION ONLY

Work to be performed for: Work to be done: ☐ Service Connection ☐ Repair

Estimated Dates: Start: Completion: Other:

Estimated Value of work: $ Dimensions: ft/in (length) ft/in (width) ft/in (depth)

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, 9th Flr.	768-8431
BWS, Customer Care			630 So. Beretania St., 1st Flr.	748-5460
Hawaiian Electric, Construction Installation			820 Ward Avenue, 4th Flr.	543-5654
Hawaiian Telcom, Excavation			1177 Bishop St., Security Entrance Adams Lane	546-7746
Gasco., Inc., Maps & Records			515 Kamakee St., 1st Flr.	594-5575
Oceanic Cablevision, Engineering & Constr.			200 Akamainui St.	625-8443
☐ CHECK IF REQUIRED DFM, Division of Road Maintenance			99-999 Iwaena Street, #214	768-3600

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: The utilities listed above may not represent all underground utilities located within City rights-of-ways, nor do these 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.

FOR DIVISION USE ONLY:

Date of Application: Received By: Application No.:

VI. 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 **751** (Provide breakdown below)

300 Studios **300** 1 Bedroom **128** 2 Bedrooms **23** 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)
Retail	**15,000 SF**	**TBD**
Restaurant	**2,250 seats/day**	**TBD**

Date of Connection: **TBD** (approximate)

Connection Work Desired: ☐ Use Existing Lateral ☑ Other

Dimensions: ft. (length) in. (size) ft. (depth)

Existing Structures/Dwellings on Property: (Provide breakdown below)

TYPE (i.e. Single Family)	QUANTITY(IES)	REMAIN	DEMOLISH
Business/Retail Building	**37,307**	**0**	**37,307**

Remarks: (Provide any additional information on the lines provided). *If response box is checked above, provide email address here:* **mkagimoto@wilsonokamoto.com**

A new 15" sewer is proposed to serve the project. Final pipe size will be determined during design. The proposed sewer connection to the 48" East End relief will be located near Queen Street, between Ward and Cummins.

FOR DIVISION USE ONLY:

Date of Application: Received By: Application No.:

SEWER TABLE

This table is used for required category and quantity for non-residential connections. (See sect. V1 "Sewer Connection Information Only" of the Site Development Master Application form).

TAX MAP KEY(S) 2-7-016-001, 005

CATEGORY	UNITS	QUANTITY	CATEGORY	UNITS	QUANTITY
Animal Clinic	Employees		Meat Processing	gpd*	
Aquarium	Employees		Medical Clinic	Employees	
Auto Repair	Employees		Military	gpd*	
Bakery	Employees		Milk Processing	gpd*	
Banks	Employees		Mortuaries	Employees	
Bowling Alley	Employees		Motel	Rooms	
Car Dealership	Employees		Museum	Employees	
Car Wash	Employees		Newspaper Agencies	Employees	
Caterers	Employees		Noodle Factory	Employees	
Church	Employees		Nursery	Employees	
Commercial (Misc.)	Sq. Ft. of Floor Space		Nursing, Convalescent Home	Employees and Beds	
Commercial Kennel	Employees		Office Building	Employees	
Convent	Sisters		Park w/ comfort station only	Employees	
Day Care, Pre-School	Children		Parking Structure	Employees	
Delicatessen	Employees		Personal Services	Employees	
Dental Clinic	Employees		Photo Finishers	Employees	
Dentist's Office	Employees		Photo Processing	Employees	
District Park	Employees		Pineapple Processing	gpd*	
Doctor's Office	Employees		Police Station	Employees	
Dormitory	Rooms		Potato Chip Manufacturing	gpd*	
Drinking Establishment	Employees		Poultry Processing	gpd*	
Dry Cleaning	gpd *		Prison	Prisoners	
Elementary School	Students		Private Clubs	Employees	
Eye Glass Manufacturing	Employees		Residential Care Home	Employees and Beds	
Fast Foods	Employees		Resort Condo	Rooms	
Fire Station	Employees		Restaurant	Seats per day	2250
Florist	Employees		Retail	Sq. Ft. of Retail Floor Space	15000
General Industry (Misc.)	Sq. Ft. of Floor Space		Rooming House	Rooms	
Golf Course w/Clubhouse	Employees		Schools (other)	Students	
Government Offices	Employees		Service Station	Employees	
Grocery Store	Employees		Shopping Center	Sq. Ft. of Retail Floor Space	
Half-way House	Employees and Beds		Soy Bean Factory	gpd*	
Health Spa	Employees		Sports Arena	gpd*	
High Schools	Students		Stadium	gpd*	
Hospital	Beds		Sugar Processing	gpd*	
Hostel	Rooms		Supermarket	Employees	
Hotel	Rooms		Theater	Seats per day	
Hotel Development	Acres		Tofu Factory	gpd*	
Intermediate Schools	Students		Warehouse	Employees	
Jewelry Manufacturing	Employees		YMCA (Lodging)	Rooms	
Laundromats	Machines		Zoo	Employees	
Library	Employees				

gpd = gallons per day

FOR DIVISION USE ONLY:

Date of Application: _____ Received By: _____ Application No.: _____

Honolulu Board of Water Supply

Request Letter
Adequacy Letter
Email Correspondence

BOARD OF WATER SUPPLY

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

August 17, 2016

KIRK CALDWELL, MAYOR

DUANE R. MIYASHIRO, Chair
ADAM C. WONG, Vice Chair
DAVID C. HULIHEE
KAPUA SPROAT
BRYAN P. ANDAYA

ROSS S. SASAMURA, Ex-Officio
FORD N. FUCHIGAMI, Ex-Officio

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

ELLEN E. KITAMURA, P.E.
Deputy Manager and Chief Engineer

MKK

RECEIVED
AUG 22 2016
WILSON OKAMOTO CORPORATION

Mr. Micah Kagimoto, P.E.
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Kagimoto:

Subject: Your Letter Dated April 28, 2016 on the Availability of Water and Flow and Pressure Data for the Ward Village Block N-East on Queen Street - Tax Map Key: 2-3-002: 106

Thank you for your letter regarding the Ward Village Block N-East 750-unit multi-family high-rise and commercial development in Kakaako.

The existing water system is adequate to provide peak hour pressures and off-site fire protection to the proposed residential/commercial development. However, please be advised that this information is based upon current data, and therefore, the Board of Water Supply (BWS) reserves the right to change any position or information stated herein up until the final approval of the building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

The developer should proceed with the upgrade of the 6-inch water main on Queen Street from Cooke Street up to the existing 12-inch water main located between Cummins and Kamakee Streets, to a 12-inch main, as indicated in our comments regarding the Victoria Ward Master Plan.

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 the proposed developments. These measures include low flow plumbing fixtures, utilization of nonpotable water for irrigation using rain catchment and chiller/air handler concensate, cooling tower conductivity meters and water softening recycling systems, drought tolerant plants, xeriscape landscaping, efficient irrigation systems and the use of Water Sense labeled ultra-low-flow water fixtures and toilets. The 2002 BWS Water System Standards did not account for recent conservation measures. The developer should provide an estimate of water conservation savings from the implementation of a full array of conservation measures that will reduce the average day demand.

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.

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

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 the following fire hydrants:

Fire Hydrant Number	Location	Static Pressure (psi)	Residual Pressure (psi)	Flow (gpm)
M-00136	Queen Street	76	23	4000
M-00144	Ward Avenue	76	60	4000
M-05626	Ward Avenue	76	60	4000
M-00117	Queen Street	76	20	3500
M-00118	Queen Street	76	43	4000
M-02056	Cummins Street	76	44	4000
M-02057	Kawaihao Street	76	47	4000
M-07529	Queen Street	76	57	4000

The data are 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.

We do not have data on the fire hydrants that begin with MP because these are private fire hydrants located after the master meter.

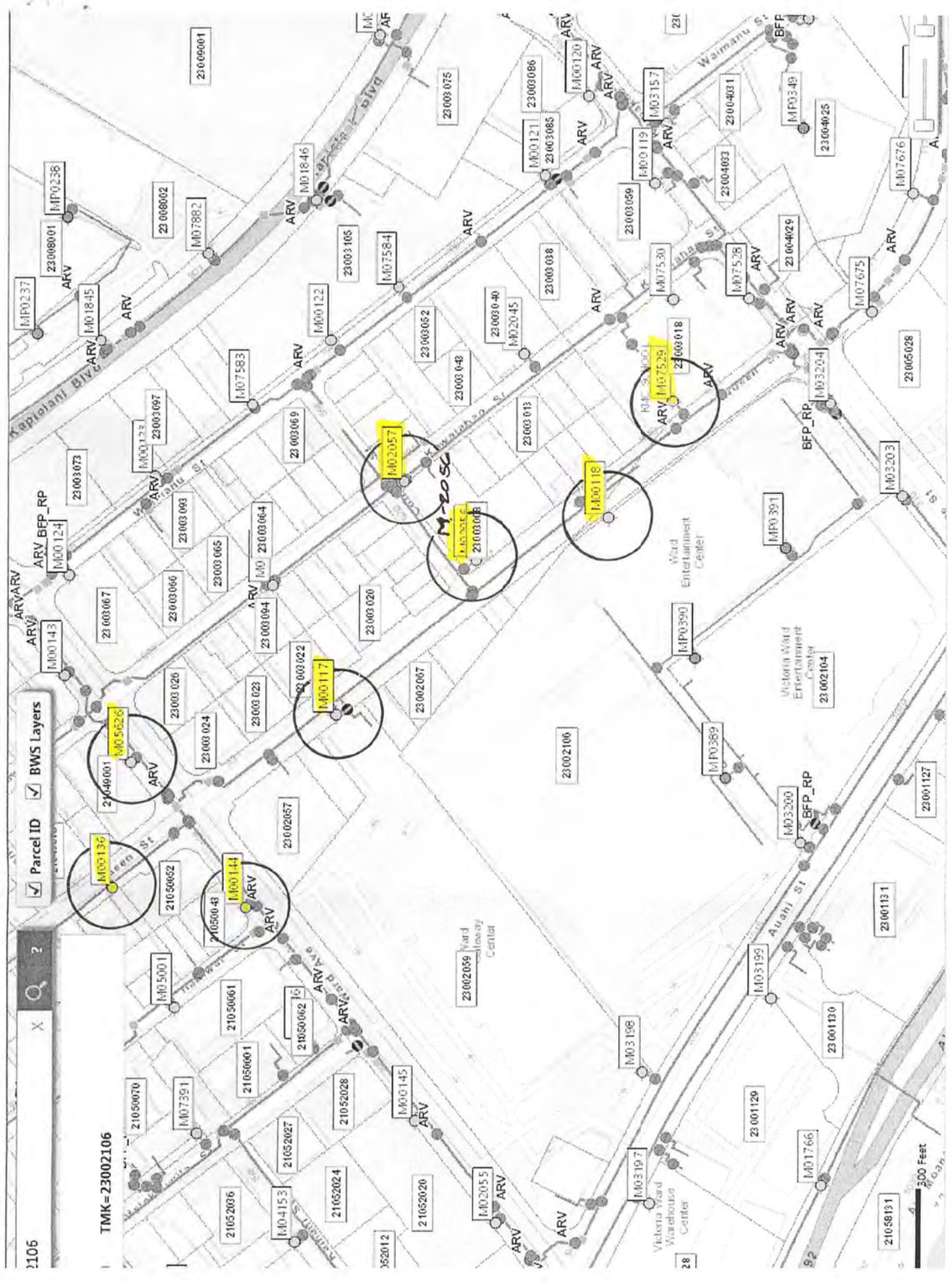
The map showing the locations of the fire hydrants is attached.

If you have any questions, please contact Robert Chun, Project Review Branch of our Water Resources Division at 748-5443.

Very truly yours,

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

Attachment



Brett Kuamoo

From: ROBERT CHUN <RCHUN@hbws.org>
Sent: Thursday, September 08, 2016 2:08 PM
To: Glenn Kuwaye
Subject: RE: Block N East BWS Letter

Categories: Filed by Newforma

Hi Glen,

The timing of the 12-inch waterline replacement of Queen Street is still the same. The 12-inch waterline replacement must be installed and placed in service prior to approval of any phase 3 projects.

I'm currently unable to locate our project folder for this area. I will be able to confirm the phase 3 projects when the folder is located.

Thank you,

Robert

From: Glenn Kuwaye [mailto:gkuwaye@wilsonokamoto.com]
Sent: Thursday, September 08, 2016 9:38 AM
To: ROBERT CHUN
Cc: Micah Kagimoto; Brett Kuamoo
Subject: RE: Block N East BWS Letter

Hi Robert,
Just following up again on the timing of the 12-inch waterline extension on Queen. Please let me know if you have any questions.

Thanks,
Glenn R. Kuwaye, P.E., LEED AP
Associate Director
Civil Engineering

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

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: Glenn Kuwaye
Sent: Friday, September 02, 2016 1:38 PM
To: 'ROBERT CHUN'
Cc: Micah Kagimoto; Brett Kuamoo
Subject: RE: Block N East BWS Letter

Hi Robert,
Just following up on my earlier email below. Please let me know if you have any questions.

Thanks,
Glenn R. Kuwaye, P.E., LEED AP
Associate Director
Civil Engineering

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From: Glenn Kuwaye
Sent: Sunday, August 28, 2016 2:17 PM
To: 'ROBERT CHUN'
Cc: Micah Kagimoto; Brett Kuamoo
Subject: Block N East BWS Letter

Hi Robert,
Thank you for sending over the BWS Block N East Water Availability Letter last week.

Reading through it, just wanted to confirm with you that the requirement for the upgrade of the existing 6-inch along Queen will need to come prior to Phase 3 of the development. Please note that per our April letter, Blocks N East, I, C West, and the Village Green are part of Phase 2. Could you please confirm?

Please feel free to contact me if you have any questions.

Thanks,
Glenn R. Kuwaye, P.E., LEED AP
Associate Director
Civil Engineering

WILSON OKAMOTO CORPORATION
ENGINEERS | PLANNERS | CONSULTANTS

1907 South Beretania Street
Artesian Plaza, Suite 400
Honolulu, Hawaii, 96826 USA
Phone: 808-946-2277
FAX: 808-946-2253
www.wilsonokamoto.com

8206-29
April 5, 2016

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

Attention: Mr. Robert Chun, Principal Executive – Customer Care Division

Subject: Ward Village – Block N-East
1001 Queen Street

Dear Mr. Chun:

Wilson Okamoto Corporation is providing schematic design for the subject project on the makai side of Queen Street at Cummins Street in Kakaako. The project site is identified by Tax Map Key: 2-3-002: 106, Lot 1 (See attached Subdivision Map). The proposed project consists of studios, and one, two, and three bedroom residential units (751 total units); 15,000 square feet of retail space; and 5,000 square feet of restaurant space on an approximately 2.51-acre property. At this time we would like to get your assistance in determining the adequacy of the existing BWS water distribution system in the vicinity of the project site to support the proposed project. Using the Domestic Consumption Guidelines for Oahu from the Board of Water Supply Water System Standards dated 2002, the average daily demand is calculated below:

Category	Avg. Daily Rate	Units	Avg. Daily Demand (gal)
Multi-Family High Rise	300 gal/unit	750 units	225,000 gal
Commercial/ Residential Mix	120 gal/1,000 sf	15,000 sf	1,800 gal
Restaurant	500 gal/day/1,000 sf	5,000 sf	2,500 gal
Total			**229,300 gal**

Based on the proposed project breakdown, the average daily water demand is 229,300 gallons per day. In addition to your review of the existing water system, we would like to obtain pressure and flow information for any existing fire hydrants (M00136, M00144, M05626, M00117, M00118, M02056, M02057, and M07529) located adjacent to the project site (Please see attached BWS System Map).

Letters were sent to BWS on August 12, 2011 and March 18, 2014 discussing the water demand for the multiple Ward Village phases. Since then, the program has changed and presented below are the updated phasing and water demands.

Updated Phase 1 projects:

Project	Ave. Day Water Demand (Gallons Per Day)
Block C East – Waiea (Under construction)	56,905
Block K – Anaha (Under construction)	102,392
Block M – Aeo (Under construction)	153,112
Block O – Ke Kilohana	130,757
Total	443,166

Previous Phase 1 projects (2014):

Project	Ave. Day Water Demand (Gallons Per Day)
Block C East	53,521
Block K	97,440
Block O	140,530
Total	291,491

Updated Phase 2 projects:

Project	Ave. Day Water Demand (Gallons Per Day)
Block N East	229,300
Block I	203,250
Village Green	
Block C West	40,900
Total	473,450

Previous Phase 2 projects (2014):

Project	Ave. Day Water Demand (Gallons Per Day)
Block C West	48,200
Block B East	48,200
Block M	119,195
Block I	102,200
Total	317,795

Please call 946-2277 should you have any questions or require additional information.

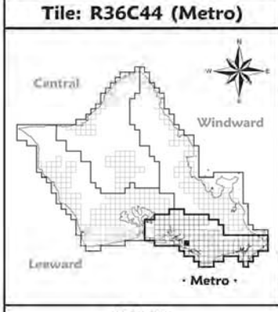
Sincerely:

Micah Kagimoto, P.E.
Senior Engineer

cc: Lee Cranmer, The Howard Hughes Corporation

Enclosures: BWS System Map – Tile: R36C44
BWS System Map – Tile: R37C44
Figure 1 – 2014 Location Map
Figure 2 – 2016 Location Map

Tile: R36C44 (Metro)



LEGEND

WATER MAIN TYPES
- Service
- Bypass
- Distribution
- Lateral
- Maintenance
- Transmission
- Private
- Non-Potable

PIPE CASINGS
- Concrete Jacket over DI pipe
- Pipeline Tunnel

MISCELLANEOUS
- Building Footprint
- Facility
- Inset Frame
- Stream Centerline

MATERIALS

AC	ASBESTOS CEMENT
AC-JM	AC-JOHNS MANSVILLE
AC-KM	AC-KEASBEY MATTISON
CC	CONCRETE CYLINDER
CC-A	CC-AMERICAN
CC-H	CC-HAWAII
CC-S	CC-SOUTHERN
CI	CAST IRON
CU	COPPER
DI	DUCTILE IRON
GI	GALVANIZED IRON
PVC	POLYVINYL CHLORIDE
STL	STEEL
CP	CATHODIC PROTECTION
NP	NON-POTABLE

BILLING METERS
- CM Compound
- DC Detector Check
- FM FM
- Unknown

FITTINGS
- Cut & Plug
- Emergency Connection
- Flow Tube
- Reducer
- Transition Coupling

FIRE HYDRANT
- Fire Hydrant
- 99 No Fire Hydrant Number

OPERATIONAL METERS
- FL Flow
- MS Master
- TUR Turbine
- Unknown
- Venturi

PUMPS
- Lift
- Line
- Source

RESERVOIR
- Reservoir

SOURCES
- Shaft
- Source Well
- Spring
- Tunnel
- Unknown

VALVES
- Air Release
- Air Release BFV
- Air Release BGGV
- Air Release Gate
- Altitude
- Backflow Preventor
- Bevel Gear Gate
- Butterfly
- Check
- Closed
- Control
- English
- Flap
- Float
- Gate
- Pressure Reducing
- Pressure Relief
- Pressure Sustaining
- Solenoid Control
- Spur Gear Gate
- Square Bottom Bevel Gear
- Stopcock
- Tapping
- Unknown

WATER TREATMENT PLANTS
- Aeration
- Blender
- Chlorination
- GAC
- Recycled Water Facility
- Sand Filtration

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Technical Engineering Projects
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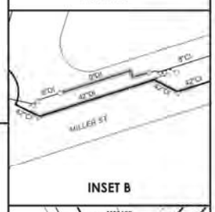
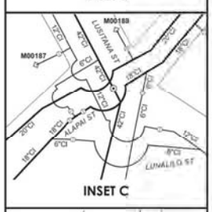
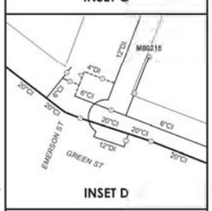
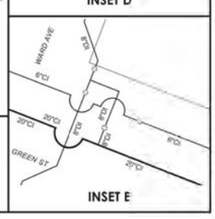
This map is a schematic representation of the water distribution system. Some features have been exaggerated for clarity & may not be to scale.

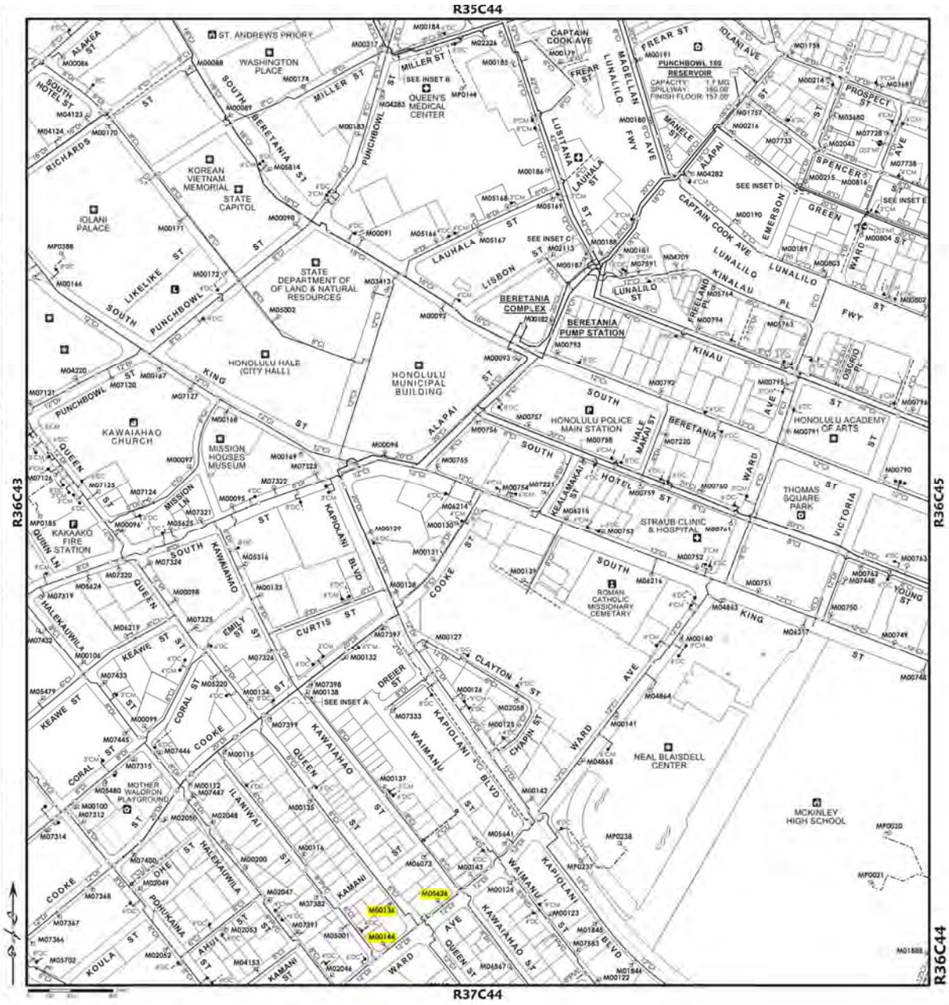
Revisions as of: 4/25/2006











Tile: R37C44 (Metro)

LEGEND

WATER MAIN TYPES
- Service
- Bypass
- Distribution
- Lateral
- Maintenance
- Transmission
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- Non-Potable

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- Concrete Jacket over DI pipe
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DI	DUCTILE IRON
GI	GALVANIZED IRON
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FITTINGS
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- Emergency Connection
- Flow Tube
- Reducer
- Transition Coupling

FIRE HYDRANT
- Fire Hydrant
- 99 No Fire Hydrant Number

OPERATIONAL METERS
- FL Flow
- MS Master
- TUR Turbine
- Unknown
- Venturi

PUMPS
- Lift
- Line
- Source

RESERVOIR
- Reservoir

SOURCES
- Shaft
- Source Well
- Spring
- Tunnel
- Unknown

VALVES
- Air Release
- Air Release BFV
- Air Release BGGV
- Air Release Gate
- Altitude
- Backflow Preventor
- Bevel Gear Gate
- Butterfly
- Check
- Closed
- Control
- English
- Flap
- Float
- Gate
- Pressure Reducing
- Pressure Relief
- Pressure Sustaining
- Solenoid Control
- Spur Gear Gate
- Square Bottom Bevel Gear
- Stopcock
- Tapping
- Unknown

WATER TREATMENT PLANTS
- Aeration
- Blender
- Chlorination
- GAC
- Recycled Water Facility
- Sand Filtration

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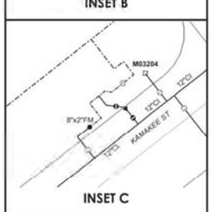
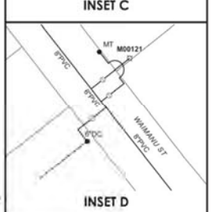
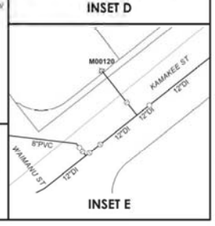
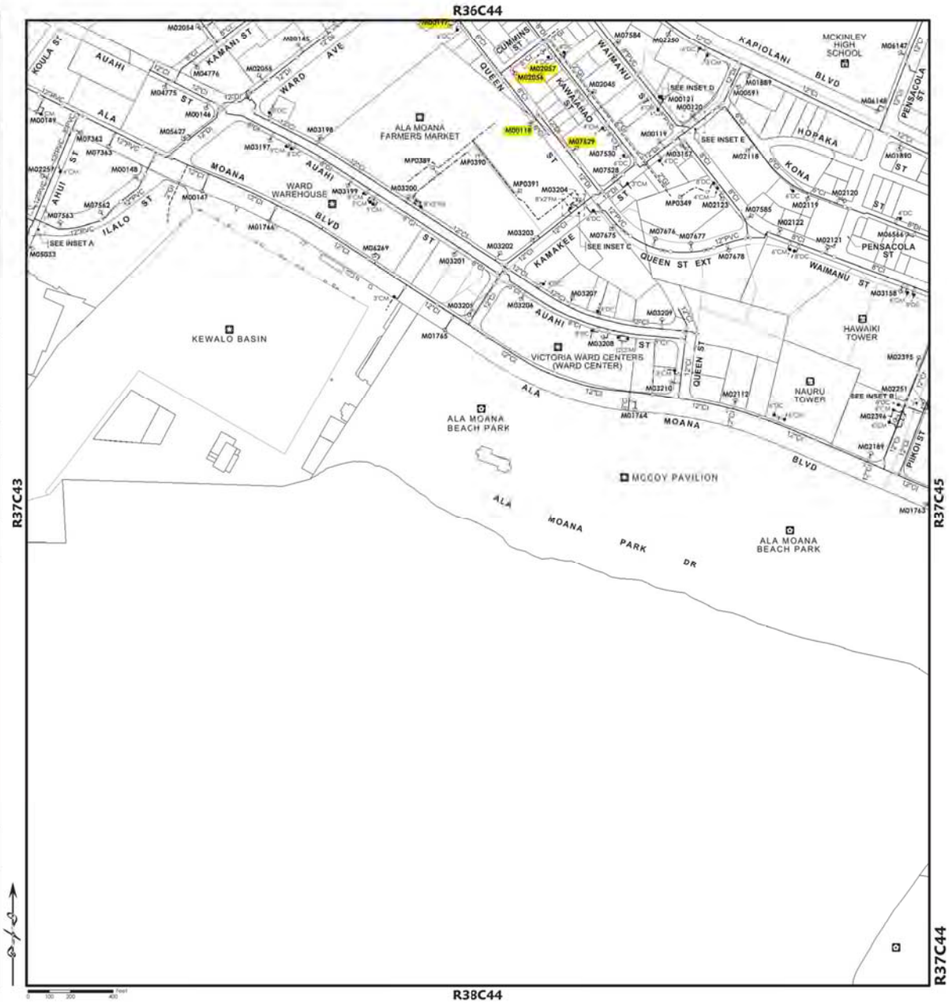
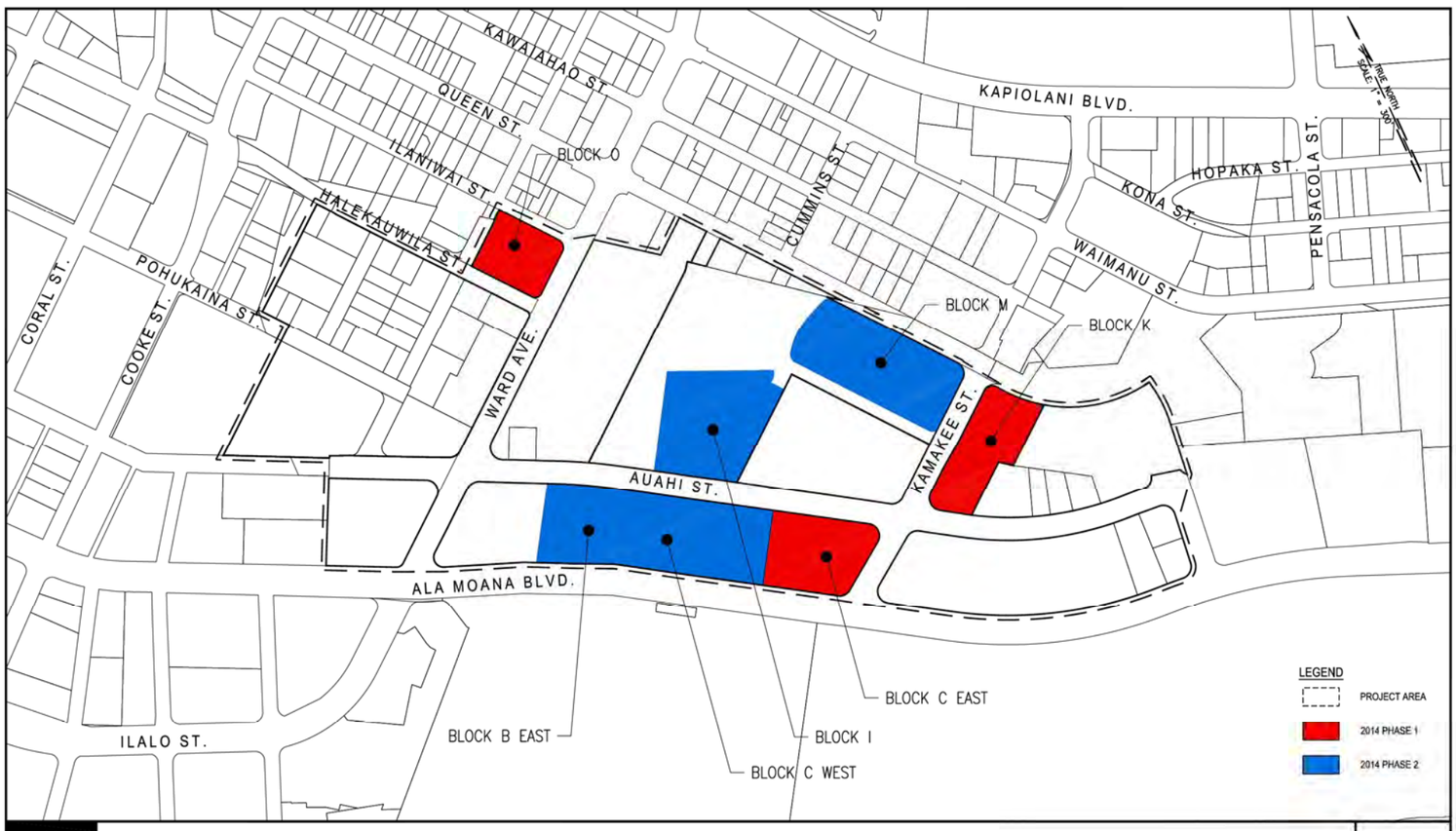
Revisions as of: 4/25/2006





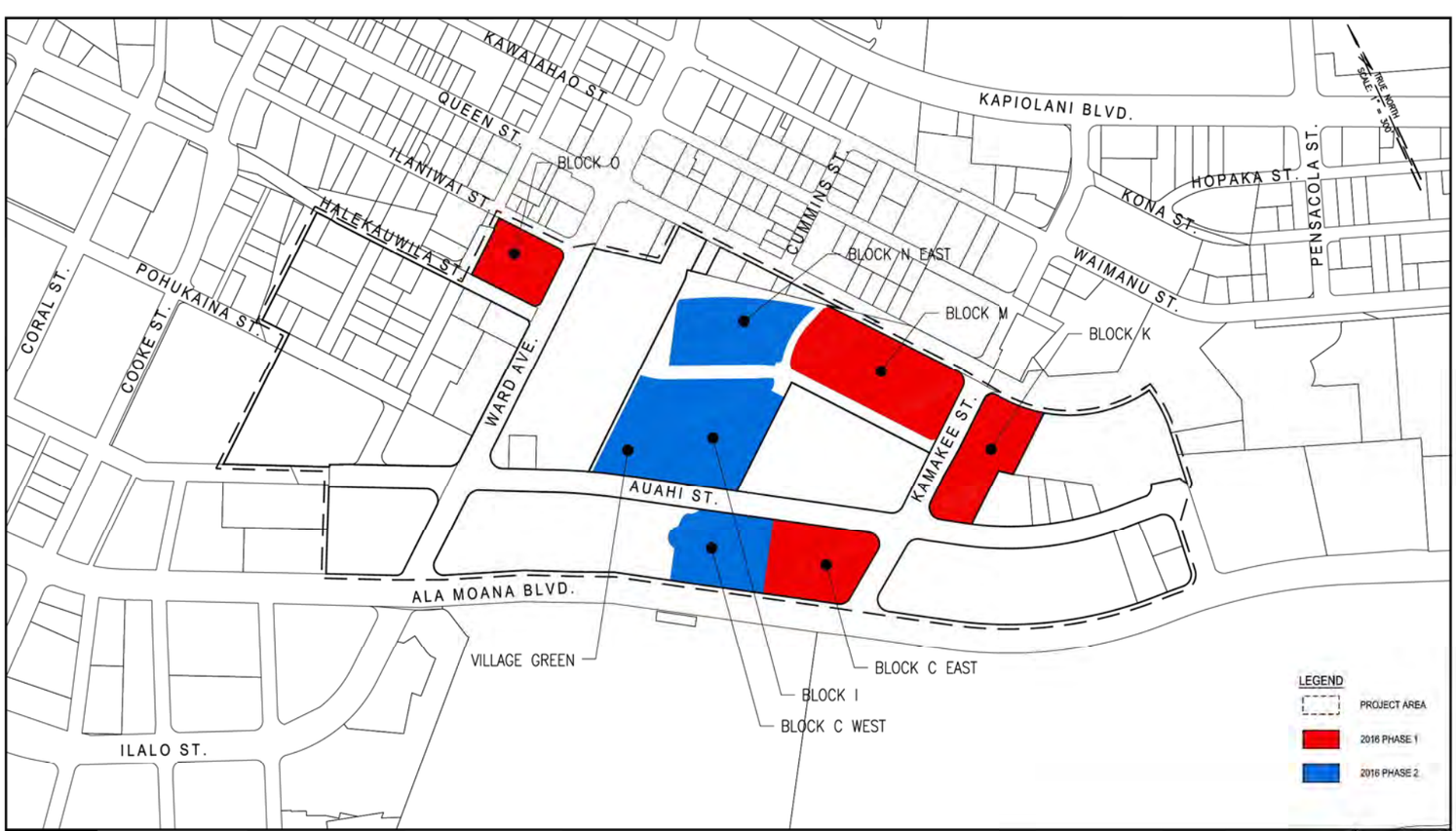






WARD VILLAGE MASTER PLAN
LOCATION MAP

FIGURE
1



WARD VILLAGE MASTER PLAN
LOCATION MAP

FIGURE
2

Honolulu Fire Department

Meeting Minutes

WILSON OKAMOTO CORPORATION
1907 S. BERETANIA STREET
HONOLULU, HAWAII 96826
PH: (808) 946-2277
FAX: (808) 946-2253

8206-34
August 1, 2016

MEETING MINUTES

SUBJECT:	HFD Meeting – Block N-East SD Design	
MEETING DATE:	July 28, 2016	
MEETING LOCATION:	Fasi Municipal Building 1st Floor HFD Plan Review Room	
MEETING TIME:	10:00 am	
ATTENDEES:	Douglas Bennett Brett Kuamoo	Honolulu Fire Department (HFD) Wilson Okamoto Corp. (WOC)

INFORMATION ITEMS:

1. Meeting was requested by WOC to discuss the proposed fire protection site layout for the Ward Village - Block N-East project.

2. WOC presented the proposed site layout, including locations of existing fire hydrants, proposed fire access roads, and water supply. It was also clarified the building will have a sprinkler system.

3. HFD clarified the following requirements:

   (a) Fire access road should be provided within 450 feet from the furthest point of the building.
   (b) Water supply should be provided within 450 feet from the furthest point of the building.
   (c) Fire access road should be provided within 50 feet of an entry point into the building.
   (d) Fire Department Connection should be provided within 20 feet of the fire access road.
   (e) Above requirements should be confirmed and provided in accordance with NFPA 1 Fire Code Handbook 2012, with City and State amendments.

4. HFD also clarified other fire codes which should be considered in design of the vertical structure. WOC noted and will forward to architectural team.

Wilson Okamoto Corporation

Brett Kuamoo, P.E.

cc: All Attendees (via email)
Glenn Kuwaye
WOC File

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

LID Email Correspondence

Brett Kuamoo

From: Kimura, Dawn <dkimura@honolulu.gov>
Sent: Wednesday, July 27, 2016 12:00 PM
To: Brett Kuamoo
Subject: RE: Ward Village Block N-East LID Concept - ActionItem:00008:wAiHa

Categories: Filed by Newforma

They can plan to use the park for off-site mitigation, but they need to provide a temporary interim solution for the current development.

Dawn N. Kimura, PE
Civil Engineering Branch
Department of Planning and Permitting
City and County of Honolulu
650 S. King Street, 8th Floor
Honolulu, HI 96813

Tel No: 768-8106
Fax: 768-4950

From: Brett Kuamoo [mailto:BKuamoo@wilsonokamoto.com]
Sent: Wednesday, July 27, 2016 11:14 AM
To: Kimura, Dawn
Cc: gkuwaye@gmail.com; Micah Kagimoto; 'Lee Cranmer' (lee.cranmer@howardhughes.com)
Subject: RE: Ward Village Block N-East LID Concept - ActionItem:00008:wAiHa

Thank you Dawn,

We tried to accommodate biofiltration as much as possible. We will try to add more as the design progresses. But good to know we can make up the difference with a manufactured treatment device if needed.

Howard Hughes had indicated they would like to provide off-site treatment at the proposed Victoria Park. I've noted the general location on attached. The park will extend to Auahi Street. This would be a preferred method to accomplish 100% biofiltration. The park is planned to be completed with the Block I project, shortly after Block N-East. Since the park will be completed after Block N-East, what will the City require to allow allocation to the park?

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

Mahalo,
Brett

From: Kimura, Dawn [mailto:dkimura@honolulu.gov]
Sent: Wednesday, July 27, 2016 9:29 AM
To: Brett Kuamoo
Subject: RE: Ward Village Block N-East LID Concept - ActionItem:00008:wAiHa

Hi Brett:

The concept looks okay. Note, the minimum total width, perpendicular to the flow, is 15'.

Dawn N. Kimura, PE
Civil Engineering Branch
Department of Planning and Permitting
City and County of Honolulu
650 S. King Street, 8th Floor
Honolulu, HI 96813

Tel No: 768-8106
Fax: 768-4950

From: Brett Kuamoo [mailto:BKuamoo@wilsonokamoto.com]
Sent: Thursday, July 21, 2016 4:40 PM
To: Kimura, Dawn
Cc: Glenn Kuwaye; Micah Kagimoto; John Kim
Subject: Ward Village Block N-East LID Concept - ActionItem:00008:wAiHa

Hello Dawn,

We've started the design on a new tower project at Ward Village (Block N-East) located Ewa of Block M (Ae`o). Please see attached for reference. Project is currently in schematic design phase.

Would it be possible to set up a meeting with you to discuss our concept LID plan and treatment options? Say next week Tuesday (7/26) morning or Thursday (7/28) any time. Please let me know if you'd prefer a different time.

Feel free to contact me should you have any questions.

Mahalo,

Brett K. Kuamoo, P.E.
Associate Project Manager

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

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

September 13, 2016

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

Dear Mr. Sakai:

Re: Ward Village – Block N

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

We have existing distribution circuits on Kamakee Street that will need to be upgraded based on the size of this project's load and other Howard Hughes developments in the area. We look forward to working with you on your design as they are being developed.

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
Sr. Engineer
Planning & Design Division
Customer Installation Dept.

ES/GF:ks

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. • Gary I. Funasaki, P.E. • Andrew I. Miyasato, P.E.

29 June 2016

Hawaiian Electric Co.
820 Ward Avenue
Honolulu, HI 96840

Attention: Eric Shimono, P.E.

Project: Ward Village Block N East Utility Assessment

Enclosures: (a) Block N East Concept Site Plans
(b) ALTA Survey Maps

Please be advised that we are working with Wilson Okamoto Corporation under contract to Howard Hughes Corporation to develop a utility assessment report for the Block N East development. Please find attached for your review and comment enclosure (a) and enclosure (b) which indicate the location of the site and building placement. It is currently anticipated that the building will consist of 751 dwelling units and 15,000 square feet of commercial space. Based on a diversified per unit demand load of 2.5 kVA and a demand load of 3 VA per square foot for the commercial space, the preliminary demand load would be 1,922 kVA. Please advise on the following:

1. HECO's preferred service connection point for this development. Also please verify that HECO's distribution system in the area has sufficient capacity to provide service to this development. If off-site improvements are required to provide 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 HECO distribution plans for any existing overhead and underground facilities within or adjacent to the site and, if possible, a color G-net map of the project area. These will assist with the development of the utility assessment.

2153 North King Street #201 • Honolulu, Hawaii 96819 • Tel (808) 941-0577 • Fax (808) 945-2646 • E-mail: postmaster@rnsha.com

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,

Steven Sakai

cc: Randal Lui-Kwan, HECO
Glenn Kuwaye, WOC

Hawaiian Telcom

Request Letter and Utility Assessment Letter

Hawaiian Telcom

July 27, 2016

Ronald N. S. Ho & Associates, Inc.
2153 North King Street #201
Honolulu, Hawaii 96819-4554
Attention: Mr. Steven Sakai

RECEIVED
AUG - 1 2016
Ronald N.S. Ho & Assoc., Inc.

Dear Mr. Sakai:

Subject: **Ward Village Block N East Utility Assessment**

In response to your letter dated June 29, 2016, we have determined that Hawaiian Telcom serves the proposed project area from its Kakaako Central Office located on Kawaiahao Street. The approximate locations of the support structures are indicated on the enclosed sheets.

Hawaiian Telcom's preferred service point of connection is located on Kamakee Street. We are currently working with your office to determine if it is possible to interconnect to the underground support structures for Block M and if there are any easements that are required. Currently, there are no apparent off-site costs associated with providing service to the proposed development.

The area is provisioned with copper facilities and, if an upgrade to the existing service is considered, fiber optic cable is available. The number of fiber optic strands provided will be dependent upon the customer's service requirements. Hawaiian Telcom has sufficient capacity to provide service to this development.

If you have any questions or require assistance in the future on this project, please call Les Loo at 546-7761.

Sincerely,

Jon M. Uyehara
Senior Manager - Outside Plant Engineering
Network Engineering & Planning

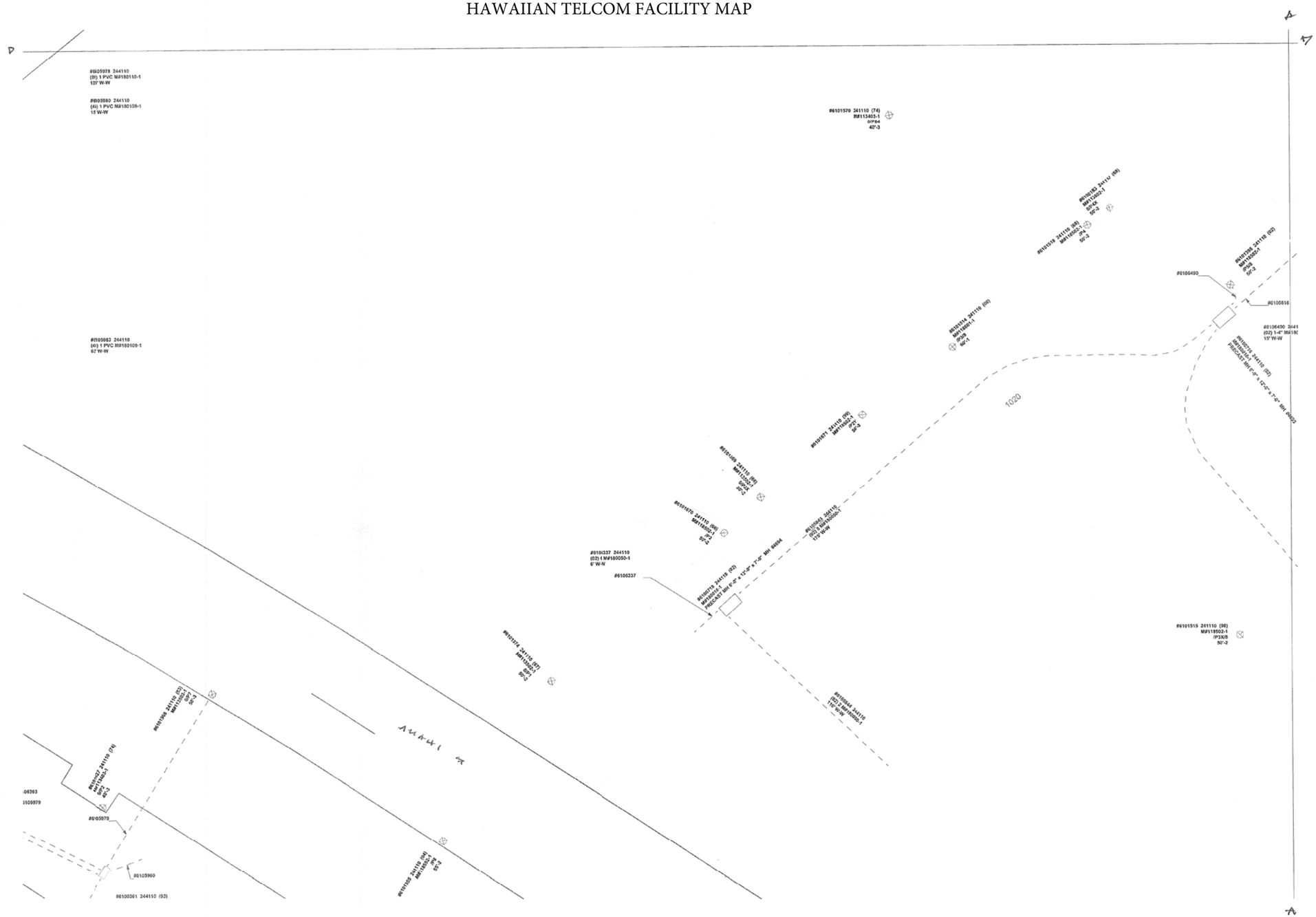
Enclosures

cc: File

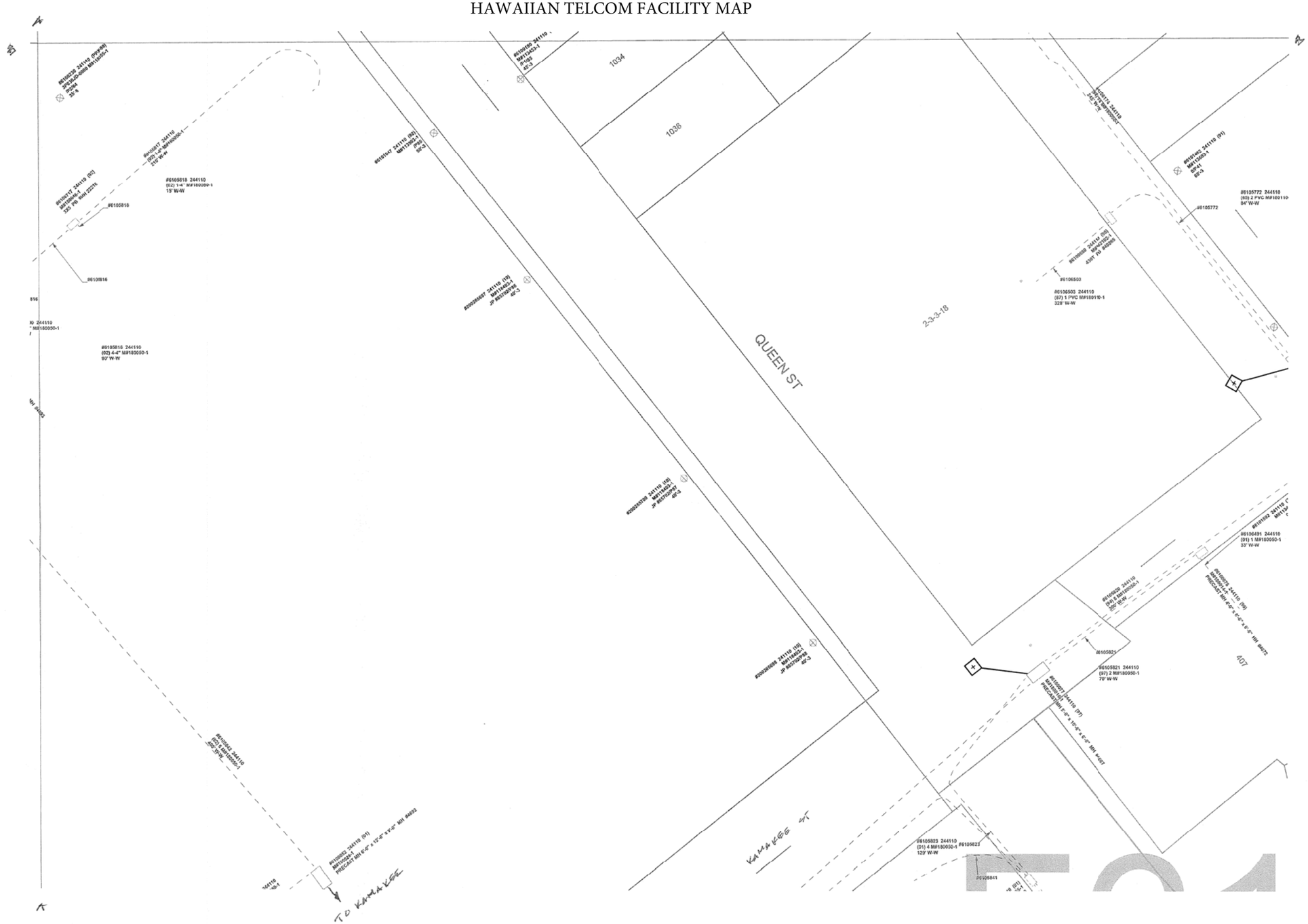
SKS ___ DT ___ SF ___
GF ___ SH ___ SI ___
AM ___ JS ___ SKS ___
BJO ___ RK ___ GFA ___
KKO ___ RS ___ AM ___
IK ___ CC ___ GDT ___
BHK ___ CA ___ SNS ___
RY ___ MT ___ JO ___
CMC ___ ___ BHW ___
AD ___ ___ NS ___

PROJECT #: ___
DATE: ___
___ DP ___
___ INO ___

HAWAIIAN TELCOM FACILITY MAP



HAWAIIAN TELCOM FACILITY MAP

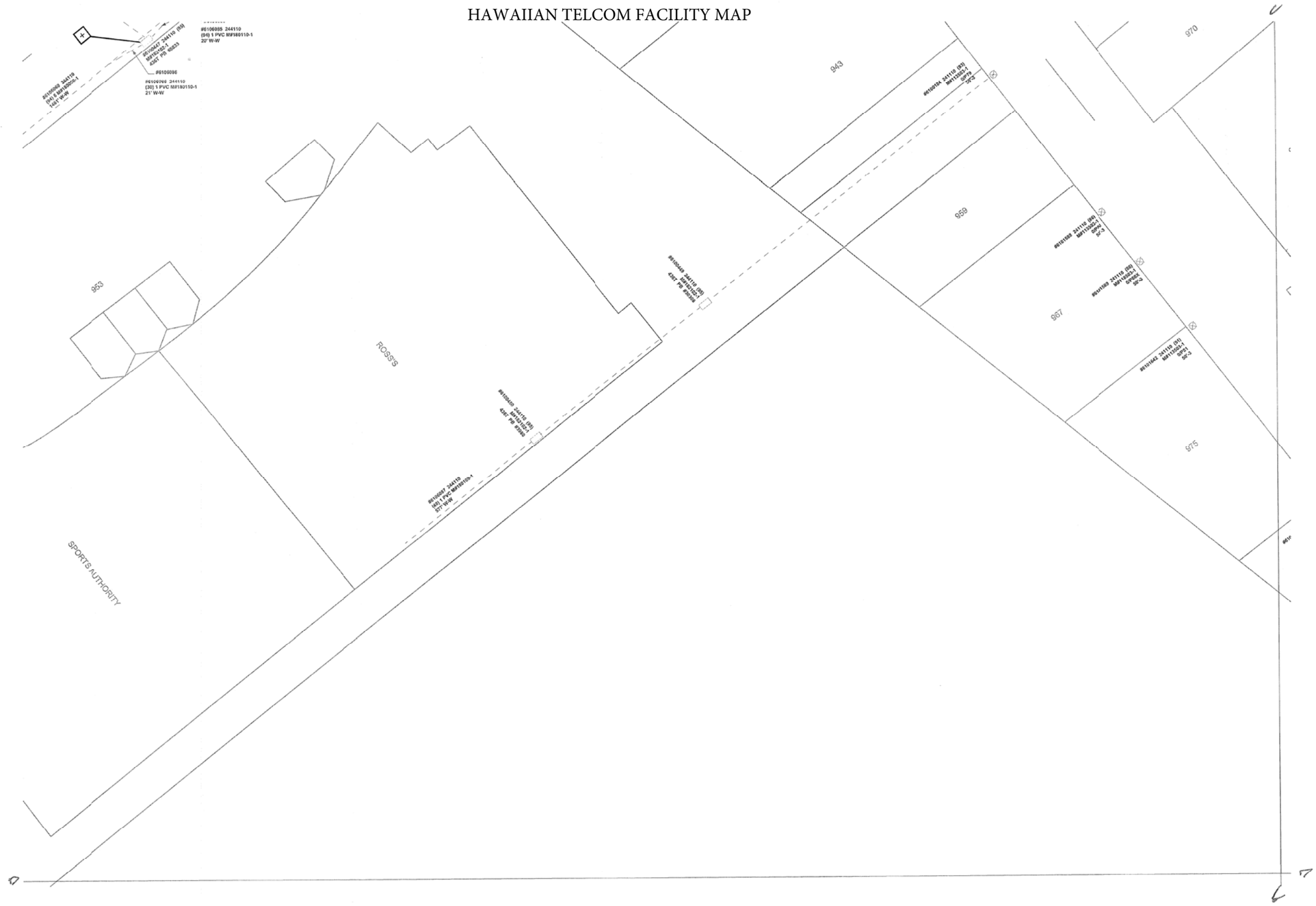


2 of 4

HAWAIIAN TELCOM FACILITY MAP

3 OF 4

HAWAIIAN TELCOM FACILITY MAP



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. • Gary I. Funasaki, P.E. • Andrew I. Miyasato, P.E.

29 June 2016

Hawaiian Telecom Inc.
1177 Bishop Street, 10 th Floor
Honolulu, HI 96713

Attention: Jon Uyehara, P.E.

Project: Ward Village Block N East Utility Assessment

Enclosures: (a) Block N East Concept Site Plans
(b) ALTA Survey Maps

Please be advised that we are working with Wilson Okamoto Corporation under contract to Howard Hughes Corporation to develop a utility assessment report for the Block N East development. Please find attached for your review and comment enclosure (a) and enclosure (b) which indicate the location of the site and building placement. It is currently anticipated that the building will consist of 751 dwelling units and 15,000 square feet of commercial space. Based on these figures and assuming conventional telecommunications provisioning, it appears that, for planning purposes, approximately 1150 telephone pairs would be required. Please advise on the following:

1. HTCO's preferred service connection point for this development. Also please verify that HTCO's distribution system in the area has sufficient capacity to provide service to this development. If off-site improvements are required to provide 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.

2153 North King Street #201 • Honolulu, Hawaii 96819 • Tel (808) 941-0577 • Fax (808) 945-2646 • E-mail: postmaster@rnsha.com

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,

Steven Sakai

cc: Leslie Loo, HTCO
Glenn Kuwaye, WOC

Charter Communications

Utility Assessment Request Letter and Email Correspondence

Brett Kuamoo

From: Ronald NS Ho & Associates (MK) <postmaster@rnsha.com>
Sent: Thursday, July 28, 2016 10:27 AM
To: 'Scott Shiraishi @ RNSHA'
Cc: 'Steve Sakai'
Subject: FW: (PN 214036) Block M Future Stub
Attachments: E-05_214036_Elec Dist Plan 01 revised.pdf

Filed in Z:\Acad\PROJECTS\214036\In\072816A
CAD-Ryan

From: Makizuru, Randy T [mailto:Randy.Makizuru@charter.com]
Sent: Thursday, July 28, 2016 9:22 AM
To: Ronald NS Ho & Associates (MK)
Cc: mkagimoto@wilsonokamoto.com
Subject: RE: (PN 214036) Block M Future Stub

Good morning Scott,

I marked up the drawing showing changes to the Private Drive 1 CATV infrastructure.
So basically it should show 2-4"V from the 2x6 CATV PB near the existing HT MH on Private Drive 2.
A new CATV 2x4 PB near the HECO and HT boxes on Private Drive 1.
1-4"V to Block M and 1-4"V to the proposed Block N project.
All conduits should enter and exit through the short side of the pullboxes.
Should you have any questions, please let me know.

Thank you,
Randy Makizuru
Charter Communications
Engineering Dept.
#625-8346

From: Ronald NS Ho & Associates (MK) [mailto:postmaster@rnsha.com]
Sent: Tuesday, July 26, 2016 10:02 AM
To: Makizuru, Randy T <Randy.Makizuru@charter.com>
Cc: mkagimoto@wilsonokamoto.com
Subject: (PN 214036) Block M Future Stub

Randy,

Please find the attached electrical PDF markup showing additional stubs for future service connection to Block N. In order to avoid trenching through Private Drive 1 after it is constructed, should we also show a stub for Charter Communications? If so, please advise on the location and size of the handhole and stub. Let me know if you need any additional information.

Scott Shiraishi, P.E., LEED AP_{BD+C}
Ronald N.S. Ho & Associates, Inc.
2153 North King Street

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. • Gary I. Funasaki, P.E. • Andrew I. Miyasato, P.E.

30 June 2016

Charter Communications
200 Akamainui Street
Mililani, HI 96789

Attention: Mr. Mitchell Miyoshi

Project: Ward Village Block N East Utility Assessment

Enclosures: (a) Block N East Concept Site Plans
(b) ALTA Survey Maps

Please be advised that we are working with Wilson Okamoto Corporation under contract to Howard Hughes Corporation to develop a utility assessment report for the Block N East development. Please find attached for your review and comment enclosure (a) and enclosure (b) which indicate the location of the site and building placement. It is currently anticipated that the building will consist of 751 dwelling units and 15,000 square feet of commercial space. Please advise on the following:

1. CC's preferred service connection point for this development. Also please verify that CC's distribution system in the area has sufficient capacity to provide service to this development. If off-site improvements are required to provide 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 CC 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,

Steven Sakai

cc: Allyson Ka'ai, CC
Glenn Kuwaye, WOC

2153 North King Street #201 • Honolulu, Hawaii 96819 • Tel (808) 941-0577 • Fax (808) 945-2646 • E-mail: postmaster@rnsha.com

Hawaii Gas

Capacity Email Correspondence

Brett Kuamoo

From: Shigemoto, Sharon <sshigemo@hawaiigas.com>
Sent: Tuesday, June 28, 2016 11:28 AM
To: Brett Kuamoo
Cc: Glenn Kuwaye; Micah Kagimoto
Subject: RE: Ward Village Block N-East - Gas Availability - ActionItem:00010:IpgrQ
Attachments: Ward Block M - Gas Map-75782-GHSVR38.pdf

Categories: Filed by Newforma

Hi Brett
I checked with our Engineering Dept and was told currently the gas line on Queen St to Auahi St has been cut off and abandoned due to the ongoing construction in the area. I believe the plan is to reconnect the existing line and reroute a new line that will connect the gas mains in Queen St and Auahi which would loop the gas system.

At this premise there should be sufficient gas to accommodate the new Block N condominium development and the potential retail gas tenants.

I've attached a gas map indicating the area of your new project. Hope this helps.

Any further questions, please let us know.

Thank you,
Sharon

Sharon Shigemoto, Supervisor, O'ahu Sales
Phone: 808-594-5534 | Mobile: 808-351-7522
515 Kamake'e Street | Honolulu, Hawai'i 96814
http://www.hawaiigas.com

HAWAI'I GAS
THE CLEAN ENERGY COMPANY

From: Shigemoto, Sharon
Sent: Monday, June 27, 2016 2:13 PM
To: 'Brett Kuamoo'
Cc: Glenn Kuwaye; Micah Kagimoto
Subject: RE: Ward Village Block N-East - Gas Availability - ActionItem:00010:IpgrQ

Hi Brett
I'll check on our gas maps and be in touch.
Thank you,
Sharon

Sharon Shigemoto, Supervisor, O'ahu Sales
Phone: 808-594-5534 | Mobile: 808-351-7522
515 Kamake'e Street | Honolulu, Hawai'i 96814
http://www.hawaiigas.com

HAWAI'I GAS
THE CLEAN ENERGY COMPANY

From: Brett Kuamoo [mailto:BKuamoo@wilsonokamoto.com]
Sent: Monday, June 27, 2016 1:04 PM
To: Shigemoto, Sharon
Cc: Glenn Kuwaye; Micah Kagimoto
Subject: Ward Village Block N-East - Gas Availability - ActionItem:00010:IpgrQ

Hello Sharon,

Howard Hughes is proposing a new tower project, Block N-East, located ewa of Block M (Ae`o) project. See attached for location. Proposed unit count is 751 (300 *studios*, 300 *1-bed*, 128 *2-bed*, 23 *3-bed*). Project will also include 15,000 sf of retail and restaurant (2,250 seats/day). We do not have any gas loads at this time.

Project is in concept design and we are currently confirming infrastructure availability for the project. Would you be able to confirm gas availability for the project?

Feel free to contact me should you have any questions or would like to discuss further.

Mahalo,

Brett K. Kuamoo, P.E.
Associate Project Manager

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

1907 South Beretania Street, Suite 400
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W http://www.wilsonokamoto.com

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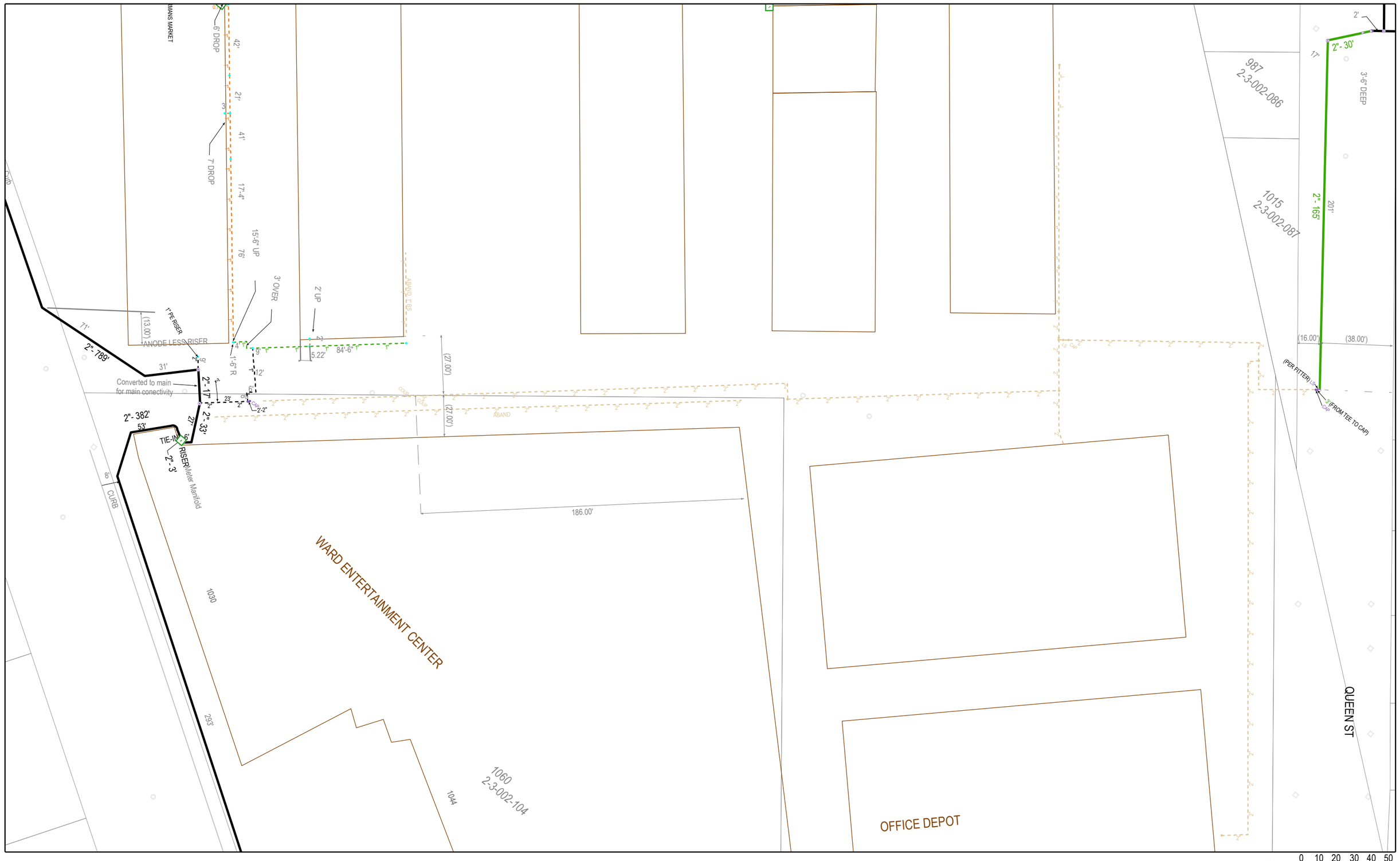
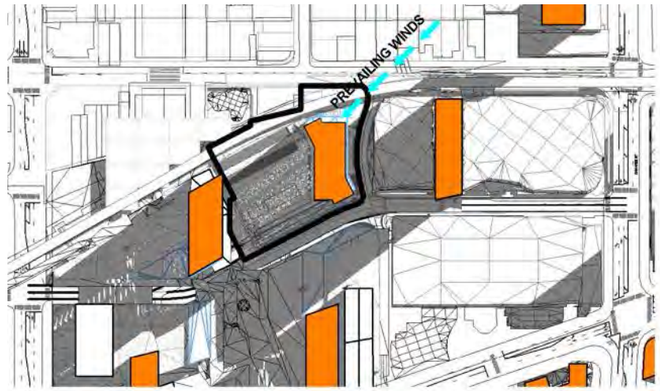


Chikamoto, Colin

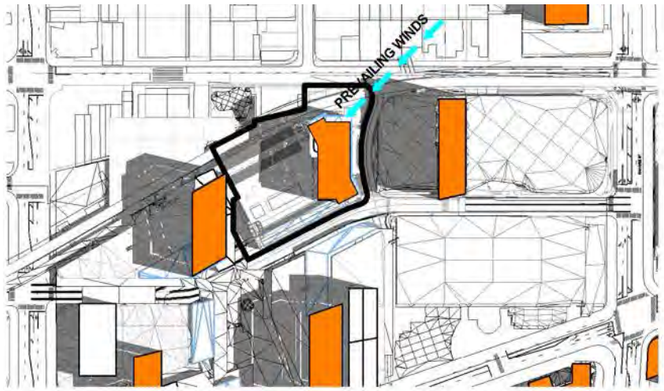
6/28/2016 9:27:47 AM

APPENDIX E

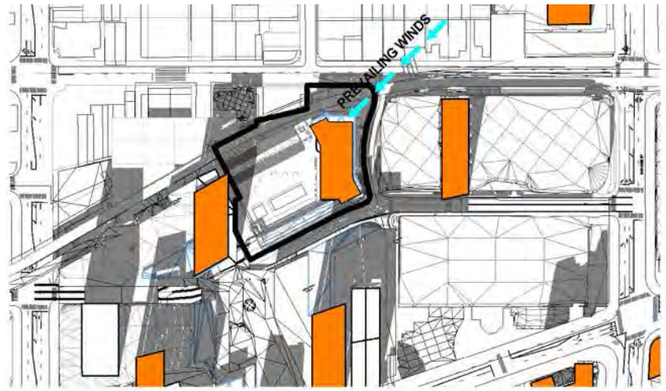
SHADOW & WIND STUDIES



MARCH 21 - 9 AM

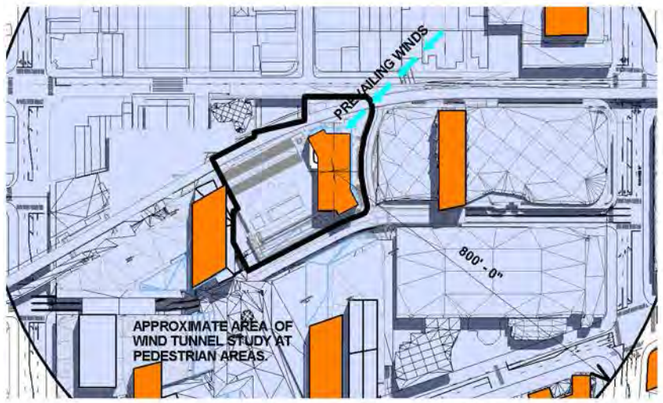


MARCH 21 - 12 PM

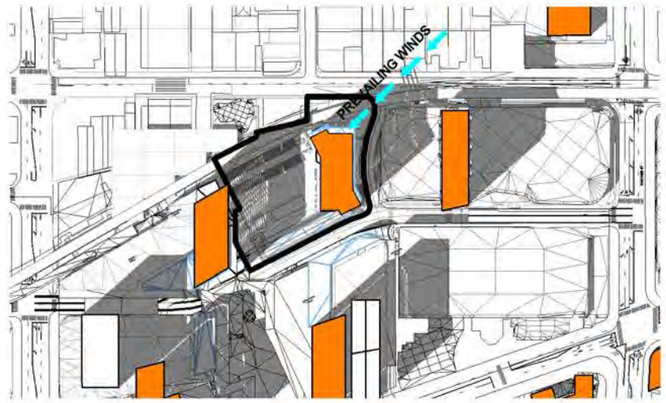


MARCH 21 - 3 PM

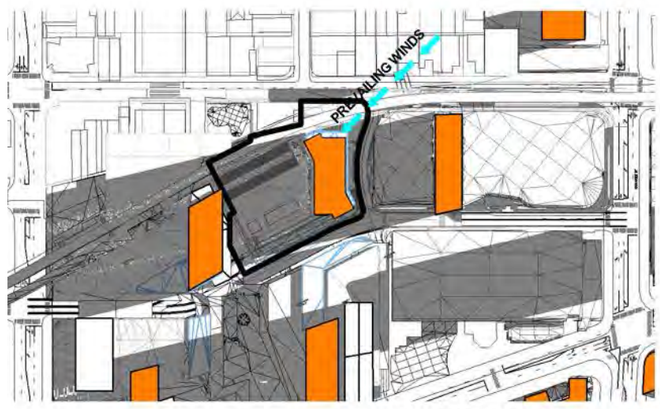
JUNE 21 - 9 AM



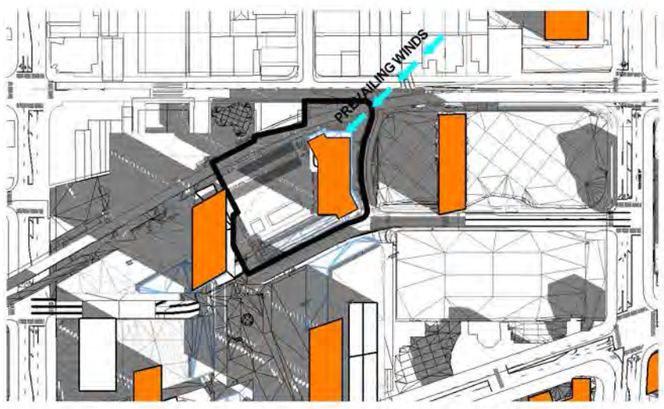
JUNE 21 - 12 PM



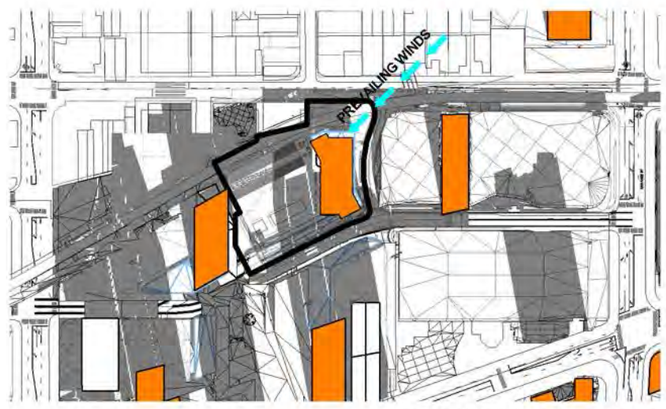
JUNE 21 - 3 PM



DECEMBER 21 - 9 AM



DECEMBER 21 - 12 PM



DECEMBER 21 - 3 PM

Theses graphics have been prepared for planning purposes and are subject to change as a result of the planning and/or permitting process.

APPENDIX F

WIND ANALYSIS STUDY LETTER

RWDI
CONSULTING ENGINEERS & SCIENTISTS

Tel: 519.823.1311
Fax: 519.823.1316

Rowan Williams Davies & Irwin Inc.
600 Southgate Drive
Guelph, Ontario, Canada
N1G 4P6

CANADA'S BEST MANAGED COMPANIES
Platinum member

September 7, 2016

To Whom It May Concern

Re: Wind Consultancy Services
Ward Village Block N East
RWDI Reference No. 1603064

Rowan Williams Davies & Irwin, Inc. (RWDI) has been requested by Ward Management Development Company, LLC. to conduct wind tunnel studies for the pedestrian wind conditions on and around the proposed Ward Village A'ali'i Land Block 1, Project 3 development in Honolulu, Hawaii.

The proposed development includes one tower located on a 2.1-acre site. Winds around the proposed development will be simulated in a boundary-layer wind tunnel for the existing and proposed building configurations by using scale model of the study building and its surroundings within a 900 ft to 1,800 ft radius. The current 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 approximately 36 wind directions 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. This data will then be compared with recognized wind comfort and safety criteria to determine if they are appropriate for the intended usage of the pedestrian areas on and around the development.

Following the tests, a report will be issued to summarize the findings through tables and figures. Wind mitigation measurements 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.

Yours very truly,

ROWAN WILLIAMS DAVIES & IRWIN Inc.

Analene Belanger

Analene Belanger, P.Eng., PMP
Associate / Senior Project Manager

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APPENDIX G

ENVIRONMENTAL NOISE STUDY

Charles M. **Salter**
ASSOCIATES INC.

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6 September 2016

Naomi Motomura
Solomon Cordwell Buenz
255 California Street, Floor 3
San Francisco, CA 94111
Email: naomi.motomura@scb.com

Subject: **Ward Village Block N East, Honolulu, HI – Environmental Noise Study**
Salter Project: 16-0496

Dear Naomi:

We have performed an environmental noise study for the project based on the 26 May 2016 Concept Package drawings. The purpose of the study is to determine the noise environment at the proposed site, compare the measured data with applicable standards, and recommend mitigation measures as necessary. This report summarizes the results.

PROJECT CRITERIA

The Hawai'i Building Code (i.e., the 2006 International Building Code) does not include any standards for environmental noise intrusion. Both HUD[1] and the State of California Building Code have a criterion of DNL[2] 45 dB for multi-family residential projects. We have used that as the criterion for this project.

NOISE ENVIRONMENT

The project is located along Queen Street, between Ward Avenue and Kamakee Street. Auahi Street and Ala Moana Boulevard are to the west of the site. There is also a planned HART[3] rail line directly east of the site (between the site and Queen Street). The noise environment at the site is predominantly controlled by vehicular traffic along the nearby streets. The future HART rail activity will also be a significant contributor.

To quantify the existing noise environment, we conducted two long-term and two short-term noise measurements between 25 and 26 August 2016 (see Figure 1 for the measurement locations). The long-term monitors were at a height of 12 feet above grade. The short-term measurements were at a height of 5-feet above grade.

1 Department of Housing and Urban Development

2 DNL (Day-Night Average Sound Level) – A descriptor for a 24-hour A-weighted average noise level. DNL accounts for the increased acoustical sensitivity of people to noise during the nighttime hours. DNL penalizes sound levels by 10 dB during the hours from 10 PM to 7 AM. For practical purposes, the DNL and CNEL are usually interchangeable. DNL is sometimes written as L_{dn}.

3 Honolulu Area Rapid Transit

We used the CadnaA 3-D noise model to calculate noise levels around the building. Figures 2 to 4 show the calculated levels. We used traffic data published by HDOT[4] and operations information on the HART line[5] to calibrate the noise model. We have included the data sheets for the roadway and rail traffic[6] in Appendix A.

The following summarizes the traffic volumes and calculated noise levels for the various roadways and rail line. We used the FHWA[7] noise model for the roadways and the HUD[8] model for the HART line.

- Ward Avenue: DNL 73 dB at 30 feet (1120 vehicles peak hour, 6.3% trucks, 25 mph)
- Queen Street: DNL 73 dB at 30 feet (1026 vehicles peak hour, 1.5% trucks, 25 mph)
- Kamakee Street: DNL 68 dB at 30 feet (713 vehicles peak hour, 2.0% trucks, 25 mph)
- HART: DNL 76 dB at 30 feet (568 trains per day: approximately 460 daytime and 100 nighttime)

We calculated noise levels at the various building facades using our measured data. A future traffic analysis was not provided for this project. However, we have added 1 dB to the data in our calculations to account for future traffic increases.

RECOMMENDATIONS

For our analysis, we used the room locations and elevations shown in the Concept Package. Figures 5 to 8 show the window and exterior door STC[9] ratings that are needed to meet the project criterion. Our calculations are based on the following:

- Bedrooms will be carpeted and all other residential spaces will have hard-surfaced floors
- The floor-to-ceiling height will be nine feet in the residences
- The structure supporting the curtainwall will be separate from the framing supporting the interior gypsum board

The recommended STC ratings are for full window assemblies (glass and frame) rather than just the glass itself. Tested sound-rated assemblies should be used.

4 Hawai'i Department of Transportation; 2014 Traffic Station Maps, Block 07

5 Addendum 01 to the Noise and Vibration Technical Report, Honolulu High-Capacity Transit Corridor Project; Table 5-1: Fixed Guideway Operations; Page 16; 1 June 2010

6 We used twice the number of operations shown (based on headway times) assuming that the data is only for one direction.

7 Federal Highway Administration; FHWA-RD-77-108; http://www.fhwa.dot.gov/environment/noise/traffic_noise_model/

8 https://www.hudexchange.info/environmental-review/dnl-calculator/

9 STC (Sound Transmission Class) – A single-number rating defined in ASTM E90 that quantifies the airborne sound insulating performance of a partition under laboratory conditions. Increasing STC ratings correspond to improved airborne sound insulation.

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For reference, typical one-inch glazing assemblies (two 1/4-inch thick panes with a 1/2-inch airspace) achieve an STC rating of approximately 33. For windows with ratings above STC 33, one lite should be laminated.

Where windows need to be closed to achieve the project indoor noise criterion, an alternative method of supplying fresh air (e.g., mechanical ventilation) should be considered. This applies to all residential rooms at the project. This issue should be discussed with the project mechanical engineer.

* * *

Sincerely,

CHARLES M. SALTER ASSOCIATES, INC.

Eric Mori, PE
Senior Vice President

Enclosures

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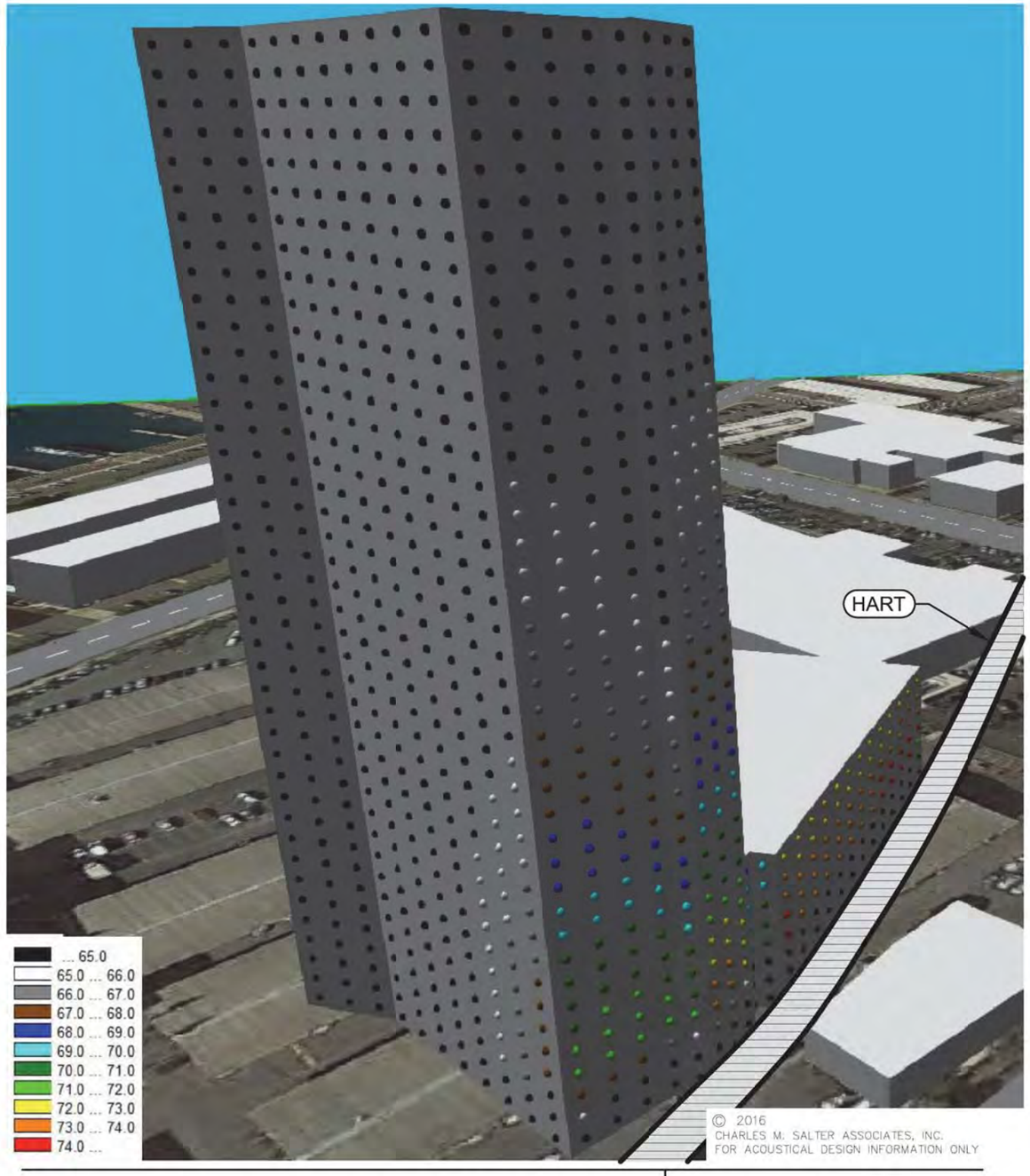
FIGURE 1

Salter # 16-0496
LVB/EBM
09.06.16

WARD VILLAGE – BLOCK N EAST
MEASUREMENT LOCATIONS

S1 & S2 = Short-Term and L1 & L2 = Long-Term Locations



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WARD VILLAGE – BLOCK N EAST
PREDICTED EXTERIOR NOISE LEVELS
VIEW FROM EAST

FIGURE 2

Salter # 16-0496

LVB/EBM 09.06.16

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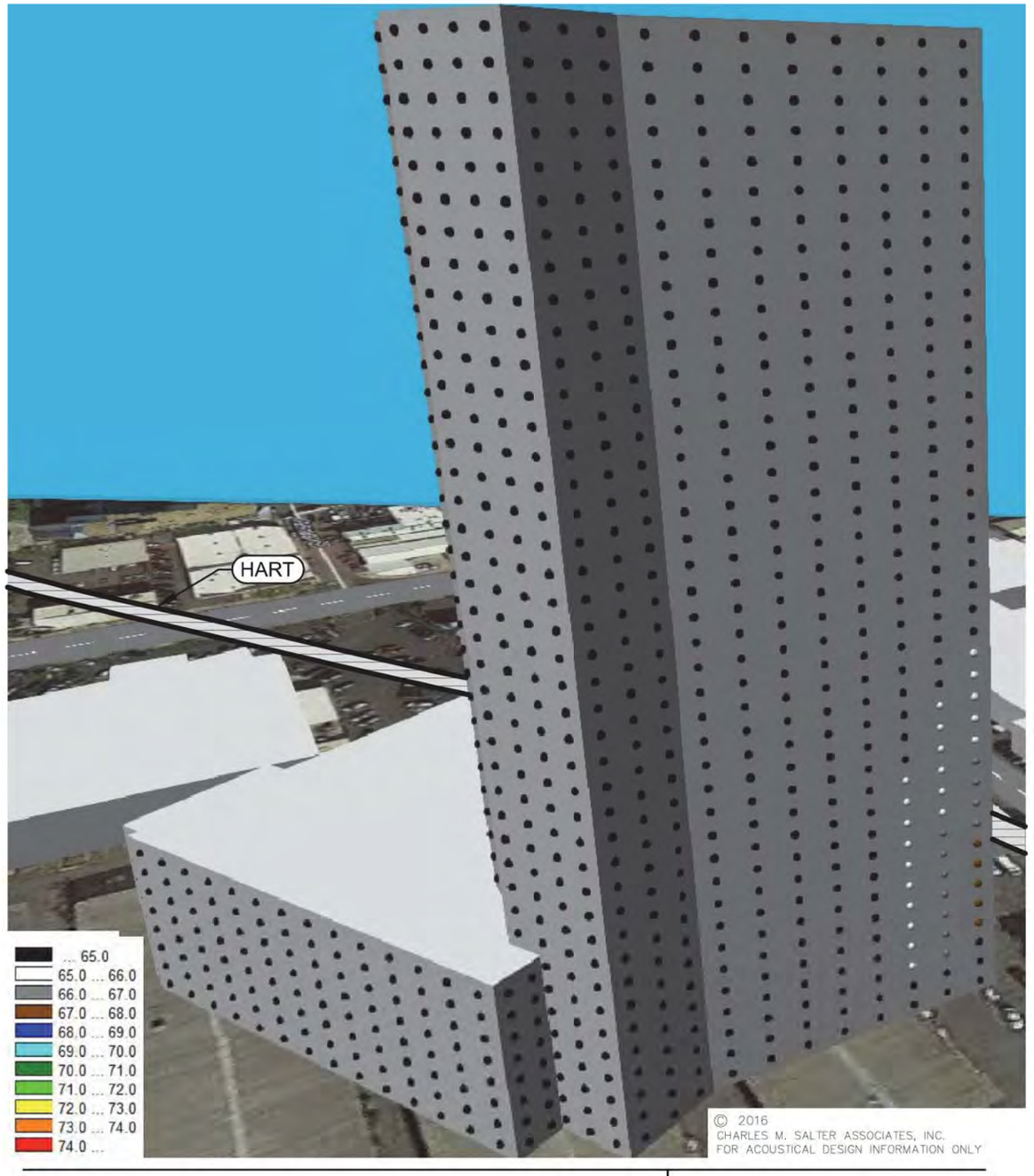

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WARD VILLAGE – BLOCK N EAST
PREDICTED EXTERIOR NOISE LEVELS
VIEW FROM SOUTH

FIGURE 3

Salter # 16-0496

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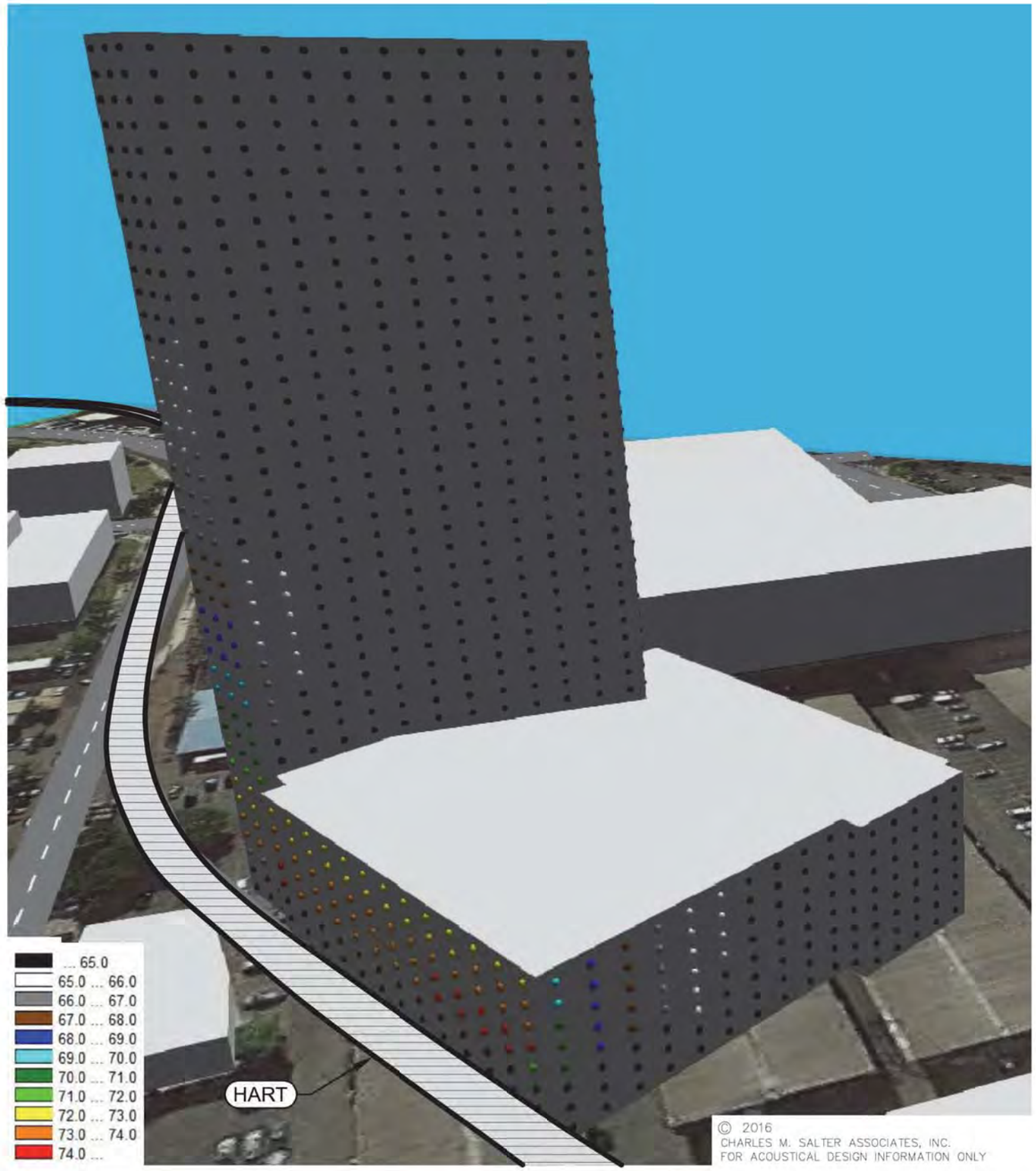

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WARD VILLAGE – BLOCK N EAST
PREDICTED EXTERIOR NOISE LEVELS
VIEW FROM NORTHWEST

FIGURE 4

Salter # 16-0496

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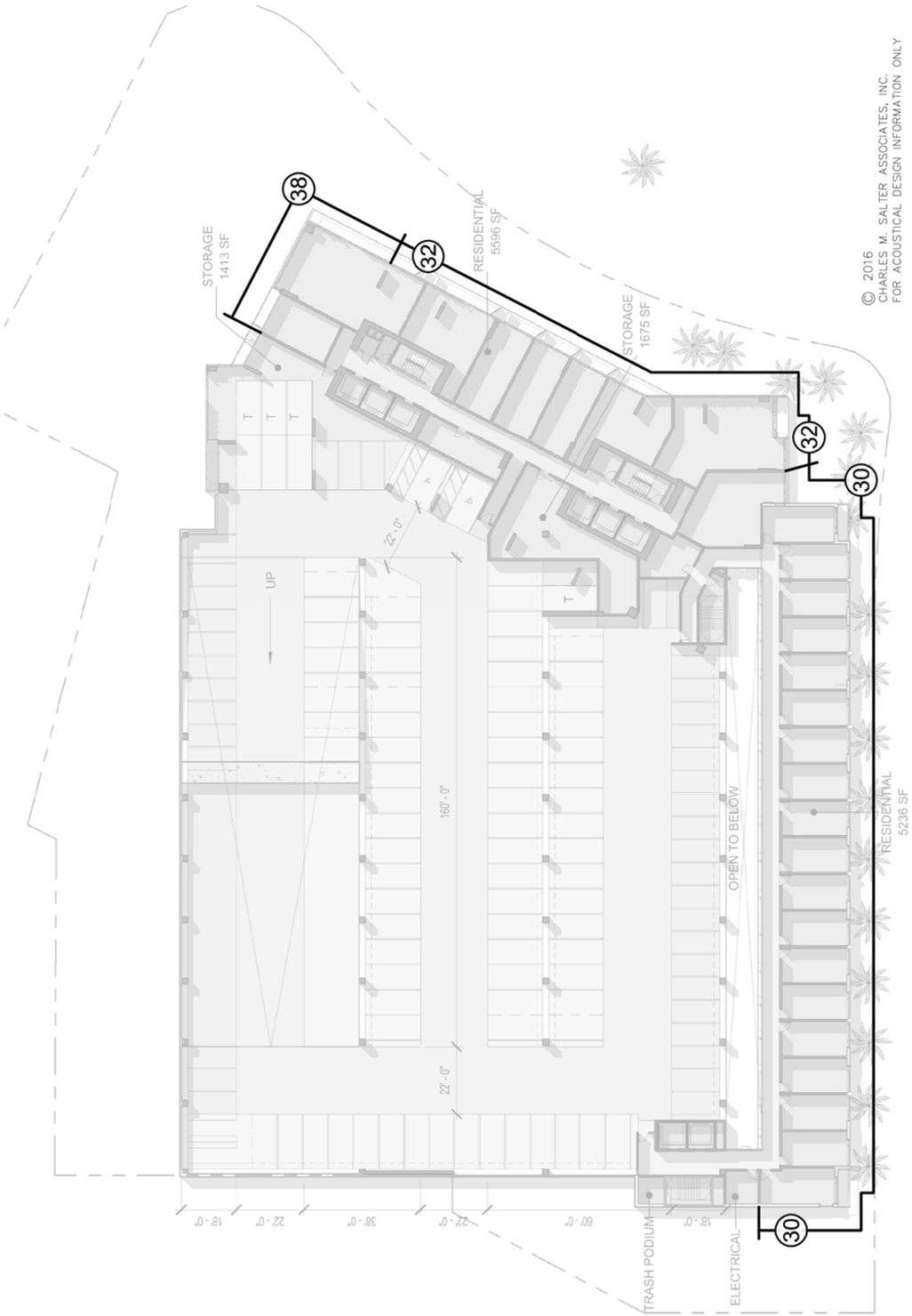

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WARD VILLAGE – BLOCK N EAST
MINIMUM RECOMMENDED STC RATINGS FOR
WINDOWS AND EXTERIOR DOORS (FLOORS 2 TO 8)

FIGURE 5

Salter # 16-0496

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130 Sutter Street San Francisco California 94104 Tel: 415 397 0442 www.cmsalter.com

WARD VILLAGE – BLOCK N EAST
MINIMUM RECOMMENDED STC RATINGS FOR WINDOWS AND EXTERIOR DOORS (FLOORS 9 TO 15)

FIGURE 6

Salter # 16-0496
LVB/EBM 09.06.16

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WARD VILLAGE – BLOCK N EAST
MINIMUM RECOMMENDED STC RATINGS FOR WINDOWS AND EXTERIOR DOORS (FLOORS 16 TO 21)

FIGURE 7

Salter # 16-0496
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WARD VILLAGE – BLOCK N EAST
MINIMUM RECOMMENDED STC RATINGS FOR
WINDOWS AND EXTERIOR DOORS (FLOORS 22 TO 41)

FIGURE 8

Salter # 16–0496
LVB/EBM 09.06.16

Appendix A: Traffic Data and HART DNL Calculations

Run Date: 2015/06/25

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2014

Site ID: B72751100000 **Route No:** 7511 **Date From:** 2014/11/20 0:00
Town: Oahu **Direction:** +MP **Date To:** 2014/11/21 23:45
Location: Ward Ave - Ala Moana Blvd to Auahi St

Functional Classification: 14 URBAN:PRINCIPAL ARTERIAL - OTHER

REPORT TOTALS - 48 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
Cycles	688	2.03%	1377
PC	26523	78.22%	53046
2A-4T	4792	14.13%	9584
LIGHT VEHICLE TOTALS	32003	94.38%	64007
HEAVY VEHICLES			
Bus	112	0.33%	280
SINGLE UNIT TRUCK			
2A-6T	148	0.44%	296
3A-SU	374	1.10%	1122
4A-SU	644	1.90%	2576
SINGLE-TRAILER TRUCKS			
4A-ST	16	0.05%	64
5A-ST	167	0.49%	835
6A-ST	62	0.18%	372
MULTI-TRAILER TRUCKS			
5A-MT	8	0.02%	40
6A-MT	169	0.50%	1014
7A-MT	207	0.61%	1449
HEAVY VEHICLE TOTALS	1907	5.62%	8048
CLASSIFIED VEHICLES TOTALS	33910 (A)	100.00%	72055 (B)
UNCLASSIFIED VEHICLES TOTALS	-0	-0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.941

ROADTUBE EQUIVALENT(B/2) = 36027 (C)

PEAK HOUR VOLUME : 1120 2014/11/20 11:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	50	(65A-1) 4.46%	639	15500	(65A-2) 4.12%	7.23%
COMBINATION (TYPE 8-13)	20	(65B-1) 1.79%	314		(65B-2) 2.03%	7.23%

Run Date: 2015/06/25

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2014

Site ID: B72751500032 **Route No:** 7515 **Date From:** 2014/07/09 0:00
Town: Oahu **Direction:** +MP **Date To:** 2014/07/10 23:45
Location: Queen St - Kamani St to Cooke St

Functional Classification: 16 URBAN:MINOR ARTERIAL

REPORT TOTALS - 48 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
Cycles	551	2.38%	1102
PC	18544	80.12%	37088
2A-4T	3639	15.72%	7278
LIGHT VEHICLE TOTALS	22734	98.22%	45468
HEAVY VEHICLES			
Bus	147	0.64%	367
SINGLE UNIT TRUCK			
2A-6T	65	0.28%	130
3A-SU	83	0.36%	249
4A-SU	13	0.06%	52
SINGLE-TRAILER TRUCKS			
4A-ST	68	0.29%	272
5A-ST	6	0.03%	30
6A-ST	13	0.06%	78
MULTI-TRAILER TRUCKS			
5A-MT	14	0.06%	70
6A-MT	1	0.00%	6
7A-MT	2	0.01%	14
HEAVY VEHICLE TOTALS	412	1.78%	1268
CLASSIFIED VEHICLES TOTALS	23146 (A)	100.00%	46736 (B)
UNCLASSIFIED VEHICLES TOTALS	-1	-0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.990

ROADTUBE EQUIVALENT(B/2) = 23368 (C)

PEAK HOUR VOLUME : 1026 2014/07/09 17:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	10	(65A-1) 0.97%	154	10500	(65A-2) 1.47%	9.77%
COMBINATION (TYPE 8-13)	5	(65B-1) 0.49%	52		(65B-2) 0.50%	9.77%

Run Date: 2015/06/30

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2014

Site ID:	B72755200006	**Route No:**	7552	**Date From:**	2014/07/09 0:00
Town:	Oahu	**Direction:**	+MP	**Date To:**	2014/07/10 23:45
Location:	Kamakee St - Auahi St to Queen St				

Functional Classification: 17 URBAN:COLLECTOR

REPORT TOTALS - 48 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
Cycles	300	1.59%	600
PC	15316	81.11%	30632
2A-4T	2772	14.68%	5544
LIGHT VEHICLE TOTALS	18388	97.38%	36776
	HEAVY VEHICLES		
Bus	82	0.43%	205
SINGLE UNIT TRUCK			
2A-6T	62	0.33%	124
3A-SU	256	1.36%	768
4A-SU	36	0.19%	144
SINGLE-TRAILER TRUCKS			
4A-ST	32	0.17%	128
5A-ST	13	0.07%	65
6A-ST	3	0.02%	18
MULTI-TRAILER TRUCKS			
5A-MT	5	0.03%	25
6A-MT	3	0.02%	18
7A-MT	2	0.01%	14
HEAVY VEHICLE TOTALS	494	2.62%	1509
CLASSIFIED VEHICLES TOTALS	18382 (A)	100.00%	38285 (B)
UNCLASSIFIED VEHICLES TOTALS	-0	-0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.986

ROADTUBE EQUIVALENT(B/2) = 19143 (C)

PEAK HOUR VOLUME : 713 2014/07/10 12:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	14	(65A-1) 1.96%	218	8600	(65A-2) 2.53%	8.29%
COMBINATION (TYPE 8-13)	0	(65B-1) 0.00%	28		(65B-2) 0.33%	8.29%

5 Consequences

Change Replace Table 5-1 and Table 5-2 with the following:

Table 5-1: Fixed Guideway Operations

Stations	Speed	Hours of Operation	Peak-Hour Headways	Off-Peak Headways	Nighttime-Headways (8:00 p.m. to 12:00 a.m.)
Kapolei Transit Center to Fort Barrette Road	50	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Fort Barrette Road to Kapolei Parkway	55	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Kapolei Parkway to East Kapolei Parkway	50	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Ho'opili to West Loch	55	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
West Loch to Waipahu Transit Center	55	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Waipahu Transit Center to Leeward Community College	55	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Leeward Community College to Pearl Highlands	45	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Pearl Highlands to Pearlridge	55	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Pearlridge to Aloha Stadium	55	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Aloha Stadium to Honolulu International Airport	55	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Lagoon Drive to Middle Street Transit Center	45	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Middle Street Transit Center to Kapālama	50	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Kapālama to Iwilei	50	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Iwilei to Chinatown	45	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Chinatown to Downtown	45	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Downtown to Civic Center	45	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Civic Center to Kaka'ako	45	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Ala Moana Center to Convention Center	45	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Convention Center to McCully	45	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
McCully to Date Street	45	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Date Street to Mō'ili'ili	45	4 a.m. to 12 a.m.	3 minute	6 minute	10 minute
Convention Center to Kālaimoku Street	45	4 a.m. to 12 a.m.	6 minute	12 minute	12 minute
Kālaimoku Street to Lili'uokalani Avenue	45	4 a.m. to 12 a.m.	6 minute	12 minute	12 minute

DNL Calculator

https://www.hudexchange.info/environmental-review/dnl-calculator/

Site ID	Ward
Record Date	6 Sept 2016
User's Name	Salter

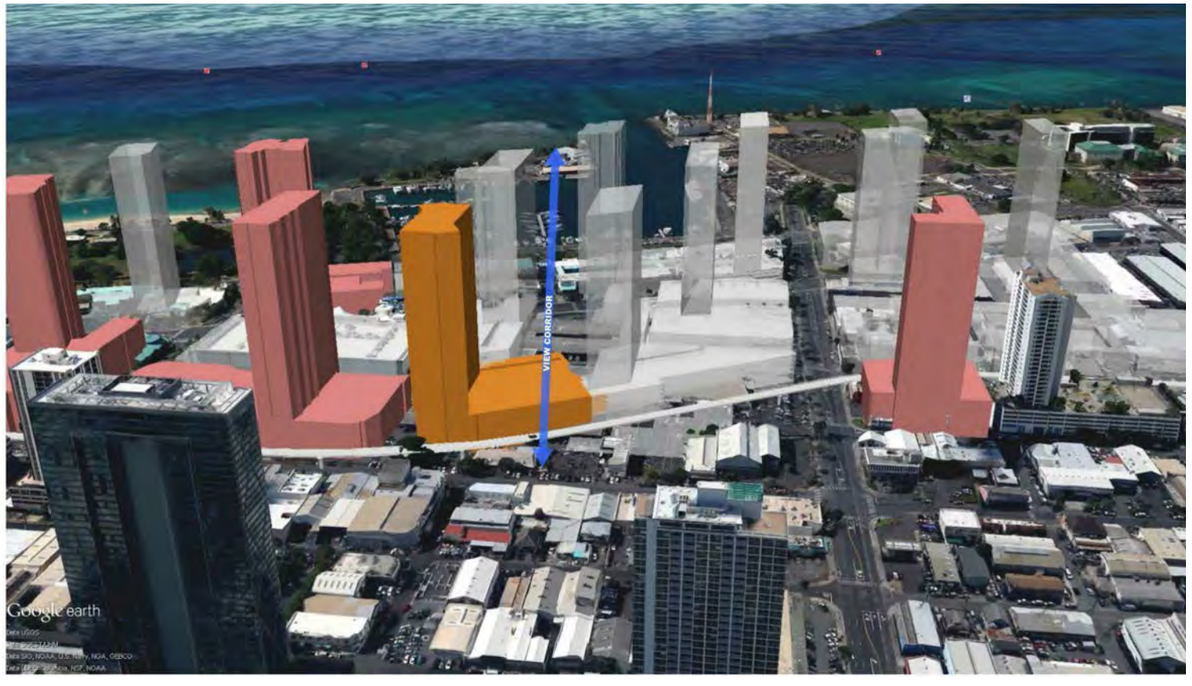
Railroad #1 Track Identifier: HART

Rail # 1

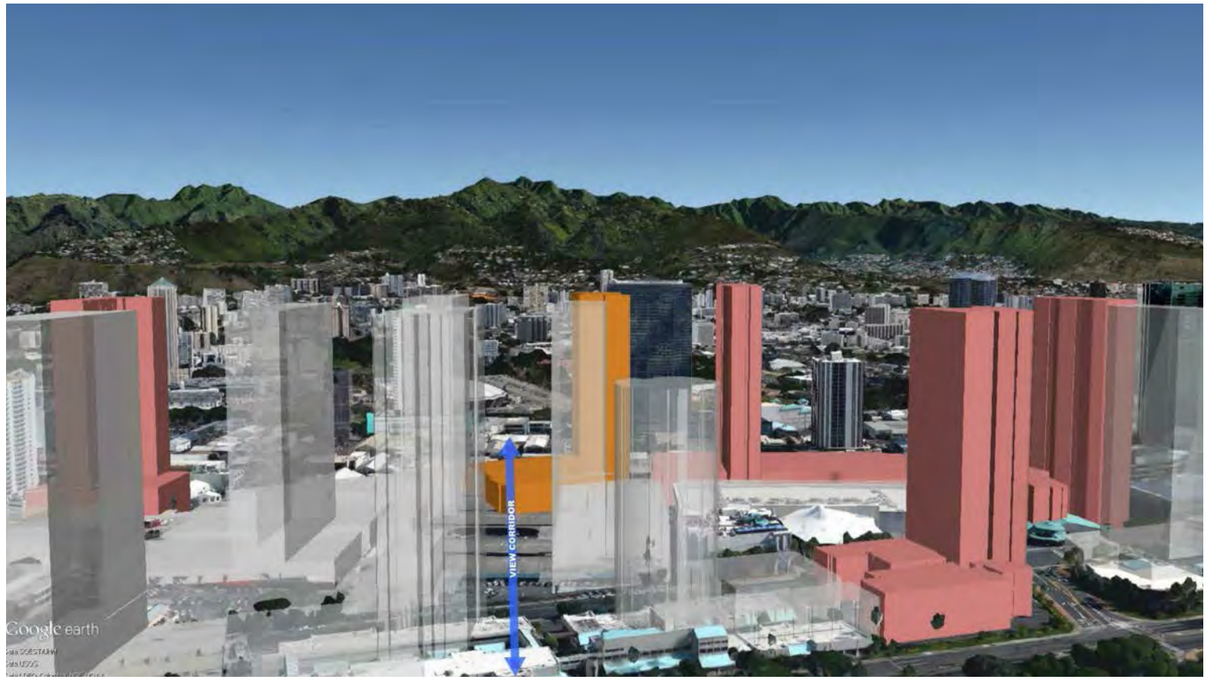
Train Type	**Electric** ☑	**Diesel** ☐
Effective Distance	27	
Average Train Speed	45	
Engines per Train	1	
Railway cars per Train	4	
Average Train Operations (ATO)	568	
Night Fraction of ATO	18	
Railway whistles or horns?	Yes: ☐ No: ☑	Yes: ☐ No: ☐
Bolted Tracks?	Yes: ☐ No: ☑	Yes: ☐ No: ☐
Train DNL	76.1	
Calculate Rail #1 DNL	76.1	Reset

APPENDIX H

VIEW ANALYSIS



MAKAI VIEW



MAUKA VIEW

Theses graphics have been prepared for planning purposes and are subject to change as a result of the planning and/or permitting process.