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DEPARTMENT OF PLANNING AND PERMITTING
KA ʻOIHANA HOʻOLĀLĀ A ME NĀ PALAPALA ʻAE
CITY AND COUNTY OF HONOLULU

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September 17, 2024

2024/GEN-8(LM)

The Honorable Tommy Waters
Chair and Presiding Officer
and Members
Honolulu City Council
530 South King Street, Room 202
Honolulu, Hawaiʻi 96813

Dear Chair Waters and Councilmembers:

Subject:	Preliminary Plans and Project Specifications For Departmental Communication D-660(24)
Project:	Hale Melia
Location:	1105 Piʻikoi Street and 1216 Young Street - Honolulu
Tax Map Key:	2-4-004: 046 and 078

We respectfully submit the attached Preliminary Plans and Project Specifications pursuant to Hawaiʻi Revised Statutes Chapter 201H. This communication and attachment is to assist you in your review of the Report and Recommendation received by the City Clerk on June 18, 2024, as Departmental Communication D-0448(24).

DEPT. COM. 674

Should you have any questions, please contact me at (808) 768-8000.

Very truly yours,

Dawn Takeuchi Apuna
Director

Enclosures: Plans and Specifications

APPROVED:

Michael D. Formby
Managing Director

Application for Exemptions Pursuant to HRS 201H.

AN AFFORDABLE RENTAL PROJECT IN HONOLULU

1105 Piikoi Street, Honolulu, Hawaii 96814

TMK: (1) 2-4-004:046 and 078

JUNE 2024

Developer/Applicant:
Hale Melia LLP
201 Merchant Street, Suite 2050
Honolulu, Hawaii 96813
Attn: Robert Q. Bruhl

Accepting Agency:
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawaii 96813
Attn: Director Dawn Takeuchi Apuna

Summary

Project Summary

HOUSING SITUATION IN THE STATE OF HAWAI'I

Hawai'i faces a severe housing shortage, with O'ahu bearing the brunt of the crisis due to its high population density and limited land availability. The shortage has led to soaring housing prices, overcrowding, and a growing homeless population. According to a 2015 research report conducted by the Department of Business Economic Development & Tourism (DBEDT), Hawai'i needs an estimated 65,000 new housing units by 2025 to meet demand. However, current construction rates fall short of this target, exacerbating the shortage. As of April 2024, the median home price on O'ahu has remained over $1,100,000 even with interest rates rising, making homeownership increasingly unattainable for many residents. Rental rates have also skyrocketed, with the average monthly rent for a two-bedroom apartment in Honolulu exceeding $3,300 according to Zillow as of May 2024. As a result, the resident population of Hawai'i and O'ahu has decreased in recent years. The State population has decreased every year since 2019 and O'ahu's population has decreased every year since 2017, according to DBEDT data. In response to the housing crisis, in July of 2023 the Governor of Hawai'i issued an Emergency Proclamation recognizing the urgent need for action to address the shortage. In addition to the Governor's Proclamation, there have been various legislative initiatives aimed at accelerating affordable housing development and providing support to vulnerable populations. Some of these initiatives include streamlining the permitting process, reducing regulatory barriers, encouraging the development of affordable housing units through incentives, subsidies, and public-private partnerships, and allocating funds for infrastructure projects. Despite these efforts, challenges remain in addressing the housing shortage, including funding constraints, land use regulations, and the need for comprehensive, sustainable solutions to ensure housing affordability for all residents. While recent legislative efforts represent a step in the right direction, sustained efforts and collaboration between government agencies, the private sector, and community stakeholders will be essential to mitigate the crisis and ensure access to affordable housing for all Hawai'i residents.

PROJECT DESCRIPTION

The proposed project (the Project) is a 247-unit affordable rental housing development in the Honolulu urban core for individuals and families earning 60% of the Area Median Income (AMI) and below. The affordability period of the Project will be for a minimum of 66 years. The unit mix includes studios, 1-bedroom, 2-bedroom, and 3-bedroom units with a majority of the units being 2-bedroom and 3-bedroom units to serve an unmet demand for family units. The Developer of the Project is Hale Melia LLP, a Hawaii limited liability partnership. The sole member of the development entity today is Melia GP LLC who will serve as the General Partner (GP) of the Development entity and whose members are Tradewind Capital, Inc. (TC) and Stanford Carr Development, LLC (SCD) via special purpose entities (SPEs) TC Melia LLC and SCD Melia LLC, respectively. (See **Appendix O Project Org Chart).** The Project will be developed on two adjacent parcels of the land, with an address of 1105 Piikoi Street (TMK: (1) 2-4-004:046) and 1216 Young Street (TMK: (1) 2-4-004:078), Honolulu, HI, 96814 (the Property or the Project site). The Project will be subject to a long-term ground lease that will be coterminous with the affordability period of the Project. The Project not only provides for grossly needed affordable housing but provides housing in a desired urban location next to various employment, recreation,

and transportation centers in a location zoned for commercial mixed-use development. The Project will stand 23 stories at approximately 199' excluding rooftop equipment and equate to a Floor to Area Ratio (FAR) of 6.42. Due to various development standards and fee exemptions required for the Project, the Developer is submitting the Project through the City and County of Honolulu's (City and County) Department of Planning and Permitting (DPP) 201H program.

As described in detail in **Section 14: Rental Rates and Utility Costs** the Project will provide 247 units affordable to families earning between 30% - 60% of the AMI. 233 units (95% of the total units) will be allocated to families earning 60% and below of the AMI, and 13 units (5% of the total units) will be allocated to families earning 30% and below of the AMI. One unit will be reserved as a manager's unit.

Address:	1105 Piikoi Street & 1216 Young Street, Honolulu, Hawaii, 96814
Tax Map Keys:	(1) 2-4-4: 046 (Parcel 46) (1) 2-4-4: 078 (Parcel 78)
Lot Area:	31,977 square feet (SF)
Landowner:	Tradewind Capital, Inc. via special purpose entity TCG Piikoi LLC of which TC is the sole member
State Land Use Classification:	Urban
City and County Zoning:	BMX-3
Zoning Development Standards:	150' Height Limit, 3.5 Max FAR w/ Open space bonus
Sustainable Communities Plan:	Primary Urban Center
Special District:	Not within Special District
Special Management Area:	Not within Special Management Area
FEMA Flood zone Designation:	X
Existing Use:	Parcel 46: vacant lot for parking and storage Parcel 78: residential walk-up building
Proposed Use:	Affordable rental housing development
Units:	247
AMI:	30%-60% AMI
Affordability Period:	Minimum 66 years
Ground Lease Tenure:	Minimum 66 years (coterminous with Affordability Period)
Parking stalls:	243 in on-site parking structure
Project Height and FAR	198'10'' / 6.42 FAR

201H APPLICATION MILESTONES

The timeline of key 201H pre-application events is as follows:

- **February 5, 2024:** the Applicant submitted a Request for Exemption of an Environmental Review pursuant to Hawaii Administrative Rules (HAR), Chapter 11-200.1 and Hawaii Revised Statutes (HRS) 343 to the DPP for the Project.

- **February 22, 2024:** the Applicant met with members of the DPP staff to conduct the "Phase 1" Pre-Consultation meeting pursuant to the DPP's 201H Application Process.

- **February 28, 2024:** the DPP determined the Project exempt from Environmental Review and exempt from the preparation of an Environmental Assessment. (See **Appendix C Exemption from Environmental Review**).

- **March 6, 2024:** the Applicant submitted its Determination of Eligibility Application to the DPP representing "Phase 2" of the DPP's 201H Application Process.

- **March 20, 2024**: the DPP issued a letter to the Applicant determining the Project "eligible for processing of affordable housing exemptions" under chapter 201H, HRS. (See **Section 2: Determination of Eligibility** and **Appendix B Determination of Eligibility Submittal and Approval**).

- **April 18, 2024:** the Applicant presented the Project to the District 10 Makiki-Tantalus Neighborhood Board. (See **Section 15: Community Outreach**).

- **April 23, 2024:** the Applicant presented the Project to the District 11 Ala Moana – Kaka'ako Neighborhood Board. (See **Section 15: Community Outreach**).

Applicant now seeks to satisfy "Phase 3" of the DPP's 201H Application Process and to provide responses to the seven (7) comments provided in the Mach 20, 2024, Determination of Eligibility letter from the DPP. The comments are included below along with the Applicant's answer or reference to the answer within this application.

1. List all relevant owners, applicants, agents, and partners, including their authorization of the Project, if necessary.

   The owner of the Property is TCG Piikoi LLC, a special purpose entity created for the purpose of owning and managing the Property, of which TC is the sole member and manager. (See **Appendix Q TCG Piikoi LLC Ownership**). The Property will be ground leased to Hale Melia LLP to develop, operate, and manage the Project through the term of the ground lease. The GP of Hale Melia LLP is Melia GP LLC. The sole members of Melia GP LLC include TC Melia LLC, an entity solely owned by TC, and SCD Melia LLC, an entity solely owned by SCD. See **Appendix O Project Org Chart** for an organizational chart of the development parties and landownership.

2. A detailed discussion of any additional approvals needed from other agencies.

   See **Section 3.H.: Requisite Permits** for a list of permits and approvals from State and County agencies.

3. A discussion of how the Project complies with the policies of the Primary Urban Center Development Plan (including the Draft Plan), and the O'ahu General Plan.

   See **Section 3.B.: Consistency with Various Plans**.

4. An analysis of the impact the Project might have on the surrounding area, including on important views between Punchbowl and Diamond Head, and mauka view up Piikoi Street.

   See **Section 3.B. Consistency with Various Plans** for a description of how the

Project maintains critical Punchbowl view planes, and **Appendix J View Planes Analysis** for a study of the Project's impact on various view planes in the surrounding area.

5. An appropriate analysis of traffic, including a pedestrian study and study of multi-modal accessibility.

   See **Section 16: Traffic Impact Assessment** for a summary of the study of the Project's impact to traffic, and a pedestrian study and study of multi-modal accessibility. See **Appendix E Traffic Impact Report** for the full traffic impact study.

6. A comprehensive list of all exemptions and fee waivers (including approximate dollar value) being requested, including a justification for each requested exemptions detailing the purpose, need, and potential impacts of granting the exemption.

   See **Appendix D Proposed Exemptions** for a list of proposed building design and fee exemptions, including a justification for each requested exemption.

7. A comprehensive list and explanation of the other permits and/or approvals that the Project will require and text explaining the status of the those permits.

   See **Section 3.H Existing Utilities and Required Permits.**

CONCLUSION

The legislature enacted HRS 201H with the intent of providing both an expeditious review of and necessary variances, including exemptions from certain City and County and State development fees and development standards, to support the Project's feasibility to ultimately provide more affordable housing. See **Appendix D Proposed Exemptions** for requested exemptions.

Project Summary Table

PROJECT NAME:	Hale Melia (unofficial)
PROJECT LOCATION:	The Project is located at the corner of Piikoi Street and Young Street with an address of 1105 Piikoi Street, Honolulu, Hawaii 96814.
SURROUDING USES:	The Project is bounded by Mattress Firm and Taco Bell to the north, Piikoi Street to the west, Young Street to the south, and a mixed-use residential commercial building to the east. The neighborhood is primarily commercial.
TAX MAP KEY:	(1) 2-4-004: 046 and 078
PROPERTY OWNERSHIP:	TCG Piikoi LLC, a Hawaii Limited Liability Company solely owned and managed by TC
PROJECT OWNERSHIP:	Hale Melia LLP, a Hawaii limited liability partnership, formed for the purpose of developing, constructing, investing in, maintaining and operating the Project. The GP members of Hale Melia LLP will be TC and SCD via SPEs TC Melia LLC and SCD Melia LLC, respectively.
LOT AREA:	TMK: (1) 2-4-004:046 – 20,019 SF or 0.460 acres TMK: (1) 2-4-004:078 – 11,958 SF or 0.275 acres
ZONING:	The Project area is zoned BMX-3, Business Mixed Use
SPECIAL DISTRICT:	The Project is not located in a Special District
STATE LAND USE:	Urban
EXISTING LAND USE:	The Property is comprised of two adjacent parcels (Parcel 46 and Parcel 78). Parcel 46, which borders Piikoi Street to the west and Parcel 78 to the east, is currently vacant and was previously the location of the Plumeria Hostel which operated out of three (3) two-story garden style walk-up buildings. The Plumeria Hostel operations were subject to a long-term ground lease through December 31, 2023. In February of 2023, the City and County delivered notice to the hostel's operator that the building's operations, which qualified as a

Project Summary Table

	transient vacation use for rental periods of less than 30 days, were in violation of BMX-3 zoning. The hostel stopped operations shortly thereafter and the operator returned the improvements to the landowner, TCG Piikoi LLC, on December 31, 2023, at the term of the ground lease. The landowner demolished the building improvements in early April 2024 after receiving the appropriate demolition permits from the DPP. Parcel 46 is currently vacant of all building improvements and is paved to serve as parking in the interim before construction of the Project commences. Parcel 78, which borders Parcel 46 to the west and residential commercial uses to the east, is the location of a three-story concrete masonry unit (CMU) built apartment building consisting of twenty (20) residential units comprising of studios, one-bedroom, and two-bedroom units. The parcel includes twenty (20) on-grade parking stalls to service the residents in the building. In general, the surrounding area consists of commercial uses and a diverse mix of medium- to high-density apartment buildings. The overall character is one of a medium- to high-density, urban mixed-use community.
NATURE OF DEVELOPMENT	The Project will primarily provide O'ahu residents with access to much needed affordable rental housing in urban Honolulu. The Project is an approximately 199-foot-tall, 100% affordable rental tower that will contain 247 dwelling units in studio, one-bedroom, two-bedroom, and three-bedroom configurations. Parking for the complex will consist of 243 residential and management/service parking stalls in an attached parking structure. The Project is expected to involve the use of Federal HUD 221(d)(4) monies, State Low Income Housing Tax Credits (LIHTC), and Rental Housing Revolving Fund (RHRF) monies administrated by the Hawaii Housing Finance and Development Corporation (HHFDC). Since the Project, as planned, will be using State funds, it will meet the provisions of HRS Chapter 343. The Project will also seek Section 201H HRS exemptions including the waiver or deferral of certain development fees and development design standards. The Project will be a mixed-use development that provides critical affordable rental housing inventory within a rapidly growing population center. The Project will ultimately provide new housing opportunities for residents of O'ahu.

Project Summary Table

TOTAL PROJECT COST	Approximately $146,000,000
PROJECT SCHEDULE	The Project construction is anticipated to commence in the spring of 2026 and will be completed in summer of 2028 subject to the award of Project financing as further described in **Section 12. B. Sources of Financing**.
PERMITS REQUIRED	State of Hawaii Agencies Department of Health Community Noise Permit / Variance City and County of Honolulu Agencies Honolulu City Council Chapter 201H Approval Department of Planning and Permitting Building Permits Department of Planning and Permitting Certificate of Occupancy Department of Planning and Permitting Construction Dewatering Permit Department of Planning and Permitting Grading and Stockpiling Permits Department of Planning and Permitting Trenching Permit Department of Planning and Permitting Erosion Control Plan/Best Management Practices Department of Environmental Services Sewer Connection Permit Department of Transportation Services Permit to Work Within County Right-of-Way

Applicant Information

Developer/Applicant:	Hale Melia, LLP Robert Q. Bruhl, Officer of Hale Melia LLP and President of Tradewind Capital, Inc. 201 Merchant Street, Suite 2050

Applicant Information

	Honolulu, HI 96813 (808) 762-6189 Alternate Contact: Stanford Carr, President of Stanford Carr Development (808) 547-2225
Developer Contact:	Tradewind Capital, Inc. Chris Fong, Project Manager 201 Merchant Street, Suite 2050 Honolulu, HI 96813 (808) 358-0187 Stanford Carr Development Kaloa Robinson, Project Manager 1100 Alakea Street, 27th Floor Honolulu, HI 96813 (808) 537-1801
Architect	Alakea Design Group, LLC Wesley Deguchi, AIA 1100 Alakea Street, Suite 1500 Honolulu, HI 96813 (808) 547-2270
Civil Engineer	RM Towill Corporation Gordon Ring, Project Engineer 2024 N. King Street Suite 200 Honolulu, HI 96819 (808) 842-1133
Hard Cost Estimator	Hawaiian Dredging Construction Company Joseph Furutani, Project Manager 605 Kapiʻolani Blvd. Honolulu, HI 96813 (808) 735-3211
Site Electrical Engineer	Bennet Engineers Ryan Hashiro, President 771 Amana Street, Suite 202 Honolulu, HI 96814 (808) 955-8565
Landscape Architect	PBR Hawaii Raymond Higa, Principal 1001 Bishop Street, Suite 650 Honolulu, HI 96813

Applicant Information

	(808) 521-5631
Structural Engineer	Base Engineering Steve Baldridge, President 1164 Bishop Street, Suite 1600 Honolulu, HI 96813 (808) 534-1300
Mechanical Engineer	Mechanical Enterprises, Inc. Ross Okuda, President 501 Sumner Street, Suite 503 Honolulu, HI 96817 (808) 591-9038
Traffic Engineer	Wilson Okamoto Corporation Jennylyn T. Morrill, Project Manager 1907 S. Beretania Street Suite 400 Honolulu, HI 96826 (808) 946-2277
Code Consultant	Code Consultants, Inc. Chris Pusher, Principal 431 E. Grand Avenue, Suite C El Segundo, CA 90245 (213) 622-5880
Archeological Consultant:	International Archaeology, LLC Tim Rieth, Manager 2081 Young St Honolulu, HI 96826 (808) 551-3090
Property Manager:	Indigo Real Estate Services, Inc. LaDon Beck, Regional Vice President 5415 California Ave SW Seattle, WA 98136 (206) 261-6479
Service Provider:	Komohale Services LLC Pamela Witty-Oakland, President 1100 Alakea Street, 27th Floor Honolulu, HI 96813 (808) 537-5220

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Section 1: Land Use Permits Division Master Application Form

Submit a completed Land Use Permits Division Master Application Form

See **Appendix A Land Use Permits Division Master Application Form**.

Section 2: Determination of Eligibility

Resubmit the materials provided for the Determination of Eligibility. Provide a statement confirming that the information submitted remains correct or identify how it has changed and why.

See **Appendix B Determination of Eligibility Submittal and Approval**.

The total unit count of the Project has changed slightly from the Determination of Eligibility Form submitted on March 6, 2024. The original submittal included 246 total units while the Project today has 247 total units as result of further design changes. A comparison of the original and current unit mix is detailed below.

Table 1 - Project Unit Mix Comparison to Determination of Eligibility Letter

	Determination of Eligibility Application Form		201H Application Form	
	Number of Units	% Of Total Units	Number of Units	% Of Total Units
30% AMI	13	5.3%	13	5.3%
60% AMI	232	94.3%	233	94.3%
Market Rate Units	1	0.4%	1	0.4%
Total	246	100.0%	247	100.0%

Section 3: Project Narrative

Provide a project narrative that includes:

3.A. Land Use

a. The State Land Use Classification and City and County Zoning District for the site.

STATE LAND USE CLASSIFICATION

The State Land Use Commission Boundary Maps identify the Project site as being within the Urban area. This is consistent with the surrounding uses that include commercial uses and high-density residential development.

COASTAL ZONE MANAGEMENT

HRS §205A-1 states that the entire State is located within the coastal zone management area (CZM). The Project is generally consistent with all objectives of the CZM. Since its location is not near the shoreline, the Project will not have any effect on the coastal zone. The Project site is zoned for development within this highly urban community, and the Project does not directly affect recreational, historic, and coastal ecosystems and will not significantly decrease softscape open space. Overall, the Project satisfies the objects of the CZM outlined in §HRS 205A-2 and should be considered a managed development that provides affordable housing for the commercial mixed-use neighborhood.

CITY AND COUNTY ZONING DISTRICT

Except to the extent that the Applicant is seeking variances under §HRS 201H-38, the Project and its intended use as an affordable rental building is consistent with the current BMX-3 Business Mixed Use zoning district.

3.B. Consistency with Various Plans

b. How the project is consistent with the goals and policies of the Sustainable Communities or Development Plan in which the project is geographically located. Reference the applicable goals and objectives from the Plan, as appropriate.

The Project site represents a unique intersection of State and County maps with aligning philosophies, goals, and objectives. The two parcels contributing to the site are designated **URBAN** on the State Land Use Map, **DISTRICT COMMMERCIAL** on the 2004 Primary Urban Center Development Plan (PUCDP) Map, **URBAN CORRIDOR/CENTER** on the 2023 Proposed Primary Urban Center Plan Map (PPUCDP), and **BMX-3** at the Honolulu Zoning Level.

The applicable maps for the State Land Use designation, PUCDP, PPUCDP, Honolulu Zoning Level, and the Honolulu Urban Core Complete Streets program is provided in **Section 10: Maps**.

HAWAII STATE PLAN

The Project is consistent with the Hawaii State Plan, HRS Chapter 226 (State Plan). The State Plan addresses five broad objectives: (1) objectives and policies for population, (2) objectives and policies for the economy, (3) objectives and policies for the physical environment, (4) objectives and policies for facilities systems, and (5) objectives and policies for socio-cultural advancement.

The proposed Project aligns with these objectives and policies as the Project: (1) will not have an impact on the population because the residents are primarily existing local residents, (2) will contribute to the local economy by creating both short- and long-term employment during the construction and operation phases of the Project, (3) will productively redevelop an underutilized site within the urban environment while respecting the physical environment, (4) will be served by existing facilities and will not create the need for expanded systems, and (5) will provide affordable rental housing for low- and moderate-income households in Hawaii.

Most relevant of the objectives and policies is HRS §226-19 which emphasizes the State's objectives for socio-cultural advancement as they relate to housing. In this regard, the State Plan states:

> *(1) Greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more affordable housing is made available to very low-, low- and moderate-income segments of Hawaii's population,*
>
> *(2) the orderly development of residential areas sensitive to community needs and other land uses,*
>
> *(3) the development and provision of affordable rental housing by the State to meet the housing needs of Hawaii's people.*

The Project will advance the objectives of HRS §226-19 by providing affordable rental and workforce housing and will balance the market housing found in the Project's vicinity.

In HRS 226-55, the State's functional plans specify objectives, policies, and implementing actions to address the State's need for diverse housing types. The intent of the functional plans is to work in coordination with other County and regulatory concerns. The Project will expand the diversity of housing found in the Makiki and Ala Moana area and is clearly supportive of the high-demand, affordable rental housing market. Furthermore, the Project addresses the top priority of HRS 226-106 and will utilize urban land to satisfy the housing needs of low-income households and provide quality housing that is affordable for Hawaii's residents rather than to develop housing intended primarily for individuals outside of Hawaii.

Lastly, the Project is generally consistent with the priority principles and guidelines for sustainability, which are stated in HRS §226-108. More specifically, the Project closely aligns with

subsections (1) and (3). The Project will represent a significant component in creating a balanced Makiki and Ala Moana district by providing affordable rental housing units within an area that is a mix of residential and commercial uses. The delivery of affordable housing will also support diverse economic opportunities as well as contribute to social and community cohesion.

CITY AND COUNTY OF HONOLULU'S O'AHU GENERAL PLAN

The City and County of Honolulu's O'ahu General Plan provides the overall vision for the island of O'ahu and broadly outlines the objectives and policies shaping future growth. While the proposed action is consistent with the General Plan overall, it is particularly pertinent to Section IV, Housing and Community. It is here where the proposed action supports Objective A, which is to provide decent housing for all the people of O'ahu at prices they can afford, and Objective C, which is to provide the people of O'ahu with a choice of living environments that are reasonably close to employment, recreation, and commercial centers and are adequately served by public utilities. The proposed action will provide affordable rental housing that is located within close proximity to major employment centers, schools, recreation areas, as well as having excellent access to public transit options.

HONOLULU 2004 PRIMARY URBAN CENTER DEVELOPMENT PLAN

The 2004 Primary Urban Center Development Plan of Honolulu serves as a strategic framework to guide growth and development in urban areas while preserving their unique character and promoting sustainability over the next 20 years. While the Project generally aligns with all aspects of the PUCDP, below is an outline of a few salient objectives from the 2004 PUCDP and the Applicant's explanation of how the Project satisfies the objective.

- **Section 3.2.2.1 Neighborhood Planning – *Promote mixed land uses*:** the section states that "In the PUC's in-town neighborhoods, both residential and office development support retail and other services. Neighborhoods with a strong mix of uses have activity 24 hours a day. Residences providing "eyes on the street" contribute to neighborhood safety."

    - **Applicant:** the Project is located in an area with heavy commercial/business activity. The introduction of multifamily renters helps support the local businesses in the surrounding neighborhood and adds more "eyes on the street" to contribute to neighborhood safety.

- **Section 3.2.2.1 Neighborhood Planning – *Make major streets which connect communities convey neighborhood identity*:** the section states that "landscape and other streetscape design for major streets which serve as principal routes connecting two or more neighborhoods should reflect the unique identities of each neighborhood and, where possible, should provide open spaces between them which create significant public views or access to mauka or shoreline resources".

    - **Applicant:** the Project is designed with a 22' setback off of Piikoi Street creating a pleasant landscaped open space for pedestrians and vehicles passing by. The Project's residential building orientation with the long edge running mauka/makai preserves view planes looking mauka/makai. The Applicant's architect and landscape consultant have designed the Project's aesthetic to be consistent with the character of the immediate neighborhood. See **Section 11: Plans.**

- **Section 3.2.2.4 Shopping and Retail Business Districts – *District Commercial*:** the section states "Mixed uses, including medium to higher density residential uses where appropriate, and higher densities are encouraged in these [District Commercial] areas".

    - **Applicant:** the Project provides high-density residential use in the District Commercial area as defined in the PUCDP.

- **Section 3.3 In-Town Housing Choices:** the section states that the PUCDP "offers in-town housing choices for people of all ages and incomes."

    - **Applicant:** the Project's unit mix of studios, one-, two-, and three-bedroom floor plans provides housing inventory for various family sizes, which generally translates to renters of various ages, income-levels, and demographics.

- **Section 3.3.1.1 Housing Stock and Occupancy:** the section states "most of the government-owned in-town sites have been developed, and funding for new housing has been drastically reduced, making preservation and retention of existing affordable units an integral and essential component of fulfilling the housing needs of PUC residents".

    - **Applicant:** the Project provides new affordable housing inventory helping to alleviate the pressure and scarcity of the current affordable rental inventory in the PUC.

- **Section 3.3.1.2 Development of New Housing:** the section states that "new housing is developed on lands which are underutilized".

    - **Applicant:** the Project will be developed on two parcels, one of which is currently vacant. The two parcels comprising the Project can support a height and density that significantly exceed that of the current improvements on-site.

HONOLULU 2023 PROPOSED PRIMARY URBAN CENTER DEVELOPMENT PLAN

The 2023 Proposed Primary Urban Center Development Plan (PPUCDP) of Honolulu aims to update the 2004 PUCDP for development changes on O'ahu including skyrocketing residential rent, climate change and sea level rise, and highway congestion, among others. The proposed plan will have a planning horizon for the next 25 years. While the Project generally aligns with all aspects of the PPUCDP, below is an outline of a few salient objectives from the 2023 PPUCDP and the Applicant's explanation of how the Project satisfies the objective.

- **Policy GD-2.1:** Support mixed-use infill development and increased bus service along key underutilized commercial corridors.

    - **Applicant:** the Project is located adjacent to a bus station on Piikoi Street and 14 bus stops in total within a quarter mile radius providing access to major employment areas including Ala Moana, Waikiki, and Downtown Honolulu.

- **Policy GD-2.3:** Invest in long-term growth in commercial corridors and mixed-density neighborhoods outside of the Sea Level Rise Exposure Area (SLR-XA).

    - **Applicant:** the Project's location between the intersections of Piikoi Street & South

Beretania Street and Piikoi Street & South King Street puts it at the center of a long-term commercial corridor outside of a SLR-XA where residents will have immediate access to various transit options, employment centers, goods and services.

- **Policy GD-2.4:** Provide green space and landscaping improvements in mixed-density in-town neighborhoods, especially those lacking parks; and **Policy PL-3.3:** Ensure pedestrian-oriented design in all corridors and centers, especially in Town Corridor, Urban Corridor, Downtown, and Resort areas.

    - **Applicant:** the Project includes a 22' setback from Piikoi Street resulting in a large open landscaped yard area in the front of the building. The Project would be introducing green spaces into a site that didn't have it before and in a commercial neighborhood that predominantly lacks landscaping on most properties. The open space elevates the pedestrian experience and creates more room to traverse the Piikoi Street and Young Street sidewalks. See **Section 11: Plans.**

- **South King/Beretania Corridors - Vision:** the section states that "as the area grows over time, it will maintain its commercial prominence by increasingly integrating neighborhood shopping and services with multifamily housing."

    - **Applicant:** although there are some residential low-rise buildings near the Project site, the neighborhood is primarily commercial. The Project will help integrate multifamily housing into a commercial district.

- **South King/Beretania Corridors – Land Uses and Development:** the section states that the City and County "support projects that aggregate parcels to create a larger contiguous parcel by offering incentives such as density bonuses, setback reductions, or other."

    - **Applicant:** the Project is comprised of two adjacent parcels that together represent 31,977 SF of contiguous land area. By consolidating the parcels, the Applicant is able to create an affordable housing community that would be infeasible using the parcels independently.

- **Makiki – Vision:** the section says that in Makiki "More intense residential infill will be balanced with preservation of significant public views to and from Punchbowl." Additionally, **Figure 2.5: Significant Public Views, East** shows the view plane corridor from Punchbowl to Diamondhead.

    - **Applicant:** The Applicant conducted a view planes analysis by superimposing the Project onto key view corridors. The Applicant analyzed the views looking both mauka and makai along Piikoi Street and looking ewa along South Beretania Street. Given the consistency in height with other towers in the neighborhood such as the Hale Kalele and Pumehana (1212 Young Street) residential towers, the Project does not have a material impact to the major view corridors in the immediate area. Additionally, the Project does not impact the views in the Punchbowl to Diamondhead corridor which is protected in the Punchbowl Special District Design Guidelines because the Project lies outside of this corridor. **See Appendix J View Planes Analysis** for the further detail on the various view

impacts.

- **Policy H-2.2: Produce new income-restricted units through public sector development and non-profit partnerships.**
    - **Applicant:** the Project will be operated and managed in partnership with Komohale Services, LLC, a local non-profit dedicated to preserving affordable housing in Hawaii and providing various services to residents. See **Appendix I Komohale Services LLC Corporate Resume.**

HONOLULU URBAN CORE COMPLETE STREETS PROJECT

On May 9, 2012, the Honolulu City Council adopted the Complete Streets ordinance (Ordinance 12-15) to improve road safety and protect and promote accessibility and mobility for all modes of transportation on O'ahu's roads. Today, ROH 14-18 Complete Streets aims to implement more "comprehensive and balanced design and construction of city transportation systems". The vision is to re-design Honolulu's streets in a way that supports safe, comfortable travel for all users, whether they choose to travel by bus, car, bicycle, foot, or other means. As part of the vision, certain major corridors in Honolulu are identified for future re-design, including Piikoi Street. As such, Piikoi Street has a 12' road widening setback requirement to allow the City and County to widen the Piikoi corridor and/or sidewalk in the future.

The Project as designed respects the 12' road widening setback off of Piikoi Street thereby allowing the expansion of Piikoi Street in the future if the City and County ever elects to do so. This would require expanding the Piikoi Street side of the entire block where the Project lies from Young Street to South Beretania Street. The 12' road widening setback on top of a standard 10' building setback results in a total 22' setback off of Piikoi Street.

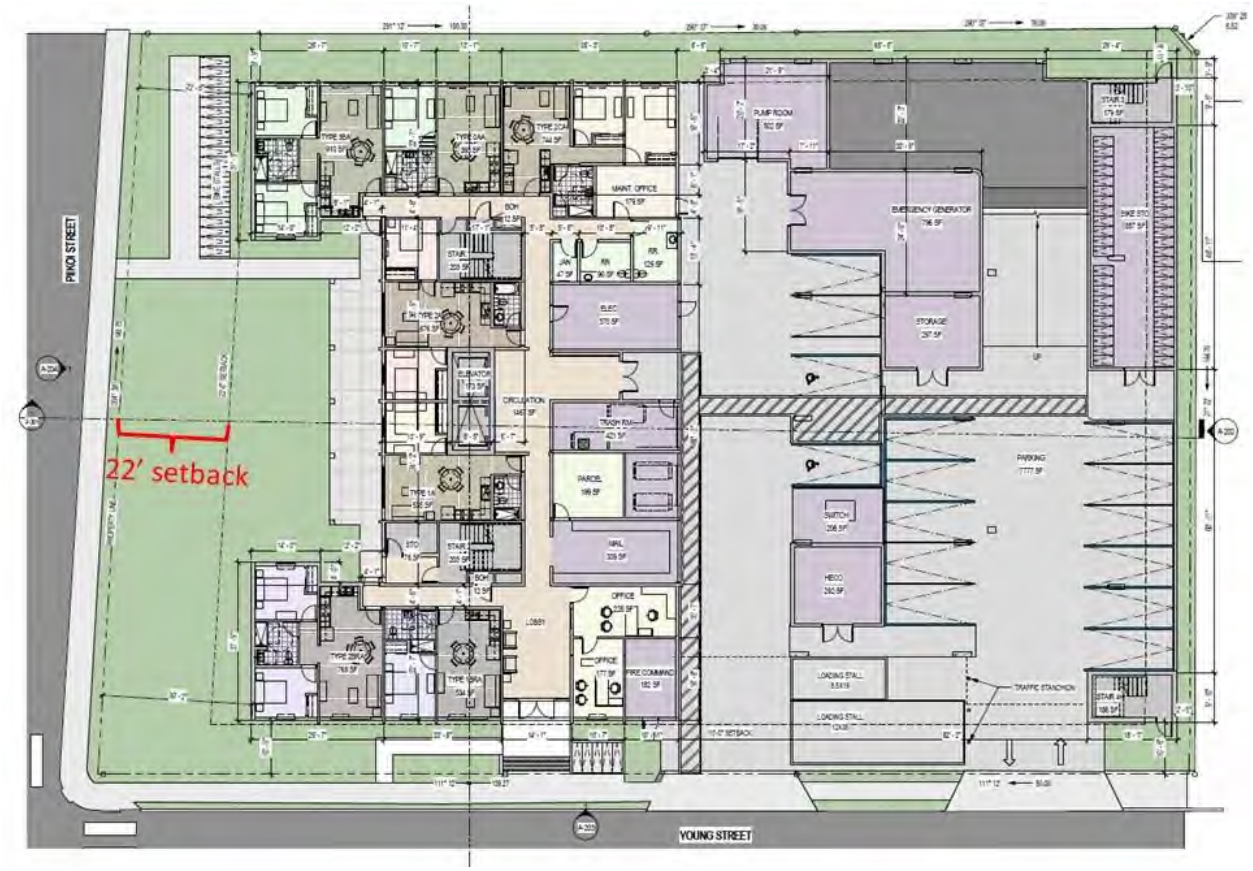


Figure 1 - Illustrative Ground Floor and Site Plan

See **Section 10: Maps** for the Complete Streets road widening vision along Piikoi Street.

3.C. Current and Historic Site Conditions

c. Describe the current and historic site conditions. Describe the degree to which existing structures, if any, will be renovated or demolished.

EXISTING STRUCTURES

Parcel 78

Parcel 78 has an address of 1216 Young Street. The improvements on the parcel include an L-shaped three-story residential building that totals approximately 14,208 SF of gross building area and 11,788 SF of net rentable area. The building was constructed in 1969 of CMU block. There are twenty (20) apartment units in total, including four (4) studios, eleven (11) one-bedrooms, and five (5) two-bedrooms. Units include kitchenettes with a sink, stove, and a refrigerator. Glass louvered windows are built into the front and back sides of the units. Roof fans ventilate the interior of the units. The roof is a flat built-up type ballasted with stone. Unit ceilings are "popcorn-style", and the floors are a mix of vinyl tile, floating wood flooring, and carpet. The site has twenty (20) ground floor parking stalls, including seven (7) covered stalls and thirteen (13) uncovered stalls. There is minimal landscaping on the property along the edges of the building. The total

land area is 11,958 SF and the residential building covers about 59% of the total site. As part of the Project, the improvements on Parcel 78 will need to be demolished. On April 6, 2024, the Applicant delivered in-person notice to the tenants of the 1216 Young Street Apartments that the landlord would not be extending leases past January 31, 2025. As of June 10, 2024, nine of the 20 units have vacated with three more vacancies planned for the end of the June.

Figure 2 - Parcel 78 - Photo of Young Street Apartments

Parcel 46

Parcel 46, totaling 20,019 SF, is currently a vacant lot with no buildings. The lot is covered with a recycled asphalt material to allow for parking.

Figure 3 - Parcel 46 - Photo of Piikoi Parcel After Demolition of Existing Structures

SURROUNDING USES

The Project site is located within the Primary Urban Center in a highly urbanized area. There are a mix of low- to high-rise residential structures, public facilities, and commercial uses within the Project's vicinity. The Project is on the edge of an area most commonly known as Makiki but borders the Ala Moana district and is not located within a special district or designated place.

In relation to Parcel 46, to the north is Mattress Firm and Taco Bell, to the west is Piikoi Street, to the south is Young Street, and to the east is Parcel 78. Current access to Parcel 46 is off of Piikoi Street to the west through two driveways and off of Young Street to the south through one driveway.

In relation to Parcel 78, to the north is Taco Bell, to the west is Parcel 46, to the south is Young Street, and to the east is a three-building residential and commercial complex along Young Street. Access to Parcel 78 is off of Young Street to the south through one driveway.

The next immediate street north of the Project site is South Beretania Street and one block north is a Safeway anchored shopping center. One block South of the Project is 7-Eleven and Zippy's Makiki. One block west of the Project is Daiso, Plato's Closet, and a shopping center anchored by Walgreens and Petco.

The general vicinity is characterized by highly commercial mixed-use with South King Street to the south and South Beretania Street to the north serving as high-intensity commercial corridors with various retail establishments, restaurants, and office facilities. Parcels between these corridors are generally zoned BMX-3. A vast array of residential communities including low-rise walk-ups or high-rise residential towers are dispersed among the commercial corridors on various side streets. High intensity residential towers occupy the Makiki neighborhood further north and

the Ala Moana neighborhood further south and are generally zoned BMX-3 or A-2 Medium-density Apartment. About 350' south on Piikoi Street is Hale Kalele, a 200-unit 20-story affordable rental housing high-rise standing approximately 191'. Queen Ka'ahumanu Elementary School is located approximate 250' to the northwest and McKinley High School is approximately 0.3 miles to the southwest. The Project's location next to commercial businesses and main thoroughfares make it a highly trafficked area both for vehicular and multimodal travelers. Piikoi Street provides direct access to the H-1 Freeway via an east and west onramp 0.18 miles north of the Project site.

HISTORIC SITE CONDITIONS

Historic Background

The Project site is in the ʻili (small area of land within an ahupuaʻa) of Makiki and the ahupuaʻa of Honolulu in the district of Kona. Honolulu Ahupuaʻa is bounded by Kapālama Ahupuaʻa to the west and Waikiki Ahupuaʻa to the east.

The greater portion of Makiki, located roughly above King Street between Alapaʻi and Punahou Street, was historically known as Kulaokahuʻa, which translates as "plain of the boundary". Early historic accounts describe Kulaokahuʻa as a flat and desolate landscape.

The Project site seems to have remained undeveloped before 1900; an 1897 map of Honolulu shows no structures in the location by the end of the 19th century. The area is not included in Honolulu fire insurance maps published in 1891 and 1899, suggesting that no significant structures were present at the time.

Twentieth Century to Present

A 1914 Sanborn fire insurance map records a roughly 75' by 50' wooden structure with encircling lānai and a terra cotta chimney in the center of the Project site. The building is labeled a "Japanese Club," likely the same club cited as a community concern during a meeting of the "Kaahumanu Improvement Club" in 1911 (Honolulu Advertiser 1911).

By 1927, the club building had been replaced by 11 smaller wooden buildings which served as houses and automobile garages. By 1954, the Project site was split into two parcels, and the houses at 1105 Piikoi Street were replaced by three (3) two-story apartment buildings which served as residential housing and eventually turned into the Plumeria Hostel. The Plumeria Hostel was demolished in early April. The apartment complex at 1216 Young Street was constructed in 1969.

Recent Changes to Improvements

Parcel 46 was previously the location of the Plumeria Hostel which operated out of three (3) two-story garden style walk-up buildings. The operations were subject to a long-term ground lease through December 31, 2023. In February of 2023, the City and County delivered notice to the operator of the Plumeria Hostel that the property's operations as transient vacation use were in violation of the parcel's BMX-3 zoning. The hostel operator stopped operations and returned the improvements to the landowner/landlord, TC, on December 31, 2023, at the term of the ground lease. The landowner began demolition of the improvements on April 2, 2024, and covered the site with a recycled asphalt material. The land currently serves as parking.

Previous Archaeological Investigations

No archaeological sites or historic properties are known in the Project site. A review of the previous archaeological investigations concluded that no archaeological investigations have been conducted in the Project site. Other investigations in lower Makiki have encountered little to no material remains of pre-contact occupation with almost all recorded archaeological materials consisting of historical refuse deposits dating from the late 19th to early 20th centuries.

Discussion and Recommendations

On January 18th, 2024, the Applicant, with the assistance of its archaeological consultant International Archaeological Research Institute, Inc. (IA), submitted a letter to the State Historic Preservation Division (SHPD) to conduct a historic preservation review for the Project in accordance with Hawai‘i Revised Statues (HRS) Chapter 6E-42 and Hawai‘i Administrative Rules (HAR) §13-275-3 and §13-275-5(b)(2). The recommended effect determination by IA was “effect, with agreed upon mitigation commitments”.

On April 26, 2024, SHPD provided a letter to the Applicant concluding its 6E-42 Historic Preservation Review. In the letter, SHPD notes that the Project site has not been previously surveyed and makes note of a burial site (Site 50-80-14-08854) located one block west of the Project site along Pensacola Street. Having insufficient information to determine the potential for subsurface historic properties and/or human burials, SHPD requests an archaeological inventory survey (AIS) with subsurface testing be conducted in order to adequately identify subsurface historic properties, determine potential impacts to them, and ensure that appropriate mitigation is implemented.

On May 9, 2024, SHPD issued a revised 6E-42 Historic Preservation Review letter, which notes that while the 1216 Young Street Apartment building was built in 1969 and meets the definition of a “Historic property” per HRS §6E-2 (defined as “any building, structure, object, district, area, or site, including heiau and underwater site, which is over fifty years old”) its significance requires further study. Per the May 9 letter, SHPD requested a Reconnaissance Level Survey (RLS) report for the entire Project area [Parcel 46 and 78] to determine the “proposed project’s impact to significant historic properties”. The RLS is considered an architectural survey report that reviews historic resources and records to determine historical importance.

See **Appendix G Chapter 6E-42 Historic Preservation Review from SHPD** for the full historic preservation review letter and subsequent revised letter provided by SHPD. The Applicant is currently preparing a plan for an AIS with subsurface testing and an RLS to submit to SHPD.

3.D. Flood Zone

d. Indicate the flood zone designation for the site from the Federal Emergency Management Agency current Flood Insurance Rate Map(s). Indicate whether the property is in a tsunami evacuation zone. Identify the mitigating measures that will be taken to ensure the safety of residents, as applicable.

FLOOD ZONE DESIGNATION

According to Panel 15003 C 0362 G of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, the Project site is located in Zone X, an area determined to be outside of the floodplain.

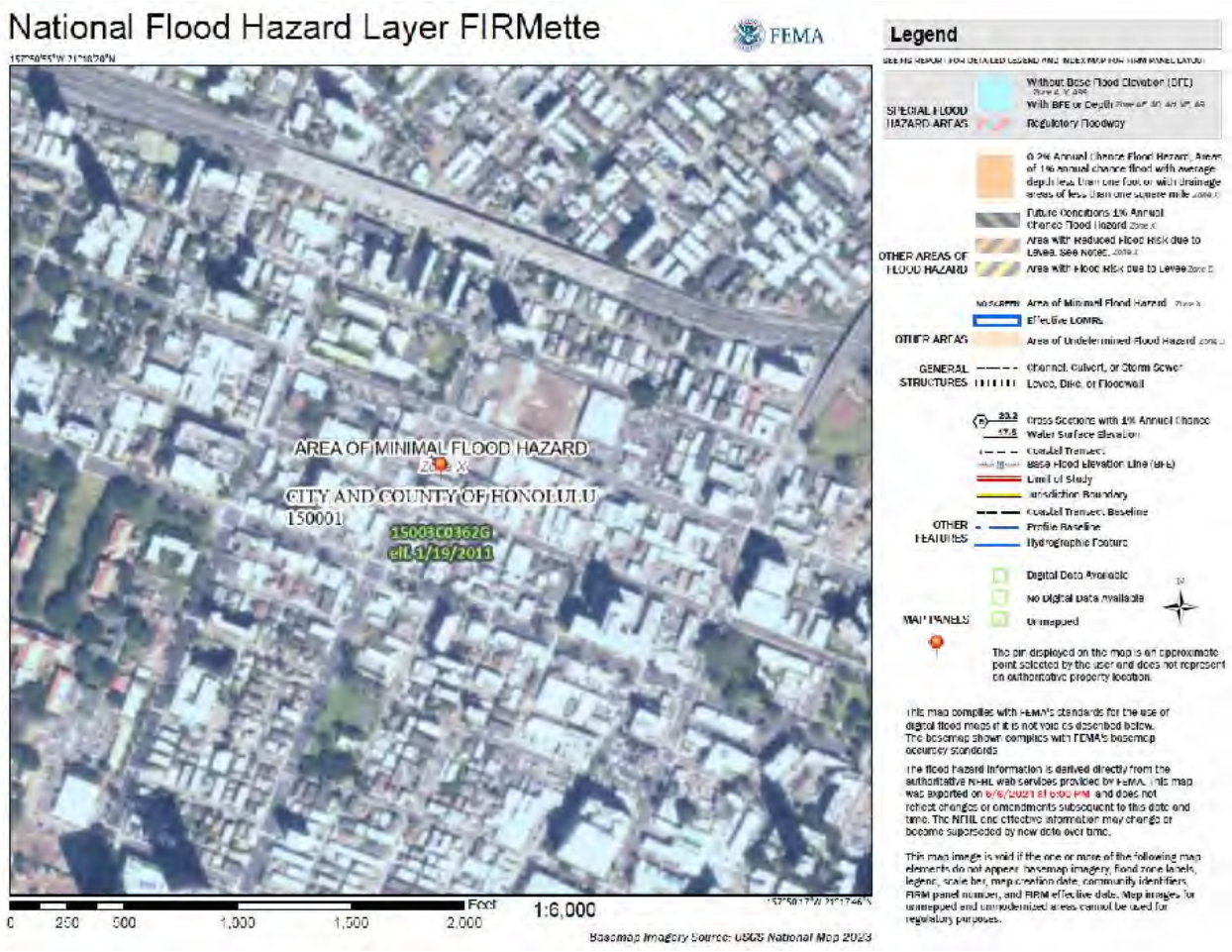


Figure 4 - FEMA Flood Map

TSUNAMI EVACUATION ZONE

According to the National Ocean and Atmospheric Administration (NOAA), the Project site is located in a Safe Zone on the Tsunami Hazard Map. This area represents a safe evacuation site in the event of a tsunami. These areas are shown in YELLOW on the map. For this evacuation you are considered safe when you have reached the GREEN Zone.

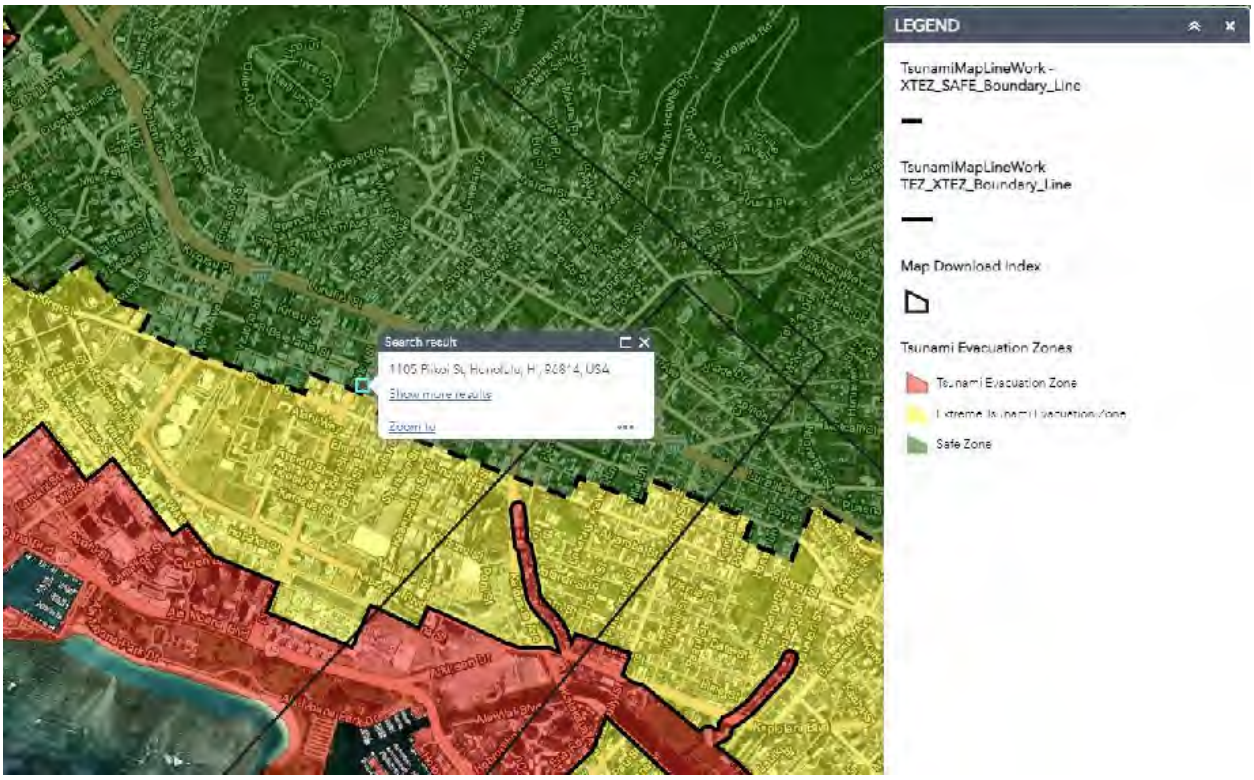


Figure 5 - Tsunami Hazard Map

MITIGATING MEASURES (IF APPLICABLE)

According to the Hawai‘i Sea Level Rise Vulnerability and Adaption Report authored by the Department of Land and Natural Resources, State of Hawaii Office of Planning and Sustainable Development, Tetra Tech, the University of Hawai‘i School of Ocean and Earth Science and Technology, the University Sea Grant Program, and the Pacific Islands Climate Science Center, sea level rise has been historically noted and is projected to increase throughout the remainder of the century. It is now widely accepted that rising sea levels, by the year 2100, may reach 3.2’ above current mean sea level. This is a global phenomenon that must be addressed on a greater policy level. The Project lies outside of the 3.2’ sea level rise zone.

3.E. Tenant Relocation (If necessary)

e. Indicate whether the proposed project will relocate any tenants, and if so, the assistance that will be provided. Provide a relocation plan, if necessary.

The 20-unit 1216 Young Street Apartments will be demolished for the Project. These 20 units house 33 recorded residents. As of April 1, 2024, 11 of 20 units were on month-to-month (MTM) leases. The remainder of the leases expire throughout 2024 with five expiring on December 31, 2024. The landlord is not renewing or leasing any new units.

On Saturday, April 6, 2024, at 10:30am, the Applicant's team provided in-person notice to residents of the 1216 Young Street Apartments that leases would not be extended past January 31, 2025, in preparation of redeveloping the site. Once tenant leases expire, they will automatically convert to MTM until January 31, 2025. Tenants were also notified that if they qualify for the income requirements of the new Project, the Applicant will explore if and how they could be among the first to apply. A letter was also provided to the tenants noting such information and providing a contact number of the Applicant and property manager for further questions or comments. All residents were encouraged to reach out to the Applicant to communicate how the Applicant could assist the residents in their move-out and relocation. For residents that were not present at the time of notice, the letter was taped to the resident's door. An example notice letter is included in **Appendix N Tenant Notice Letter.**

As a result of the Applicant's meticulous planning to provide tenant notice, as of June 10, 2024, nine of the 20 units have vacated with three more vacancies planned for the end of the June leaving only eight remaining tenants. The apartment is expected to be vacant more than one year before demolition and construction begins.

Pursuant to HRS §521-38 Residential Landlord-Tenant Code, a landlord must provide 120 days' notice of termination of a rental agreement when converting a property to a condominium property regime. By giving notice on April 6, 2025, of move-out by January 31, 2025, the Applicant provided a three hundred (300) day notice to tenants of their lease termination. Additionally, although the Project contemplates using a Federal HUD 221(d)(4) loan to finance the Project which can come with certain relocation requirements per HUD guidelines, the Applicant would not trigger such relocation requirements because the Young Street Apartments would be vacant much before the Applicant applied for such financing, which would occur toward the end 2025, and which is the trigger for HUD tenant relocation requirements.

3.F. Building Types

3.f. Describe each proposed building; the type of construction being proposed; the dwelling unit mix including the types of units by bedroom size, the total number of each type of unit and floor area for each type; the square feet attributable to common areas in the buildings; the square feet of non-residential spaces on the site, if any; project amenities; and, proximity to services and employment.

BUILDING TYPES AND THEIR RESPECTIVE CONSTRUCTION TYPES

The structures will be separated into two (2) components: high-rise and parking structure.

The high-rise component utilizes the tunnel form system which is a series of contiguous concrete shear walls that run from grade to the top of the building. Hawaiian Dredging Construction Company, Inc. (Hawaiian Dredging) pioneered the use of tunnel forming in Hawaii high-rise construction. While tunnel forms are common to low- and mid-rise applications, Hawaiian Dredging was one of the few contractors in the nation to perfect its use on high-rise construction. Over the years, Hawaiian Dredging has developed the expertise to apply this economical and highly efficient building method to meet the structural demands of today's modern projects while also maintaining the design aesthetics for both residential and resort projects.

Figure 6 - Photo Example of Tunnel Form Placement

The use of concrete for the walls and floors aims to address three primary concerns with high-rise structures. First, acoustics is a major issue with multi-family housing; however, the use of concrete helps to isolate noise over framed construction. Second, the resiliency of concrete holds up against day-to-day abuse and is able to withstand the use by tenants over a period of time. And third, concrete is critical against *force majeure* and ensures tenant safety. The Project is outside of the flood zone, but the use of concrete prepares the structure against any tidal or flooding forces caused by tsunamis.

The base of the structure will utilize auger cast piles that are designed to carry the load of the high-rise to the ground. These piles will range in various depths to ensure that the structure is anchored. Piles will prevent buoyancy and will keep the structure in place should inundation of the soil from rains or flooding occur.

The parking structure will use slab-on-grade with post and beam concrete structure on top. Up-turned beams will provide vehicle barriers on the exterior with vehicle barrier tension cables on the inside. If the development budget allows per the Developer's best judgement, above the parking structure will be a Photovoltaics (PV) array. Steel beams will likely be utilized to support the PV system and to provide the necessary support for any cable runs.

Tower

Table 2 - Tower Livable and Common Area SF Allocation by Floor

	Area Allocation (SF)		
Floor	**Livable**	**Common**	**Total**
23	7,400	1,690	9,090
22	7,400	1,690	9,090
21	7,400	1,690	9,090
20	7,400	1,690	9,090
19	7,400	1,690	9,090
18	7,400	1,690	9,090
17	7,400	1,690	9,090
16	7,400	1,690	9,090
15	7,400	1,690	9,090
14	7,400	1,690	9,090
13	7,400	1,690	9,090
12	7,400	1,690	9,090
11	7,400	1,690	9,090
10	7,400	1,690	9,090
9	7,400	1,690	9,090
8	7,400	1,690	9,090
7	5,282	2,404	7,686
6	5,282	2,404	7,686
5	5,282	2,404	7,686
4	5,282	2,404	7,686
3	5,336	3,273	8,609
2	5,336	2,848	8,184
1	4,702	7,685	12,387
Total	**154,902**	**50,462**	**205,364**

The residential tower (the "Tower") contains 247 units and 205,364 SF of gross floor area (154,902 SF is living area and while the remaining 50,462 SF is for common area, amenities, etc.). Table 2 demonstrates the allocation of dwelling unit area to common area at each of the 23 floors. There is no commercial retail or parking component in the Tower.

The building's leasing and management offices, mailroom and parcel room are located on the ground floor. Additionally, there are seven residential units located on the ground floor.

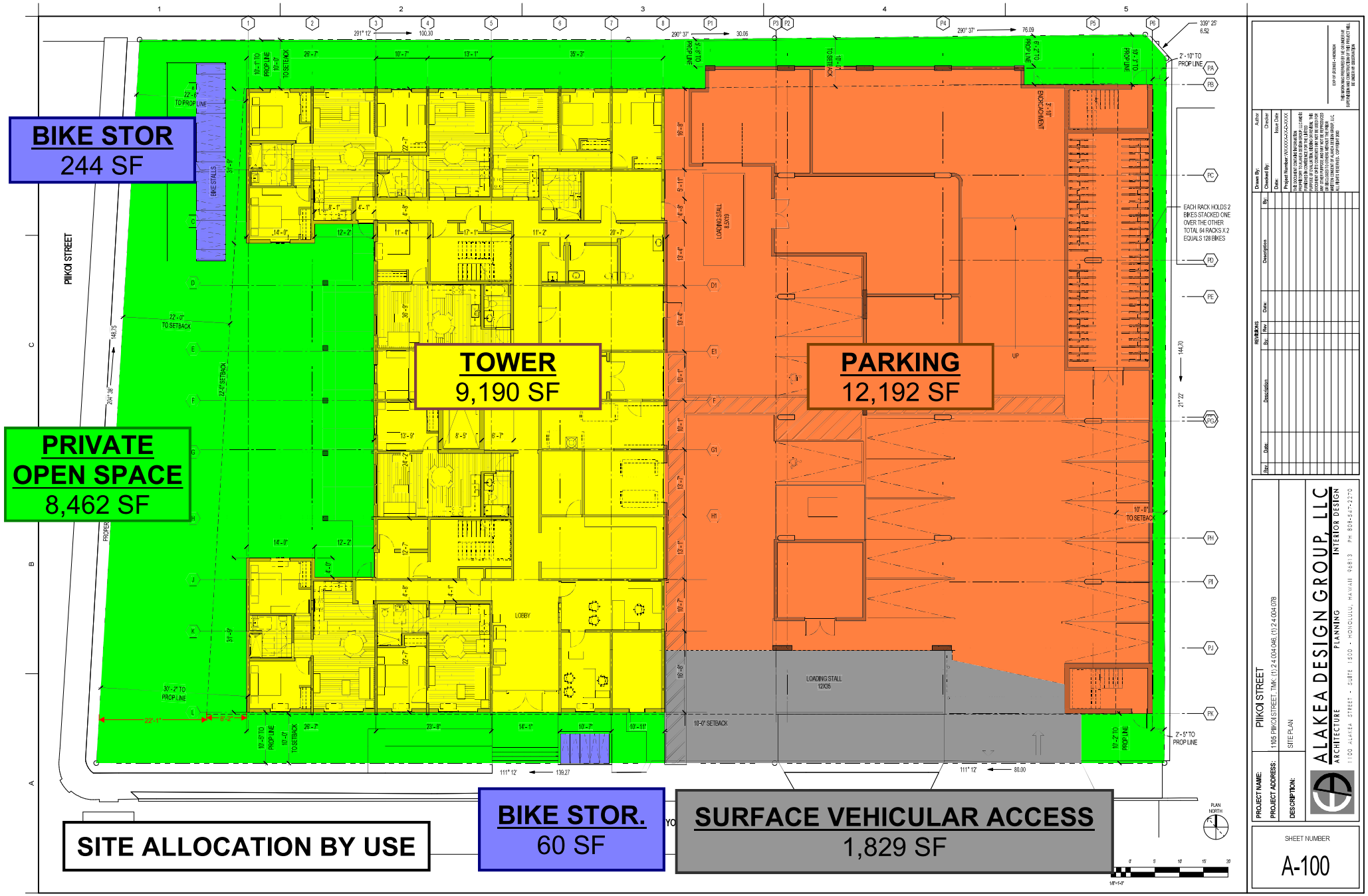
A community room open to all residents is located on the second floor and totals 517 SF. A communal laundry room and resource/fitness center is located on the third floor and totals 528 SF and 517 SF, respectively.

The tower stands 23 stories with a top deck at 198'10" excluding the rooftop mechanical equipment and wind turbine which will add an additional 23' to stand at 221'10". The typical residential floor starting on floor eight will contain 12 units consisting of one (1) studio unit, five (5) one-bedroom units, five (5) two-bedroom units, and one (1) three-bedroom units. Floors one through seven have slightly less units due to the parking structure being integrated into the building on those floors. Floor one has seven (7) units and floors two through seven have eight (8) units.

Figure 7 through 12 below are provided to show the uses by floor. Greater detail is provided in **Appendix M Use Exhibit**.

Furthermore, the unit floor plans are incorporated in subsequent sections.

Figure 7 - First Floor By Use



PROJECT NAME: PIIKOI STREET
PROJECT ADDRESS: 1105 PIIKOI STREET, TMK: (1) 2-4-004:046; (1) 2-4-004:078
DESCRIPTION: SITE PLAN

ALAKEA DESIGN GROUP, LLC
ARCHITECTURE PLANNING INTERIOR DESIGN
1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH 808-545-2270

SHEET NUMBER
A-100

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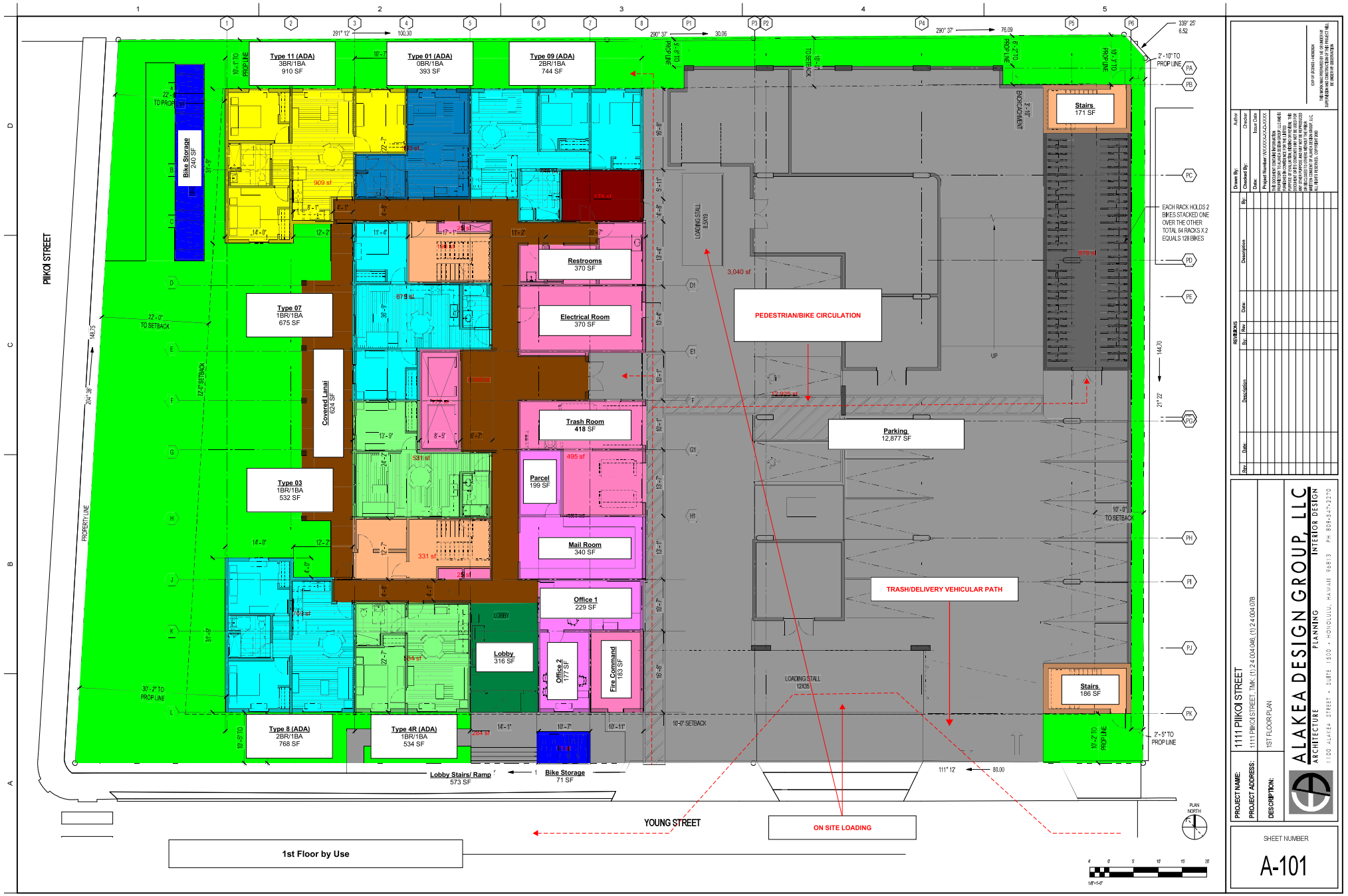

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PROJECT NAME: 1111 PIIKOI STREET
PROJECT ADDRESS: 1111 PIIKOI STREET, TMK: (1) 2-4-004:046; (1) 2-4-004:078
DESCRIPTION: 1ST FLOOR PLAN

ALAKEA DESIGN GROUP, LLC
ARCHITECTURE PLANNING INTERIOR DESIGN
1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH 808-545-2270

SHEET NUMBER
A-101

Figure 8 - Tower Second Floor Uses by Area

Figure 9 – Tower Third Floor Uses By Area

Figure 10 - Tower Fourth thru Seventh Floor Uses by Area

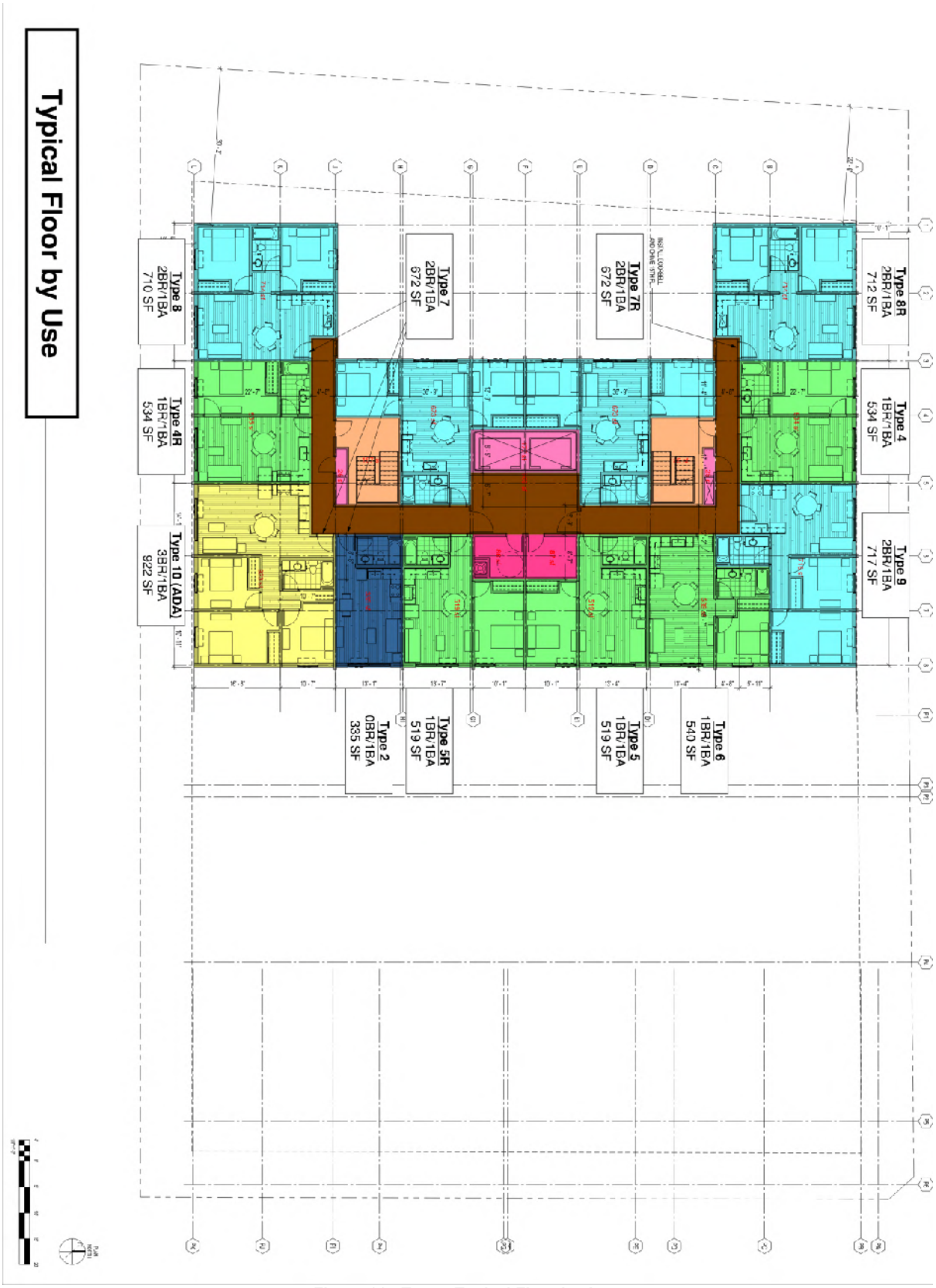


Figure 11 - Tower Typical Floor by Area

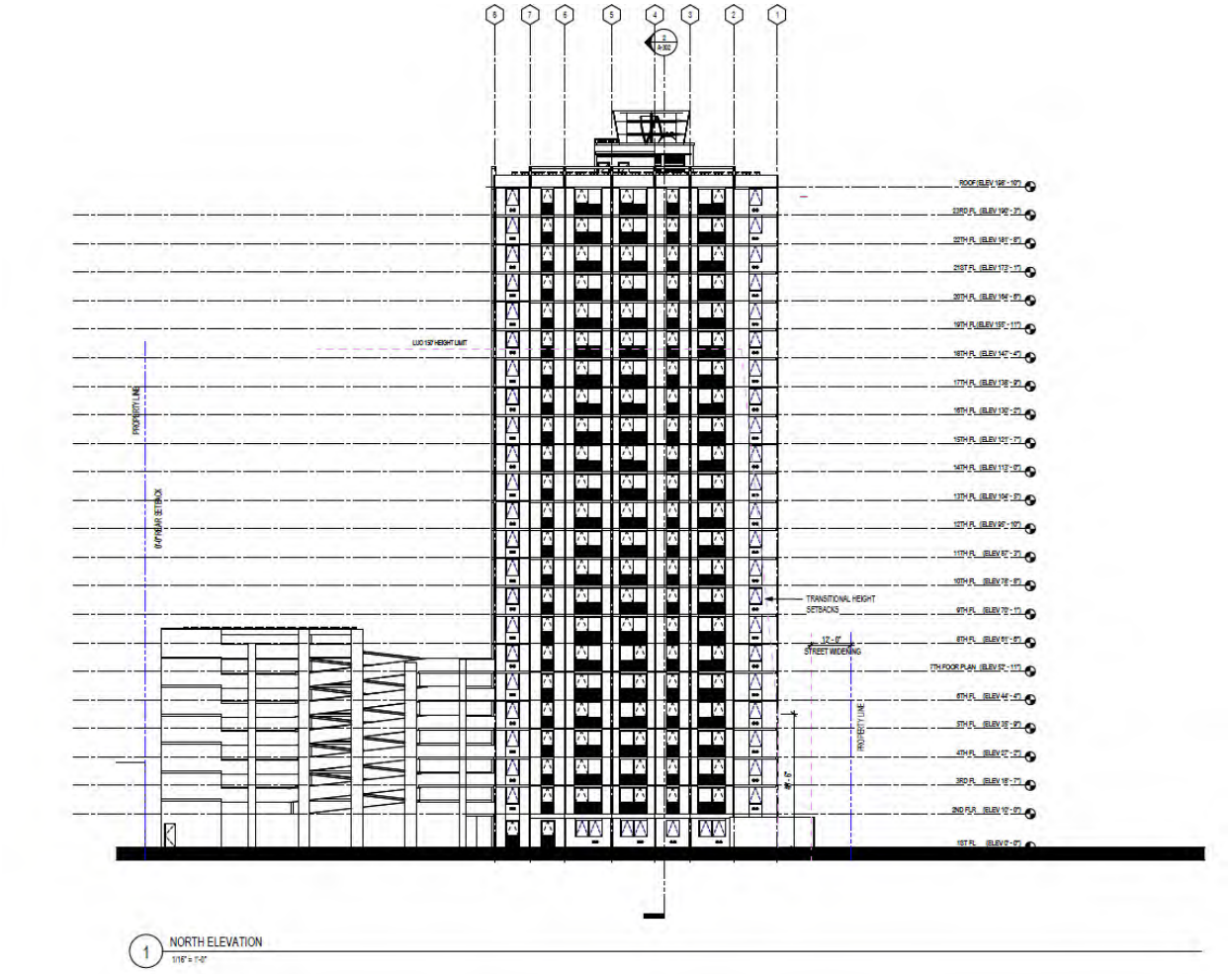


Figure 12 - Tower Plan North Elevation

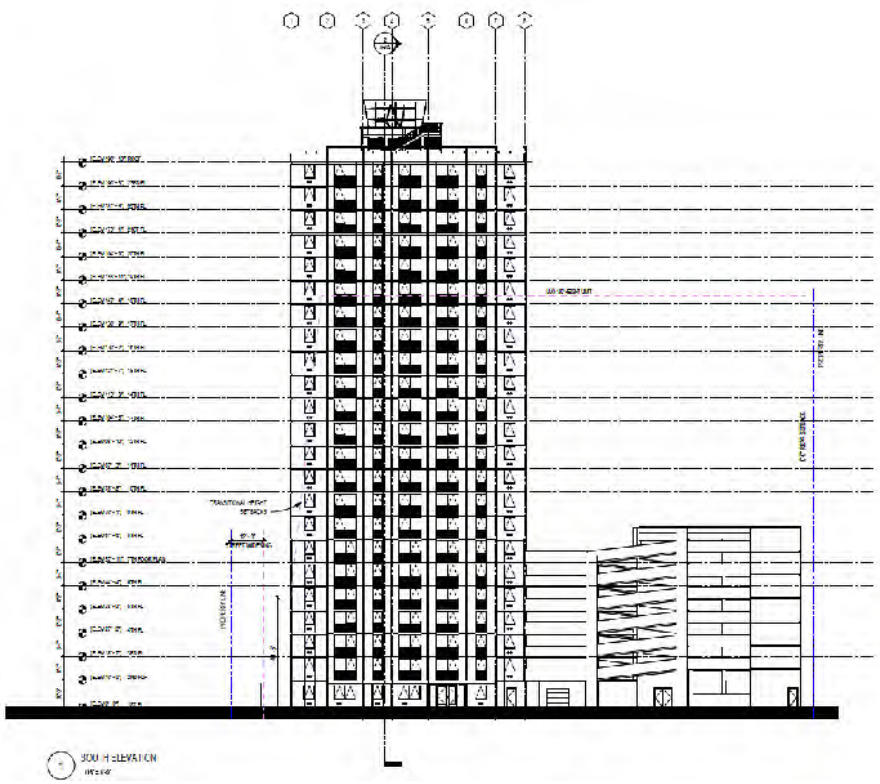


Figure 13 - Tower Plan South Elevation

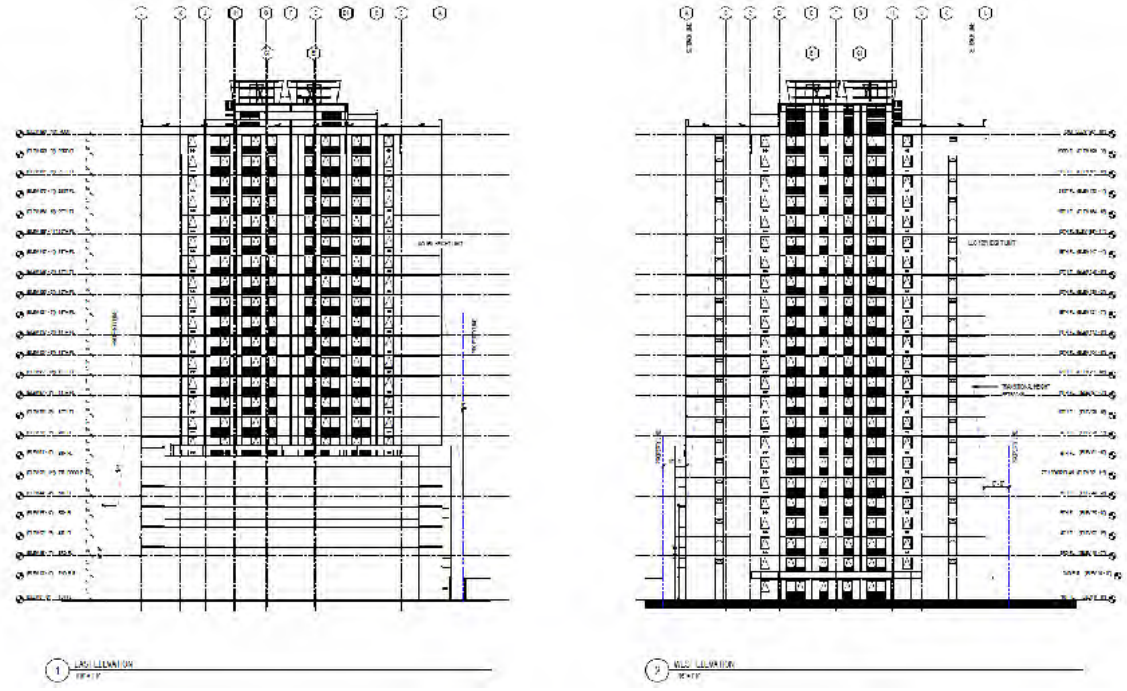


Figure 14 - Tower Plan East and West Elevations

Parking Structure

The high-rise parking structure is composed of seven stories standing approximately 65' tall and is designed as a separate structure to the residential podium.

Figure 15 - Aerial Rendering of Project Facing Mauka

Entrance to the parking structure is off of Young Street via two entrances, one for residents (entrance further east) and one for employee/service vehicles (entrance further west). Unlike the residential tower, the parking structure will utilize post-tensioned slabs supported by reinforced concrete columns and beams. The parking structure is integrated into the east side of the residential tower replacing various residential stacks on floors 2-7. This design accommodates a separate parking structure and residential tower on the 32,000 SF site. Additionally, by integrating the parking structure into the residential tower, it eliminates the need for, and associated cost of, an additional wall for the west side of the parking structure by utilizing a Tower wall. There is access from each floor of the parking structure into the residential tower, allowing residents to park on the same floor as their unit and walk directly into the Tower. (See **Figure 10 - Tower Fourth thru Seventh Floor Uses by Area**). Each floor of the parking structure has access to open air. Within the parking structure on the ground floor is an 889 SF bike storage room that is locked and secured for tenants to use and can house up to 128 bicycles in a stacked configuration. A fire exit stairwell is located in the northeast corner of the parking garage. Various mechanical equipment, including a pump room, emergency generator, and electrical room are also located on the ground floor of the parking structure. The parking structure is designed to accommodate service vehicles such as trash trucks onsite in the Loading Stall zone in between Young Street and the parking structure. Although onsite, the Loading Stall area is outside of the parking structure and allows service vehicles to enter via the eastern access point and exit via the western access point in one forward motion which is more efficient and safer. Traffic stanchions and chains can be used to restrict access to the Loading Stall area when not in use.

Atop the roof deck the Developer will reserve space for a field of PV panels, which address two common problems in affordable rental projects: (1) reduction of the “heat island” effect by shading the top surface of the parking deck and (2) offsetting the energy demands from both buildings. The parking façade as designed allows for the installation of an aesthetic artistic screen of a floral design that would provide an artistic element to the building façade.

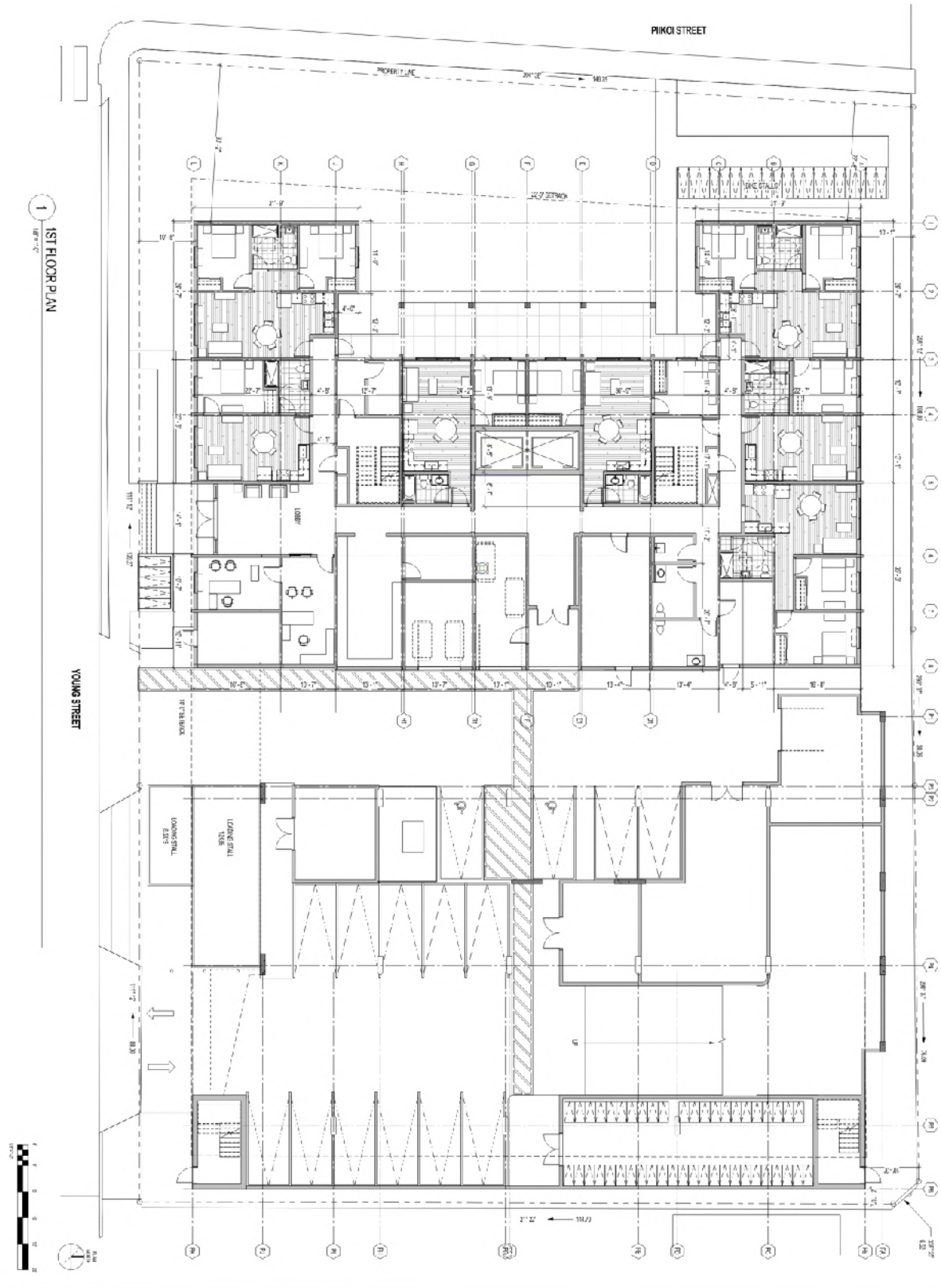


Figure 16 – Tower and Parking First Floor Schematic Plan

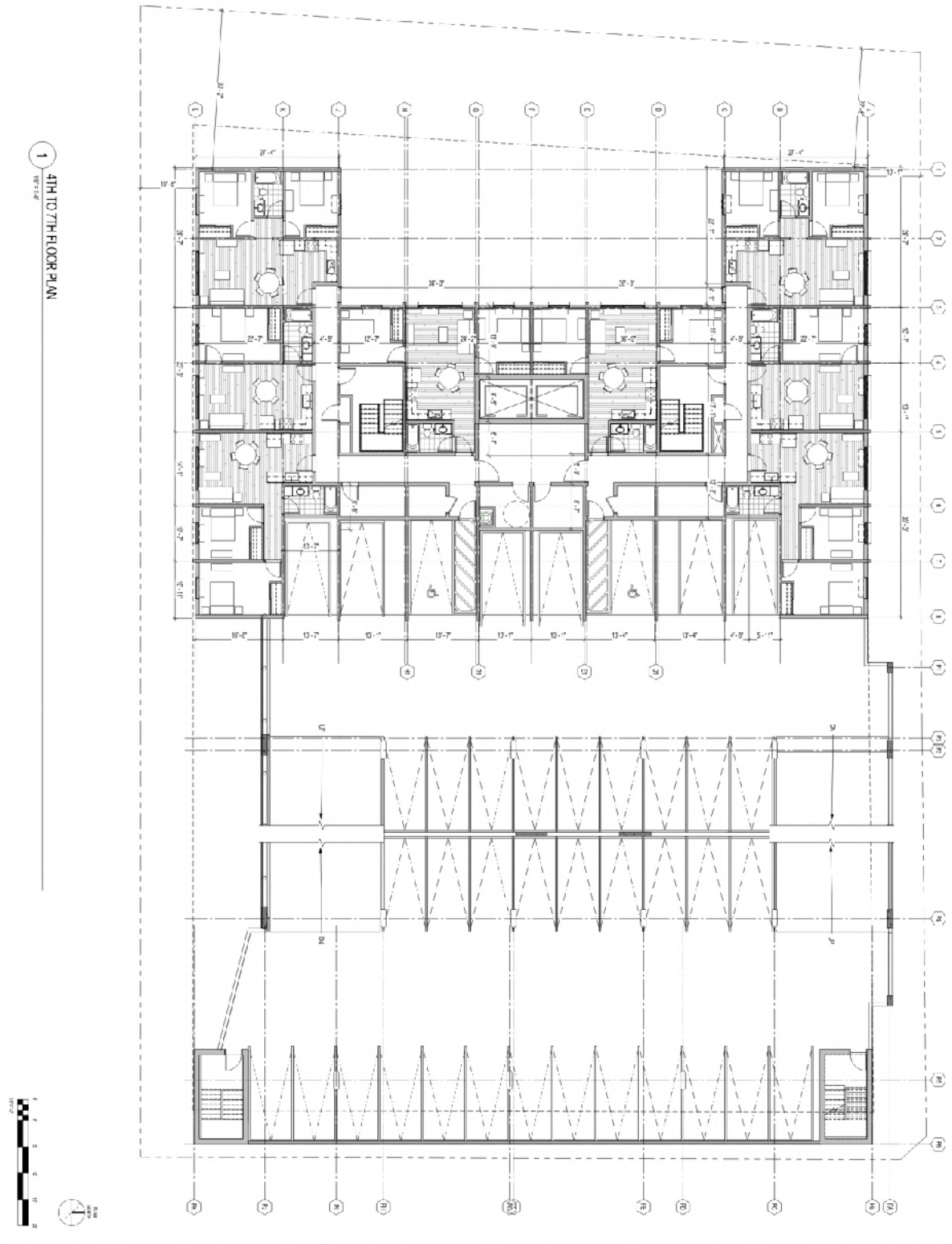


Figure 17 - Tower and Parking 4th thru 7th Schematic Plan

DWELLING UNITS AND UNIT MIX

Overall Dwelling Unit Mix

The Project is largely targeted to serve families considered "Low Income" by the U.S. Department of Housing and Urban Development (HUD), and Hawaii Housing Finance and Development Corporation – less than 60% of the AMI. The Project's mix of housing allocates 233 (95%) of units to families earning 60% of the AMI or less and 13 (5%) of units allocated to families earning 30% of the AMI or less. One unit will be reserved as a manager unit.

Notwithstanding any future changes that the Applicant may make, **Table 3** below illustrates an intended unit mix by bedroom count and affordability with all units, excluding the manager unit, reserved for renters at the 60% AMI level and below. As the Project and/or market demand evolve, the Applicant may elect to reallocate units and/or unit types to different income categories (for example, reallocating a 30% AMI unit to a one-bedroom floor plan from a studio floor plan). Furthermore, provided that HHFDC adopts rules in the future to allow for "average income" qualifications as defined by the IRS and allowed in other states, the Developer may change some units allocated to the 60% AMI category to the 80% AMI category which will be offset by other units allocated to the 40% AMI category so that the average income category of all units is not greater than 60% of the AMI.

Two-bedroom units intentionally constitute 48% of the Project mix. The Applicant, using internal and external market data sources, anticipates that the largest demand for urban living amongst the target demographic will be young families with an average of one child.

The following **Table 3 - Summary of Allocation of Units to Income Categories by Bedroom Size** shows the allocation of units by bedroom size and AMI level.

Table 3 - Summary of Allocation of Units to Income Categories by Bedroom Size

	Bedroom Count:					
AMI	**0br**	**1br**	**2br**	**3br**	**Total**	**% of Total**
30%	13				13	5%
60%	4	93	119	17	233	94%
Manager Unit		1			1	0%
Total	17	94	119	17	247	100%
% of Unit Mix	7%	38%	48%	7%	100%	

Table 4 below provides approximate gross areas according to each plan type.

Table 4 - Average Unit Areas by Affordability and Bedroom Type

	Average Unit Size (SF):			
AMI	**0br**	**1br**	**2br**	**3br**
30%	339			
60%	335	530	702	921
Manager Unit		677		
Average	338	531	702	921

Additionally, each unit will have its own bathroom, kitchen, and air conditioning with living spaces floored with carpet for comfort and to muffle sound while wet areas will have a durable vinyl product. Units will enjoy air-conditioned spaces, wifi, and modern fixtures and appliances.

Studios

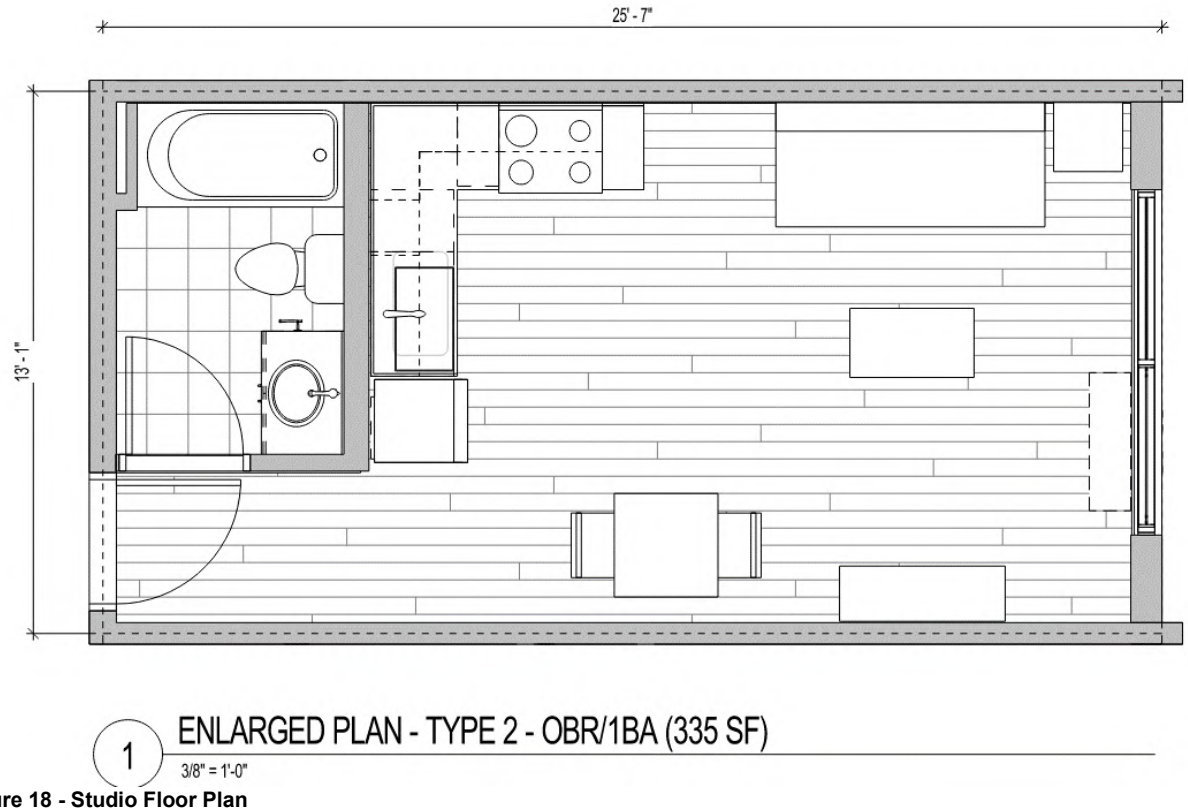


Figure 18 - Studio Floor Plan

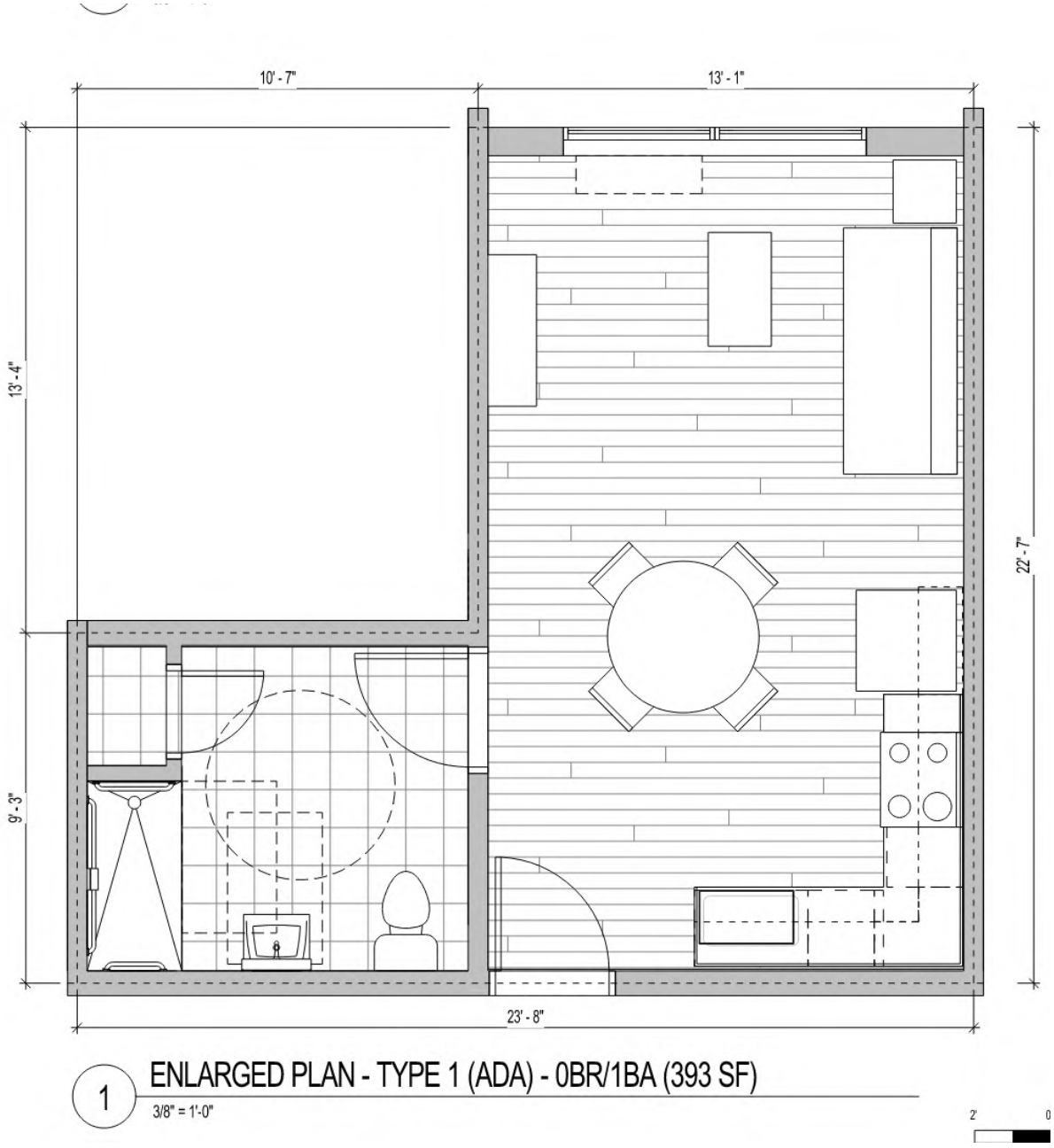


Figure 19 - Studio ADA Floor Plan

One Bedrooms

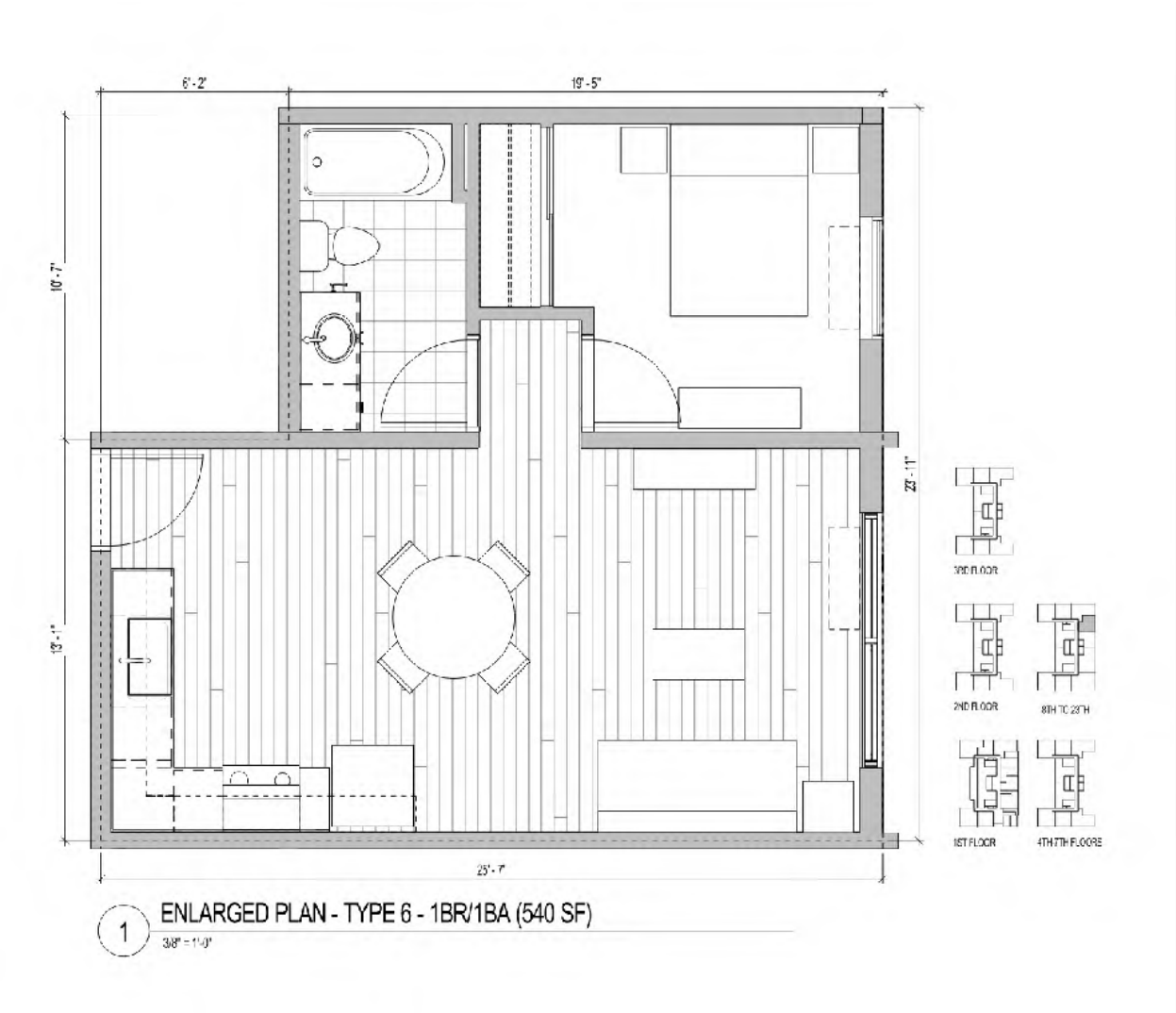


Figure 20 - One Bedroom Floor Plans

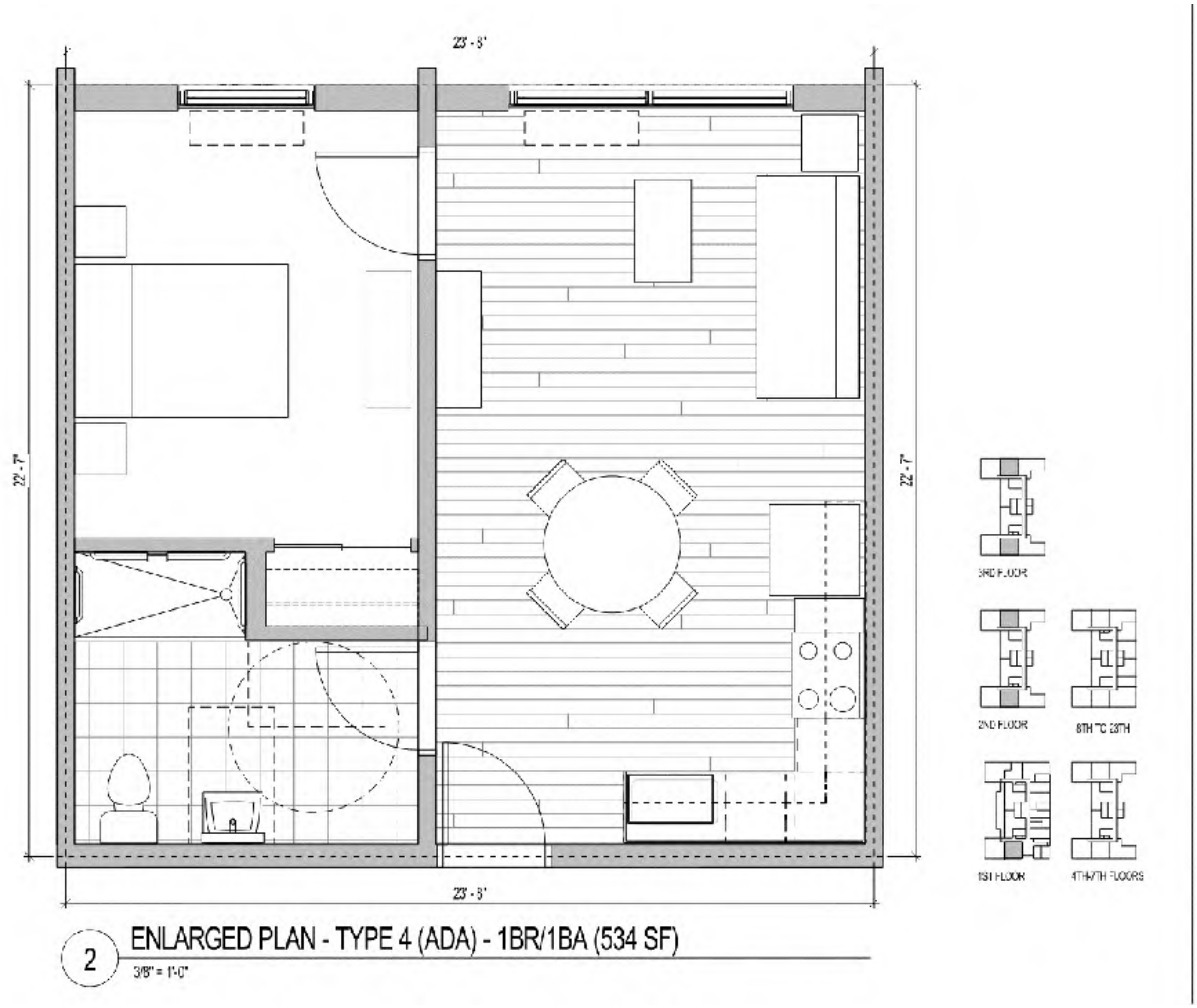


Figure 21 - One Bedroom ADA Floor Plan

Two Bedrooms

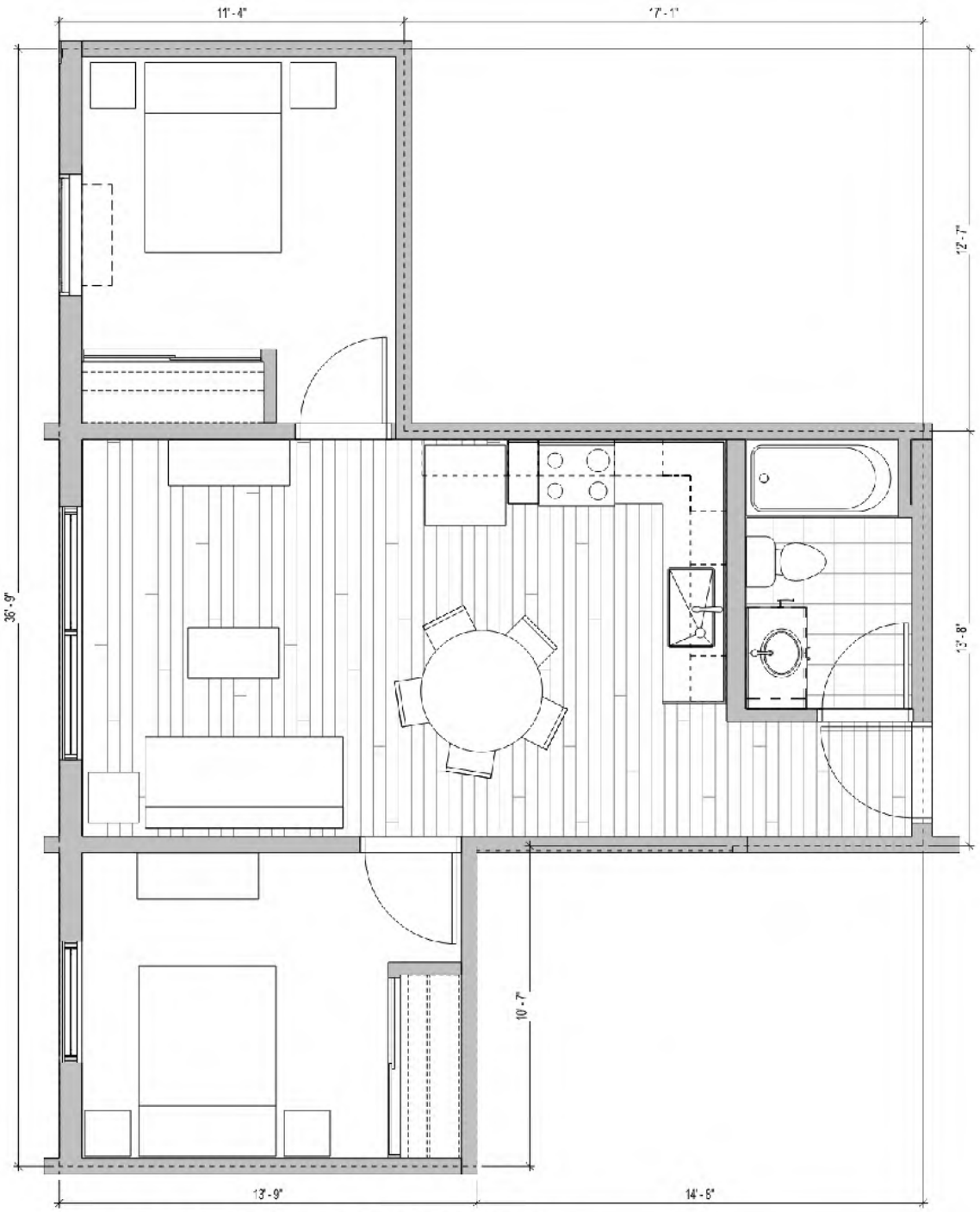


Figure 22 - Two Bedroom Floor Plans

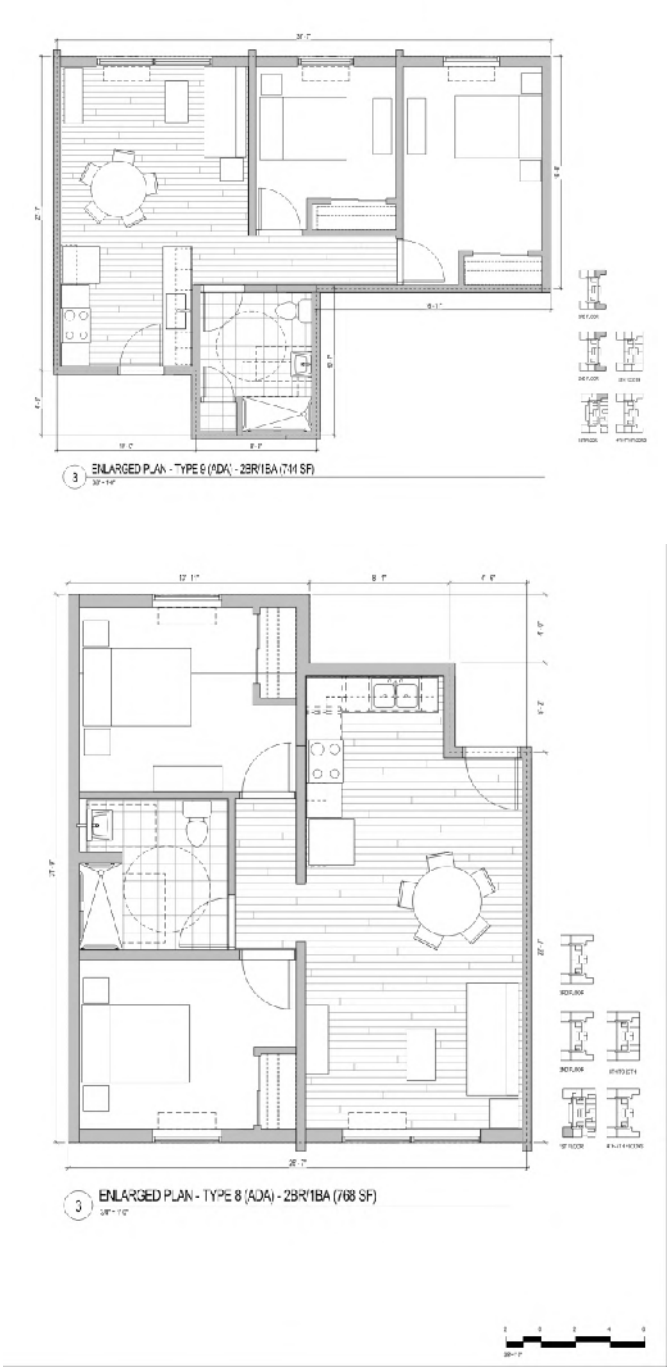


Figure 23 - Two Bedroom ADA Floor Plans

Three Bedrooms

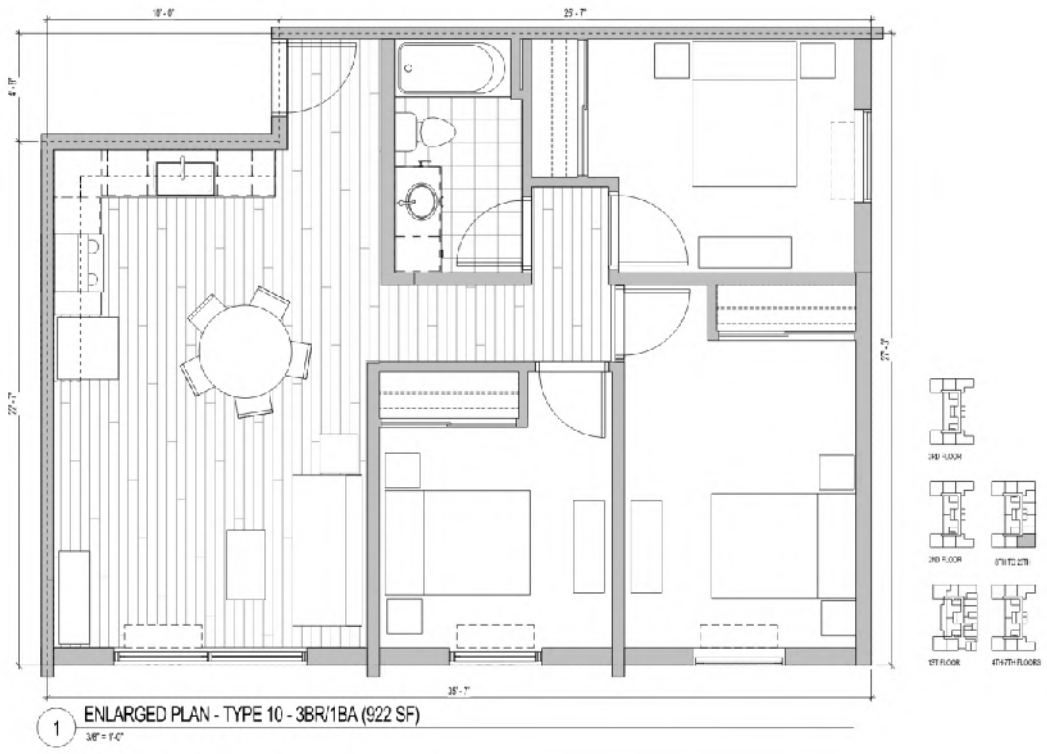


Figure 24 - Three Bedroom Floor Plan

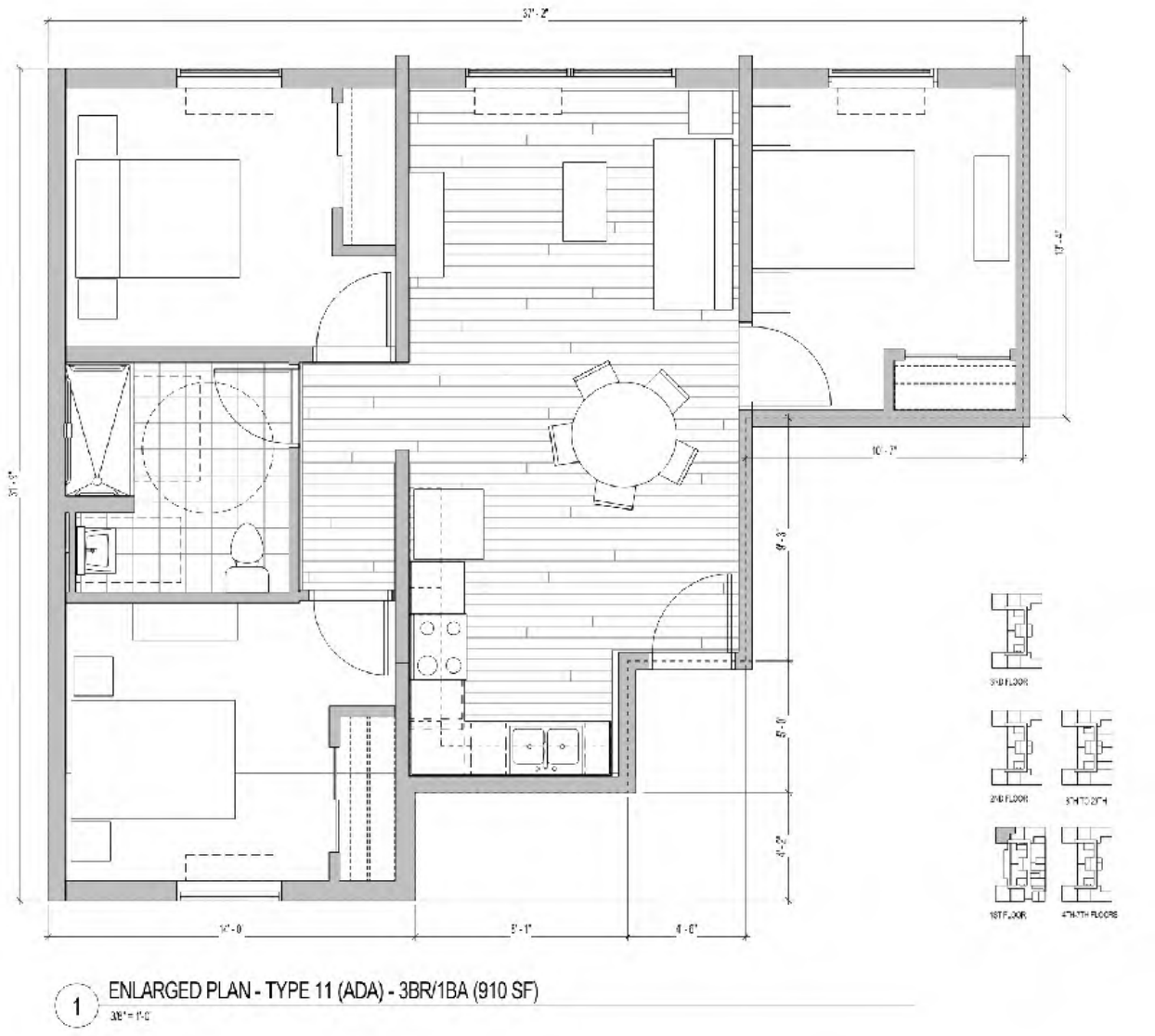


Figure 25 - Three Bedroom ADA Floor Plan

USES BY AREA

The Project site comprises two parcels yielding a total 31,977 SF (approximately 0.73 acres) as per **Table 5** below. Further noted in **Table 6** are the allocations of the land area by each use or building type. Lastly **Table 7** outlines the allocation of area between livable space, common area, and parking area.

Table 5 - Land Parcels by Area

TMK	SF	Acres (Approx)
(1) 2-4-004:046	20,019	0.460
(1) 2-4-004:078	11,958	0.275
Total	**31,977**	**0.734**

Table 6 - Land Usage by Structure Area (SF)

LAND USES BY STRUCTURE AREA			
OPEN SPACE	8,462	SF	26%
BIKE STOR - PIIKOI	244	SF	1%
BIKE STOR - YOUNG	60	SF	0%
TOWER	9,190	SF	29%
PARKING	12,192	SF	38%
SURFACE VEHICULAR	1,829	SF	6%
TOTAL	**31,977**	**SF**	**100%**

Table 7 - Building Components by Area

Residential Tower			Parking Garage
Livable Area SF	Common Area SF	Gross Area SF	Parking Area SF
154,902	**50,462**	**205,364**	**88,724**
a	b	(a+b) = c	d

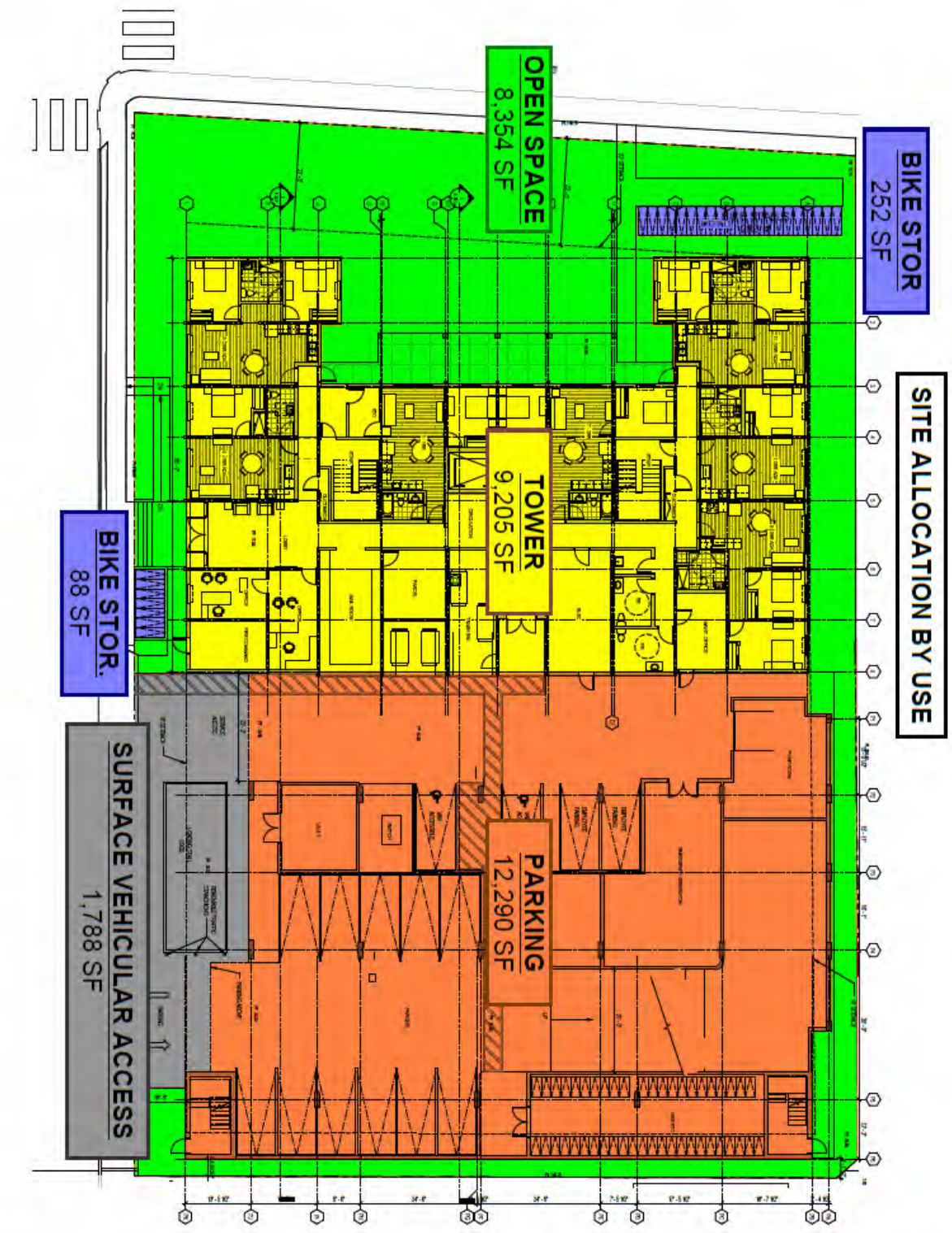


Figure 26 - Allocation of Land Area by Use

AMENITIES AND PROXIMITY TO SERVICES/EMPLOYMENT

Building Amenities

Building amenities include a community room of 517 SF located on the second floor. The community room will be available for all residents and can be used to host social events, building townhalls or personal meetings, and implement certain social services in conjunction with the Developer's non-profit partner, Komohale Services LLC. A 517 SF resource center which is preliminarily dedicated as a fitness center, and a 528 SF laundry room which will include the appropriate number of washers and dryers to service all residents, is located on the third floor. In the front of the building along Piikoi Street is an open-air lawn area for residents to lounge that can be accessed from two entrances along the Piikoi Street side of the building. The front lawn creates an aesthetic open area for residents and softscape visual relief for pedestrians and vehicular riders along Piikoi Street. The parking garage on the ground floor includes an 889 SF bicycle storage room for residents to securely store their bicycles and that houses 128 bicycles.

Education Facilities

Queen Ka'ahumanu Elementary School is located approximately 250' to the northwest at the intersection of South Beretania Street and Piikoi Street. It serves grade levels kindergarten through 5th grade. Additionally, it includes a Federal Head Start preschool program.

Robert Louis Stevenson Middle School (Stevenson Middle) is located one mile north of the Project site. In 2008, Stevenson Middle became the Department of Education's first Science Signature School (S4) emphasizing science, technology, engineering and mathematics (STEM). Stevenson Middle is also a designated Advancement Via Individual Determination (AVID) school, in alignment with its mission to utilize innovative, exciting and learner-centered practices.

McKinley High School is approximately 0.3 miles to the southwest along Pensacola Street. It serves grade levels 9th through 12th and enrolls approximately 1,500 students annually. The high school offers a differentiated education approach by providing "Freshman Houses" where a team of teachers for different subjects share the same students allowing teachers to support their students' progress in all classes.

Medical Facilities

Straub Medical Center (Straub) is 0.5 miles west at the intersection of Ward Avenue and South King Street. Straub is a fully integrated not-for-profit health care provider with 159 medical beds. With more than 500 physicians, Straub provides its patients with more than 32 different medical specialties, including bone and joint, heart, cancer, endocrinology/diabetes, family medicine, gastroenterology, geriatric medicine, internal medicine, women's health, vascular and urology. Straub is home to the Pacific region's only multidisciplinary burn treatment center. Straub is an affiliate of Hawaii Pacific Health.

Additionally, 0.3 miles west is Kaiser Permanente Medical Office, one of America's leading health care providers and not-for-profit health plans. The facility at the intersection of Pensacola Street and South King Street provides Urgent Care and pharmacy services among others.

Grocers, Supermarkets, and Commercial Outlets

On the King Street and Beretania Street corridors there are various commercial centers providing a wide array of goods and services. Some notable centers include Safeway and Times Supermarket one block north, Petco and Walgreens one block west, DAISO one block southwest, and Foodland Farms and Whole Foods one mile south. As a predominately commercial neighborhood, there are various restaurants, food, home goods, business services, religious and recreational outlets in the immediate vicinity.

Major Employment Centers

Ala Moana Shopping Center, the world's largest open-air shopping center, is located one mile south of the Project site. Ala Moana has more than 350 shops and restaurants, and over 160 dining options. Waikiki, the island's main tourist district, is located 2.3 miles southeast of the Project site. O'ahu's downtown central business district, which serves as headquarters to some of the island's largest businesses, is located 1.4 miles west of the Project site.

3.G Access, Parking, and Modes of Transportation

g. Identify the number of resident, guest, and handicapped parking spaces, bicycle stalls, loading stalls, and how the site will be accessed by vehicles, pedestrians, and people on bicycles.

PARKING (RESIDENT, GUESTS, AND COMMERCIAL)

As itemized below, the Project will have a total of 243 parking spaces, comprised of 229 standard stalls, 12 ADA compliant stalls, and two ADA van stalls. Of the Projects 229 standard stalls, two will be reserved for management employees and/or services vehicles and the remaining will be for residents. The ratio of parking stall to residential units equates to approximately 1 to 1. The following **Table 8** displays how parking is allocated across the parking structure.

Table 8 - Parking Allocation by Type

Parking Count				
LEVEL	STD	ADA	ADA VAN	TOTAL
7	37	2		39
6	37	2		39
5	37	2		39
4	37	2		39
3	33	2		35
2	35	2		37
1	13		2	15
TOTAL	**229**	**12**	**2**	**243**
Total Parking			**243**	

The Parking Structure's electrical distribution system is being planned to accommodate several future EV charging stations.

BICYCLE AND NON-VEHICULAR STORAGE

Over 150 bicycle stalls are planned for the Project. On the ground floor of the parking structure is an 899 SF bicycle storage room that can accommodate 128 bikes stalls. Residents can access the bicycle storage room through the parking garage and exit with their bicycles onto Young Street through the parking garage entrance. Short-term bike storage is provided along the Piikoi Street side of the building and the Young Street side of the building. This includes 20 bike stalls along Piikoi Street and 5 bike stalls along Young Street for a total of 25 short-term stalls. A paved path is provided from the short-term bike stalls to the residential tower.

ACCESS

Pedestrian

The main lobby access to the residential Tower will be located on the south side of the building off of Young Street on the ground floor. Tower access is also provided directly from all seven levels of the parking structure. The design allows seven levels of residents to avoid using the elevator assuming those residents park on the same level of their unit, thereby reducing elevator usage and wait times.

Two accesses to the residential tower are also available from the Piikoi Street side of the building via the front lawn. A walkway is provided to connect the Piikoi Street sidewalk through the front lawn to the building's Piikoi Street side entrances. Both accesses to the Tower from Piikoi and Young Street include short-term bike stalls. All access points into the building will be ADA compliant.

Vehicular

The main vehicular access is on the southeast corner of the parking structure off of Young Street thereby isolating ingress/egress as far from the Piikoi and Young Street intersection as possible. An employee/service vehicle access is located to the west of the main resident access along Young Street. A service vehicle loading stall/zone area is located adjacent to Young Street on-site outside of the parking structure. It is accessed through the main resident vehicular driveway and exited through the employee access driveway, thereby allowing service vehicles, such as trash trucks, to pull in and out of the premises in one forward direction and off of Young Street. Traffic stanchions and chains can be used to restrict the loading zone area when not in use.

LANDSCAPING

The overall goal of the proposed landscape improvements is to provide outdoor spaces that enhance the outdoor experience for residents and their guests. In addition, the new landscape improvements create an attractive addition for residents, neighbors, and vehicular travelers to a predominately built environment along Piikoi Street and Young Street.

The proposed landscape improvements strive to:

- Aim to create a landscape with a distinct Hawaiian character and heritage using Hawaiian and Polynesian plant materials;
- Seek to introduce patterns embedded in the paving and hardscape surfaces, inspired by

Hawaiian prints and natural plants at the woonerf areas;

- Be planned to incorporate a laʻau type community garden area for residents;
- Install irrigation systems and controls designed to minimize water demand by the use of low-volume drip systems and high-efficiency spray systems in order to maximize water conservation.

Plants are generally selected for their low-maintenance qualities and coordinated with property management. The use of soil mix with high drainage properties are usually used to best accommodate the native plantings.

3.H Existing Utilities and Required Permits

h. Describe the existing water, sewer, drainage, roads, and electrical improvements and what additional improvements and other permits and/or approvals are needed to accommodate the project. Explain the status of those permits and/or approvals.

The proposed improvements are readily serviced by existing utilities located in the immediate vicinity. Electrical and telecommunications services are located in overhead lines.

EXISTING WATER

The Project will continue to be serviced by the existing water system. The Project will result in a significant increase in water demand. The new domestic water and fire protection water meters that currently serve the Project are expected to be upgraded as part of the development. The project operator will likely implement water conservation efforts upon completion. Notwithstanding the increase in demand for the site, the Board of Water Supply has stated that the existing water system can accommodate the Project.

EXISTING WASTEWATER

Approval from the City and County of Honolulu Department of Planning and Permitting for municipal sewer system connection to accommodate the proposed Project has been issued to the Applicant. Sewer mains are located along each street frontage, and an appropriate sewage connection system will be designed in consideration of the most effective connection points.

EXISTING DRAINAGE

The Project site presently drains towards the intersection of Piikoi Street and Young Street where a curb and gutter system collects and conveys stormwater. The Project will be required to control drainage according to prevailing drainage regulations. All storm water runoff from the proposed improvements will be reviewed for conformance with City and County of Honolulu Ordinance 96-34 which addresses peak runoff.

Best Management Practices (BMPs) will be employed prior to the start of construction to ensure that runoff in the storm drain system is treated for minimal impact into State receiving waters. Additionally, Low Impact Design features will be considered for the Project.

EXISTING ROADS

Piikoi Street, a major mauka-makai oriented thoroughfare owned by the City and County of Honolulu, will border the site. Piikoi Street is a one-way thoroughfare mauka bound. Young Street, a minor east-west thoroughfare owned by the City and County of Honolulu that runs perpendicular to Piikoi Street will provide main resident and vehicular access to the Project. Young Street is a two-way thoroughfare.

EXISTING ELECTRICAL

Telephone and electrical services are available to the Project site both along Piikoi Street and Young Street. Coordination with the local electric and telephone service providers will be expected during the design and construction phases.

REQUISITE PERMITS

Permits and approvals that may be required are contingent upon the actual design of the proposed Project. All other permits and approvals are generally ministerial in nature.

State Agencies

Permit or Approval	**Approving Agency**
National Pollutant Discharge	Dept. of Health
Community Noise Permit / Variance	Dept. of Health
Archeological Inventory Survey	State Historic Preservation Division, DLNR
Archeological Monitoring Plan	State Historic Preservation Division, DLNR

County Agencies

Permit or Approval	**Approving Agency**
Chapter 201H Approval	Honolulu City Council
Building Permits	Dept. of Planning and Permitting
Certificate of Occupancy	Dept. of Planning and Permitting
Construction Dewatering Permit	Dept. of Planning and Permitting
Grading and Stockpiling Permits	Dept. of Planning and Permitting
Sewer Connection Permit	Dept. of Environmental Services
Trenching Permit	Dept. of Planning and Permitting
Erosion Control Plan/Best	Dept. of Planning and Permitting
Traffic Review Branch	Dept. of Planning and Permitting

Management Practices

Permit or Approval	**Approving Agency**
Permit to Work Within County ROW	Dept. of Transportation Services

3.I. Topography and Soils

Describe the topography and soils and what mitigation is needed, if any, to accommodate new structures, access, and stormwater management.

TOPOGRAPHY

The Project site consists of flat urban lands occupied by one (1) mid-rise three-story residential walk-up. The entire block, except for Parcel 46, is fully developed with residential or commercial improvements. The Project site is located within a highly urbanized environment and is essentially devoid of any plant material. Additionally, the site does not serve as a habitat for wildlife.

SOILS

A Geotechnical Exploration and Assessment was prepared by NOVA and is attached as **Appendix K Geotechnical Report.** The Geotechnical Report concluded that Project site appears to be underlain by conditions that are generally favorable for the proposed development from a geotechnical standpoint.

The subsurface profile of the Project site consists of about 4' to 6' of clayey silt. Beneath the silt, a stratum of basaltic sands (cinders) occupies the dirt to a depth of about 15' below current grades. Below a depth of 15', a stratum of coral sands interbedded with intact coral resides. The coral sands are generally in a medium dense to very dense condition. At depths around 17' to 40' is basaltic bedrock.

To provide for proper support of the heavier structural elements, a system of deep foundations are required. Typical deep foundation systems employed in the area include auger cast piles and drilled piers.

Section 4: Proposed Exemptions

List the proposed exemptions and reference the applicable ordinance sections; their approximate dollar value, as applicable; the degree to which they deviate from development standards of the underlying City and County zoning, as applicable; and justification for each exemption sought.

Appendix D Proposed Exemptions provides a table that includes all listed exemptions, the respective ordinances or statutes of the exemptions, the dollar value of the exemptions, and the degree to which the Applicant requests said exemptions. Applicant's requested exemptions are largely fee exemptions that will provide financial support to the Project's overall feasibility.

Additionally, the following is a list of certain key design requirements per the LUO that similar type 201H processed affordable projects typically ask for exemption that the Applicant is not requesting for exemption here because it was able to incorporate such design requirements in the Project.

Development Standard or Requirement	**Relevant Section**	**Development Standard Explained**	**Proposed Project Development Standard**
Off-Street Parking Stalls	ROH Section 21-6.110	For dwellings, 1 per 1,000 square feet of private dwelling or lodging area.	The LUO requires 155 parking stalls; the Project includes 243 parking stalls.
Front Yard Setback	ROH Section 21-3.120-2	Front: 10 feet	The front of the Project respects the 10' setback from Piikoi Street and Young Street.
Off-Street Loading Stalls	ROH Section 21-6.110	2 for dwelling units between 151 and 300 units.	The Project includes 2 loading stalls.
Bicycle Stalls	ROH Section 21-6.40	Long-term bicycle stalls of 1 for every 2 dwelling units Short-term bicycle stalls of 1 for every 10 dwelling units	The LUO requires 124 long-term bicycle stalls and 25 short-term bicycle stalls. The Project will include 128 long-term bicycle stalls and 25 short-term stalls.

Section 5: Sewer Capacity (DPP WWB)

Submit a letter from DPP's Wastewater Branch confirming the capacity to connect to the municipal sewer system or from the DOH documenting approval for an alternative treatment system.

See **Appendix F Infrastructure Availability Letters.**

Section 6: Water Availability (BWS)

Submit a letter confirming availability of water from the Board of Water Supply or describe how water will otherwise be made available.

See **Appendix F Infrastructure Availability Letters.**

Section 7: Electrical Capacity (HECo)

Submit a letter from the local electricity provider confirming the availability of electricity.

See **Appendix F Infrastructure Availability Letters.**

Section 8: Development Schedule

Provide the project development schedule.

Prior to submitting this 201H application, the Applicant has met several key milestones including:

1. Confirming water and sewer capacity from the Board of Water Supply and City and County
2. Confirming electrical capacity with HECO
3. Completing a traffic study for the Project to analyze the traffic impact
4. Conducting geotechnical testing
5. Finalizing the Project Schematic Design
6. Notifying tenants, neighbors, and key affected community groups of the Project plans
7. Presenting to the Makiki Makiki-Tantalus and Ala Moana-Kakaako Neighborhood Boards
8. Receiving notice of exemption from Environmental Review and preparation of an Environmental Assessment (EA) by the City and County
9. Receiving HRS Chapter 6E-8 Historic Preservation Review from the State Historic Preservation Division (SHPD)
10. Completing "Phase 1" Pre-Consultation meeting, and "Phase 2" Determination of Eligibility with the DPP
11. Completing a Phase 1 Environmental Assessment

The critical path for the Project is entitlements (201H approval). Subsequent to 201H approval, the Applicant will submit for building permits. The Applicant intends to submit for financing from the Hawaii Housing Finance & Development Corporation (HHFDC) for Low-Income Housing Tax Credits (LIHTC), Hula Mae Multi-Family (HMMF) Tax-exempt Bonds, and Rental Housing Revolving Fund financing in February of 2025. If awarded in the 2025 financing round, which is scheduled to occur in Q2 of 2025, and assuming building permits are issued, the Applicant will proceed to closing of debt financing and LIHTC equity (Financial Close) followed by construction in Q1 of 2026.

Provided herein as **Table 9: Project Milestones** is a listing of milestones and their respective start and finish dates. Highlighted rows indicate completed tasks.

Once in construction, the Developer will abate and demolish the existing Young Street Apartments structure then will proceed to grade the site and install under-ground utilities in preparation for vertical construction of the Tower and Parking Structure. Construction of the Tower will commence first followed by the Parking Structure commencing approximately 10 months after the start of the Tower.

The construction of the Tower is the critical path to project completion. For that reason, the

Developer planned for the Tower to make use of the “Tunnel Form” construction methodology in lieu of a post-tensioned slab to take advantage of the four-day pour cycle typical in a Tunnel Form tower. Ideally, the use of Tunnel Form will slate delivery of the Tower (and by extension, the Project) within 26 months. Pursuant to the below schedule, the Developer anticipates receiving a Certificate of Occupancy in May of 2028 with lease up complete in Q3 2028.

Table 9 - Project Milestones

MILESTONE	**START**	**FINISH**
ARCHITECTURAL DESIGN	12/21/2023	1/24/2025
TRAFFIC STUDY	2/14/2024	5/1/2024
NEIGHBORHOOD BOARDS	4/18/2024	4/23/2024
CIVIL ENGINEERING	1/16/2024	1/10/2025
ENTITLEMENTS (201H PROCESSING)	2/22/2024	11/7/2024
HHFDC FINANCING PROCESS	12/16/2024	3/27/2026
CONSTRUCTION		
DEMOLITION OF SITE IMPROVEMENTS	3/30/2026	7/31/2026
TOWER	8/24/2026	5/5/2028
PARKING GARAGE	6/10/2027	3/14/2028
FINAL PREP	5/5/2028	5/16/2028
OPERATIONS		
LEASE-UP + STABILIZATON	5/16/2028	8/16/2028

Section 9: Project Management and Operation Plan

Provide a project management plan, including a sales and/or rental plan that ensures affordability to the target population.

Property Manager and Resident Manager Duties

A Property Manager (PM) will be hired to manage the Property. Duties of the PM include, but are not limited to, implementing leasing processes, maintaining and inspecting the Property, implementing House Rules, providing monthly financial reports to the Developer, and keeping appropriate records of Property financials and tenant data for State and Federal compliance purposes.

The Project will have an on-site resident manager (RM). The duties of the RM will include, among others, leasing, waitlist management, compliance processing, supervision of contractor performance, general property maintenance, unit inspections, and house rules and lease enforcement.

The PM, RM, and support staff will maintain high ethical and professional standards and possess technical skills and knowledge in the following areas:

- Hawaii Residential Landlord-Tenant Code
- State and Federal Fair Housing laws
- Americans with Disabilities Act
- Low Income Housing Tax Credit program (LIHTC)
- HUD programs
- RHRF program
- HOME Program
- State Section 8 program
- Budget preparation and capital improvement project planning and execution

The PM will at all times attempt to keep the Property fully occupied by marketing and maintaining a waiting list of prospective residents. Applications will be available at the Property and on the property website. Applications can be mailed via postal service or emailed to the PM. All applications shall be processed in the order of receipt, dated and time stamped and placed on the appropriate waiting list by bedroom number per AMI% (Area Medium Income). Selection of the residents will be the responsibility of the PM.

Advertising will be placed in the local newspapers, on internet rental sites, the Property's website, and other media deemed appropriate by the Developer and PM, and availability information will be forwarded to social services organizations (internal and external network), neighborhood boards, and both City and State public housing authorities.

Tenant Selection and Verification Process

The selection of applicants for occupancy at the Property will follow Federal and State Fair Housing laws and regulations, including certification/verification requirement for specific funding programs. All applicants are required to complete the application issued by the PM. If they do not

do this, the application is incomplete and will not be considered for placement. Applicants who are on the waiting list will be notified as soon as it is known that a unit may be available. Applicants will then be required to complete all verification forms to determine if they meet the eligibility requirements for the Property. Before acceptance, written or verbal verifications is typically obtained from previous and/or present landlords (where possible) to determine the character of the applicant. Compliance staff shall confirm information provided by applicants, including verification of all household income, assets, allowances/expenses, household size, credit and background checks.

A verification request shall be signed for each source of income. These forms shall be mailed, faxed or emailed to each of the sources of income and assets. Applicants shall not be permitted to obtain their own verifications. Third-party verification is the most accurate method of verification and must be used whenever possible. If third-party verification cannot be used, then the applicant's file must be documented as to why another method was used. If third-party verification is impossible, then the HUD handbook must be consulted to determine other "Acceptable Forms of Verifications." The process used to verify an applicant's income and eligibility must be thoroughly documented in the applicant's file. Verifications shall be valid for a period of ninety (90) days from the date of receipt after which the information must be re-verified.

After each application is processed, the applicant must be promptly notified as to whether the applicant shall be (a) admitted to the Project, (b) placed on a waiting list for the next available unit or (c) rejected. If an applicant is determined to be ineligible because the applicant does not meet the tenant selection criteria, the applicant must be promptly notified in writing of that determination. The applicant's application and notice of non-acceptance must be maintained on file for a period of at least three (3) years.

The RM will be available to give access to the apartments and common area for prospective residents to view. When a prospective resident is approved and ready to move in, the resident will be briefed on the lease agreement, the House Rules, and other applicable legal and compliance forms.

Section 10: Maps

Submit a vicinity map and land use map from the appropriate Development or Sustainable Communities Plan.

Oahu General Plan Map

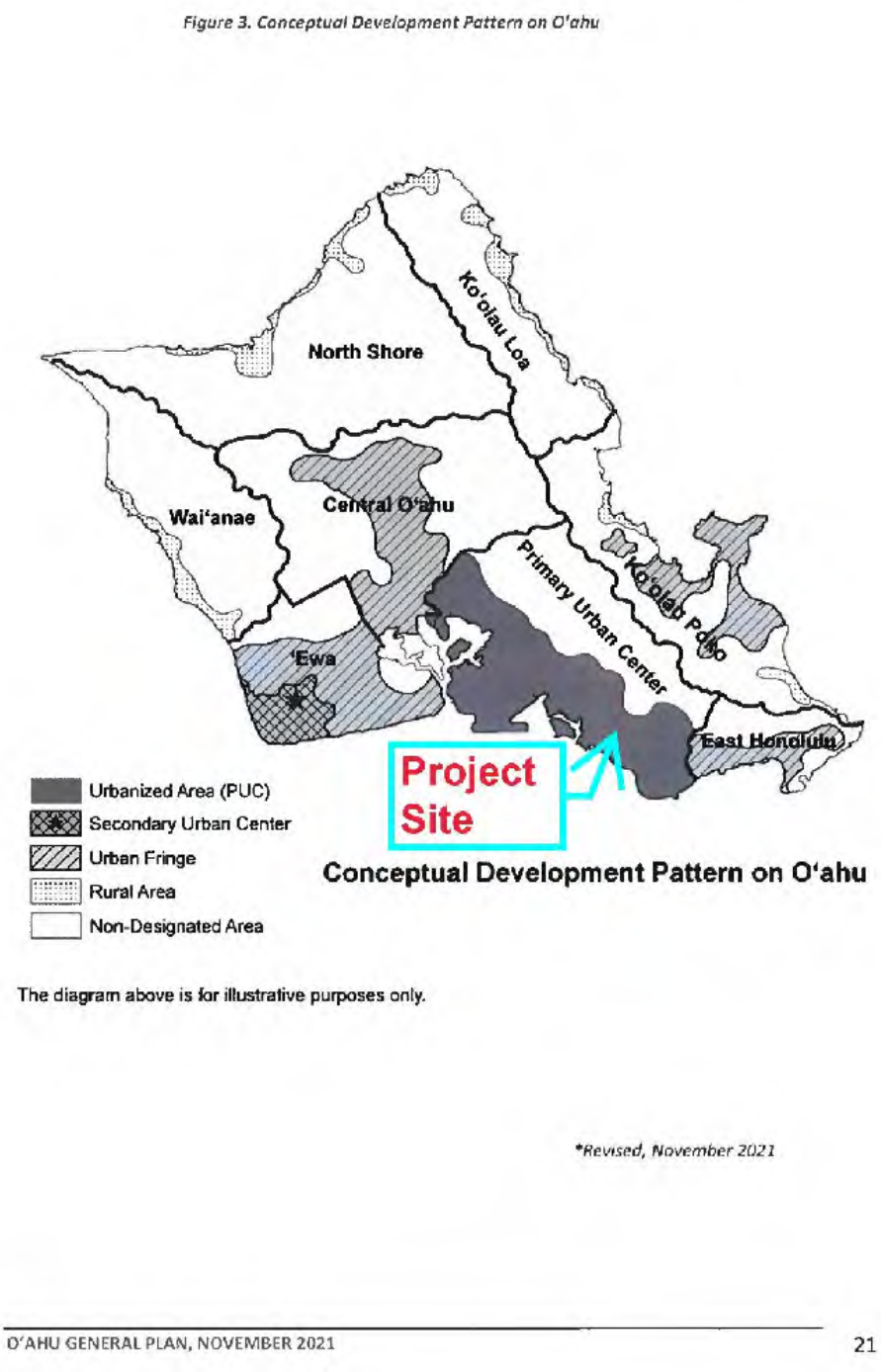


Figure 27 - Oahu General Plan Map

2004 Primary Urban Center Development Plan Map

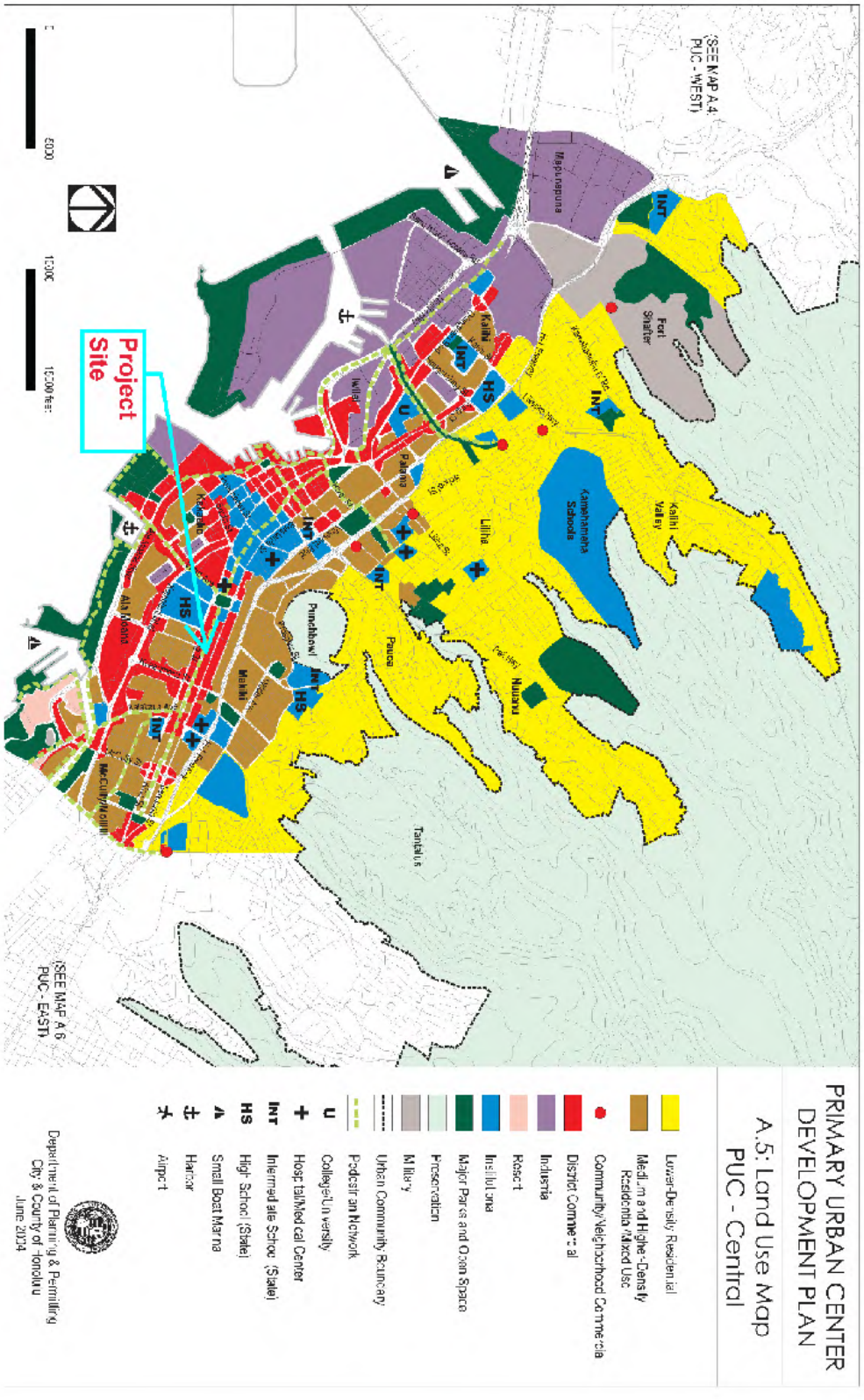


Figure 28 - Primary Urban Center Development Plan Map

2023 Proposed Primary Urban Center Development Plan Map

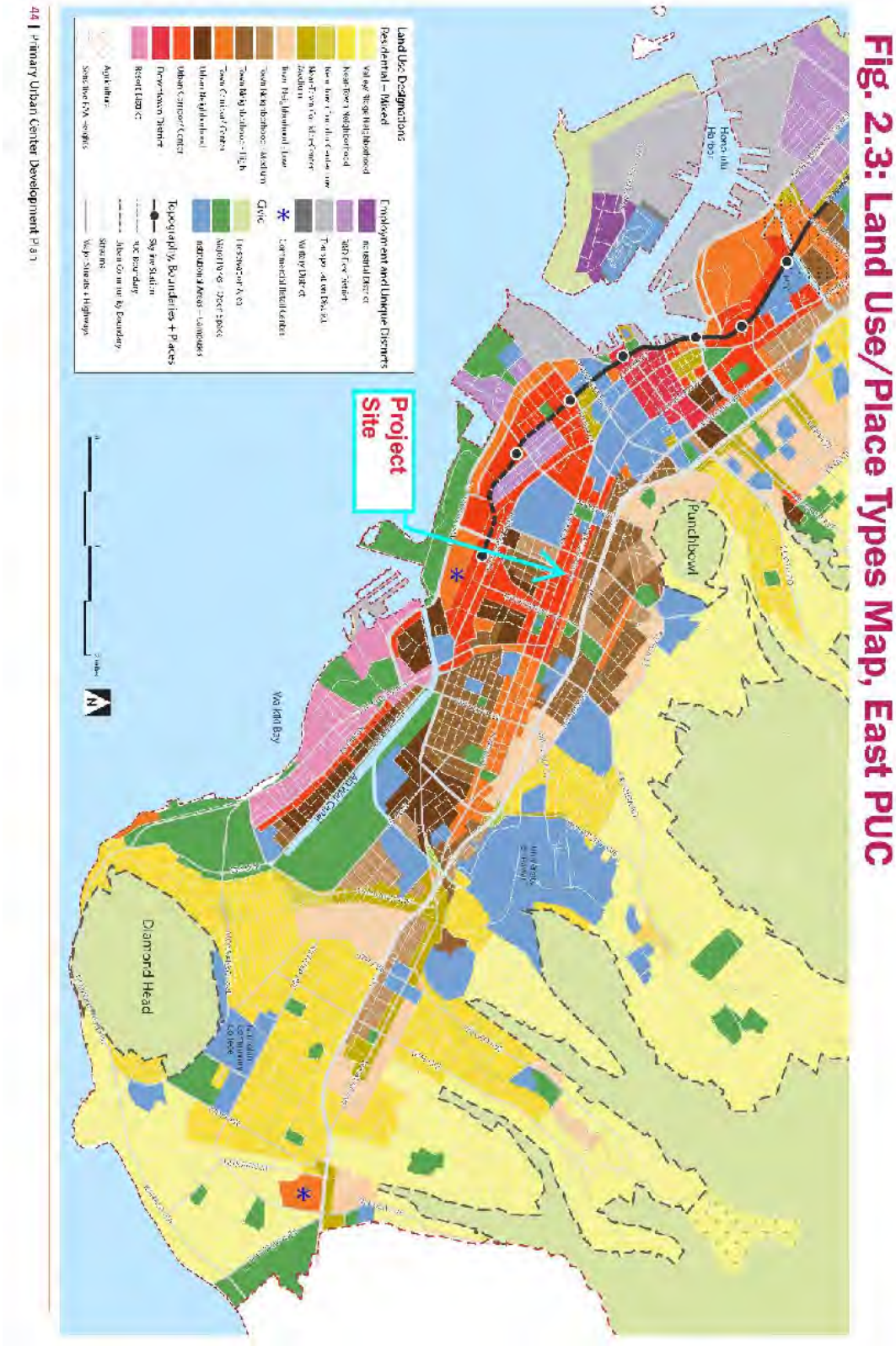


Figure 29 - Proposed Primary Urban Center Development Plan Map

City & County Zoning Map

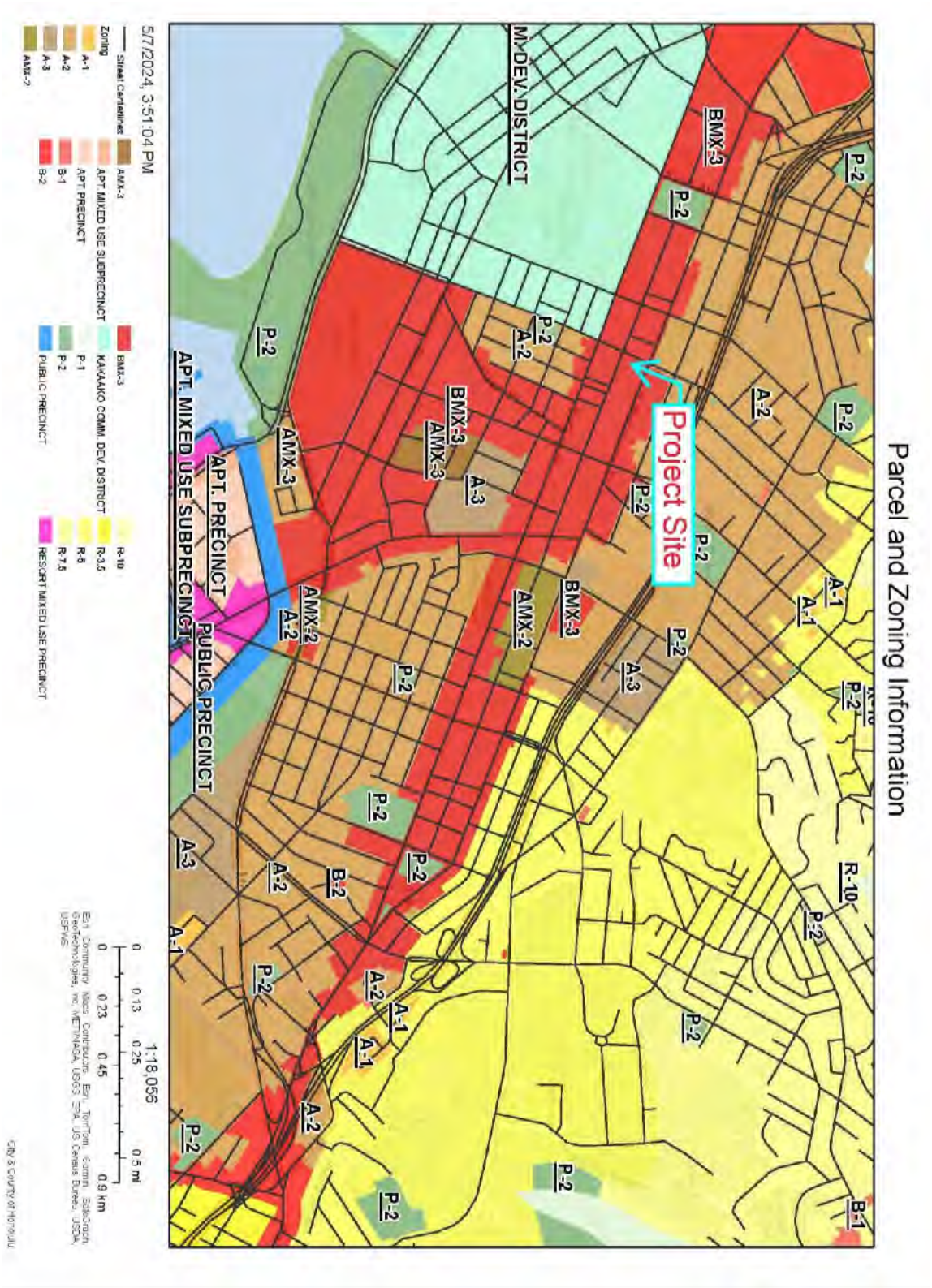


Figure 30 - City & County Zoning Map

City & County Complete Streets

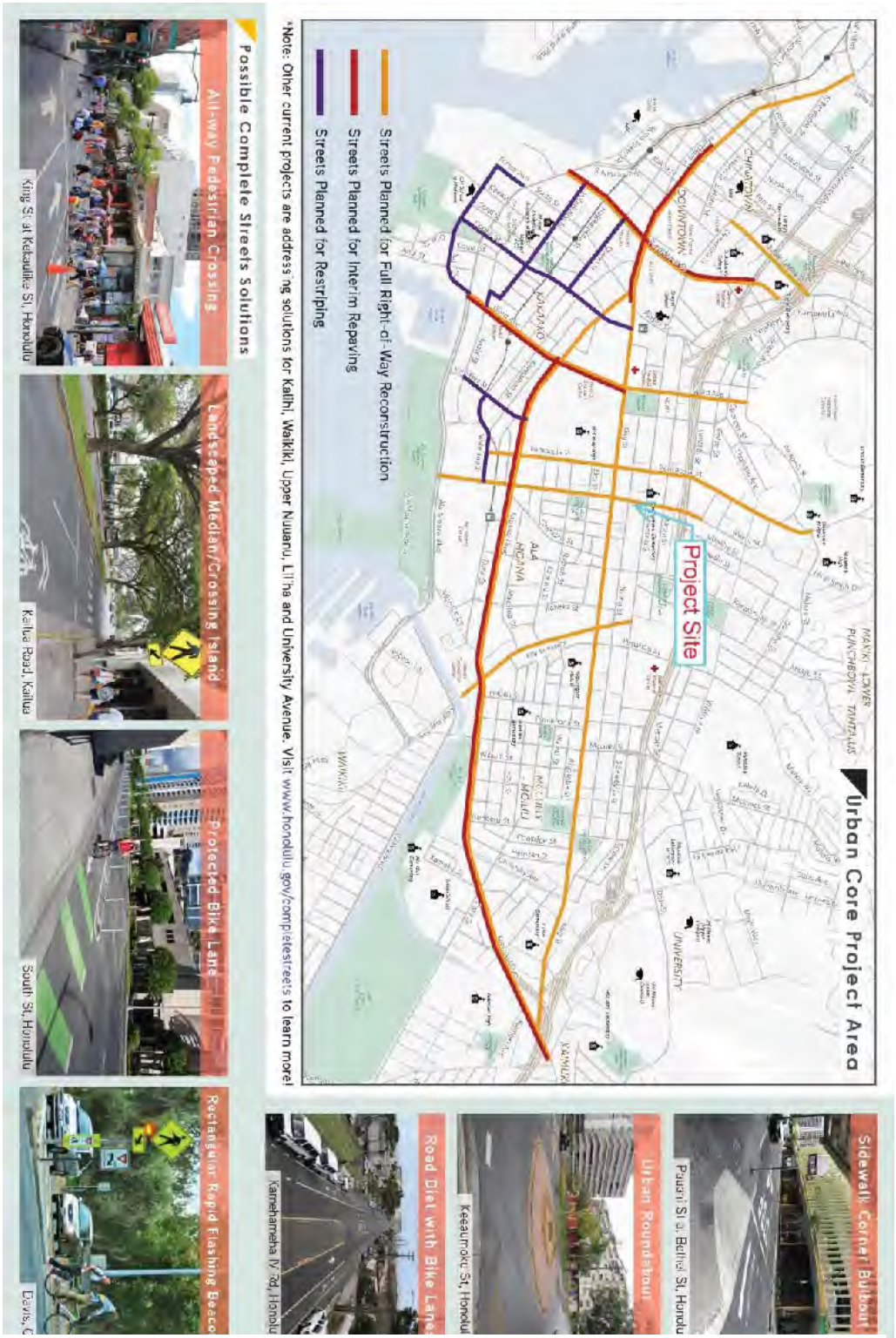


Figure 31 - City & County Complete Streets Map

Section 11: Plans

Submit two sets of fully dimensioned drawings and/or plans drawn to scale and prepared by a licensed professional. For document imaging purposes, one set of drawings shall be a maximum size of 11" x 17" and the second should not exceed 24" x 36". DPP staff may request additional copies after acceptance of the application. The plans shall include:

a. Property lines, lot areas, all existing and proposed easements with dimensions, and the purpose of easements.

b. Location of all existing and proposed improvements. Indicate if existing structures are to remain, be altered, or be removed.

c. The dimensions of proposed and existing buildings, and all setbacks from property lines.

d. Existing contours at vertical intervals of 5 feet where the slope is greater than 10 percent, and not more than 2 feet where the slope is less than 10 percent. Proposed grading must be shown with contours and spot elevations.

e. Preliminary floor plans and floor area calculations, showing all dimensions used in calculating proposed floor area and building area. Indicate the elements used in the calculation and include the tabulation of total proposed floor area and total allowable floor area.

f. Exterior building elevations and sections with dimensions and existing/proposed finish grades, including all building heights and envelopes measured from these grades. Provide the dimensions between structures.

g. Open space plans and area calculations, showing all dimensions and elements used in calculating these areas, including the total proposed and total required open space. (If bonus areas are used, provide calculations and indicate the applicable areas on the plans.) The open space plan should also specify 1) areas devoted to public, semi-public, and private open space, including parks, plazas, and playgrounds; 2) an integrated circulation system indicating proposed movement of vehicles, goods, pedestrians, and bicyclists within the project area and adjacent areas, including streets and driveways, sidewalks and pedestrian ways, bicycle lanes, bicycle tracks, and multi-use paths.

h. Off-street parking and loading plans and calculations with dimensions of all stalls, aisles, driveways and setbacks from property lines and proposed structures, showing the total number of proposed parking and loading stalls.

i. Preliminary landscaping and screening plans, with enough specificity such that compliance with the requirements of the Land Use Ordinance can be determined

See **Appendix M Use Exhibit.**

Section 12: Development Costs

12. A. Development Costs

Provide a breakdown of the development costs for the project. Indicate the total dollar amount in the form of cash (or equivalents), land, or "in kind" contributions that your organization will directly contribute to the project. "In kind" contributions may include, but are not limited to, donated construction materials or professional services (i.e., pro bono work by architects, engineers, attorneys, etc.). If land is part of your equity contribution, provide an estimate of the land value and how that number was derived i.e., if the land value is from an appraisal, include a copy of the appraisal. If your organization is not contributing any cash, land, or "in kind" goods and services to the project, please provide an explanation.

Table 10 Project Budget below details the summarized project costs. Further, and as shown in the chart below, the Project is estimated to cost approximately $146.3M with $99.9M (68%) in hard costs, $19.3M (13%) in Financing and Developer Fee, $10.6M (7%) in Reserve and Contingency, $9.0M (6%) in upfront land costs, and $7.5M (5%) in Soft Costs.

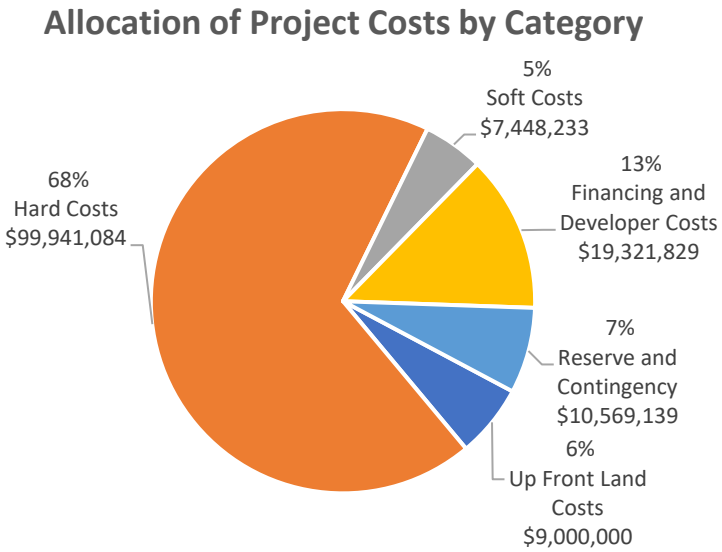


Figure 32 - Allocation of Project Costs by Use

Table 10 Project Budget

	Total $	$ Per Gross SF Excl. Parking	$ Per Gross SF Incl. Parking	$ Per Unit
Up Front Land Costs				
Ground Lease Premium [1]	$9,000,000	$44	$31	$36,437
Hard Costs				
Residential Podium	81,597,271	397	277	330,353
Parking Structure	14,000,023	68	48	56,680
Sitework	4,343,790	21	15	17,586
Total Hard Costs	99,941,084	487	340	404,620
Soft Costs				
Architect and Engineering	3,005,000	15	10	12,166
Consulting	599,500	3	2	2,427
Entitlement Reports	225,000	1	1	911
Legal Fees	250,000	1	1	1,012
Insurance	1,998,822	10	7	8,092
FF&E and Construction Management	1,369,911	7	5	5,546
Total Soft Costs	7,448,233	36	25	30,155
Financing and Developer Costs				
Financing Costs	8,321,829	41	28	33,692
Developer Fee Including Overhead	11,000,000	54	37	44,534
Total Financing and Developer Costs	19,321,829	94	66	78,226
Reserve and Contingency				
Start-up Reserves	2,573,853	13	9	10,420
Project Contingency	7,995,287	39	27	32,370
Total Reserves and Contingency	10,569,139	51	36	42,790
Total Project Costs	**$146,280,285**	**$712**	**$497**	**$592,228**

[1] Represents up front payment upon commencement of ground lease. Value negotiated between Landlord and Lessee and represents a market transaction value.

12. B. Sources of Financing

Identify the sources of all financing.

As currently planned, the Project will be funded by an amalgamation of Federal and State Low-Income Housing Tax Credits (LIHTC), Hula Mae Multi-Family Private Activity Bonds (HMMF), a senior loan insured by the United States Department of Housing and Urban Development (HUD), an equity-gap debt "soft-second" loan from the State of Hawaii's Rental Housing Revolving Fund (RHRF) as appropriated by the Hawaii State Legislature in its FY 2025 budget, a "bridge" loan from a commercial lender collateralized by LIHTC, and developer equity. **Table 11 – Construction (interim) Sources and Uses of Funds** below lists the estimated interim financing structure which will be in place from commencement of construction until certificate of occupancy. Upon the receipt of the Project's certificate of occupancy and achieving certain lender stipulated stabilization metrics, the Project's financing will convert to the permanent facilities detailed subsequently in **Table 12 - Permanent Sources and Uses of Funds**.

Note: Neither of the below tables reflect HMMF bonds as a source because the Applicant intends to issue a public offering of the bonds, collateralized with the sources of funds itemized below in order to achieve a higher rating on the bonds, and therefore a lower yield. Effectively, this makes the bonds a "pass thru" source of financing that are used to meet the "50% test" of IRC 42. Essentially, the Developer will use HMMF bonds to pay for at least 50% of the aggregate basis of the Project's cost, and the bonds are immediately funded back to the bond trustee from the sources below. Nonetheless, these bonds are a critical component of the capital stack.

Table 11 – Construction (interim) Sources and Uses of Funds

Sources & Uses - Construction/Interim		
Sources		
LIHTC Equity (Federal & State)	$	7,782,049
DURF Loan	$	-
RHRF Loan	$	39,520,000
Senior Loan (HUD 221D4)	$	32,173,158
Bridge Loan	$	56,030,750
GP Equity - Interim	$	-
Deferred Costs	$	10,774,329
Total Sources	**$**	**146,280,285**
Uses		
Up Front Land	$	9,000,000
Hard Construction Costs	$	99,941,084
Soft Costs	$	7,448,233
Interest	$	3,750,000
Financing	$	4,571,829
Reserves + Contingency	$	10,569,139
Developer Fees	$	11,000,000
Total Uses	**$**	**146,280,285**

Table 12 - Permanent Sources and Uses of Funds

Sources & Uses - Permanent		
Sources		
LIHTC Equity (Federal & State)	$	77,820,486
DURF Loan	$	-
RHRF Loan	$	36,286,641
Permanent Loan	$	32,173,158
Bridge Loan	$	-
Other	$	-
Developer Fees	$	-
Total Sources	**$**	**146,280,285**
Uses		
Up Front Land	$	9,000,000
Hard Construction Costs	$	99,941,084
Soft Costs	$	7,448,233
Interest	$	3,750,000
Financing	$	4,571,829
Reserves + Contingency	$	10,569,139
Developer Fees	$	11,000,000
Total Uses	**$**	**146,280,285**

12. C. Operational Subsidies

Specify whether any operating subsidies have been awarded or are being contemplated.

No operating subsidies have been awarded or are being contemplated.

Section 13: Applicant Experience

Describe the Applicant's experience developing or managing affordable housing.

STANFORD CARR DEVELOPMENT, LLC

Stanford Carr Development, LLC, ("**SCD**") which is responsible for some of the most recognizable and award-winning residential communities in Hawaii, has substantial expertise in all types of real estate development including affordable housing, single-family homes, affordable apartments, low-rise condominiums, townhomes, and high-rise condominiums. Founded in 1990, SCD has developed and built over 5,500 high-quality apartment units and homes with a value of more than $2.0 billion over the last 32 years.

With a passion for and commitment to excellence in architectural design and community planning, SCD continues to vigorously pursue its mission to develop high quality communities that achieve strong market acceptance and enhance values over the long-term. As an acknowledged industry leader, SCD has become known for creating distinctive and successful communities through: (1) diversity in architectural design and product types, (2) cutting-edge technology and building materials, (3) environmental sensitivity, and (4) innovative site planning.

SCD's excellence in architectural design and quality has earned the company numerous accolades, which include being named the 3x Grand Champion of Building Industry Association of Hawaii, Western National awards across various categories from the Pacific Coast Builder Conference, and several other awards from the U.S. Department of Housing and Urban Development (HUD), the American Institute of Architects, 2017 Developer of the Year by Smart Growth of American, and the Governor of Hawaii. As one of the most dynamic real estate development firms in Hawaii, SCD has consistently pursued the idea of creating quality developments for our island communities. These communities include:

- The Peninsula at Hawaii Kai on Oahu;
- Kulalani at Mauna Lani on the Big Island;
- Waikoloa Colony Villas on the Big Island;
- Kahakai Estates on the Big Island;
- Kekuilani and Iwalani (Villages of Kapolei) on Oahu;
- The 540-acre, 2,400-unit master planned community of Kehalani on Maui; and
- Wailea Fairway Villas on Maui.

SCD has dedicated significant time and resources to address Hawaii's increasing housing crisis and is an advocate for affordable, quality housing. In addition to actively participating in governmental roundtables, at both the City and State levels, to come up with innovative solutions to alleviate Hawaii's affordable housing shortage, SCD has created several notable affordable housing projects:

- Keauhou Place: 85 entry level (100% - 140% AMI) for sale condos in Kakaako (Oahu);
- Kahoma Village:122 workforce (80% - 140% AMI) for sale condos in Lahaina (Maui);

- Halekauwila Place: 204 affordable (<= 60% AMI) rental apartments in Kakaako (Oahu), where affordability is most critical, and construction is most cost prohibitive;
- Hale Kewalo: 128 affordable (30% - 60% AMI) rental apartments in Honolulu (Oahu);
- Kekuilani Courts: 136 affordable (<= 80% AMI) rental apartments in Kapolei (Oahu);
- Selected to partner with the State of Hawaii (Hawaii Housing Finance & Development Corp) in the repositioning and renovation of a portfolio of 1,221 affordable and workforce housing units;
- Franciscan Vistas: 150 Senior rental units in Ewa (Oahu); and
- Ulu Ke Kukui: 80 transitional housing units in Ma'ili (Oahu). The program provides assistance to families with children under the age of nineteen who are homeless. Key on-site services available to residents include: Case management services, Budget counseling, Housing counseling, Life skills counseling, TIFFE Nurturing, Keiki Play Morning, Creating Nurturing Families, People Empowerment Program and Legal services assistance.

LIST OF PROJECTS

Table 13 - SCD's Resume of Projects

Project Name	Location	Units	Project Type	Costs
Ma'ili Transitional Housing	Ma'ili, HI	80	State Financing	$19.5M
Franciscan Vista Estates	Honolulu, HI	150	LIHTC, RHRF, Home/CDBG	$40.1M
Halekauwila Place	Honolulu, HI	204	LIHTC	$72.0M
Hale Kewalo	Honolulu, HI	128	LIHTC, RHRF	$53.0M
Pukalani Fairway Estates	Pukalani, HI	24	Market Rate	$8.0M
Kekuilani Village 4	Kapolei, HI	645	Mixed Income	$109M
Wailea Fairway Villa	Wailea, HI	118	Market Rate	$29.7M
Wailuku Parkside	Wailuku, HI	119	Mixed Income	$39.9M
Iwalani Village 5	Kapolei, HI	448	Market Rate	$40.4M
Olena I	Wailuku, HI	31	Market Rate	$8.2M
Olena II	Wailuku, HI	32	Market Rate	$10.1M
Kahakai Estates	Kailua-Kona, HI	98	Market Rate	$23.5M
Peninsula: Carriageways, Cottages, Executive Residences and Villas	Honolulu, HI	630	Market Rate	$333.0M
Waikoloa Colony Villas	Waikoloa, HI	168	Market Rate	$58.3M
Kehalani Gardens	Wailuku, HI	132	Mixed Income	$23.0M
Maunaleo	Wailuku, HI	83	Market Rate	$33.3M
Fairways at Mauna Lani	Mauna Lani	126	Market Rate	$37.3M
Kulalani at Mauna Lani	Mauna Lani	126	Market Rate	$67.0M
Kehalani - Module 5 (Villas)	Wailuku, HI	103	Market Rate	$47.5M
Kehalani - Module 11 (Cottages)	Wailuku, HI	114	Market Rate	$47.1M
Kehalani Module 17 (Ho'olea Terrace)	Wailuku, HI	174	Mixed Income	$46.5M
Kehalani Commercial Center	Wailuku, HI	115	Market Rate	$35.4M
Keauhou Place	Honolulu, HI	423	Mixed Income	$235.0M
Kahoma Village	Lahaina, HI	203	Mixed Income	$102.0M
The Cottages at Mauna Olu	Makaha, HI	120	Market Rate	$78.0M
Kauhale Kakaako	Honolulu, HI	268	Affordable / Mixed Income	$61.8M
Pohulani Elderly	Honolulu, HI	263	Affordable / Mixed Income	$38.1M
Kekuilani Courts	Kapolei, HI	80	Affordable / Mixed Income	$12.3M
Lailani Apartments	Kailua-Kona, HI	200	Affordable / Mixed Income	$31.4M
Honokowai Kauhale	Lahaina, HI	184	Affordable / Mixed Income	$35.5M

AFFORDABLE DEVELOPMENT IN PARTNERSHIP WITH THE HAWAII COMMUNITY DEVELOPMENT AUTHORITY AND THE HAWAII HOUSING FINANCE AND DEVELOPMENT CORPORATION (HHFDC)

Halekauwila Place in Honolulu, HI

Halekauwila Place (2014)

Halekauwila Place is a workforce rental housing project located in the heart of Kakaako and adjacent to historic Mother Waldron Park. The 204 unit, $70 million ground up development, consists of studios, one-, two-, and three-bedroom apartments, and features a community lounge, computer lab, laundry facility, and 3,358 SF ground floor retail space. The parking structure contains 284 parking stalls with over 912 photovoltaic solar panels on the rooftop generating 600 to 800 kwh to provide electricity for commercial and common areas. Halekauwila Place's innovative design serves as a benchmark for new affordable urban communities being developed on Oahu today.

SCD was selected as developer for Halekauwila Place through an RFP process administered by the Hawaii Housing Finance and Development Corporation. The project qualified for and was financed with Low- Income Housing Tax Credits, which requires rental rates to be affordable to households at 60% or below the Area Median Income (AMI). A true Public-Private partnership, Halekauwila Place was Hawaii's first affordable rental housing project in nearly forty years to work with the U.S. Department of Housing and Urban Development (HUD).

Hale Kewalo Apartments in Honolulu, HI

Hale Kewalo (2019)

Hale Kewalo is a workforce rental housing development in Honolulu located on the corner of Kona and Piikoi Street, across from Ala Moana Shopping Center, and a short walk from Ala Moana Beach Park. The community is comprised of 128-units that range from one to three bedrooms and are available to households earning between 30% and 60% of the Area Median Income (AMI). In addition to community center, Hale Kewalo includes 77 parking stalls reserved for residents, a laundry facility, a management office, and a small retail space.

Like Halekauwila Place, this $52 million ground up development qualified for and was financed with 4% by-right Low-Income Housing Tax Credits combined with Tax-Exempt Bonds as well as Rental Housing Revolving Fund monies administered by the Hawaii Housing Finance and Development Corporation. The Senior Mortgage for the development consisted of a HUD Section 221(d)(4) loan. To secure and close on the Section 221(d)(4) Senior Mortgage for Hale Kewalo, SCD successfully underwent HUD's 8-step decision making process to develop within a Special Flood Hazard Area. Throughout Hale Kewalo's development, SCD set precedent and paved the way for future development in Honolulu's urban core.

SAMPLE AFFORDABLE HOUSING RENTAL DEVELOPMENT IN PARTNERSHIP WITH A NON-PROFIT

Franciscan Vistas (2012)

This $40.1 million ground up development, financed through a combination of federal ($12.0M) and state ($4.9M) low-income housing tax credits, and various state and federal rental housing monies, was completed by SCD in partnership with the Sisters of St. Francis. Franciscan Vistas Ewa is a 149-unit garden style apartment community that consists of 126 one-bedrooms and 23 two-bedroom apartment homes. This project serves a broad range of income levels: 5% of units restricted at 30% AMI, 1% of units restricted at 50% AMI, 94% of units restricted at 60% AMI. Programs available to residents include concerts, cultural activities, social clubs, ethnic clubs, health screenings, fitness activities, arts & crafts, music and dance, and a farmer's market.

Franciscan Vistas Ewa is a safe, independent living community for seniors featuring stacked, one-story apartments. Franciscan Vistas Ewa combines one- and two-bedroom rental flats equipped with a full kitchen and fitted with ADA accessible amenities. Twenty-four-hour supportive care services are available as needed. Unlike any other planned community in Hawaii, Franciscan Vistas Ewa offers "Stay Healthy at Home" Health and Wellness Program, which is a unique program available for households in the development with older adults. As their needs change, residents receive a range of supportive care services from case management and assistance with daily living activities to long-term health care in the comfort of their own homes.

REPOSITIONING OF A PUBLIC HOUSING PORTFOLIO: A PARTNERSHIP WITH HAWAII HOUSING HONOLULU, KAPOLEI, KAILUA-KONA, AND LAHAINA, HI

Awarded through a competitive RFP process, SCD and Standard Communities formed the Komohale LP joint venture partnership with the Hawaii Housing Finance & Development Corporation ("**HHFDC**") in a $223.9 million Public-Private transaction.

HHFDC's awarded a ground lease for its six-site public housing portfolio. SCD is in the process of transforming and expanding the project-based rental assistance attached to those 1,221 units, which establishes community services and resident programming, while simultaneously completing an extensive renovation without displacing residents. SCD entered into long-term leases for the sites, allowing HHFDC to retain ownership of the land. The deal commenced with an upfront lease payment of $130 million to HHFDC, which will allow HHFDC to pay down tax-exempt public debt and capitalize other affordable housing around the state. In addition to the upfront payment, a renovation budget of more than $70,000 per unit ($85,470,000) was included and more than $35 million of private, non-LIHTC capital will be invested into the sites. The scale, scope, capitalization, and community focus of SCD in its partnership with HHFDC provide experience that this Development Team can draw upon when working with the Department of Hawaiian Home Lands on the 820 Isenberg site.

Left to Right: Pohulani Elderly, Kauhale Kakaako, Kamakee Vista

The six-site HHFDC portfolio mentioned above consists of a combination of low-rise buildings and high-rise towers and includes urban core properties in Oahu, Maui, and Kauai, as detailed below.

Property	Location	Type	Units
Pohulani Elderly	Kakaako, Oahu	Elderly	263
Kauhale Kakaako	Kakaako, Oahu	Family	268
Kamakee Vista	Kakaako, Oahu	Family	226
Kekuilani Courts	Kapolei, Oahu	Family	80

Honokowai Kauhale	Lahaina, Maui	Family	184
Lailani Apartments	Kailua-Kona, Hawaii	Family	200

The renovation was structured to be completed without displacing residents and to address the significant deferred maintenance of the properties, which include the upgrade of unit interiors and common areas, and the modernization of the building systems. The renovation places a focus on energy efficiency, including energy-efficient appliances, low-flow water fixtures, window repairs/replacements, and LED lighting. Energy efficiency and sustainability are core elements of every project that SCD and Hawaiian Dredging undertake, and their joint efforts are no different.

Robust social services are at the forefront of any affordable rental project by SCD. In the partnership with the HHFDC, social services and resident programming suites are designed for both senior and family properties. These services and programs are implemented and tailored to address the greatest opportunities to serve those residents.

Education and counseling services are offered to the residents of the HHFDC portfolio via a full-time staff of two individuals. This full-time staff complements the resident managers at each of the properties as well as coordinates with outside non-profit and government organizations to provide a wide range of programming for residents, such as Meals on Wheels and the University of Hawaii Elderly Law Program. The three main areas of focus for the programming at the HHFDC properties are educational enrichment, personal health, and financial literacy.

TRADEWIND CAPITAL

Tradewind Capital (TC) is a Honolulu-based investment firm that specializes in real estate and private equity business investments. The firm is part of the Tradewind Group (TG) family of companies alongside other notable local businesses including Island Insurance, Atlas Insurance Agency, Pyramid Insurance, and Pacxa. TC is also a sister company of Hawaiian Properties, a real estate management company with close to 40,000 units under management. TC was formed in 1993 but its roots can be traced back to 1929 and the founding of National Mortgage & Finance Company, Ltd. TC's executive leadership includes Colbert Matsumoto, Founder and Past Chairman, Robert Nobriga, Chairman, and Robert Bruhl, President.

TC's real estate business includes a wide variety of investment product types including residential rentals and development, industrial rentals and development, retail, and office. The risk profile of investments vary from stabilized "core" assets to "opportunistic" development assets. TC also operates a robust high-yield lending platform to provide "gap" type mezzanine or B-note financing typically to large-scale development projects.

801 South Street Towers

In 2012, TC partnered with Workforce Kakaako LLC, an entity led by Marshall Hung, to develop the 801 South Street Towers at the intersection of South Street and Kapiolani Boulevard in Honolulu, the location of the former Star Advertiser building. The project includes 1,045 residential condominium units across two towers both standing 46 stories and constitutes a "Workforce Housing" project where at least 75% of units were sold to families earning between 100% and 140% of the AMI. The project includes an 11-story parking structure with 915 stalls. Of the two towers, the first was completed in 2015 and includes 635 units, and the second was completed in 2017 and includes 410 units.

801 South Street Towers (2015 and 2017)

Waipahu Plantation Apartments

In 2006, TC partnered with M & M Investments, a group led by Michael Kimura, to develop Plantation Town Apartments, a two-building, 330-unit affordable condominium complex located at 94-302 Paiwa Street, Waipahu, Hawaii for residents earning between 80% and 120% of the AMI. The project was entitled through HHFDC's 201H program and included a 10-year buyback and Shared Appreciation Equity Agreement. The project was completed in 2008.

Waipahu Plantation Apartments (2008)

Residential Portfolio

TC manages a large portfolio of multi-family and single apartment units across Hawai‘i and the Pacific Northwest. The portfolio includes TC standalone investments and partnership investments. A list of the investments is included below and organized by number of units.

Table 14 - Tradewind Capital Portfolio of Real Estate Investments

Project Name	Location	Units	Project Type	Investment Type
Tradewind Group Properties				
Kaanapali Shores	Lahaina, HI	61	Condo	Lessor
Molokai Shores	Kaunakakai, HI	32	Condo	Lessor
Napili Ridge	Lahaina, HI	32	Condo	Lessor
Crosspointe	Honolulu, HI	24	Condo	Lessor
Piikoi Plaza	Honolulu, HI	24	Condo	Lessor
Waikiki Beach Tower	Honolulu, HI	23	Condo	Lessor
Royal Kahana	Lahaina, HI	9	Condo	Lessor
801 South St Building B	Honolulu, HI	9	Condo	Landlord
444 Nahua	Honolulu, HI	7	Condo	Lessor
Pohailani	Lahaina, HI	7	Condo	Lessor
801 South St Building A	Honolulu, HI	7	Condo	Landlord
Kaanapali Alii	Lahaina, HI	6	Condo	Lessor
1134 Kinau	Honolulu, HI	5	Condo	Lessor
Kailani	Honolulu, HI	5	Condo	Lessor
Koko Isle	Honolulu, HI	4	Condo	Lessor
Aikahi Gardens	Kailua, HI	2	Condo	Lessor
Kuapa Isle	Honolulu, HI	2	Condo	Lessor
Gateway Peninsula	Honolulu, HI	2	Condo	Lessor
Kalakauan	Honolulu, HI	2	Condo	Lessor
Regency at Kahala	Honolulu, HI	1	Condo	Lessor

Project Name	Location	Units	Project Type	Investment Type
1634 Nuuanu	Honolulu, HI	1	Condo	Lessor
Hale Kaheka	Honolulu, HI	1	Condo	Lessor
Haleiwa Surf	Haleiwa, HI	1	Condo	Lessor
Tradewind Capital Properties				
Clairemont	Seattle, WA	54	Multifamily	Limited Partner
Ludlow	Seattle, WA	52	Multifamily	Limited Partner
Summit	Seattle, WA	50	Multifamily	Limited Partner
Halmark & Hamrick	Seattle, WA	48	Multifamily	Limited Partner
Winston	Seattle, WA	23	Multifamily	Limited Partner
Spires	Richmond, Canada	22	Multifamily	Limited Partner
Yesler	Seattle, WA	21	Multifamily	Limited Partner
Oak Keys	Vancouver, Canada	20	Multifamily	Limited Partner
Deering	Seattle, WA	19	Multifamily	Limited Partner
Wallingford	Seattle, WA	19	Multifamily	Limited Partner
Queen Anne	Seattle, WA	10	Multifamily	Limited Partner

Section 14: Rental Rates and Utility Costs

If the affordable housing units are for rent, provide proposed rental rates and provide an estimate of monthly utility costs

AFFORDABLE RENT GUIDELINES* 2024

Affordable rents are based on 30% of income (including utilities)**

Area	$113,300	Studio	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
HONOLULU COUNTY - GROSS RENTS INCLUDING UTILITIES						
30% of Median		$731	$783	$939	$1,086	$1,211
50% of Median		$1,218	$1,305	$1,566	$1,810	$2,018
60% of Median		$1,462	$1,566	$1,879	$2,172	$2,422
80% of Median		$1,950	$2,089	$2,506	$2,896	$3,230
100% of Median		$2,437	$2,611	$3,132	$3,620	$4,037
120% of Median		$2,751	$2,947	$3,537	$4,087	$4,560
140% of Median		$3,412	$3,655	$4,385	$5,068	$5,652

Area	$113,300	Studio	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
HONOLULU COUNTY - HIGH RISE UTILITY ALLOWANCE						
Cooking Electric		$28	$33	$47	$63	$78
Other Electric		$105	$123	$172	$220	$269
Total Tenant Utility Cost		$133	$156	$219	$283	$347

Area	$113,300	Studio	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
HONOLULU COUNTY - NET RENTS AFTER UA DEDUCTION						
30% of Median		$598	$627	$720	$803	$864
50% of Median		$1,085	$1,149	$1,347	$1,527	$1,671
60% of Median		$1,329	$1,410	$1,660	$1,889	$2,075
80% of Median		$1,817	$1,933	$2,287	$2,613	$2,883
100% of Median		$2,304	$2,455	$2,913	$3,337	$3,690
120% of Median		$2,618	$2,791	$3,318	$3,804	$4,213
140% of Median		$3,279	$3,499	$4,166	$4,785	$5,305

*Please note that area market rents may be lower than these rent guidelines.

**Monthly rent levels would include the cost of the following utilities: water, sanitary sewage services, electricity and gas (where applicable). Please refer to the Utility Allowance Schedule for each island.

Section 15: Community Outreach

Document efforts associated with community outreach and comments received.

ELECTED OFFICIALS

Below is a list of elected officials the Applicant has contacted to-date for feedback on the Project, ordered by the date of meeting or initial meeting if multiple meetings occurred.

Table 15 - Elected Officials and Staff Consulted

Elected Officials and Staff Consulted	Date of Meeting
Councilmember Say, City Council District 5	10/2/2023, 2/22/2024
Councilmember Tyler Dos-Santos Tam, City Council District 7	3/14/2024
Councilmember Radiant Cordero, City Council District 6	3/19/2024
Councilmember Esther Kiaʻaina, City Council District 3	4/1/2024
Councilmember Matt Weyer, City Council District 2	4/16/2024
State Senator Carol Fukunaga, State Senate District 11	4/1/2024
ED Matsubara, City and County of Honolulu Office of Housing	10/11/23, 3/20/24
Mayor Blangiardi and Staff, City and County of Honolulu Mayor	3/20/2024

In terms of questions received, a couple key topics were raised by multiple officials (paraphrased below):

1.) How are tenants at the Young Street Apartments being handled?

   a. The Applicant explained that all tenants would be notified in-person of plans to redevelop the site and that a contact of the Applicant would be provided to residents to allow them reach out to the Applicant to explain what assistance would be helpful as part of their transition out of the Young Street Apartments.

2.) What will the impact be to traffic and what efforts will be implemented to mitigate the impact?

   a. The Applicant explained that a traffic report was being prepared by Wilson Okamoto Corporation which would include recommended actions to manage traffic impact, facilitate multimodal transportation, and optimize day-to-day vehicular and multimodal activity on-site. Additionally, key elements of the Project were designed to mitigate any traffic impact, including providing adequate on-site parking to eliminate any impact to street parking, providing bike storage and ride sharing services, and building within the 22' setback off of Piikoi Street to allow for future Piikoi Street widening by the City and County. The Applicant noted that there is a bus stop along Piikoi Street right in front of the Project site providing a direct line to Ala Moana Shopping Center and Waikiki.

3.) What are the requested exemptions for the Project?

   a. The Applicant explained that it would be requesting generally the same type of

exemptions as other similar affordable rental projects processed through 201H, including various fee and development standards exemptions.

CURRENT RESIDENTS

As described in detail in **Section 3.E. Tenant Relocation (If necessary)** on April 6, the Applicant's team provided in-person notice to the tenants of the Young Street Apartments about the proposed Project and that tenant leases would not be extended past January 31, 2025. The members of the Applicant's team that provided notice included four members from the TC team, and four members from the SCD team – eight members in total. Members organized in four (4) groups of two, and each group took five doors to knock. Regarding questions received at the time of notice, some tenants asked about when the Project would be built and what the affordability requirements would be, to which the Applicant's team shared that the Project would be completed in 2028 at the earliest, and that the income requirements would be at the 60% AMI level and below. A few tenants acknowledged they assumed the landowner was pursuing a redevelopment of the block after watching the demolition of the Parcel 46 Plumeria Hostel improvements in early April 2024. The Applicant's team also notified tenants that it was their intention to lease units in the new Project on a first-come-first-serve basis, so if current tenants meet the income qualifications, there could be an opportunity to be first on a list to rent at the new Project. Many tenants expressed enthusiasm at this prospect although noted that the time frame was years away. Residents were encouraged to reach out the Applicant's point of contact, Project Manager Chris Fong, whose contact number was provided in the notice letter, to ask any questions or comments as the residents processed the news. There were no hostile encounters during the notice event. The Applicant is still managing conversations with tenants and expects it to be an on-going dialogue as the move-out date draws closer.

An example notice letter is included in **Appendix N Tenant Notice Letter.**

NEIGHBORING PROPERTY OWNERS

On April 15th through April 17th, the Applicant provided notice to neighboring property owners of its intent to redevelop the Project site. This included all neighboring businesses adjacent to the Project site or across the street on Piikoi Street, Young Street, and South Beretania Street. The Taco Bell and Mattress Firm mauka of the Project site expressed their appreciation for demolishing the vacant Plumeria Hostel improvements on Parcel 46 which were bringing in excessive homeless to the block. Plato's Closet across of Piikoi Street and Hakuyosha Dry Cleaners across of Young Street expressed their enthusiasm for future business. No businesses expressed any concern about the future Project.

QUEEN KA'AHUMANU ELEMENTARY

On April 23, 2024, Queen Ka'ahumanu Elementary Principal Tanya Leinā'ala Hall was debriefed on the Project. Principal Hall had no concerns with the Project and only inquired about what the income requirements would be.

NEIGHBORBOOD BOARDS

Makiki Neighborhood Board

On the evening of April 18th, 2024, Chris Fong, Project Manager for the Project, presented in

person to the District 10 Makiki-Tantalus Neighborhood Board at the Makiki District Public Library. The presentation included a 10-minute overview of the Project followed by questions and answers. The board meeting was held in-person; however, a livestream was available for community members who preferred to participate remotely. The following questions and answers were provided at the meeting. The questions and answers are paraphrased herein; however, the full live recording of the meeting is posted on YouTube, and a link to the video is provided in the online minutes.

1. Board member Janel Fujinaka: How long will the rentals stay affordable?
    a. Chris Fong: The Project as planned will remain affordable for a minimum of 65 years as required by HHFDC and the type of financing being procured for the Project.
2. Board member Sam Mitchell: For the residents being displaced by the Project, is there anything in their contracts that will allow them to get in and rent at the new Project?
    a. Chris Fong: Yes, we intend to rent units on a first-come-first-serve basis. We communicated with tenants that there is a way we can work with them to get them first on a list to rent at the Project.
3. Board Chair Ian Ross: Have you informed residents yet of plans to redevelop the property and what type of assistance are you offering to the residents.
    a. Chris Fong: Yes, we have notified the tenants, and the way we did it was one weekend, members of our team went down and knocked on every single door to provide notice to the residents in person. The notice included describing our plan to redevelop the property and that leases would not be extended past January 31, 2025. It's important to note that for all the tenants, none of them have leases extending beyond the end of the year [2024]. We provided the residents with our contact and encouraged them to reach out to us to let us know how we could assist. We provided that notice about two weeks ago, so we are still communicating with them and letting them reach out to us to describe how we can assist them.
4. Board member Corinne Carson: Would you consider building a small playground in the lawn space because there is no park area for young children in that area.
    a. Chris Fong: I haven't thought about that personally, but it's great feedback that we will consider as we progress through the design phase.
5. Board member Richard Kawano: to confirm, so this project would be about 3 stories higher than the neighboring [Pumehana Apartments and Hale Kalele] high-rise towers?
    a. Chris Fong: Correct.
6. Board member Paul Klink: Is there a website for this development?
    a. Chris Fong: Not yet, eventually there will be but we're a little earlier in the process but once we're further along and getting ready to lease that is definitely something we want to put out to the community.
7. Community member: My concern is you're going to go above the height allowance. It just seems like everyone is creeping higher and higher. Why not just stay within the allowable height limit?
    a. Chris Fong: Our position is we just need more affordable housing. A lot of times

when you see other developers building past the allowable height, it's in part to build market rate housing, whereas our project is 100% affordable.

8. Board member Nathan Char: To counterbalance the sentiment against high-rise housing, I am strongly in support of such type of housing to better utilize our space. One of the major complaints in our area is parking, and there is 247 units and 245 parking stalls so in terms of doing due diligence regarding the impact to parking and traffic, I think they've done a fantastic job.
    a. *Applicant Note: the Project's parking stall count has changed slightly from the Neighborhood Board presentations (from 245 stalls to 243 stalls) to accommodate comments from the Applicant's traffic consultant, Wilson Okamoto Corporation.*

Ala Moana – Kaka'ako Neighborhood Board

On the evening of April 23rd, 2024, Chris Fong, Project Manager for the Project, presented in person to the District 11 Ala Moana – Kaka'ako Neighborhood Board at the Makiki Christian Church. The Project does not lies within the District 11 Ala Moana – Kaka'ako Neighborhood Board boundary which ends at Young Street to the north; however, given its close proximity to the District 11 boundary and the practical impact the Project would have on the Ala Moana area, the Applicant felt it was prudent to present the Project to the District 11 community. The presentation included a 10-minute overview of the Project followed by questions and answers. The board meeting was held in-person; however, a livestream was available for community members who preferred to participate remotely. The following questions and answers were provided at the meeting. The questions and answers are paraphrased herein; however, the full live recording of the meeting is posted on YouTube, and a link to the video is provided in the online minutes.

1. Board member Lynn Mariano: What is the rent for the three-bedroom unit?
    a. Chris Fong: Three-bedroom rent is around $2,000 for a family qualifying at $79,000 annual income based on the 2023 HHFDC published rents and incomes at the 60% AMI level.
2. Board member Lynn Mariano: I like your thought process of opening the garage entrance on Young Street, but during peak periods, the traffic can get really bad. Currently, there is temporary closure of the eastbound onramp off Piikoi Street and sometimes it can take 15 minutes to just go four blocks. Something to look at is the impact to traffic for businesses along Young Street.
    a. Chris Fong: Luckily in front of our Project on Young Street there is no street parking, so we won't be taking away street parking on Young Street, nor will there be parked cars to block the traffic flows coming into and out of our building. There is also a bus stop right in front of our Project along Piikoi Street along with fourteen (14) bus stops within a quarter mile radius of the Project, along with two Biki stations, one on mauka side by Safeway and one on the makai side by Zippy's. We're excited for the multimodal options for residents on-site.
3. Board member Rodney Chang: I think the Project is a great idea. That place is the pits, it is absolutely disgusting, I have to walk by there sometimes and it's awful, so thank you for getting Stanford Carr involved because if it's anything like the Halekauwila project then good job.

Section 16: Traffic Impact Assessment

Provide a traffic impact assessment or study, if required by DPP's Traffic Review Branch.

A Traffic Impact Report (TIR) for the Project was conducted by Wilson Okamoto Corporation in March 2024. The study is titled *Traffic Impact Report* and is summarized in this section and included in its entirety in **Appendix E Traffic Impact Report.**

Scope of Study

To summarize, the scope of the report includes:

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

Description of Immediate Roadways

The Project site is bounded by Piikoi Street to the west, Young Street to the south, residential uses to the east, and commercial uses to the north. Access to the Project site is provided via driveways off Young Street. Many of the major thoroughfares surrounding the Project site are one-way streets, including Piikoi Street (northbound), South Beretania Street (westbound) one block north, and South King Street (eastbound) one block south. Young Street, bordering the Project site, is a two-lane, two-way street.

The below excerpt from the TIR labeled "Figure 3" shows the exiting lane configurations.

Field Investigation and Analysis

INVESTIGATION PARAMETERS

Field investigations were conducted on February 20-21, 2024, and consisted of manual turning movement count surveys during the morning peak hours between 6:30 AM and 8:30 AM and the afternoon peak hours between 4:00 PM and 6:00 PM at the following intersections:

- Piikoi Street and Young Street
- Piikoi Street and South Beretania
- Piikoi Street and South King Street
- Young Street and Keeaumoku Street

TRAFFIC CAPACITY STUDY

Capacity Analysis Methodology

The highway capacity analysis performed in this study is based upon procedures presented in the "Highway Capacity Manual", Transportation Research Board, 2016, 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.

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. The analysis is based on these peak hour time periods for each intersection to identify the traffic impacts resulting from the proposed Project.

Piikoi Street and Young Street Summary Traffic Characteristics

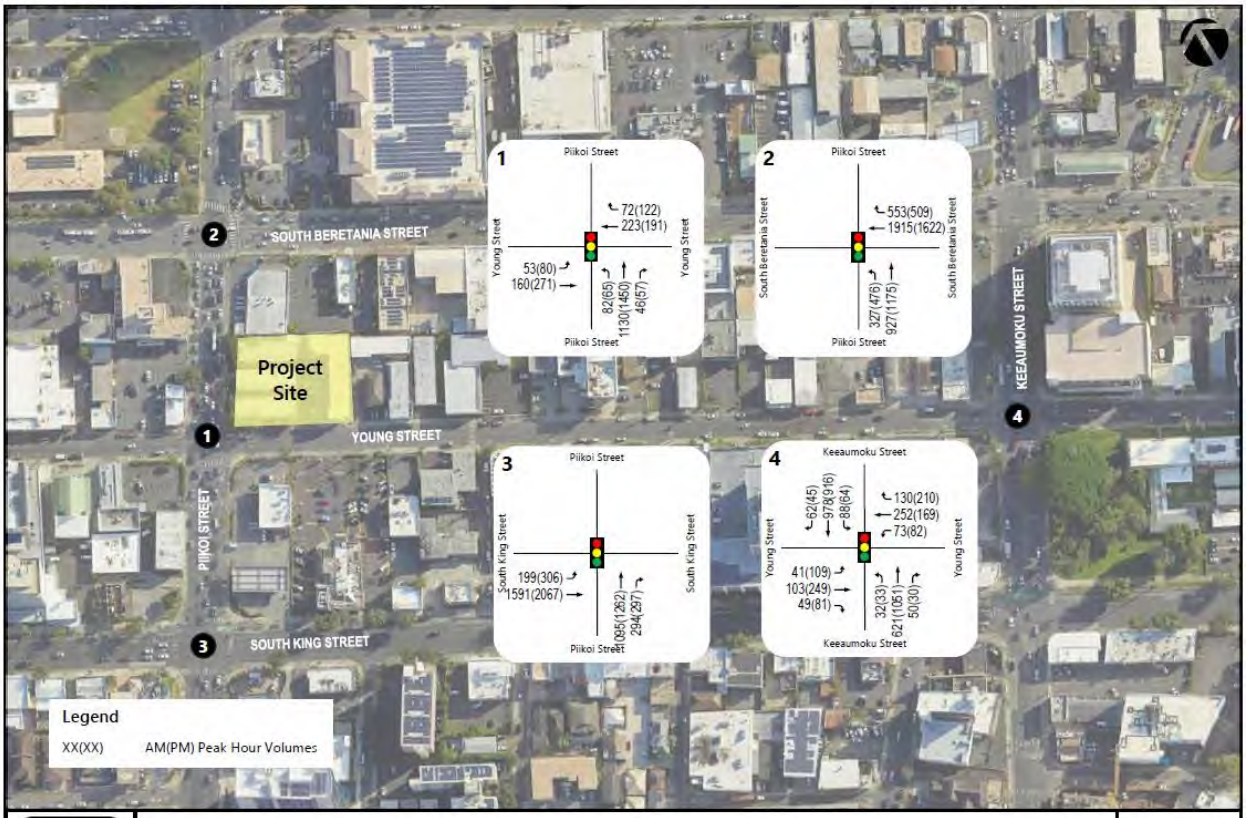
At the intersection with Young Street, the Piikoi Street approach of the intersection carries 1,258 vehicles and 1,572 vehicles northbound during the AM and PM peak hours of traffic, respectively. The northbound approach operates at LOS "A" during both peak periods. Traffic queues periodically occurred on the northbound approach during the peak periods. Field observations indicate these queues are influenced by the queues that form at the downstream intersections leading to the connections to the H-1 Freeway on-ramps. These queues were primarily observed within the three right lanes with minimal queueing observed within the two left lanes. Most of these queues were observed clearing the intersection after each traffic signal cycle change.

Young Street carries 213 vehicles eastbound and 295 vehicles westbound at this intersection during the AM peak hour of traffic. During the PM peak hour, traffic volumes are higher with 351 vehicles traveling eastbound and 313 vehicles traveling westbound. The eastbound and westbound approaches operate at LOS "B" during both peak periods. The below excerpt from the TIR labeled "Tabled 3" shows the existing LOS at the studied intersections today and projected in 2028 without the Project. The LOS for all of the intersections is "A", "B", or "C" indicating relatively ideal or free-flow traffic at all the intersections studied.

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

Intersection	Approach/	AM		PM	
		Exist	Year 2028 w/out Proj	Exist	Year 2028 w/out Proj
Piikoi St/ Young St	Eastbound	B	B	B	B
	Westbound	B	B	B	B
	Northbound	A	A	A	A
Piikoi St/ South Beretania St	Westbound	B	B	B	B
	Northbound	C	C	B	C
Piikoi St/ South King St	Eastbound	B	B	B	B
	Northbound	B	B	B	C
Young St/ Keeaumoku St	Eastbound	B	B	B	C
	Westbound	B	B	B	B
	Northbound	A	A	B	B
	Southbound	B	B	B	B

The below excerpt from the TIR labeled “Figure 4” shows existing traffic volumes at peak hours at intersections studied for context of traffic flows.



TRIP GENERATION STUDY

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, 11th Edition," 2021. The ITE trip generation rates are developed empirically by correlating vehicle trip generation data with various land use characteristics such as the number of vehicle trips generated per dwelling unit. The trip generation methodology also includes provisions for multimodal trips. Multimodal trips are trips made using non-motorized modes of travel such as walking and biking, as well as trips made using transit. The trips generated by the new development were adjusted to account for the trips made utilizing alternative modes of transportation based on the study "Commuting Patterns in Hawaii" published by the State of Hawaii Department of Business, Economic Development and Tourism, Research and Economic Analysis Division dated April 2015.

Trip Generation Estimates

The below excerpt from the TIR labeled "Table 2" shows the adjusted trip generation characteristics applied to the AM and PM peak hours traffic after accounting for multimodal

transport habits for this area, such as transit, biking, walking, etc. Simply put, this represents the total anticipated number of cars entering and exiting the building during the AM and PM peak hours.

Table 2: Adjusted Peak Hour Trip Generation

TOTAL		
AM PEAK	ENTER	18
	EXIT	35
	TOTAL	53
PM PEAK	ENTER	35
	EXIT	27
	TOTAL	62

THROUGH TRAFFIC FORECASTING STUDY

Through Traffic Forecasting Methodology

The travel forecast is based upon historical traffic count data obtained from the State DOT, Highways Division at survey stations in the vicinity of the Project site. The historical data indicates relatively stable traffic volumes along the roadways in the study area. As such, an annual traffic growth rate of approximately 0.5% was conservatively assumed along South King Street, South Beretania Street, and Piikoi Street in the Project vicinity, while an annual traffic growth rate of approximately 1% was assumed along Keeaumoku Street to account for anticipated future developments along this roadway further south of the Project site. Using 2024 as the Base Year, a growth rate factor of 1.02 was applied to the existing through traffic demands along South King Street, South Beretania Street, and Piikoi Street while a growth rate factor of 1.04 was applied to the existing through demands along Keeaumoku Street to achieve the projected Year 2028 traffic demands.

Total Traffic Volumes with Project

The below excerpt from the TIR labeled “Table 4” shows the cumulative AM and PM peak hour traffic conditions with the Project in 2028 at various intersections. Under Year 2028 with Project conditions (“w/ Proj”), traffic operations in the vicinity are expected to remain similar to without Project conditions (“w/ out Proj”) as denoted by the same LOS letter appearing in both columns, indicating the Project causes no change in effective traffic conditions.

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

Intersection	Approach	AM		PM	
		Year 2028		Year 2028	
		w/out Proj	w/ Proj	w/out Proj	w/ Proj
Piikoi St/Young St	Eastbound	B	B	B	B
	Westbound	B	B	B	B
	Northbound	A	A	A	A
Piikoi St/ South Beretania St	Westbound	B	B	B	B
	Northbound	C	C	C	C
Piikoi St/ South King St	Eastbound	B	B	B	B
	Northbound	B	B	C	C
Young St/ Keeaumoku St	Eastbound	B	B	C	C
	Westbound	B	B	B	B
	Northbound	A	A	B	B
	Southbound	B	B	B	B

PEDESTRIAN TRAFFIC DATA

At Piikoi and Young Street, during the AM peak hour, 43 pedestrians and 41 pedestrians were observed crossing Young Street on the east and west sides of the intersection, respectively, while 17 pedestrians and 18 pedestrians were observed crossing Piikoi Street on the north and south sides of the intersection, respectively. During the PM peak hour, 73 pedestrians and 22 pedestrians were observed crossing Young Street on the east and west sides of the intersection, respectively, while 6 pedestrians and 22 pedestrians were observed crossing Piikoi Street on the north and south sides of the intersection, respectively.

MULTIMODAL FACILITIES

Pedestrian Facilities

The proposed Project is located in a generally well-developed area with a network of improved sidewalks and marked crosswalks. However, the overall pedestrian environment varies depending on the location. On the west side of the Project, Piikoi Street has continuous sidewalks along both sides of the roadway with overhead street lighting provided to increase pedestrian comfort during the evening hours. The overall pedestrian environment along this roadway is influenced by the high volume of traffic, presence of utility poles and proximity of the adjacent buildings which reduce the effective width of the sidewalk, and the multiple access points (driveways) along its alignment. Pedestrian crossings along Piikoi Street are facilitated via crosswalks, curb ramps, and designated pedestrian phases at the signalized intersections with Young Street, South Beretania Street, and South King Street.

Along the south side of the Project site, Young Street also includes improved, but narrow sidewalks with overhead street lighting along the south side of the roadway. Similar to Piikoi Street, the overall pedestrian environment is influenced by the presence of utility poles and proximity of the adjacent buildings which reduce the effective width of the sidewalk, as well as the multiple access points (driveways) along its alignment.

The proposed Project is expected to maintain/improve the existing pedestrian facilities in the vicinity of the Project. The Project is expected to incorporate frontage improvements along Piikoi Street and Young Street by setting back the building faces and providing appropriate sidewalk widths and landscaping treatments along its frontage to enhance the overall pedestrian environment.

Bicycle Facilities

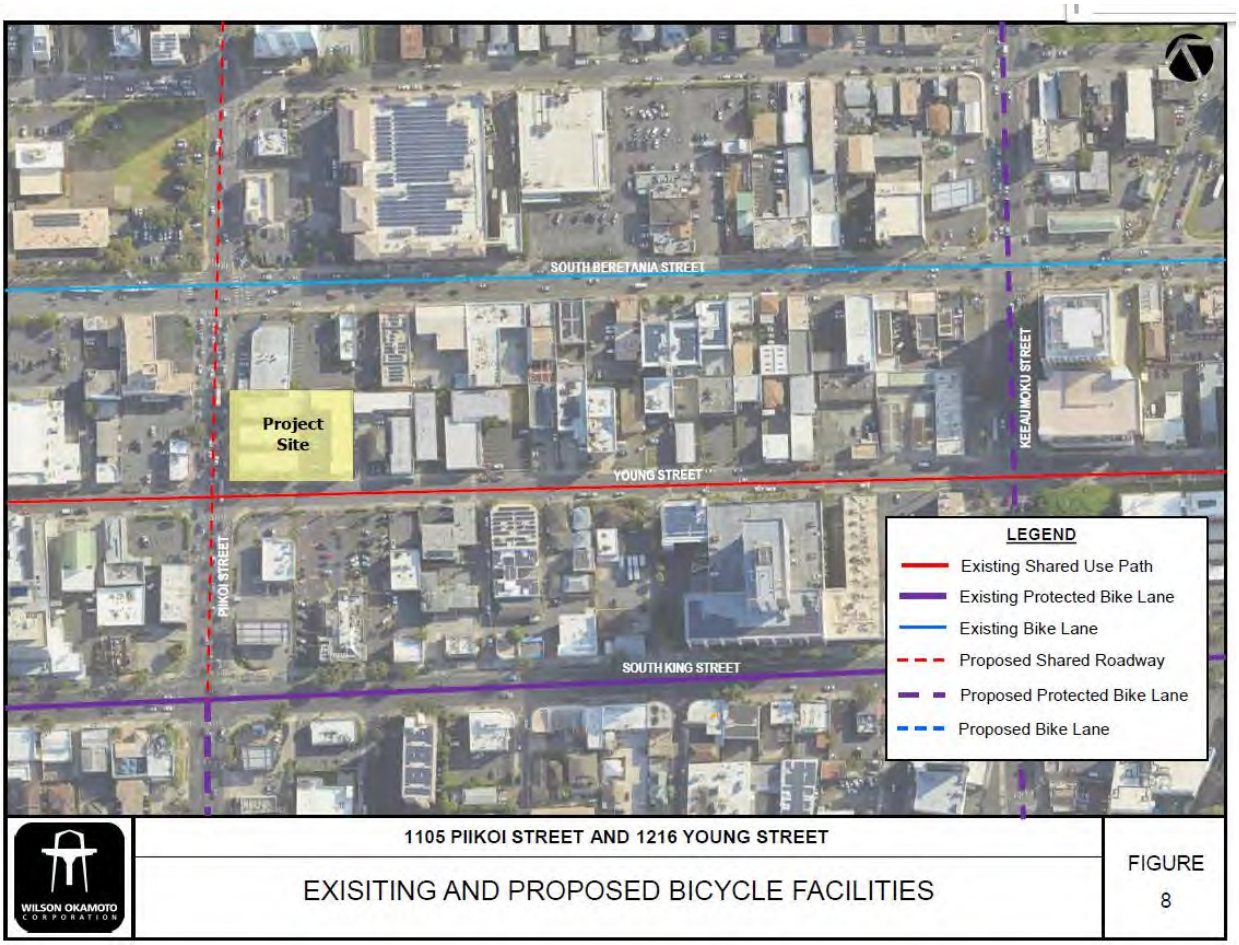
There are two BIKI bike share stations located in close proximity to the Project site. One station is located on the north side of South King Street near Zippy's and the other is located along the north side of South Beretania Street near Safeway. Dedicated bicycle facilities along the adjacent roadways include an existing bike lane along South Beretania Street and a protected bike lane along South King Street. In addition, Young Street is a shared roadway with sharrows provided along its alignment.

The proposed Project is expected to incorporate bicycle facilities for residents and visitors. A secured bicycle parking area is planned to be located on the ground floor of the development. Along the adjacent roadways, the City and County of Honolulu may plan to provide additional bicycle facilities in the Project vicinity. According to the 2019 Update of the "Oahu Bike Plan" published by the City and County of Honolulu DTS, these improvements include the following:

- Protected bike lane along Piikoi Street south of South King Street with a shared roadway north of South King Street

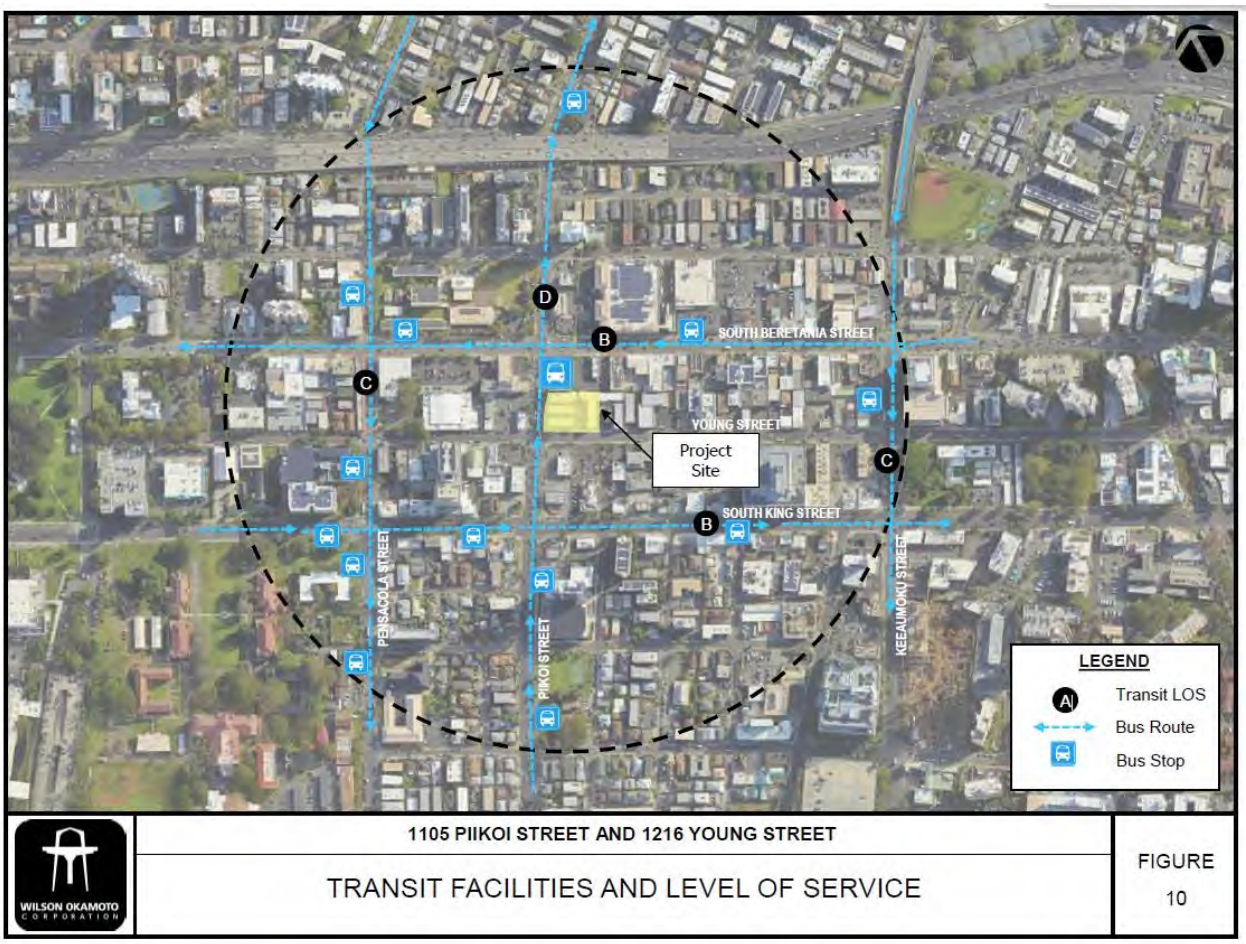
- Protected bike lane along Keeaumoku Street

The below excerpt from the TIR labeled "Figure 8" shows the existing and proposed bicycle paths/lanes.



Transit Facilities

Existing transit resources located in the Project vicinity include convenient access to bus service along Piikoi Street, South Beretania Street, and South King Street. These facilities are provided by "The Bus" which is operated by the Oahu Transit Service (OTS) for the City and County of Honolulu Department of Transportation Services. The below excerpt from the TIR labeled "Figure 10" shows the bus stops and routes within a quarter mile radius of the Project site. The closest stop along Piikoi Street is located south of the intersection with South Beretania Street and is served by Route 8. Along South Beretania Street the closest stop is located near Times Supermarket east of the intersection with Piikoi Street and is served by Routes 1 and 2. Along South King Street, the closes stop is located at the intersection with Piikoi Street and is served by Routes 1 and 2. Based on the Transit Capacity and Quality of Service Manual (TCQSM), a quarter mile represents the maximum distance that people will walk to a transit stop which is equivalent to approximately 5 minutes of walking time. There are 14 bus stops located within a quarter mile radius of the Project site. In addition, the Project site is located in close proximity to a number of other bus stops along Pensacola Street and Keeaumoku Street.



RECOMMENDATIONS AND CONCLUSION

Recommendations

The TIR includes various recommendations for the Project design. The recommendations are listed below. The Applicant was able to incorporate all of the recommendations that are feasible at this stage of the Project/design and plans to incorporate all of the remaining recommendations that occur later in the development process.

1. Provide sufficient sight distance for motorists to safely enter and exit project driveways. It should be noted that the loading stalls are located immediately adjacent to the driveways at the entrance/exit to the parking garage. As such, consideration should be given to ensuring motorists, pedestrians, and bicyclists are aware of the presence of each other at these conflict points.

2. Prohibit off-site loading operations and ensure service/loading zones are designated to accommodate such. The layout and dimensions shall be determined during the design phase.

3. Provide adequate turn-around area for service, delivery, and refuse collection vehicles

to maneuver on the project site and prohibit vehicle-reversing maneuvers onto Young Street. It should be noted that the proposed loading stalls are located parallel to Young Street between the project driveways.

4. Provide sufficient turning radii at all project driveways to avoid vehicle encroachments to oncoming traffic lanes.

5. Provide signage at the project driveways to indicate their designated uses (i.e., for service and employee parking only) to minimize driver confusion at the driveways.

6. Restrict parking along the project frontage on Young Street to facilitate through traffic movements and ensure adequate sight distances for entering and exiting vehicles at the project driveways along this roadway.

7. Provide pedestrian connections between the on-site uses and off-site facilities along Young Street and Piikoi Street. Pedestrian facilities should be made accessible in conformance with the American with Disabilities Act (ADA).

8. Provide adequate connections to and from the designated and secured bike parking areas to ensure convenient and safe pedestrian and bicyclist access, as well as connections to the planned bicycle facilities along the roadways adjacent roadway(s) to the project site. In addition, consider providing short term bicycle parking for visitors.

9. Prepare a Construction Management Plan (CMP) that includes the anticipated construction schedule and phasing, as well as traffic circulation, traffic control, and parking during the construction period.

10. Prepare a Transportation Management Plan (TMP) which includes traffic circulation, parking, loading, and traffic demand management (TDM) strategies to further minimize the impact of the development on the surrounding roadway network.

Conclusion

The conclusion of the report is that as designed, the Project will cause operations in the immediate roadways to remain similar as if no Project was built, e.g., the Project will not have a significant impact on current and future traffic conditions in the immediate area.

Section 17: Land Use Commission Application (If applicable)

Provide the status of the Land Use Commission application, as necessary, and any correspondence that documents that status.

Not applicable. No Land Use Commission Application is necessary due to existing designation as Urban.

Section 18: Development Agreement

Provide a draft development agreement (optional, may also be submitted after the City Council votes on the Project).

A draft development agreement will be submitted after City Council votes on the Project.

Appendix A Land Use Permits Division Master Application Form

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF PLANNING & PERMITTING

650 South King Street, 7th Floor
Honolulu, Hawaii 96813

LAND USE PERMITS DIVISION MASTER APPLICATION FORM

Additional data, drawings/plans, and fee requirements are listed on a separate sheet titled "Application Instructions." *PLEASE ASK FOR THESE INSTRUCTIONS.*

All specified materials described in the "Instructions for Filing" and required fees must accompany this form; incomplete applications will delay processing. You are encouraged to consult with Zoning Division staff in completing the application. Please call the appropriate phone number given in the "Instructions for Filing."

Please print legibly or type the required information. **SUBMITTED FEE: $_____**

PERMIT/APPROVAL REQUESTED (Check one or more as appropriate):

Cluster:
- ☐ Agricultural
- ☐ Country
- ☐ Housing

Conditional Use Permit:
- ☐ Minor ☐ Major

☐ **Existing Use:** _____ (Indicate Type of Use)

Environmental Document:
- ☐ Environmental Impact Statement
- ☐ Environmental Assessment
- ☐ Supplemental

☐ **Minor Shoreline Structure**

☐ **Modify Approved Permit:** _____ (Indicate Reference File No.)

☐ **Plan Review Use**

Planned Development:
- ☐ Housing
- ☐ Commercial (WSD Only)
- ☐ Resort (WSD Only)
- ☐ Interim Planned Development (IPD-T)

☐ **Shoreline Setback Variance**

Special District Permit:
- ☐ Minor ☐ Major

_____ (Indicate District)

☐ **Downtown Height >350 Feet**

Special Management Area Use Permit:
- ☐ Minor ☐ Major

☐ **Temporary Use Approval**

☐ **Variance from LUO Section(s):** _____

☐ **Waiver from LUO Section(s):** _____

☐ **Zoning Adjustment, LUO Section(s):** _____

☑ **HRS Section 201H-38 Project**

TAX MAP KEY(S): (1) 2-4-4: 046; (1) 2-4-4: 078
LOT AREA: 31,977sf in total (20,019sf + 11,958sf)
ZONING DISTRICT(S): BMX-3 **STATE LAND USE DISTRICT:** Urban
STREET ADDRESS/LOCATION OF PROPERTY: 1105 Piikoi Street and 1216 Young Street, Honolulu, HI 96814

RECORDED FEE OWNER:
Name (& title, if any) TCG Piikoi LLC
Mailing Address 201 Merchant Street Suite 2050, Honolulu, HI 96813
Phone Number 808-564-8237
Signature [signature]

PRESENT USE(S) OF PROPERTY/BUILDING:
Parcel 046: parking lot
Parcel 078: three story walk-up apartment

PROJECT NAME (if any): TBD

APPLICANT:
Name Hale Melia LLP
Mailing Address 201 Merchant Street Suite 2050, Honolulu, HI 96813
Phone Number 808-564-8237
Signature [signature]

AUTHORIZED AGENT/CONTACT PERSON:
Name Robert Q. Bruhl
Mailing Address 201 Merchant Street Suite 2050, Honolulu, HI 96813
Phone Number 808-762-6189
E-mail rbruhl@tradewindcap.com
Signature [signature]

REQUEST/PROPOSAL (Briefly describe the nature of the request, proposed activity or project):
Request for processing of a 201H application for a 247 unit affordable high-rise renal tower at the corner of Piikoi street and Young street (the Project). The Project is seeking various design and fee exemptions to facilitate the development of the Project. The Project will be designated for residents qualifying at the 60% AMI level and below.

POSSE JOB NO. _____

LUPD-master-application-form

Final Audit Report 2024-06-05

Created:	2024-06-05
By:	Chris Fong (cfong@tradewindcap.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAD5bnwoJ34t47i1zle0wsCOg4GJwdSmrx

"LUPD-master-application-form" History

Document created by Chris Fong (cfong@tradewindcap.com)
2024-06-05 - 0:28:44 AM GMT

Document emailed to rbruhl@tradewindcap.com for signature
2024-06-05 - 0:29:45 AM GMT

Email viewed by rbruhl@tradewindcap.com
2024-06-05 - 0:38:58 AM GMT

Signer rbruhl@tradewindcap.com entered name at signing as Robert Q Bruhl
2024-06-05 - 0:40:01 AM GMT

Document e-signed by Robert Q Bruhl (rbruhl@tradewindcap.com)
Signature Date: 2024-06-05 - 0:40:03 AM GMT - Time Source: server

Agreement completed.
2024-06-05 - 0:40:03 AM GMT

Adobe Acrobat Sign

Appendix B Determination of Eligibility Submittal and Approval

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF PLANNING AND PERMITTING

201H HOUSING PROGRAM PROCESS AND APPLICATION

Summary of the 201H Process

A. Eligibility Requirements

B. Phase I - Pre-Consultation

C. Phase II - Determination of Eligibility

D. Phase III – Application Review and Processing

Forms and Instructions

A. Determination of Eligibility

B. 201H Application

SUMMARY OF THE 201H PROCESS

A. Eligibility Requirements

Chapter 201H, Hawaii Revised Statutes (HRS), allows the Department of Planning and Permitting (DPP) to develop or assist in the development of housing projects which are exempt from certain statutes, ordinances, charter provisions, and rules of any governmental agency relating to planning, zoning, construction standards for subdivisions, development and improvement of land, and the construction of units thereon, provided that:

- The project primarily or exclusively includes affordable housing units;
- The project meets minimum requirements of health and safety; and
- The project does not contravene any safety standards, tariffs, or rates and fees approved by the public utilities commission for public utilities or Board of Water Supply.

The 201H expedited processing program provides for greater design flexibility and cost savings for affordable housing projects. The DPP establishes its affordability threshold for projects as those projects that primarily are affordable to households with incomes at or below 120 percent of area median income for the City and County of Honolulu ("AMI"), adjusted for family size.

Projects eligible to receive exemptions from development standards and fees must:

1. Provide for economically integrated housing, by stipulation and design, where at least 51 percent of the units (sales or rental) in the project are made affordable to low- and moderate-income households; and

2. Contain at least 30 dwelling units. The total number of units in the proposed project are to be distributed as follows:

    i. A minimum of 20 percent of the total number of units in the project must be affordable to low-income households earning annual incomes that do not exceed 80 percent AMI.

    ii. A minimum of 31 percent of the total number of units must be affordable to moderate-income households earning annual incomes ranging between 81 percent and 120 percent AMI, or lower AMI.

    iii. A maximum of 49 percent of the total units may be sold or rented at rates determined by the Applicant, including market rates.

    The variously-priced units may not be segregated and must be randomly dispersed (individually or in clusters) throughout the project horizontally, and if applicable, vertically, to the maximum extent feasible.

    Projects developed solely for persons with special living needs shall not be subject to this minimum dwelling unit requirement. Projects developed solely for

low- and moderate-income purchasers or renters must contain at least 15 units, or obtain a waiver from the DPP; and

3. Maintain affordability for a period of not less than 30 years.

B. Phase I – Pre-Consultation

The Applicant must meet with DPP staff before submitting a 201H application. Prior to this Phase I Pre-Consultation meeting, the Applicant must have:

1. Obtained control of the project site.

2. Developed a preliminary project concept (estimated total number of units, rental vs. sales, single-family detached vs. multi-family, mix of affordable vs. market units, period of affordability, etc.).

3. Conducted site analyses and feasibility studies.

4. Confirmed the requirement, if any, for preparing and filing (a) an Environmental Assessment (EA) with Finding of No Significant Impact (FONSI), or (b) an Environmental Impact Statement (EIS), for the project in compliance with Chapter 343, HRS.

5. Confirmed whether the proposed project is located in a flood plain or tsunami hazard area.

6. Explored the capacity for connection to the municipal sewer system or, in the case of alternative treatment systems, initiated discussions with the State Department of Health (DOH).

7. Initiated consultations with affected community groups.

8. Determined whether Land Use Commission approval is necessary and, if approval is necessary, how and when approval will be secured.

C. Phase II – Determination of Eligibility

The purpose of Phase II is to determine whether the project is eligible under the City's 201H Program.

1. Submission Requirements

   The Applicant must submit the following form and materials:

   a. 201H Determination of Eligibility Form.

   b. Evidence of site control for the project, e.g., deed, lease, agreement of sale, option agreement, or comparable document.

   c. Environmental Assessment: (i) EA with FONSI or (ii) EIS, pursuant to Chapter 343, HRS, as necessary. If the project is eligible for exemption

pursuant to Hawaii Administrative Rules (HAR Section 11-200.1-15(c), submit a determination of exemption from the appropriate agency.

If requesting a determination of exemption from the DPP based on HAR Section 11-200.1-15(c)(10), which exempts new construction of affordable housing, in your request letter, demonstrate how the project meets the following:

i. Has the use of state or county lands or funds or is within Waikiki as the sole triggers for compliance with Chapter 343, HRS;

ii. As proposed conforms with the existing state urban land use classification;

iii. As proposed is consistent with the existing county zoning classification that allows housing; and

iv. As proposed does not require variances for shoreline setbacks or siting in an environmentally sensitive area as stated in HAR Section 11-200.1-13(b)(11), such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

2. Applicant Notification

DPP will notify the Applicant in writing within 10 days of receipt of the Request for Determination whether the project is eligible for processing pursuant to the City's program.

D. Phase III – Application Review and Processing

Phase III begins when the Applicant submits the application.

1. Submission Requirements

If the project is eligible for processing under the City's program and the Applicant wishes to move forward with the application, the Applicant should complete and submit the 201H Application.

2. Applicant Notification

DPP will notify the Applicant in writing within 10 days of receipt of the application whether the project is complete and accepted for processing. Once accepted, the DPP shall have 90 days to complete its review and forward a recommendation to the City Council.

3. Agencies' Review

DPP will transmit the complete application to other agencies and organizations, as appropriate, for review and comment. Agencies will review the application to ensure that the project and exemptions requested do not negatively affect public health and safety. The Applicant will work directly with agencies to address

outstanding concerns. The Applicant's architect/engineer may have to modify plans to address agency comments. Final agency comments should be received within 30 days of DPP issuing a notice of application acceptance. If comments are not received, DPP will assume the agency has no comments.

4. City Council Review

   Within 90 days of issuing a notice of application acceptance, the DPP will prepare a report and submit its recommendation to the City Council. The package to Council will typically include a report that summarizes the proposed plans and a draft resolution that itemizes each proposed exemption and conditions of approval. The DPP may recommend approval, approval with conditions, or denial to the City Council.

   The 201H Application is first reviewed by a committee of the City Council. The Applicant or representative shall attend the committee meeting to present the project and respond to any questions or concerns. The committee will then forward its recommendation to the full Council. The Applicant or representative shall be present at the full Council meeting to respond to any questions or concerns.

   The City Council has 45 days from the date of its receipt of the DPP's recommendation to act on the proposed resolution. The Council may require modifications to the project during the course of its deliberations. The City Council may:

   - Vote to approve the resolution.
   - Vote to approve the resolution with conditions.
   - Vote to deny the resolution.
   - Choose to not act upon the resolution. If no action is taken, the resolution is deemed to be adopted after the 45-day Council review period lapses.

5. Project Development Phase

   After the City Council and Land Use Commission (if necessary) approvals are obtained, the DPP and Applicant will execute the development agreement that ensures the project is built and operated as presented by the Applicant,

   The Applicant must file the approved executed development agreement with the Bureau of Conveyances and/or Assistant Registrar of the Land Court of the State of Hawaii, as appropriate. Proof of such filing shall be in a form of a copy certified by the appropriate agency submitted to the DPP.

   The approved resolution must be attached to subsequent building permit applications.

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF PLANNING AND PERMITTING (DPP)

201H Program Determination of Eligibility Form

Applicant Name and Contact Information	Hale Melia LLP 201 Merchant Street Suite 2050 Honolulu, HI 96813
Project Name, Address, and Tax Map Key	Hale Melia (working name) 1105 Piikoi St, Honolulu HI, 96814 TMK: (1) 2-4-004: 046 & 078

1. Housing Affordability

i. Target Households and Affordable Units

Affordable Units		
Restricted at % of AMI*	Number of units	Percent of total units
30.00% of AMI	13 units	5.31%
60.00% of AMI	232 units	94.69%
0.00% of AMI	0 units	0.00%
Special Housing Needs**	0 units	0.00%
Total Affordable Units	245 **units**	
Market Rate Units	1 units	0.00%
Total Number of Units	246 **units**	100.00%

*AMI = Area Median Income per current HUD standards

** Describe the Special Housing Need of the tenants below, if applicable

ii. Length of Affordability Commitment

Length of affordability restrictions: 66.0 Years

2. Site Control Status

☒	Own site - fee simple	Owned by Tradewind Capital thru SPEs
☐	Executed ground lease	Expires on:
☐	Option to purchase	Expires on:
☐	Option to lease	Expires on:
☐	Other	Describe:
		Expires on:

Submit evidence of site control for the project, e.g., deed, lease, agreement of sale, option agreement, or comparable document.

3. Environmental Disclosure

The project must comply with Chapter 343, HRS. If an Environmental Assessment (EA) or Environmental Impact Statement (EIS) has been published or will be published, identify the date of publication in the Office of Environmental Quality Control (OEQC) bulletin. Identify the accepting agency. Submit a copy of the most recent (a) EA with FONSI, (b) EIS, or (c) exemption determination.

Accepting Agency:	NA; No EA required	
Check if applicable		**Date of publication or estimated completion date.**
☑	No EA or EIS is required	(specify reason)
☐	EA status and finding	
☐	EIS status	
☐	NEPA compliance status	

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF PLANNING AND PERMITTING (DPP)

201H Program Application Instructions

This document is intended to assist in preparing a complete application.

Attach a cover letter to the application. Number responses to each application item and each page. A table of contents and list of attachments is highly recommended. Check to ensure the application is complete and all attachments are included before submitting. If you have any questions about completing the application, contact the DPP.

1. Submit a completed Land Use Permits Division Master Application Form.

2. Resubmit the materials provided for the Determination of Eligibility. Provide a statement confirming that the information submitted either remains correct or identify how it has changed and why.

3. Provide a project narrative that includes:

    a. The State Land Use Classification and City and County Zoning District for the site.

    b. How the project is consistent with the goals and policies of the Sustainable Communities or Development Plan in which the project is geographically located. Reference the applicable goals and objectives from the Plan, as appropriate.

    c. Describe the current and historic site conditions. Describe the degree to which existing structures, if any, will be renovated or demolished.

    d. Indicate the flood zone designation for the site from the Federal Emergency Management Agency current Flood Insurance Rate Map(s). Indicate whether the property is in a tsunami evacuation zone. Identify the mitigating measures that will be taken to ensure the safety of residents, as applicable.

    e. Indicate whether the proposed project will relocate any tenants, and if so, the assistance that will be provided. Provide a relocation plan, if necessary.

    f. Describe each proposed building; the type of construction being proposed; the dwelling unit mix including the types of units by bedroom size, the total number of each type of unit and floor area for each type; the square feet attributable to common areas in the buildings; the square feet of non-residential spaces on the site, if any; project amenities; and, proximity to services and employment.

    g. Identify the number of resident, guest, and handicapped parking spaces, bicycle stalls, loading stalls, and how the site will be accessed by vehicles, pedestrians, and people on bicycles.

    h. Describe the existing water, sewer, drainage, roads, and electrical improvements and what additional improvements and other permits and/or approvals are needed to accommodate the project. Explain the status of those permits and/or approvals.

i. Describe the topography and soils and what mitigation is needed, if any, to accommodate new structures, access, and stormwater management.

4. List the proposed exemptions and reference the applicable ordinance sections; their approximate dollar value, as applicable; the degree to which they deviate from development standards of the underlying City and County zoning, as applicable; and justification for each exemption sought.

5. Submit a letter from DPP's Wastewater Branch confirming the capacity to connect to the municipal sewer system or from the DOH documenting approval for an alternative treatment system.

6. Submit a letter confirming availability of water from the Board of Water Supply, or describe how water will otherwise be made available.

7. Submit a letter from the local electricity provider confirming the availability of electricity.

8. Provide the project development schedule.

9. Provide a project management plan, including a sales and/or rental plan that ensures affordability to the target population.

10. Submit a vicinity map and land use map from the appropriate Development or Sustainable Communities Plan.

11. Submit two sets of fully dimensioned drawings and/or plans drawn to scale and prepared by a licensed professional. For document imaging purposes, one set of drawings shall be a maximum size of 11" x 17" and the second should not exceed 24" x 36". DPP staff may request additional copies after acceptance of the application. The plans shall include:

    a. Property lines, lot areas, all existing and proposed easements with dimensions, and the purpose of easements.

    b. Location of all existing and proposed improvements. Indicate if existing structures are to remain, be altered, or be removed.

    c. The dimensions of proposed and existing buildings, and all setbacks from property lines.

    d. Existing contours at vertical intervals of 5 feet where the slope is greater than 10 percent, and not more than 2 feet where the slope is less than 10 percent. Proposed grading must be shown with contours and spot elevations.

    e. Preliminary floor plans and floor area calculations, showing all dimensions used in calculating proposed floor area and building area. Indicate the elements used in the calculation and include the tabulation of total proposed floor area and total allowable floor area.

f. Exterior building elevations and sections with dimensions and existing/proposed finish grades, including all building heights and envelopes measured from these grades. Provide the dimensions between structures.

g. Open space plans and area calculations, showing all dimensions and elements used in calculating these areas, including the total proposed and total required open space. (If bonus areas are used, provide calculations and indicate the applicable areas on the plans.) The open space plan should also specify 1) areas devoted to public, semi-public, and private open space, including parks, plazas, and playgrounds; 2) an integrated circulation system indicating proposed movement of vehicles, goods, pedestrians, and bicyclists within the project area and adjacent areas, including streets and driveways, sidewalks and pedestrian ways, bicycle lanes, bicycle tracks, and multi-use paths.

h. Off-street parking and loading plans and calculations with dimensions of all stalls, aisles, driveways and setbacks from property lines and proposed structures, showing the total number of proposed parking and loading stalls.

i. Preliminary landscaping and screening plans, with enough specificity such that compliance with the requirements of the Land Use Ordinance can be determined.

12. Provide a breakdown of the development costs for the project. Indicate the total dollar amount in the form of cash (or equivalents), land, or “in kind” contributions that your organization will directly contribute to the project. “In kind” contributions may include, but are not limited to, donated construction materials or professional services (i.e., pro bono work by architects, engineers, attorneys, etc.). If land is part of your equity contribution, provide an estimate of the land value and how that number was derived i.e., if the land value is from an appraisal, include a copy of the appraisal. If your organization is not contributing any cash, land, or “in kind” goods and services to the project, please provide an explanation.

    a. Identify the sources of all financing.

    b. Specify whether any operating subsidies have been awarded or are being contemplated.

13. Describe the Applicant’s experience developing or managing affordable housing.

14. If the affordable housing units are for rent, provide proposed rental rates and provide an estimate of monthly utility costs.

15. Document efforts associated with community outreach and comments received.

16. Provide a traffic impact assessment or study, if required by DPP’s Traffic Review Branch.

17. Provide the status of the Land Use Commission application, as necessary, and any correspondence that documents that status.

18. Provide a draft development agreement (optional, may also be submitted after the City Council votes on the Project).

DEPARTMENT OF PLANNING AND PERMITTING
KA 'OIHANA HO'OLĀLĀ A ME NĀ PALAPALA 'AE
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAI'I 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041 • WEBSITE: honolulu.gov/dpp

RICK BLANGIARDI
MAYOR
MEIA

DAWN TAKEUCHI APUNA
DIRECTOR
PO'O

JIRO A. SUMADA
DEPUTY DIRECTOR
HOPE PO'O

RECEIVED
MAR 22 2024

2024/ELOG-432(LM)

NOTICE OF ELIGIBILITY
CHAPTER 201H, HAWAII REVISED STATUTES (HRS), EXEMPTIONS and
CHAPTER 343, HRS, COMPLIANCE DETERMINATION

File No.:	2024/ELOG-432
Owner:	TCG Piiki, LLC
Applicant:	Hale Melia, LLP
Agent:	Tradewind Capital (Chris Fong) and Stanford Carr (Kaloa Robinson)
Location:	1105 Pi'ikoi Street – Downtown
Tax Map Keys:	2-4-004: 046 and 078
Received:	March 7, 2024
Request:	Determination of eligibility for affordable housing exemptions pursuant to Chapter 201H, HRS, from various planning, zoning, construction and/or development standards for an Affordable Housing Project.

The above application has been reviewed and determined to be eligible for processing of affordable housing exemptions by the City and County of Honolulu (City) under Chapter 201H, HRS, as discussed below.

Pursuant to the City's 201H Housing Program Administrative Rules (201H Rules), eligible projects must contain at least 30 dwelling units, of which at least 51 percent will be affordable to low-and moderate-income households. More specifically, at least 20 percent of the units must be set aside for households earning annual incomes less than 80 percent of the area median income (AMI), and 31 percent of the total number of units must be set aside for households earning between 81 percent and 120 percent of the AMI, or lower. The affordable units must remain affordable for a period not less than 30 years.

As detailed in your request, this Project proposes 246 total units, of which 13 units (5.31 percent) will be will be set aside for households earning no more than 30 percent of the AMI, and 232 units (94.69 percent) will be set aside for households earning no more than 60 percent of the AMI, for a period of no less than 66 years. One unit will be reserved for on-site managers, and may be offered at market rate. Therefore, the Project complies with this eligibility requirement of the 201H Rules.

In addition to providing land for residential purposes, the City may allow portions of the land dedicated to the Project to be used for commercial, industrial, or other uses, provided it is an integral part of the Project, and is primarily for the benefit of the residents of the Project. The primary use, a multi-family residential development, is allowed within the BMX-3 Community Business District. No other uses are proposed at this time. If the project includes a commercial or industrial component, please be aware that the 201H Rules stipulate that the City may allow portions of the land to be dedicated to commercial, industrial, or other uses, provided they are integral to the Project and are primarily for the benefit of the residents of the Project. During the processing of the 201H application, the City must consider whether the proposed uses conform with the objectives and policies of the Sustainable Communities or Development Plans, provide employment opportunities to the residents of the Project, provide necessary and convenient amenities and services to the residents of the Project, and whether the Project mitigates adverse impacts on the proposed residential units and adjacent land uses. With the above considerations, the City generally supports mixed-use affordable housing Projects.

The Applicant is deemed eligible if they are licensed or otherwise authorized to do business within the State, have a reasonable amount of experience in the type of work proposed, and have obtained site control of the Project site. The Applicant, Hale Melia, LLP, has a deed showing site control of the Project site by TCG PIIKOI, LLC. TCG PIIKOI, LLC is licensed or otherwise authorized to do business in the State of Hawai'i. The registered agent for TCG PIIKOI, LLC is Tradewind Capital, Inc., who is a Hawai'i-based investment firm focused on real estate and private equity. Tradewind Capital has partnered with Stanford Carr, a real estate developer with experience in affordable housing. Considering this, the Applicant is eligible to submit the application for review under the 201H Rules.

The Project proposes to apply for State funds, which is the only trigger for Hawai'i Revised Statutes Chapter 343 compliance, and therefore meets the criteria set forth in Hawai'i Administrative Rules Chapter 11-200.1-15(c)(10(A). The Project is located within the State urban land use classification, and therefore the Project meets the criteria set forth in the Hawai'i Administrative Rules (HAR) Section 11-200.1-15(c)(10)(B). Multi-family dwellings are a permitted use within the BMX-3 Community Business District, and therefore the Project meets the criteria set forth in HAR Section 11-200.1-15(c)(10)(C). As proposed, the Project does not require a shoreline setback variance, nor is the site in an environmentally sensitive area; therefore, the Project meets the criteria set forth in HAR Section 11 200.-15(c)(10)(D). As the Project meets all the criteria, the Project is exempt from the preparation of an EA.

Lastly, the Agent has supplied all of the necessary information for the Department pf Planning and Permitting (DPP) to make a determination of eligibility, pursuant to Section 20-25-8 of the 201H Rules. Therefore, the Project will be eligible for further processing under the 201H, HRS, program by the City.

After our initial review of this proposal to determine eligibility, we recommend that in addition to the materials described in the 201H application instructions the following be included in your application submittal:

1. List of all relevant owners, applicants, agents, and partners, including their authorization of the Project if necessary.

2. A detailed discussion of any additional approvals needed from other agencies.

3. A discussion of how the Project complies with the policies of the Primary Urban Center Development Plan (including the Draft Plan), and the O'ahu General Plan.

4. An analysis of the impact the Project might have on the surrounding area, including on important views between Punchbowl and Diamond Head, and mauka view up Piikoi Street.

5. An appropriate analysis of traffic, including a pedestrian study and study of multi-modal accessibility.

6. A comprehensive list of all exemptions and fee waivers (including approximate dollar value) being requested, including a justification for each requested exemption detailing the purpose, need, and potential impacts of granting the exemption.

7. A comprehensive list and explanation of the other permits and/or approvals that the Project will require and text explaining the status of those permits.

Should you have any questions, please contact Laura Mo, of our staff, at (808) 768-8025 and refer to the above file number.

for Dawn Takeuchi Apuna
Director

Date: March 20, 2024

Note: If you have appointed an agent to represent you, all future correspondence will be with the agent. If you should change agents, please notify the Department of Planning and Permitting immediately.

Appendix C Exemption from Environmental Review

DEPARTMENT OF PLANNING AND PERMITTING
KA 'OIHANA HO'OLĀLĀ A ME NĀ PALAPALA 'AE
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAI'I 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041 • WEBSITE: honolulu.gov/dpp

RICK BLANGIARDI
MAYOR
MEIA

DAWN TAKEUCHI APUNA
DIRECTOR
PO'O

JIRO A. SUMADA
DEPUTY DIRECTOR
HOPE PO'O

February 28, 2024

2024/ELOG-203 (LM)

Mr. Chris Fong and Mr. Kaloa Robinson
Hale Melia, LLP
201 Merchant Street, Suite 2050
City Financial Tower
Honolulu, Hawai'i 96813

Dear Mr. Fong and Mr. Robinson:

SUBJECT: Exemption from Environmental Review
Hawai'i Administrative Rules (HAR) Chapter 11-200.1 and
Hawai'i Revised Statutes (HRS) Chapter 343
Pi'ikoi and Young Street Affordable Rental Housing Development
1105 Pi'ikoi Street and 1216 Young Street
Tax Map Keys 2-4-004: 046 and 078

This letter is in response to your request, received on February 5, 2024, seeking written confirmation that the proposed development is exempt from the preparation of an Environmental Assessment (EA). We concur that the Project is eligible for an exemption from the preparation of an EA.

The proposed action is new construction of affordable housing, with approximately 245 units within the BMX-3 Community Business Distrct. The Project plans to apply for State funds, which is the only trigger for HRS Chapter 343 compliance, and therfore meets the criteria set forth in HAR Section 11-200.1-15(c)(10)(A). The Project is located within the State urban land use classification, and therefore the Project meets the criteria set forth in HAR Section 11-200.1-15(c)(10)(B). Multi-family dwellings are a permitted use within the BMX-3 Community Business Distrct, and therefore the Project meets the criteria set forth in HAR Section 11-200.1-15(c)(10)(C). As proposed, the Project does not require a shoreline setback variance, nor is the site in an environmentally sensitive area; therefore, the Project meets the criteria set forth in HAR Section 11-200.-15(c)(10)(D). As the Project meets all the criteria, the Project is exempt from the preparation of an EA.

Should you have any questions, please contact Laura Mo, of our Urban Design Branch, at (808) 768-8025 or via email at laura.mo@honolulu.gov.

Very truly yours,

for Dawn Takeuchi Apuna
Director

Appendix D Proposed Exemptions

Building Design Exemptions

Development Standard or requirement	Relevant Section	Proposed Project Development Standard	Applicable Agency	Rationale	Estimated Value
Density (FAR)	ROH Section 21-3.120-2	Exemption to allow a maximum density of 7.0 FAR (instead of 2.5)	DPP	To provide more affordable housing beyond what code allows	-
Building Height	ROH Section 21-3.120-2	Exemption to allow a maximum height of 225' including mechanical equipment and 210' excluding mechanical equipment (instead of 150')	DPP	To provide more affordable housing beyond what code allows	-
Height Setback	ROH Section 21-3.120-2	Exemption to allow for no height setback.	DPP	The height encroachment allows for 247 affordable housing units and a more efficient design	-
Additional explanation:	The Project will encroach into the height setbacks (above 40ft, an additional 1-foot setback for each additional 10 feet of height).				
Yard Side and Rear Setback	ROH Section 21-3.120-2	Exemption to allow encroachment into the 10-foot yard side and rear setback.	DPP	The parking structure and loading stall zone encroach into the 10' side/rear setback to accommodate 243 parking stalls	-
Additional explanation:	The residential tower does not encroach into the front or side/rear yard setback. However, the parking structure which is connected to the residential tower does encroach into the 10' side/read setback on the north and east side. A parking structure is typically considered an "other use" in the LUO which requires a 0' side/rear setback. In this instance, given the parking structure is connected to the residential tower it may be considered "multifamily use" and would therefore encroach onto the 10' side and rear setback required for multifamily structures.				

Building Fee Exemptions

Development Standard or requirement	Relevant Section	Proposed Project Development Standard	Applicable Agency	Rationale	Estimated Value
Building Permit Fees	ROH Sec. 18-6.2	Exemption from payment of Building Permit Fees	DPP	To facilitate the economic feasibility of the Project as a 201H affordable housing project.	$454,000
Plan Review Fees	ROH Sec. 18-6.1	Exemption from payment of Plan Review Fees	DPP	To facilitate the economic feasibility of the Project as a 201H affordable housing project.	$25,000
Grading and Grubbing Fees	ROH, Sec. 18A-2.4	Exemption from payment of Grading and Grubbing Fees	DPP	To facilitate the economic feasibility of the Project as a 201H affordable housing project.	$1,220
Storm Drain Connection Fee	ROH Sec. 14-12.12(f)	Exemption from payment of Storm Drain Connection Fee	DPP	To facilitate the economic feasibility of the Project as a 201H affordable housing project.	$200
Wastewater System Facility Charge	ROH Sec. 43-10.1, 43-10.2, 43-10.3	Exemption from payment of Wastewater System Facility Charge for affordable dwelling units	DPP	To facilitate the economic feasibility of the Project as a 201H affordable housing project.	$967,920
Water System Facility Charge	BWS R & R 1-102, 2-202(2), and 2-203(3)	Deferral of payment of Water Supply Connection Fee until Issuance of Cert. of Occupancy	BWS	To facilitate the applicant's financial capability in proceeding with the project through the construction period.	$572,200

Development Standard or requirement	Relevant Section	Proposed Project Development Standard	Applicable Agency	Rationale	Estimated Value
Wastewater Sewer Installation Charges	ROH 43-3.2	Exemption of payment of Sewer Installation Charges	DPP	To facilitate the applicant's financial capability in proceeding with the project through the construction period.	$8,712
Wastewater Sewer Service Charge	ROH 43-6.1, 43-6.2, 43-6.3	Exemption from payment of Wastewater Sewer Service Fee until Issuance of Cert. of Occupancy	DPP	To facilitate the applicant's financial capability in proceeding with the project through the construction period.	$25,000
Fire Department Review Fees	ROH 20-1.1	Exemption from Fire Department plan review fees	HFD	To facilitate the applicant's financial capability in proceeding with the project through the construction period.	$45,430
General Excise Tax Payments	201H-36	Exemption from general excise taxes	DPP	To facilitate the applicant's financial capability in proceeding with the project through the construction period.	$6,000,000
Trenching, Repair, and Service Permit Fees	ROH 14-2.1.c	Exemption from ROH Section 14-2.1 to exempt Applicant from payment of trenching, repair, and service permit fees	DPP	To facilitate the applicant's financial capability in proceeding with the project through the construction period.	$400
Disability and Communications Access Board Review Fees	HRS 103-50	Exemption from HRS section 103-50 to exempt Applicant front payment of DCAB review fees	DCAB	To facilitate the applicant's financial capability in proceeding with the project through the construction period.	$25,000

Development Standard or requirement	Relevant Section	Proposed Project Development Standard	Applicable Agency	Rationale	Estimated Value
School Impacts Fees	HRS 302A-1601 thru 1612 and the Hawaii State Department of Education (HIDOE)	Exemption from HRS section 1601-1612 of the School Impact fee	HIDOE	To facilitate the economic feasibility of the Project as a 201H affordable housing project.	$950,000
Park Dedication Fee	ROH Chapter 22, Article 7	Exemption from Park Dedication Requirements for the Project's affordable housing units	DPP	To facilitate the economic feasibility of the Project as a 201H affordable housing project.	$4,290,000

Appendix E Traffic Impact Report

Traffic Impact Report

1105 Piikoi Street and 1216 Young Street Development

Prepared for:
Hale Melia LLP

Prepared by:
Wilson Okamoto Corporation

May 2024

TRAFFIC IMPACT REPORT

FOR THE

1105 PIIKOI AND 1216 YOUNG STREET DEVELOPMENT

Prepared for:

Hale Melia LLP
City Financial Tower Building
201 Merchant Street
Honolulu, HI 96813

Prepared by:

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96826
WOC Ref #10866-01

May 2024

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I. INTRODUCTION

A. Purpose of Study

The purpose of this study is to identify and assess the traffic impacts resulting from the 1105 Piikoi Street and 1216 Young Street Development in Honolulu on the island of Oahu. The proposed project entails the replacement of existing uses with a new residential development.

B. Scope of Study

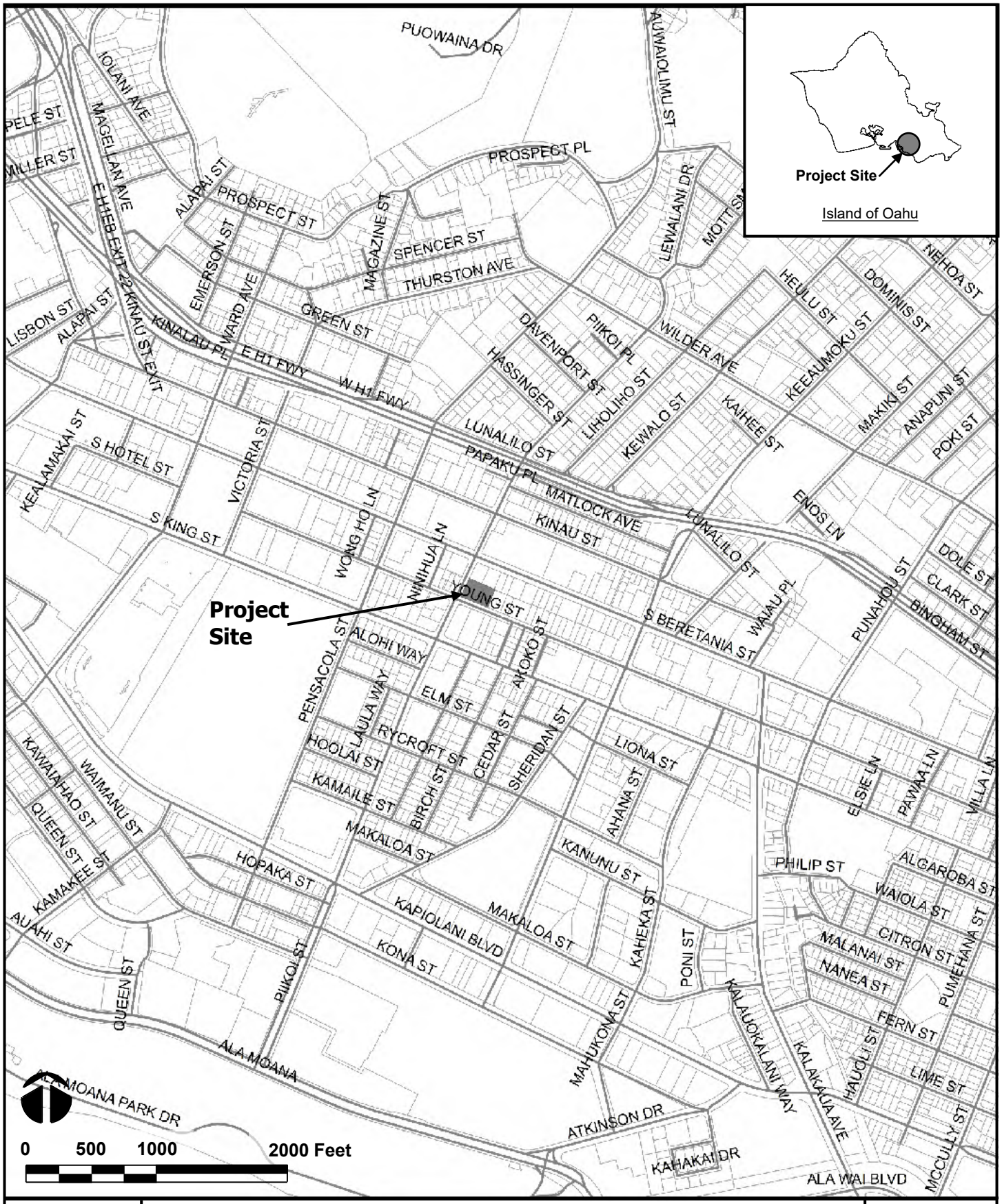
This report presents the findings and conclusions of the traffic study, the scope of which includes:

1. Description of the proposed project.
2. Evaluation of existing roadway and traffic operations in the vicinity.
3. Analysis of future roadway and traffic conditions without the proposed project.
4. Analysis and development of trip generation characteristics for the proposed project.
5. Superimposition of site-generated traffic over future traffic conditions.
6. The identification and analysis of traffic impacts resulting from the proposed project.
7. Assessment of multimodal facilities including pedestrian, bicycle, and transit facilities
8. 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 development is located adjacent to Piikoi Street on the northeast corner of the intersection with Young Street in Honolulu on the island of Oahu (see Figure 1). The project site is bounded by Piikoi Street to the west, Young Street to the south, residential uses to the east, and commercial uses to the north. The project site is further identified as Tax Map Keys (TMKs): 2-4-004: parcels 046 and 078. Access to the project site is expected to be provided via driveways off Young Street.



WILSON OKAMOTO CORPORATION	1105 PIIKOI STREET AND 1216 YOUNG STREET	FIGURE 1
	LOCATION MAP AND VICINITY MAP	

B. Project Characteristics

The project site for the proposed 1105 Piikoi Street and 1216 Young Street Development (hereinafter referred to as the "Piikoi Development") currently houses several low-rise multifamily buildings with a total of 39 units. The proposed project entails the redevelopment of the existing site to provide a new high-rise residential development that includes approximately 247 affordable multifamily units with ground floor amenities. It should be noted that the building design incorporates a 22-feet setback to accommodate a potential widening of Piikoi Street in the future for Complete Streets improvements. Primary access will be provided via a new driveway off Young Street near the east end of the project site with secondary service access provided via a second two-way driveway west of the primary access. The proposed development is anticipated to be completed and occupied by Year 2028. See Figure 2 for the proposed site plan.

III. EXISTING TRAFFIC CONDITIONS

A. Area Roadway System

In the vicinity of the project, Piikoi Street is a one-way (northbound) City and County of Honolulu roadway generally oriented in the north-south direction that varies between five and six lanes. At the signalized intersection with Young Street, the Piikoi Street approach has one shared left-turn and through lane, four through lanes, and an exclusive right-turn lane. Young Street is a predominantly two-lane, two-way City and County of Honolulu roadway generally oriented in the east-west direction serving the residential and commercial uses along its alignment. At the intersection with Piikoi Street, the eastbound approach of Young Street has one shared left-turn and through lane and a through lane while the westbound approach has one through lane and an exclusive right-turn lane.

North of the intersection with Young Street, Piikoi Street intersects South Beretania Street. At this signalized intersection, the northbound approach of Piikoi Street has an exclusive left-turn lane and four through lanes. In the vicinity of the project site, South Beretania Street is a predominantly five-lane, one-way (westbound) City and County of Honolulu roadway that forms a couplet with South King Street that runs parallel to the Interstate H-1 Freeway and Vineyard Boulevard

WILSON OKAMOTO CORPORATION	**1105 PIIKOI STREET AND 1216 YOUNG STREET**	FIGURE 2
	PROJECT SITE PLAN	

through downtown Honolulu. The westbound approach of South Beretania Street has four through lanes and a channelized right-turn lane.

South of the intersection with Young Street, Piikoi Street intersects South King Street. At this signalized intersection, the northbound approach of Piikoi Street includes four through lanes and an exclusive right-turn lane. In the vicinity of the project site, South King Street is a predominantly five-lane, one-way (eastbound) City and County of Honolulu roadway generally oriented in the east-west direction that serves as the eastbound component of a roadway couplet with South Beretania Street. The eastbound approach of South King Street includes a shared left-turn and through lane, and four through lanes. It should be noted that there is a sign at this approach indicating that vehicles in the left lane are not allowed to turn left on red.

East of the intersection with Piikoi Street, Young Street intersects Keeaumoku Street. At this signalized intersection, the eastbound approach of Young Street includes an exclusive left-turn lane and a shared through and right-turn lane, while the westbound approach has a shared through and left-turn lane, and a shared through and right-turn lane. In the vicinity of the project site, Keeaumoku Street is a predominantly six-lane, two-way collector roadway generally oriented in the north-south direction. The southbound and northbound approaches of Keeaumoku Street at the intersection with Young Street includes an exclusive left-turn lane, one through lane, and a shared through and right-turn lane.

B. Traffic Volumes and Conditions

1. General

a. Field Investigation

Field investigations were conducted on February 20-21, 2024 and consisted of manual turning movement count surveys during the morning peak hours between 6:30 AM and 8:30 AM and the afternoon peak hours between 4:00 PM and 6:00 PM at the following intersections:

- Piikoi Street and Young Street
- Piikoi Street and South Beretania

- Piikoi Street and South King Street
- Young Street and Keeaumoku Street

Appendix A includes the existing traffic 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, 2016, 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.

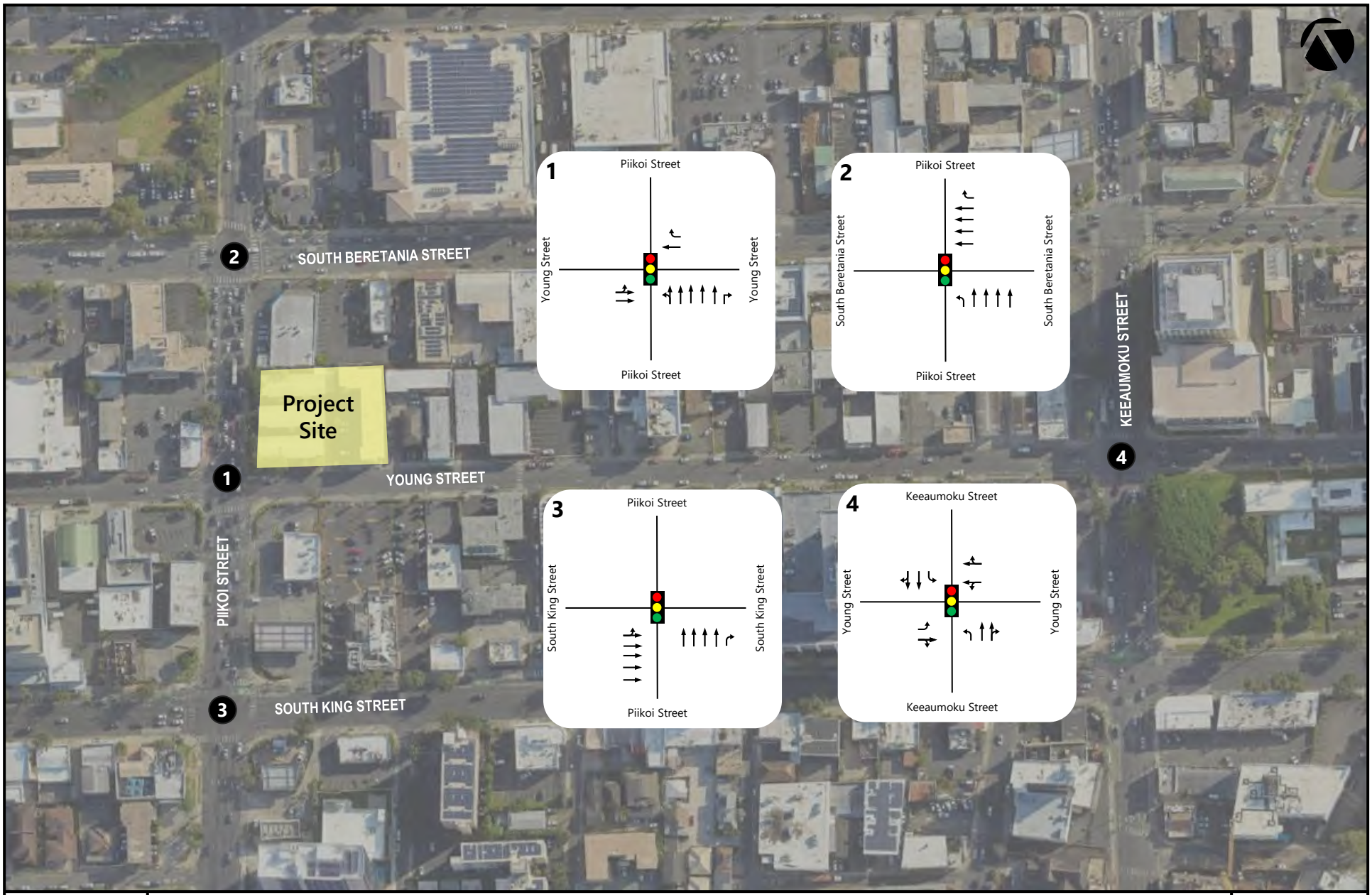
LOS is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS "A" through "F"; LOS "A" representing ideal or free-flow traffic operating conditions and LOS "F" unacceptable or potentially congested traffic operating conditions.

"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. Existing Peak Hour Traffic

a. General

Figures 3 and 4 show the existing lane configurations and peak period traffic volumes. 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. The analysis is based on these peak hour time periods for each intersection to identify the traffic impacts resulting from the proposed project. LOS calculations are included in Appendix C.



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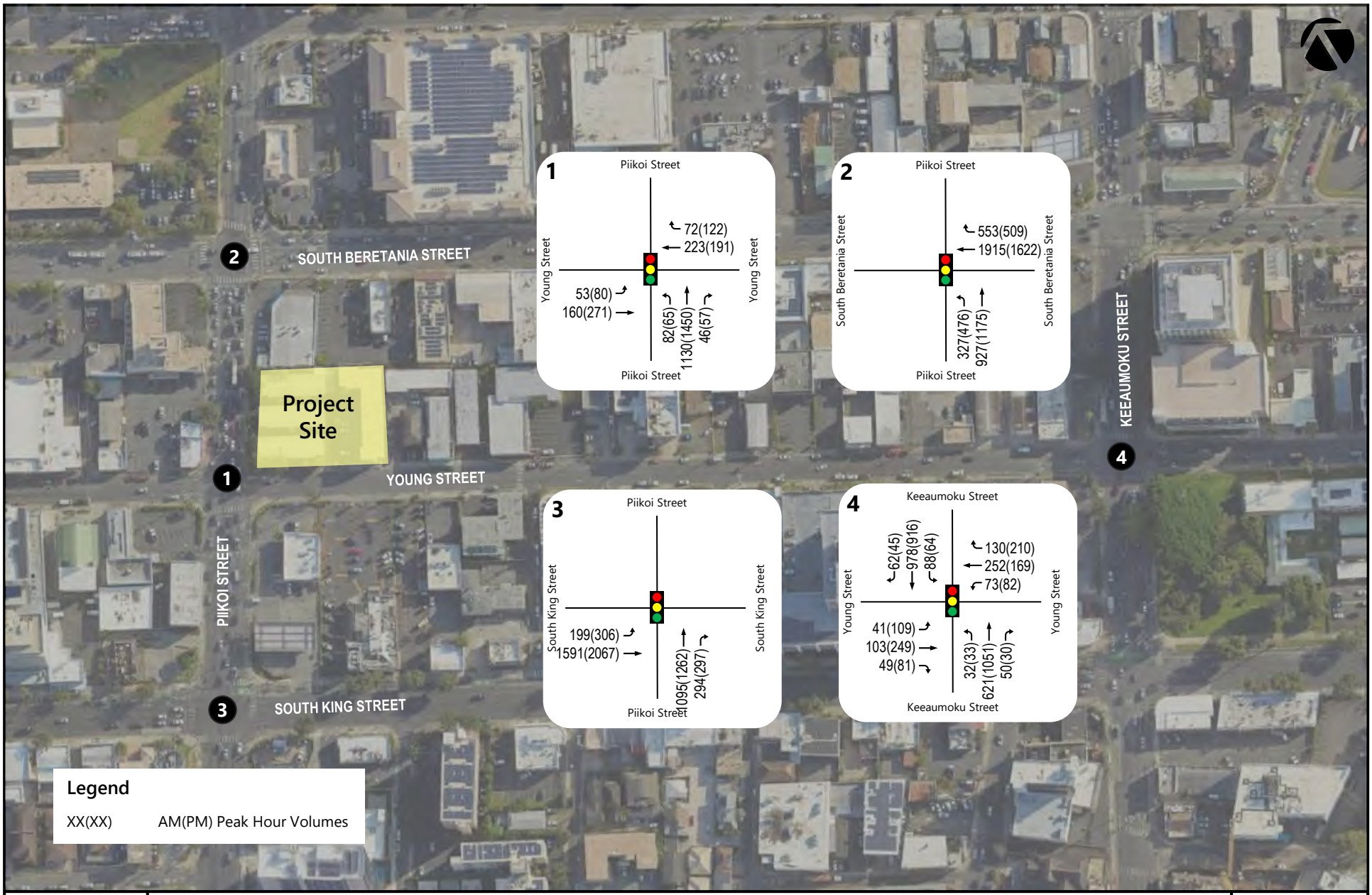
1105 PIIKOI STREET AND 1216 YOUNG STREET

EXISTING LANE CONFIGURATIONS

FIGURE 3



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1105 PIIKOI STREET AND 1216 YOUNG STREET

EXISTING YEAR 2024 PEAK HOURS OF TRAFFIC

FIGURE 4

b. Piikoi Street and Young Street

At the intersection with Young Street, the Piikoi Street approach of the intersection carries 1,258 vehicles and 1,572 vehicles northbound during the AM and PM peak hours of traffic, respectively. The northbound approach operates at LOS "A" during both peak periods. Traffic queues periodically occurred on the northbound approach during the peak periods. Average queue lengths of 5-7 vehicles were observed on this approach during the AM peak period while average queue lengths of 6-8 vehicles were observed during the PM peak period. Field observations indicate these queues are influenced by the queues that form at the downstream intersections leading to the connections to the H-1 Freeway on-ramps. These queues were primarily observed within the three right lanes with minimal queueing observed within the two left lanes. Most of these queues were observed clearing the intersection after each traffic signal cycle change.

Young Street carries 213 vehicles eastbound and 295 vehicles westbound at this intersection during the AM peak hour of traffic. During the PM peak hour, traffic volumes are higher with 351 vehicles traveling eastbound and 313 vehicles traveling westbound. The eastbound and westbound approaches operate at LOS "B" during both peak periods. Traffic queues occasionally formed on the westbound and eastbound approaches of the intersection with the most significant queueing occurring along the eastbound approach. Average queue lengths of 3-5 vehicles were observed along this approach during the AM peak period and average queue lengths of 4-6 vehicles were observed during the PM peak period. Field observations indicate that queueing along Young Street are influenced by the queues that form along Piikoi Street, limiting the available gaps for left-turn and right-turning vehicles from entering the traffic stream along Piikoi Street.

Most of these queues were observed clearing the intersection after each traffic signal cycle change.

Crosswalks are provided across Young Street on the east and west sides of the intersection, as well as across Piikoi Street on the north and south sides of the intersection. During the AM peak hour, 43 pedestrians and 41 pedestrians were observed crossing Young Street on the east and west sides of the intersection, respectively, while 17 pedestrians and 18 pedestrians were observed crossing Piikoi Street on the north and south sides of the intersection, respectively. During the PM peak hour, 73 pedestrians and 22 pedestrians were observed crossing Young Street on the east and west sides of the intersection, respectively, while 6 pedestrians and 22 pedestrians were observed crossing Piikoi Street on the north and south sides of the intersection, respectively.

c. **Piikoi Street and South Beretania Street**

At the intersection with South Beretania Street, Piikoi Street carries 1,254 vehicles northbound and 1,651 vehicles northbound during the AM and PM peak hours of traffic, respectively. The northbound approach operates at LOS "C" and LOS "B" during the AM and PM peak periods, respectively. Traffic queues periodically formed along the northbound approach. As previously discussed, queues that form downstream near the connections to the H-1 Freeway ramps extended through this intersection influencing operations along Piikoi Street. Although most of these queues were observed clearing the intersection, vehicles occasionally had to wait for more than 1 traffic signal cycle change to clear the intersection.

The South Beretania Street approach of the intersection carries 2,468 vehicles and 2,131 vehicles westbound during the AM and PM peak hours of traffic, respectively. The westbound approach operates at LOS "B" during both peak periods. Traffic queues occasionally formed along the westbound approach. Average queue lengths of 11-

13 vehicles were observed along this approach during both peak periods. Most of these queues were observed clearing the intersection after each traffic signal cycle.

Crosswalks are provided across Piikoi Street on the north and south sides of the intersection, as well as across South Beretania Street on the east and west sides of the intersection. During the AM peak hour, 37 pedestrians and 43 pedestrians were observed crossing Piikoi Street on the north and south sides of the intersection, respectively, while 60 pedestrians and 79 pedestrians were observed crossing South Beretania Street on the east and west sides of the intersection, respectively. During the PM peak hour, 39 pedestrians and 44 pedestrians were observed crossing Piikoi Street on the north and south sides of the intersection, respectively, while 77 pedestrians and 47 pedestrians were observed crossing South Beretania Street on the east and west sides of the intersection, respectively.

d. Piikoi Street and South King Street

At the intersection with South King Street, Piikoi Street carries 1,389 vehicles and 1,559 vehicles northbound during the AM and PM peak hours of traffic, respectively. The northbound approach operates at LOS "B" during the AM and PM peak periods. Traffic queues periodically formed along the northbound approach during both peak periods. Average queue lengths of 8-10 vehicles were observed during both peak periods. Most of these queues were observed clearing the intersection after each traffic signal change.

The South King Street approach of the intersection carries 1,790 vehicles and 2,373 vehicles eastbound during the AM and PM peak hours of traffic, respectively. The eastbound approach operates at LOS "B" during both peak periods. Traffic queues periodically formed along the South King Street approach of the intersection with more significant queueing observed during the PM peak period.

Average queue lengths of 8-10 vehicles were observed along this approach during this peak period.

Crosswalks are provided across Piikoi Street on the north and south sides of the intersection, as well as across South King Street on the east and west sides of the intersection. During the AM peak hour, 37 pedestrians and 43 pedestrians were observed crossing Piikoi Street on the north and south sides of the intersection, respectively, while 60 pedestrians and 56 pedestrians were observed crossing South King Street on the east and west sides of the intersection, respectively. During the PM peak hour, 39 pedestrians and 49 pedestrians were observed crossing Piikoi Street on the north and south sides of the intersection, respectively, while 68 pedestrians and 44 pedestrians were observed crossing South King Street on the east and west sides of the intersection, respectively.

e. Young Street and Keeaumoku Street

At the intersection with Keeaumoku Street, Young Street carries 455 vehicles westbound and 193 vehicles eastbound during the AM peak hour of traffic. During the PM peak hour, traffic volumes are higher with 461 vehicles traveling westbound and 439 vehicles traveling eastbound. The westbound and eastbound approaches operate at LOS "B" during both peak periods. Traffic queues occasionally formed along the Young Street approaches with the most significant queueing observed along the westbound approach. Average queue lengths of 4-6 vehicles was observed along this approach during both peak periods.

The Keeaumoku Street approach of the intersection carries 1,128 vehicles southbound and 703 vehicles northbound during the AM peak hour of traffic. During the PM peak hour, the overall traffic volume is higher with 1,025 vehicles traveling southbound and 1,114 vehicles traveling northbound. The northbound approach operates at LOS "A" and LOS "B" during the AM and PM peak periods,

respectively while the southbound approach operates at LOS "B" during both peak periods. Traffic queues periodically formed on the Keeaumoku Street approaches of the intersection with more significant queueing occurring during the PM peak period. Average queues of 6-8 vehicles were observed along the northbound and southbound approaches during this peak period.

Crosswalks are provided across Young Street on the east and west sides of the intersection, as well as across Keeaumoku Street on the north and south sides of the intersection. During the AM peak hour, 21pedestrians and 37 pedestrians were observed crossing Young Street on the east and west sides of the intersection, respectively, while 18 pedestrians and 8 pedestrians were observed crossing Keeaumoku Street on the north and south sides of the intersection, respectively. During the PM peak hour, 33 pedestrians and 55 pedestrians were observed crossing Young Street on the east and west sides of the intersection, respectively, while 9 pedestrians and 9 pedestrians were observed crossing Keeaumoku Street on the north and south sides of the intersection, respectively.

IV. PROJECTED TRAFFIC CONDITIONS

A. Site-Generated Traffic

1. Trip Generation Methodology

The trip generation methodology used in this study is based upon generally accepted techniques developed by the Institute of Transportation Engineers (ITE) and published in "Trip Generation, 11th Edition," 2021. The ITE trip generation rates are developed empirically by correlating vehicle trip generation data with various land use characteristics such as the number of vehicle trips generated per dwelling unit. Table 1 summarizes the trip generation characteristics related to the proposed Piikoi Development applied to the AM and PM peak hours of traffic.

Table 1: Peak Hour Trip Generation

MULTIFAMILY HOUSING (HIGH-RISE) INDEPENDENT VARIABLE: Dwelling Units = 247		
		PROJECTED TRIP ENDS
AM PEAK	ENTER	23
	EXIT	44
	TOTAL	67
PM PEAK	ENTER	44
	EXIT	35
	TOTAL	79

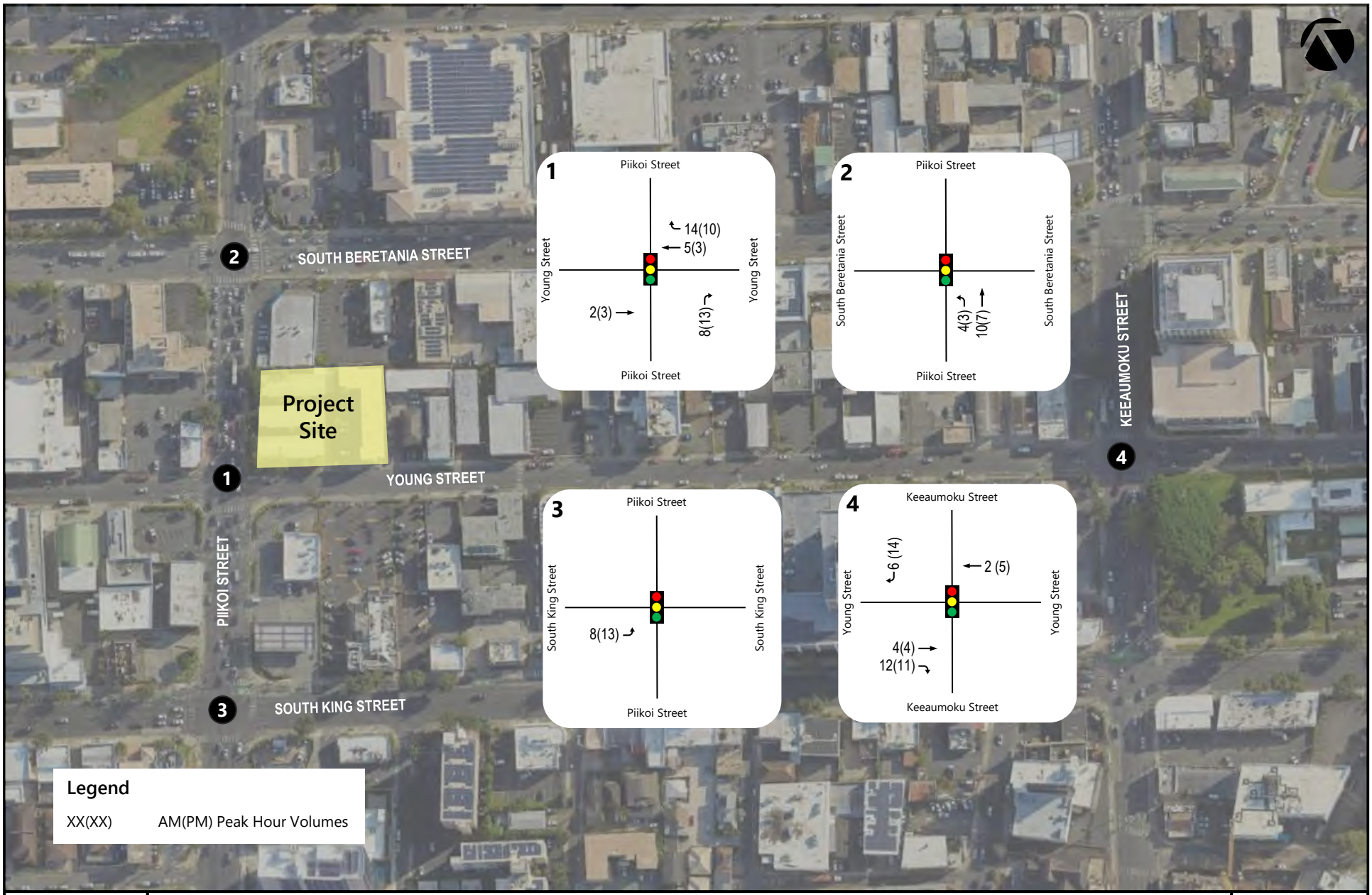
The trip generation methodology also includes provisions for multimodal trips. Multimodal trips are trips made using non-motorized modes of travel such as walking and biking, as well as trips made using transit. The trips generated by the new development were adjusted to account for the trips made utilizing alternative modes of transportation based on the study "Commuting Patterns in Hawaii" published by the State of Hawaii Department of Business, Economic Development and Tourism, Research and Economic Analysis Division dated April 2015. Table 2 shows the adjusted trip generation characteristics applied to the AM and PM peak hours of traffic.

Table 2: Adjusted Peak Hour Trip Generation

TOTAL		
AM PEAK	ENTER	18
	EXIT	35
	TOTAL	53
PM PEAK	ENTER	35
	EXIT	28
	TOTAL	63

2. Trip Distribution

Figure 5 shows the distribution of site-generated traffic during the AM and PM peak periods. Primary access to the proposed project will be provided via driveways off Young Street. The directional distribution of site-generated vehicles was based on the relative distribution of traffic along South Beretania and South King Streets. Site-generated vehicles were distributed at the study intersections based upon their assumed origin/destination, allowed turning movements, and the relative convenience of the available routes.



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1105 PIIKOI STREET AND 1216 YOUNG STREET

DISTRIBUTION OF SITE-GENERATED VEHICLES

FIGURE 5

B. Through Traffic Forecasting Methodology

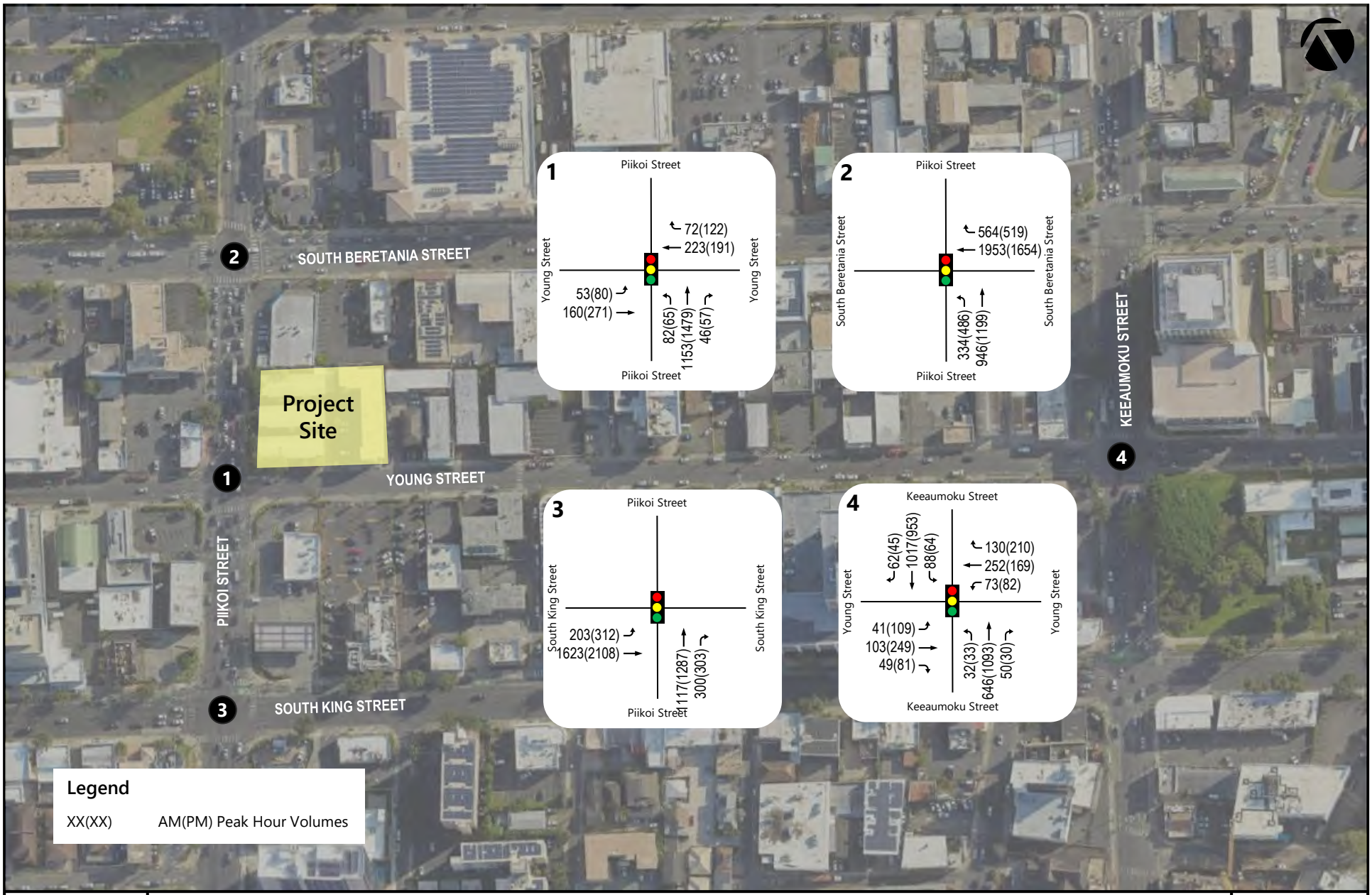
The travel forecast is based upon historical traffic count data obtained from the State DOT, Highways Division at survey stations in the vicinity of the project site. The historical data indicates relatively stable traffic volumes along the roadways in the study area. As such, an annual traffic growth rate of approximately 0.5% was conservatively assumed along South King Street, South Beretania Street, Piikoi Street in the project vicinity, while an annual traffic growth rate of approximately 1% was assumed along Keeaumoku Street to account for anticipated future developments along this roadway further south of the project site. Using 2024 as the Base Year, a growth rate factor of 1.02 was applied to the existing through traffic demands along South King Street, South Beretania Street, Piikoi Street while a growth rate factor of 1.04 was applied to the existing through demands along Keeaumoku Street to achieve the projected Year 2028 traffic demands.

C. Total Traffic Volumes Without Project

The projected Year 2028 AM and PM peak period traffic volumes and operating conditions without the proposed Piikoi Development are shown in Figure 6 and summarized in Table 3. As previously mentioned, the Year 2028 without project conditions incorporate ambient growth in traffic. The existing levels of service are provided for comparison purposes. LOS calculations are included in Appendix D.

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

Intersection	Approach/	AM		PM	
		Exist	Year 2028 w/out Proj	Exist	Year 2028 w/out Proj
Piikoi St/ Young St	Eastbound	B	B	B	B
	Westbound	B	B	B	B
	Northbound	A	A	A	A
Piikoi St/ South Beretania St	Westbound	B	B	B	B
	Northbound	C	C	B	C
Piikoi St/ South King St	Eastbound	B	B	B	B
	Northbound	B	B	B	C



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1105 PIIKOI STREET AND 1216 YOUNG STREET

YEAR 2028 PEAK HOURS OF TRAFFIC WITHOUT PROJECT

FIGURE 6

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

Intersection	Approach/	AM		PM	
		Exist	Year 2028 w/out Proj	Exist	Year 2028 w/out Proj
Young St/ Keeaumoku St	Eastbound	B	B	B	C
	Westbound	B	B	B	B
	Northbound	A	A	B	B
	Southbound	B	B	B	B

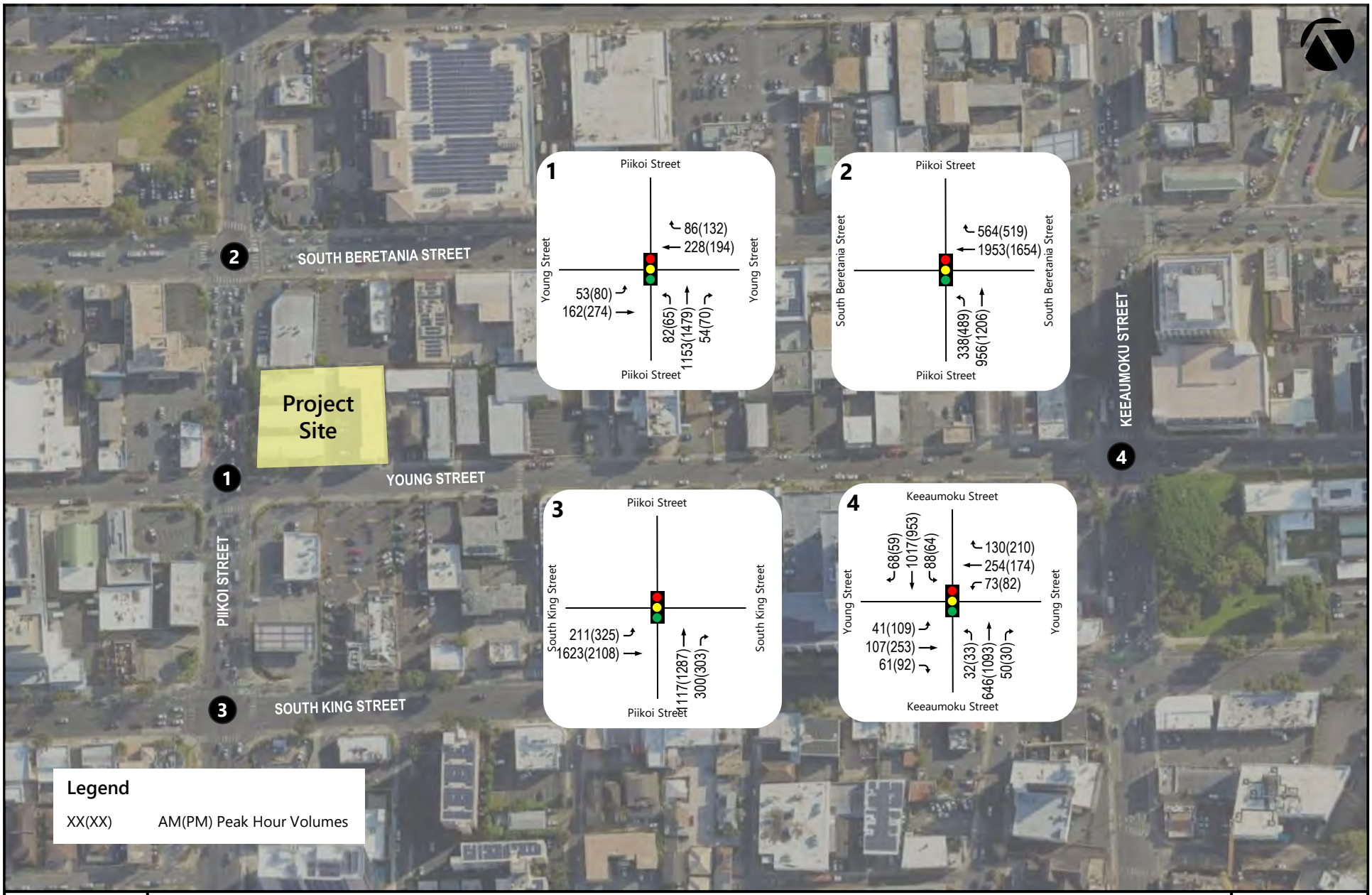
Under Year 2028 without project conditions, traffic operations are generally expected to remain similar to similar to existing conditions. Along Piikoi Street, traffic operations at the intersection with Young Street is expected to continue operating at LOS "B" or better during both peak periods while those at South Beretania Street are expected to continue operating at LOS "C" or better during both peak periods. Along Keeaumoku Street, the approaches at the intersection with Young Street are anticipated to continue operating similar to existing conditions with the exception of the eastbound approach where it's expected to operate at a slightly lower LOS "C" during the PM peak period. The remaining study intersections are also expected to continue operating similar to existing conditions.

D. Total Traffic Volumes With Project

Figure 7 shows the Year 2028 cumulative AM and PM peak hour traffic conditions resulting from the proposed Piikoi Development. The cumulative volumes consist of site-generated traffic superimposed over Year 2028 projected traffic demands. The traffic impacts resulting from the proposed project are addressed in the following section.

V. TRAFFIC IMPACT ANALYSIS

The projected Year 2028 cumulative AM and PM peak hour traffic conditions with the Piikoi Development are summarized in Table 4. The existing and projected Year 2028 (Without Project) operating conditions are provided for comparison purposes. LOS calculations are included in Appendix E.



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1105 PIIKOI STREET AND 1216 YOUNG STREET

YEAR 2028 PEAK HOURS OF TRAFFIC WITH PROJECT

FIGURE 7

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

Intersection	Approach	AM		PM	
		Year 2028		Year 2028	
		w/out Proj	w/ Proj	w/out Proj	w/ Proj
Piikoi St/ Young St	Eastbound	B	B	B	B
	Westbound	B	B	B	B
	Northbound	A	A	A	A
Piikoi St/ South Beretania St	Westbound	B	B	B	B
	Northbound	C	C	C	C
Piikoi St/ South King St	Eastbound	B	B	B	B
	Northbound	B	B	C	C
Young St/ Keeaumoku St	Eastbound	B	B	C	C
	Westbound	B	B	B	B
	Northbound	A	A	B	B
	Southbound	B	B	B	B

Under Year 2028 with project conditions, traffic operations in the vicinity are expected to remain similar to without project conditions. Along Piikoi Street, traffic operations at the intersection with South Beretania Street and South King Street are anticipated to continue operating at LOS "C" or better during both peak periods. As previously discussed, traffic operations along this roadway are expected to continue being influenced by the existing queues that form at the downstream intersection leading to the connections to the H-1 Freeway on ramps. The approaches of the study intersection along Young Street at the intersection Piikoi Street are expected to continue operating at LOS "B" or better whereas those at the intersection with Keeaumoku 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.

VI. MULTIMODAL FACILITIES

A. Pedestrian Facilities

The proposed project is located in a generally well-developed area with a network of improved sidewalks and marked crosswalks. However, the overall pedestrian environment varies depending on the location. On the west side of the project, Piikoi Street has continuous, but narrow sidewalks along both sides of the

roadway with overhead street lighting provided to increase pedestrian comfort during the evening hours. The overall pedestrian environment along this roadway is influenced by the high volume of traffic, presence of utility poles and proximity of the adjacent buildings which reduce the effective width of the sidewalk, and the multiple access points (driveways) along its alignment. Pedestrian crossings along Piikoi Street are facilitated via crosswalks, curb ramps, and designated pedestrian phases at the signalized intersections with Young Street, South Beretania Street, and South King Street.

Along the south side of the project site, Young Street also includes improved, but narrow sidewalks with overhead street lighting along the south side of the roadway. Similar to Piikoi Street, the overall pedestrian environment is influenced by the presence of utility poles and proximity of the adjacent buildings which reduce the effective width of the sidewalk, as well as the multiple access points (driveways) along its alignment.

The proposed project is expected to maintain/improve the existing pedestrian facilities in the vicinity of the project. The project is expected to incorporate frontage improvements along Piikoi Street and Young Street by setting back the building faces and providing appropriate sidewalk widths and landscaping treatments along its frontage to enhance the overall pedestrian environment.

B. Bicycle Facilities

1. Methodology

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

- LTS 1: Characterized by strong separation from all except low speed, low volume traffic. Simple crossings. Suitable for children.

- LTS 2: Except in low speed/low volume traffic situations, cyclists have their own place to ride that keeps them from having to interact with traffic except at formal crossings. There is a physical separation from higher speed and multilane traffic. Crossings are easy for an adult to navigate. This refers to a level of traffic stress that most adults can tolerate, particularly those sometimes classified as interested but concerned.

- LTS 3: Involves interaction with moderate speed or multilane traffic, or close proximity to higher speed traffic. Refers to a level of traffic stress acceptable to those classified as enthused and confident.

- LTS 4: Involves interaction with higher speed traffic or close proximity to high-speed traffic. Refers to a level of stress acceptable only to those classified as strong and fearless.

It should be noted that current LTS methodology assumes no traffic stress is imposed on cyclists at signalized intersections. Guidance provided by the Mineta Transportation Institute includes categorizing signalized intersections as a LTS 2.

2. Existing Conditions and Bicycle Level of Traffic Stress

There are two BIKI bike share stations located in close proximity to the project site. One station is located on the north side of South King Street near Zippy's and the other is located along the north side of South Beretania Street near Safeway. Dedicated bicycle facilities along the adjacent roadways include an existing bike lane along South Beretania Street and a protected bike lane along South King Street (see Figure 8). In addition, Young Street is a shared roadway with sharrows provided along its alignment. As such, the roadways in the vicinity were assessed to determine the level of stress (LTS) imposed upon bicyclists based upon the prevailing speed and geometric characteristics of the roadway. The assessment indicates that conditions along the roadways in the vicinity of the project are generally more suited for experienced bikers. Piikoi Street and Keeaumoku Street are both rated at LTS 4 due to the multi-lane configuration of these roadways and the lack of dedicated facilities thereby requiring bicyclists to share the travel way with other motorists. South Beretania Street and South King Street are rated at a slightly better LTS 3 since there are dedicated facilities along these roadways. However, the high volume of vehicles and multilane lane configuration of

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1105 PIIKOI STREET AND 1216 YOUNG STREET

EXISTING AND PROPOSED BICYCLE FACILITIES

FIGURE 8

these roadways influence the LTS for these roadways. Figure 9 depicts the existing LTS along the roadways in the vicinity of the project.

3. With Project Conditions

The proposed project is expected to incorporate bicycle facilities for residents and visitors. A secured bicycle parking area is planned to be located on the ground floor of the development. Along the adjacent roadways, the City and County of Honolulu has plans to provide additional bicycle facilities in the project vicinity (see Figure 8). According to the 2019 Update of the "Oahu Bike Plan" published by the City and County of Honolulu DTS, these improvements include the following:

- Protected bike lane along Piikoi Street south of South King Street with a shared roadway north of South King Street
- Protected bike lane along Keeaumoku Street

These improvements are expected to increase the availability of bicycle facilities in the vicinity of the project. However, the timelines for these improvements are not known at this time.

C. Transit Facilities

1. Methodology

Transit Capacity and Quality of Service is a metric used to measure transit availability, comfort, and convenience from both the passenger and transit service provider's points of view. The framework for this metric is outlined in the Transit Cooperative Research Program (TCRP) Report 165: Transit Capacity and Quality of Service Manual (TCQSM), 3rd Edition published in 2013 which provides research-based guidance on public transit capacity and quality of service. The quality of service concepts and methods contained in the TCQSM address real-world transit operations, comprehensive planning, and design needs. The research for and development of the TCQSM has also directly supported the development of the Multimodal Level of Service (LOS) analysis methodologies introduced in the Highway Capacity Manual (HCM) 2010 and subsequently refined in HCM 6. Multimodal LOS analyzes a roadway corridor comprised of street segments which are defined as a length of street between intersections where traffic may have to stop due

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1105 PIIKOI STREET AND 1216 YOUNG STREET

EXISITING AND PROPOSED BICYCLE FACILITIES

FIGURE 8

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

2. Transit LOS

Existing transit resources located in the project vicinity include convenient access to bus service along Piikoi Street, South Beretania Street, and South King Street (see Figure 10). These facilities are provided by "The Bus" which is operated by the Oahu Transit Service (OTS) for the City and County of Honolulu Department of Transportation Services. The closest stop along Piikoi Street is located south of the intersection with South Beretania Street and is served by Route 8. Along South Beretania Street the closest stop is located near Times Supermarket east of the intersection with Piikoi Street and is served by Routes 1 and 2. Along South King Street, the closes stop is located at the intersection with Piikoi Street and is served by Routes 1 and 2. Based on the Transit Capacity and Quality of Service Manual (TCQSM), a quarter mile represents the maximum distance that people will walk to a transit stop which is equivalent to approximately 5 minutes of walking time. In addition to the aforementioned bus stop locations, the project site is located in close proximity to a number of other bus stops along Pensacola Street and Keeaumoku Street. As such, an assessment of these facilities was conducted based on the methodology outlined by the TCQSM to verify existing quality of service (see Appendix F). The assessment indicates that transit service along South Beretania Street and South King Street operates at LOS "B" due to the relative frequency of service and availability of amenities provided at those stops. Along Piikoi Street, transit service operates at a LOS "D" since this roadway is only served by Route 8. The transit service along the remaining roadways in the vicinity operate at LOS "C". The existing transit

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1105 PIIKOI STREET AND 1216 YOUNG STREET

EXISITING AND PROPOSED BICYCLE FACILITIES

FIGURE 8

service in the vicinity are generally expected to remain similar under with project conditions.

VII. RECOMMENDATIONS

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

1. Provide sufficient sight distance for motorists to safely enter and exit project driveways. It should be noted that the loading stalls are located immediately adjacent to the driveways at the entrance/exit to the parking garage. As such, consideration should be given to ensuring motorists, pedestrians, and bicyclists are aware of the presence of each other at these conflict points.

2. Prohibit off-site loading operations and ensure service/loading zones are designated to accommodate such. The layout and dimensions shall be determined during the design phase.

3. Provide adequate turn-around area for service, delivery, and refuse collection vehicles to maneuver on the project site and prohibit vehicle-reversing maneuvers onto Young Street. It should be noted that the proposed loading stalls are located parallel to Young Street between the project driveways.

4. Provide sufficient turning radii at all project driveways to avoid vehicle encroachments to oncoming traffic lanes.

5. Provide signage at the project driveways to indicate their designated uses (i.e. for service and employee parking only) to minimize driver confusion at the driveways.

6. Restrict parking along the project frontage on Young Street to facilitate through traffic movements and ensure adequate sight distances for entering and exiting vehicles at the project driveways along this roadway.

7. Provide pedestrian connections between the on-site uses and off-site facilities along Young Street and Piikoi Street. Pedestrian facilities should be made accessible in conformance with the American with Disabilities Act (ADA).

8. Provide adequate connections to and from the designated and secured bike parking areas to ensure convenient and safe pedestrian and bicyclist access, as well as connections to the planned bicycle facilities along the roadways adjacent roadway(s) to the project site. In addition, consider providing short term bicycle parking for visitors.

9. Prepare a Construction Management Plan (CMP) that includes the anticipated construction schedule and phasing, as well as traffic circulation, traffic control, and parking during the construction period.

10. Prepare a Transportation Management Plan (TMP) which includes traffic circulation, parking, loading, and traffic demand management (TDM) strategies to further minimize the impact of the development on the surrounding roadway network.

VIII. CONCLUSION

The project site for the proposed 1105 Piikoi Street and 1216 Young Street development currently houses several low-rise multifamily buildings. The proposed project entails the replacement of the existing buildings with a new high rise building with 247 multifamily units. With the implementation of the aforementioned recommendations, traffic operations are expected to remain similar to without project conditions. Although traffic operations at the study intersections are expected to remain similar to without project conditions, the project site is located in proximity to a number of multimodal facilities. As such, consideration should be given to ensuring adequate connections are provided to facilitate access to these facilities and encourage the use of alternative modes of transportation. In addition, given the project's location in a well-developed area, the preparation of a Construction Management Plan that includes the anticipated construction schedule and phasing, as well as traffic circulation, traffic control, and parking during the construction is recommended to further minimize the project's impact to the surrounding roadways.

APPENDIX A

EXISTING TRAFFIC COUNT DATA

Wilson Okamoto Corporation

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

Counted By: CD, TH
Counters: TU-3264, TU-0654
Weather: Clear/Dry

File Name : YouPii AM
Site Code : 2
Start Date : 2/20/2024
Page No : 1

Groups Printed- Unshifted

	Piikoi Street Southbound					Young Street Westbound					Piikoi Street Northbound					Young Street Eastbound							
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
06:30 AM	0	0	0	3	0	7	8	0	8	15	3	183	11	3	197	0	22	2	3	24	17	236	253
06:45 AM	0	0	0	4	0	17	13	0	10	30	7	218	14	1	239	0	18	6	5	24	20	293	313
Total	0	0	0	7	0	24	21	0	18	45	10	401	25	4	436	0	40	8	8	48	37	529	566
07:00 AM	0	0	0	5	0	19	22	0	13	41	10	293	9	5	312	0	34	8	6	42	29	395	424
07:15 AM	0	0	0	2	0	13	43	0	13	56	12	273	19	4	304	0	41	13	6	54	25	414	439
07:30 AM	0	0	0	5	0	21	66	0	8	87	11	312	13	5	336	0	36	12	11	48	29	471	500
07:45 AM	0	0	0	4	0	19	75	0	8	94	14	288	30	5	332	0	36	11	18	47	35	473	508
Total	0	0	0	16	0	72	206	0	42	278	47	1166	71	19	1284	0	147	44	41	191	118	1753	1871
08:00 AM	0	0	0	6	0	19	39	0	14	58	9	257	20	4	286	0	47	17	6	64	30	408	438
08:15 AM	0	0	0	1	0	15	40	0	15	55	0	0	0	0	0	0	0	0	0	0	16	55	71
Grand Total	0	0	0	30	0	130	306	0	89	436	66	1824	116	27	2006	0	234	69	55	303	201	2745	2946
Apprch %	0	0	0			29.8	70.2	0			3.3	90.9	5.8			0	77.2	22.8					
Total %	0	0	0		0	4.7	11.1	0		15.9	2.4	66.4	4.2		73.1	0	8.5	2.5		11	6.8	93.2	

	Piikoi Street Southbound				Young Street Westbound				Piikoi Street Northbound				Young Street Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	13	43	0	56	12	273	19	304	0	41	13	54	414
07:30 AM	0	0	0	0	**21**	66	0	87	11	**312**	13	**336**	0	36	12	48	471
07:45 AM	0	0	0	0	19	**75**	0	**94**	**14**	288	**30**	332	0	36	11	47	**473**
08:00 AM	0	0	0	0	19	39	0	58	9	257	20	286	0	**47**	**17**	**64**	408
Total Volume	0	0	0	0	72	223	0	295	46	1130	82	1258	0	160	53	213	1766
% App. Total	0	0	0		24.4	75.6	0		3.7	89.8	6.5		0	75.1	24.9		
PHF	.000	.000	.000	.000	.857	.743	.000	.785	.821	.905	.683	.936	.000	.851	.779	.832	.933

Wilson Okamoto Corporation

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

Counted By: CD, GH
Counters: TU-3264, TU-0654
Weather: Clear/Dry

File Name : YouPii PM
Site Code : 2
Start Date : 2/20/2024
Page No : 1

Groups Printed- Unshifted

	Piikoi Street Southbound					Young Street Westbound					Piikoi Street Northbound					Young Street Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	3	3	33	49	0	12	94	16	381	22	3	422	0	49	27	2	78	597
04:15 PM	0	0	0	1	1	23	32	0	10	65	9	355	20	5	389	0	56	24	4	84	539
04:30 PM	0	0	0	3	3	27	53	0	23	103	17	353	19	4	393	0	59	22	6	87	586
04:45 PM	0	0	0	1	1	19	31	0	18	68	19	344	17	12	392	0	65	17	7	89	550
Total	0	0	0	8	8	102	165	0	63	330	61	1433	78	24	1596	0	229	90	19	338	2272
05:00 PM	0	0	0	0	0	35	58	0	18	111	9	371	15	0	395	0	79	20	4	103	609
05:15 PM	0	0	0	2	2	41	49	0	14	104	12	382	14	6	414	0	68	21	5	94	614
05:30 PM	0	0	0	0	0	30	37	0	10	77	9	367	10	0	386	0	51	19	3	73	536
05:45 PM	0	0	0	0	0	25	34	0	15	74	0	0	0	0	0	0	0	0	0	0	74
Total	0	0	0	2	2	131	178	0	57	366	30	1120	39	6	1195	0	198	60	12	270	1833
Grand Total	0	0	0	10	10	233	343	0	120	696	91	2553	117	30	2791	0	427	150	31	608	4105
Apprch %	0	0	0	100		33.5	49.3	0	17.2		3.3	91.5	4.2	1.1		0	70.2	24.7	5.1		
Total %	0	0	0	0.2	0.2	5.7	8.4	0	2.9	17	2.2	62.2	2.9	0.7	68	0	10.4	3.7	0.8	14.8	

	Piikoi Street Southbound				Young Street Westbound				Piikoi Street Northbound				Young Street Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	27	53	0	80	17	353	**19**	389	0	59	**22**	81	550
04:45 PM	0	0	0	0	19	31	0	50	**19**	344	17	380	0	65	17	82	512
05:00 PM	0	0	0	0	35	**58**	0	**93**	9	371	15	395	0	**79**	20	**99**	**587**
05:15 PM	0	0	0	0	**41**	49	0	90	12	**382**	14	**408**	0	68	21	89	587
Total Volume	0	0	0	0	122	191	0	313	57	1450	65	1572	0	271	80	351	2236
% App. Total	0	0	0		39	61	0		3.6	92.2	4.1		0	77.2	22.8		
PHF	.000	.000	.000	.000	.744	.823	.000	.841	.750	.949	.855	.963	.000	.858	.909	.886	.952

Wilson Okamoto Corporation

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

Counted By: MAL, JTM
Counters: TU-3263, TU-2606
Weather: Clear/Dry

File Name : PiiBer AM
Site Code : 3
Start Date : 2/21/2024
Page No : 1

Groups Printed- Unshifted

	Piikoi Street Southbound					South Beretania Street Westbound					Piikoi Street Northbound					South Beretania Street Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	0	0	0	4	4	69	176	0	24	269	0	180	36	1	217	0	0	0	3	3	493
06:45 AM	0	0	0	5	5	108	300	0	7	415	0	231	37	6	274	0	0	0	5	5	699
Total	0	0	0	9	9	177	476	0	31	684	0	411	73	7	491	0	0	0	8	8	1192
07:00 AM	0	0	0	7	7	109	355	0	24	488	0	246	61	9	316	0	0	0	9	9	820
07:15 AM	0	0	0	12	12	157	470	0	20	647	0	239	74	10	323	0	0	0	4	4	986
07:30 AM	0	0	0	14	14	144	478	0	16	638	0	210	87	20	317	0	0	0	29	29	998
07:45 AM	0	0	0	8	8	141	511	0	12	664	0	231	83	9	323	0	0	0	34	34	1029
Total	0	0	0	41	41	551	1814	0	72	2437	0	926	305	48	1279	0	0	0	76	76	3833
08:00 AM	0	0	0	3	3	111	456	0	12	579	0	226	76	4	306	0	0	0	12	12	900
08:15 AM	0	0	0	3	3	105	383	0	12	500	0	0	0	0	0	0	0	0	0	0	503
Grand Total	0	0	0	56	56	944	3129	0	127	4200	0	1563	454	59	2076	0	0	0	96	96	6428
Apprch %	0	0	0	100		22.5	74.5	0	3		0	75.3	21.9	2.8		0	0	0	100		
Total %	0	0	0	0.9	0.9	14.7	48.7	0	2	65.3	0	24.3	7.1	0.9	32.3	0	0	0	1.5	1.5	

	Piikoi Street Southbound				South Beretania Street Westbound				Piikoi Street Northbound				South Beretania Street Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	**157**	470	0	627	0	**239**	74	313	0	0	0	0	940
07:30 AM	0	0	0	0	144	478	0	622	0	210	**87**	297	0	0	0	0	919
07:45 AM	0	0	0	0	141	**511**	0	**652**	0	231	83	**314**	0	0	0	0	**966**
08:00 AM	0	0	0	0	111	456	0	567	0	226	76	302	0	0	0	0	869
Total Volume	0	0	0	0	553	1915	0	2468	0	906	320	1226	0	0	0	0	3694
% App. Total	0	0	0		22.4	77.6	0		0	73.9	26.1		0	0	0		
PHF	.000	.000	.000	.000	.881	.937	.000	.946	.000	.948	.920	.976	.000	.000	.000	.000	.956

Wilson Okamoto Corporation

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

Counted By: MAL/TH
Counters: TU-3263, TU-2606
Weather: Clear/Dry

File Name : PiiBer PM
Site Code : 3
Start Date : 2/21/2024
Page No : 1

Groups Printed- Unshifted

	Piikoi Street Southbound					South Beretania Street Westbound					Piikoi Street Northbound					South Beretania Street Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	5	5	134	433	0	25	592	0	247	95	15	357	0	0	0	3	3	957
04:15 PM	0	0	0	5	5	133	451	0	34	618	0	184	120	9	313	0	0	0	6	6	942
04:30 PM	0	0	0	11	11	136	391	0	26	553	0	236	110	10	356	0	0	0	12	12	932
04:45 PM	0	0	0	12	12	127	435	0	16	578	0	300	117	11	428	0	0	0	9	9	1027
Total	0	0	0	33	33	530	1710	0	101	2341	0	967	442	45	1454	0	0	0	30	30	3858
05:00 PM	0	0	0	10	10	129	410	0	20	559	0	250	100	15	365	0	0	0	14	14	948
05:15 PM	0	0	0	16	16	117	386	0	15	518	0	274	103	8	385	0	0	0	12	12	931
05:30 PM	0	0	0	13	13	105	380	0	18	503	0	329	89	14	432	0	0	0	6	6	954
05:45 PM	0	0	0	6	6	119	324	0	13	456	0	0	0	0	0	0	0	0	0	0	462
Total	0	0	0	45	45	470	1500	0	66	2036	0	853	292	37	1182	0	0	0	32	32	3295
Grand Total	0	0	0	78	78	1000	3210	0	167	4377	0	1820	734	82	2636	0	0	0	62	62	7153
Apprch %	0	0	0	100		22.8	73.3	0	3.8		0	69	27.8	3.1		0	0	0	100		
Total %	0	0	0	1.1	1.1	14	44.9	0	2.3	61.2	0	25.4	10.3	1.1	36.9	0	0	0	0.9	0.9	

	Piikoi Street Southbound				South Beretania Street Westbound				Piikoi Street Northbound				South Beretania Street Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	127	**435**	0	**562**	0	300	**117**	417	0	0	0	0	**979**
05:00 PM	0	0	0	0	**129**	410	0	539	0	250	100	350	0	0	0	0	889
05:15 PM	0	0	0	0	117	386	0	503	0	274	103	377	0	0	0	0	880
05:30 PM	0	0	0	0	105	380	0	485	0	**329**	89	**418**	0	0	0	0	903
Total Volume	0	0	0	0	478	1611	0	2089	0	1153	409	1562	0	0	0	0	3651
% App. Total	0	0	0		22.9	77.1	0		0	73.8	26.2		0	0	0		
PHF	.000	.000	.000	.000	.926	.926	.000	.929	.000	.876	.874	.934	.000	.000	.000	.000	.932

Wilson Okamoto Corporation

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

Counted By: MAL, NL
Counters: TU-0652, TU-0651
Weather: Clear/Dry

File Name : KinPii AM
Site Code : 1
Start Date : 2/20/2024
Page No : 1

Groups Printed- Unshifted

	Piikoi Street Southbound					South King Street Westbound					Piikoi Street Northbound					South King Street Eastbound							
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
06:30 AM	0	0	0	6	0	0	10	6	3	16	19	168	0	10	187	0	156	33	9	189	28	392	420
06:45 AM	0	0	0	7	0	0	0	0	10	0	35	210	0	3	245	0	188	24	4	212	24	457	481
Total	0	0	0	13	0	0	10	6	13	16	54	378	0	13	432	0	344	57	13	401	52	849	901
07:00 AM	0	0	0	9	0	0	0	0	11	0	56	295	0	2	351	0	332	30	9	362	31	713	744
07:15 AM	0	0	0	8	0	0	0	0	14	0	74	294	0	10	368	0	419	47	10	466	42	834	876
07:30 AM	0	0	0	13	0	0	0	0	19	0	98	278	0	13	376	0	431	55	17	486	62	862	924
07:45 AM	0	0	0	8	0	0	0	0	13	0	70	270	0	10	340	0	399	59	19	458	50	798	848
Total	0	0	0	38	0	0	0	0	57	0	298	1137	0	35	1435	0	1581	191	55	1772	185	3207	3392
08:00 AM	0	0	0	8	0	0	0	0	14	0	52	253	0	10	305	0	342	38	10	380	42	685	727
08:15 AM	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	310	38	2	348	13	348	361
Grand Total	0	0	0	70	0	0	10	6	84	16	404	1768	0	58	2172	0	2577	324	80	2901	292	5089	5381
Apprch %	0	0	0			0	62.5	37.5			18.6	81.4	0			0	88.8	11.2					
Total %	0	0	0		0	0	0.2	0.1		0.3	7.9	34.7	0		42.7	0	50.6	6.4		57	5.4	94.6	

	Piikoi Street Southbound				South King Street Westbound				Piikoi Street Northbound				South King Street Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	56	**295**	0	351	0	332	30	362	713
07:15 AM	0	0	0	0	0	0	0	0	74	294	0	368	0	419	47	466	834
07:30 AM	0	0	0	0	0	0	0	0	**98**	278	0	**376**	0	**431**	55	**486**	**862**
07:45 AM	0	0	0	0	0	0	0	0	70	270	0	340	0	399	**59**	458	798
Total Volume	0	0	0	0	0	0	0	0	298	1137	0	1435	0	1581	191	1772	3207
% App. Total	0	0	0		0	0	0		20.8	79.2	0		0	89.2	10.8		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.760	.964	.000	.954	.000	.917	.809	.912	.930

Wilson Okamoto Corporation

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

Counted By: MAL, JTM
Counters: TU-0652, TU-0651
Weather: Clear/Dry

File Name : KinPii PM
Site Code : 1
Start Date : 2/20/2024
Page No : 1

Groups Printed- Unshifted

	Piikoi Street Southbound					South King Street Westbound					Piikoi Street Northbound					South King Street Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	12	12	0	0	0	14	14	70	338	0	12	420	0	419	68	10	497	943
04:15 PM	0	0	0	12	12	0	0	0	11	11	69	313	0	10	392	0	510	71	8	589	1004
04:30 PM	0	0	0	4	4	0	0	0	15	15	70	340	0	16	426	0	504	51	6	561	1006
04:45 PM	0	0	0	11	11	0	0	0	21	21	80	280	0	15	375	0	522	93	17	632	1039
Total	0	0	0	39	39	0	0	0	61	61	289	1271	0	53	1613	0	1955	283	41	2279	3992
05:00 PM	0	0	0	10	10	0	0	0	14	14	73	306	0	9	388	0	541	99	10	650	1062
05:15 PM	0	0	0	12	12	0	0	0	18	18	74	336	0	9	419	0	500	63	11	574	1023
05:30 PM	0	0	0	10	10	0	0	0	13	13	74	302	0	7	383	0	524	76	3	603	1009
05:45 PM	0	0	0	15	15	0	0	0	0	0	0	0	0	0	0	0	416	55	10	481	496
Total	0	0	0	47	47	0	0	0	45	45	221	944	0	25	1190	0	1981	293	34	2308	3590
Grand Total	0	0	0	86	86	0	0	0	106	106	510	2215	0	78	2803	0	3936	576	75	4587	7582
Apprch %	0	0	0	100		0	0	0	100		18.2	79	0	2.8		0	85.8	12.6	1.6		
Total %	0	0	0	1.1	1.1	0	0	0	1.4	1.4	6.7	29.2	0	1	37	0	51.9	7.6	1	60.5	

	Piikoi Street Southbound				South King Street Westbound				Piikoi Street Northbound				South King Street Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	80	280	0	360	0	522	93	615	975
05:00 PM	0	0	0	0	0	0	0	0	73	306	0	379	0	541	99	640	1019
05:15 PM	0	0	0	0	0	0	0	0	74	336	0	410	0	500	63	563	973
05:30 PM	0	0	0	0	0	0	0	0	74	302	0	376	0	524	76	600	976
Total Volume	0	0	0	0	0	0	0	0	301	1224	0	1525	0	2087	331	2418	3943
% App. Total	0	0	0		0	0	0		19.7	80.3	0		0	86.3	13.7		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.941	.911	.000	.930	.000	.964	.836	.945	.967

Wilson Okamoto Corporation

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

Counted By: CD, DM
Counters: TU-2605, TU-2841
Weather: Clear/Dry

File Name : KeeYou AM
Site Code : 4
Start Date : 2/21/2024
Page No : 1

Groups Printed- Unshifted

	Keeaumoku Street Southbound					Young Street Westbound					Keeaumoku Street Northbound					Young Street Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	7	140	5	0	152	24	21	6	4	55	1	71	3	1	76	7	11	1	6	25	308
06:45 AM	13	182	15	2	212	27	18	7	3	55	5	107	2	0	114	6	9	3	6	24	405
Total	20	322	20	2	364	51	39	13	7	110	6	178	5	1	190	13	20	4	12	49	713
07:00 AM	12	156	18	0	186	22	23	9	8	62	12	125	2	4	143	2	13	10	5	30	421
07:15 AM	10	195	22	2	229	42	39	10	3	94	11	180	6	0	197	12	22	11	14	59	579
07:30 AM	16	242	29	5	292	29	66	21	7	123	10	185	5	3	203	8	23	17	9	57	675
07:45 AM	16	277	22	9	324	35	85	20	9	149	18	154	15	3	190	13	29	9	13	64	727
Total	54	870	91	16	1031	128	213	60	27	428	51	644	28	10	733	35	87	47	41	210	2402
08:00 AM	20	264	15	2	301	24	62	22	2	110	11	102	6	2	121	16	29	4	1	50	582
08:15 AM	0	0	0	0	0	0	0	0	0	0	10	120	4	3	137	11	13	7	5	36	173
Grand Total	94	1456	126	20	1696	203	314	95	36	648	78	1044	43	16	1181	75	149	62	59	345	3870
Apprch %	5.5	85.8	7.4	1.2		31.3	48.5	14.7	5.6		6.6	88.4	3.6	1.4		21.7	43.2	18	17.1		
Total %	2.4	37.6	3.3	0.5	43.8	5.2	8.1	2.5	0.9	16.7	2	27	1.1	0.4	30.5	1.9	3.9	1.6	1.5	8.9	

	Keeaumoku Street Southbound				Young Street Westbound				Keeaumoku Street Northbound				Young Street Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	10	195	22	227	**42**	39	10	91	11	180	6	197	12	22	11	45	560
07:30 AM	16	242	**29**	287	29	66	21	116	10	**185**	5	**200**	8	23	**17**	48	651
07:45 AM	16	**277**	22	**315**	35	**85**	20	**140**	**18**	154	**15**	187	13	**29**	9	**51**	**693**
08:00 AM	**20**	264	15	299	24	62	**22**	108	11	102	6	119	**16**	29	4	49	575
Total Volume	62	978	88	1128	130	252	73	455	50	621	32	703	49	103	41	193	2479
% App. Total	5.5	86.7	7.8		28.6	55.4	16		7.1	88.3	4.6		25.4	53.4	21.2		
PHF	.775	.883	.759	.895	.774	.741	.830	.813	.694	.839	.533	.879	.766	.888	.603	.946	.894

Wilson Okamoto Corporation

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

Counted By: CD, KY
Counters: TU-2605, TU-2841
Weather: Clear/Dry

File Name : KeeYou PM
Site Code : 4
Start Date : 2/21/2024
Page No : 1

Groups Printed- Unshifted

	Keeaumoku Street Southbound					Young Street Westbound					Keeaumoku Street Northbound					Young Street Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	6	232	15	4	257	54	49	10	13	126	12	233	14	2	261	19	35	32	15	101	745
04:15 PM	2	223	16	4	245	47	58	20	3	128	7	262	8	0	277	25	48	28	22	123	773
04:30 PM	21	195	19	0	235	61	44	13	4	122	4	245	5	1	255	21	64	41	15	141	753
04:45 PM	9	225	16	2	252	64	37	31	5	137	8	280	10	2	300	16	71	23	10	120	809
Total	38	875	66	10	989	226	188	74	25	513	31	1020	37	5	1093	81	218	124	62	485	3080
05:00 PM	7	256	15	3	281	49	43	22	6	120	7	240	9	2	258	22	67	19	10	118	777
05:15 PM	8	240	14	4	266	36	45	16	18	115	11	286	9	4	310	22	47	26	20	115	806
05:30 PM	14	226	9	1	250	35	31	16	2	84	11	260	9	0	280	27	39	30	11	107	721
05:45 PM	0	0	0	0	0	0	0	0	0	0	13	260	11	0	284	19	42	18	16	95	379
Total	29	722	38	8	797	120	119	54	26	319	42	1046	38	6	1132	90	195	93	57	435	2683
Grand Total	67	1597	104	18	1786	346	307	128	51	832	73	2066	75	11	2225	171	413	217	119	920	5763
Apprch %	3.8	89.4	5.8	1		41.6	36.9	15.4	6.1		3.3	92.9	3.4	0.5		18.6	44.9	23.6	12.9		
Total %	1.2	27.7	1.8	0.3	31	6	5.3	2.2	0.9	14.4	1.3	35.8	1.3	0.2	38.6	3	7.2	3.8	2.1	16	

	Keeaumoku Street Southbound				Young Street Westbound				Keeaumoku Street Northbound				Young Street Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**21**	195	**19**	235	61	44	13	118	4	245	5	254	21	64	**41**	**126**	733
04:45 PM	9	225	16	250	**64**	37	**31**	**132**	8	280	**10**	298	16	**71**	23	110	**790**
05:00 PM	7	**256**	15	**278**	49	43	22	114	7	240	9	256	**22**	67	19	108	756
05:15 PM	8	240	14	262	36	**45**	16	97	**11**	**286**	9	**306**	22	47	26	95	760
Total Volume	45	916	64	1025	210	169	82	461	30	1051	33	1114	81	249	109	439	3039
% App. Total	4.4	89.4	6.2		45.6	36.7	17.8		2.7	94.3	3		18.5	56.7	24.8		
PHF	.536	.895	.842	.922	.820	.939	.661	.873	.682	.919	.825	.910	.920	.877	.665	.871	.962

APPENDIX B

LEVEL OF SERVICE DEFINITIONS

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR AUTOMOBILES AT SIGNALIZED INTERSECTIONS

LOS A describes operations with a control delay of 10s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B describes operations with control delay between 10 and 20s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C describes operations with control delay between 20 and 35s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D describes operations with control delay between 35 and 55s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E describes operations with control delay between 55 and 80s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F describes operations with control delay exceeding 80s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most Cycles fail to clear the queue.

A lane group can incur a delay less than 80s/veh when the volume-to-capacity ratio exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression is favorable, or both. As a result, both the delay and volume-to-capacity ratio are considered when lane group LOS is established. A ratio of 1.0 or more indicated that cycle capacity is fully utilized and represents failure from a capacity perspective (just as delay in excess of 80s/veh represents failure from a delay perspective).

"Highway Capacity Manual," Transportation Research Board, 2016.

APPENDIX C

CAPACITY ANALYSIS CALCULATIONS
EXISTING PEAK PERIOD TRAFFIC ANALYSIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	160	0	0	223	72	82	1130	46	0	0	0
Future Volume (veh/h)	53	160	0	0	223	72	82	1130	46	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.98	1.00		0.95			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	57	172	0	0	240	77	88	1215	49			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	379	556	0	0	556	463	228	3405	694			
Arrive On Green	0.30	0.30	0.00	0.00	0.30	0.30	0.46	0.46	0.46			
Sat Flow, veh/h	1053	1870	0	0	1870	1558	496	7409	1511			
Grp Volume(v), veh/h	57	172	0	0	240	77	327	976	49			
Grp Sat Flow(s),veh/h/ln	1053	1870	0	0	1870	1558	1846	1515	1511			
Q Serve(g_s), s	1.9	2.9	0.0	0.0	4.3	1.5	4.8	4.3	0.7			
Cycle Q Clear(g_c), s	6.1	2.9	0.0	0.0	4.3	1.5	4.8	4.3	0.7			
Prop In Lane	1.00		0.00	0.00		1.00	0.27		1.00			
Lane Grp Cap(c), veh/h	379	556	0	0	556	463	848	2785	694			
V/C Ratio(X)	0.15	0.31	0.00	0.00	0.43	0.17	0.39	0.35	0.07			
Avail Cap(c_a), veh/h	1117	1867	0	0	1867	1555	1752	5754	1435			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	14.1	11.2	0.0	0.0	11.6	10.7	7.3	7.2	6.2			
Incr Delay (d2), s/veh	0.2	0.3	0.0	0.0	0.5	0.2	0.3	0.1	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.4	1.0	0.0	0.0	1.5	0.4	1.4	1.0	0.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	11.5	0.0	0.0	12.2	10.8	7.6	7.2	6.2			
LnGrp LOS	B	B	A	A	B	B	A	A	A			
Approach Vol, veh/h		229			317			1352				
Approach Delay, s/veh		12.2			11.9			7.3				
Approach LOS		B			B			A				
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		23.9		17.2				17.2				
Change Period (Y+Rc), s		5.0		5.0				5.0				
Max Green Setting (Gmax), s		39.0		41.0				41.0				
Max Q Clear Time (g_c+I1), s		6.8		8.1				6.3				
Green Ext Time (p_c), s		11.5		1.3				1.7				
Intersection Summary												
HCM 6th Ctrl Delay			8.6									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	1915	553	327	927	0	0	0	0
Future Volume (veh/h)	0	0	0	0	1915	553	327	927	0	0	0	0
Initial Q (Qb), veh				0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)				1.00		0.98	1.00		1.00			
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach					No			No				
Adj Sat Flow, veh/h/ln				0	1870	1870	1870	1870	0			
Adj Flow Rate, veh/h				0	1995	576	341	966	0			
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %				0	2	2	2	2	0			
Cap, veh/h				0	3627	876	637	1958	0			
Arrive On Green				0.00	0.56	0.56	0.30	0.30	0.00			
Sat Flow, veh/h				0	6696	1554	1781	6696	0			
Grp Volume(v), veh/h				0	1995	576	341	966	0			
Grp Sat Flow(s),veh/h/ln				0	1609	1554	1781	1609	0			
Q Serve(g_s), s				0.0	14.9	19.5	12.5	9.3	0.0			
Cycle Q Clear(g_c), s				0.0	14.9	19.5	12.5	9.3	0.0			
Prop In Lane				0.00		1.00	1.00		0.00			
Lane Grp Cap(c), veh/h				0	3627	876	637	1958	0			
V/C Ratio(X)				0.00	0.55	0.66	0.54	0.49	0.00			
Avail Cap(c_a), veh/h				0	4163	1005	824	2634	0			
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)				0.00	1.00	1.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh				0.0	10.4	11.5	22.7	21.6	0.0			
Incr Delay (d2), s/veh				0.0	0.1	1.3	0.7	0.2	0.0			
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln				0.0	4.6	6.1	5.1	3.4	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				0.0	10.6	12.7	23.4	21.8	0.0			
LnGrp LOS				A	B	B	C	C	A			
Approach Vol, veh/h					2571			1307				
Approach Delay, s/veh					11.1			22.2				
Approach LOS					B			C				

Timer - Assigned Phs	2							8				
Phs Duration (G+Y+Rc), s	28.0							47.7				
Change Period (Y+Rc), s	5.0							5.0				
Max Green Setting (Gmax), s	31.0							49.0				
Max Q Clear Time (g_c+I1), s	14.5							21.5				
Green Ext Time (p_c), s	7.3							21.2				

Intersection Summary		
HCM 6th Ctrl Delay	14.8	
HCM 6th LOS	B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	1591	0	0	0	0	0	1095	294	0	0	0
Future Volume (veh/h)	199	1591	0	0	0	0	0	1095	294	0	0	0
Initial Q (Qb), veh	0	0	0				0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.95			
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00			
Work Zone On Approach		No						No				
Adj Sat Flow, veh/h/ln	1870	1870	0				0	1870	1870			
Adj Flow Rate, veh/h	219	1748	0				0	1203	323			
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0				0	2	2			
Cap, veh/h	931	2976	0				0	2505	589			
Arrive On Green	0.46	0.46	0.00				0.00	0.39	0.39			
Sat Flow, veh/h	1781	6696	0				0	6696	1512			
Grp Volume(v), veh/h	219	1748	0				0	1203	323			
Grp Sat Flow(s),veh/h/ln	1781	1609	0				0	1609	1512			
Q Serve(g_s), s	5.1	13.5	0.0				0.0	9.5	11.2			
Cycle Q Clear(g_c), s	5.1	13.5	0.0				0.0	9.5	11.2			
Prop In Lane	1.00		0.00				0.00		1.00			
Lane Grp Cap(c), veh/h	931	2976	0				0	2505	589			
V/C Ratio(X)	0.24	0.59	0.00				0.00	0.48	0.55			
Avail Cap(c_a), veh/h	1161	3810	0				0	3810	895			
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00				0.00	1.00	1.00			
Uniform Delay (d), s/veh	11.1	13.4	0.0				0.0	15.5	16.0			
Incr Delay (d2), s/veh	0.1	0.2	0.0				0.0	0.1	0.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.8	4.4	0.0				0.0	3.2	3.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.3	13.6	0.0				0.0	15.6	16.8			
LnGrp LOS	B	B	A				A	B	B			
Approach Vol, veh/h		1967						1526				
Approach Delay, s/veh		13.3						15.9				
Approach LOS		B						B				

Timer - Assigned Phs		2		4								
Phs Duration (G+Y+Rc), s		31.3		36.3								
Change Period (Y+Rc), s		5.0		5.0								
Max Green Setting (Gmax), s		40.0		40.0								
Max Q Clear Time (g_c+I1), s		13.2		15.5								
Green Ext Time (p_c), s		11.8		15.7								

Intersection Summary												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	103	49	73	252	130	32	621	50	88	978	62
Future Volume (veh/h)	41	103	49	73	252	130	32	621	50	88	978	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.96	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	46	116	55	82	283	146	36	698	56	99	1099	70
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	310	369	175	201	585	289	261	1660	133	394	1693	108
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	952	1192	565	363	1887	933	479	3321	266	702	3387	216
Grp Volume(v), veh/h	46	0	171	274	0	237	36	373	381	99	576	593
Grp Sat Flow(s),veh/h/ln	952	0	1757	1667	0	1515	479	1777	1810	702	1777	1826
Q Serve(g_s), s	2.2	0.0	3.9	2.7	0.0	6.7	3.2	7.0	7.0	5.5	12.6	12.6
Cycle Q Clear(g_c), s	8.9	0.0	3.9	6.7	0.0	6.7	15.8	7.0	7.0	12.5	12.6	12.6
Prop In Lane	1.00		0.32	0.30		0.62	1.00		0.15	1.00		0.12
Lane Grp Cap(c), veh/h	310	0	544	606	0	469	261	888	905	394	888	913
V/C Ratio(X)	0.15	0.00	0.31	0.45	0.00	0.51	0.14	0.42	0.42	0.25	0.65	0.65
Avail Cap(c_a), veh/h	595	0	1070	1085	0	922	459	1623	1654	684	1623	1668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	13.9	14.7	0.0	14.8	15.6	8.3	8.3	12.3	9.7	9.7
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.5	0.0	0.8	0.2	0.3	0.3	0.3	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.4	2.4	0.0	2.1	0.3	2.2	2.2	0.8	4.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.7	0.0	14.2	15.2	0.0	15.7	15.8	8.6	8.6	12.6	10.5	10.5
LnGrp LOS	B	A	B	B	A	B	B	A	A	B	B	B
Approach Vol, veh/h		217			511			790			1268	
Approach Delay, s/veh		15.1			15.4			9.0			10.7	
Approach LOS		B			B			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.3		21.3		31.3		21.3				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		48.0		32.0		48.0		32.0				
Max Q Clear Time (g_c+I1), s		17.8		10.9		14.6		8.7				
Green Ext Time (p_c), s		5.9		1.2		11.1		3.3				

Intersection Summary												
HCM 6th Ctrl Delay			11.4									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	271	0	0	191	122	65	1450	57	0	0	0
Future Volume (veh/h)	80	271	0	0	191	122	65	1450	57	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.93			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	84	285	0	0	201	128	68	1526	60			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	351	509	0	0	509	428	160	3870	749			
Arrive On Green	0.27	0.27	0.00	0.00	0.27	0.27	0.51	0.51	0.51			
Sat Flow, veh/h	1047	1870	0	0	1870	1575	314	7600	1471			
Grp Volume(v), veh/h	84	285	0	0	201	128	401	1193	60			
Grp Sat Flow(s),veh/h/ln	1047	1870	0	0	1870	1575	1855	1515	1471			
Q Serve(g_s), s	3.3	6.0	0.0	0.0	4.0	2.9	6.2	5.5	1.0			
Cycle Q Clear(g_c), s	7.3	6.0	0.0	0.0	4.0	2.9	6.2	5.5	1.0			
Prop In Lane	1.00		0.00	0.00		1.00	0.17		1.00			
Lane Grp Cap(c), veh/h	351	509	0	0	509	428	944	3085	749			
V/C Ratio(X)	0.24	0.56	0.00	0.00	0.39	0.30	0.43	0.39	0.08			
Avail Cap(c_a), veh/h	959	1596	0	0	1596	1343	1664	5435	1320			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	16.5	14.3	0.0	0.0	13.6	13.2	7.0	6.9	5.7			
Incr Delay (d2), s/veh	0.3	1.0	0.0	0.0	0.5	0.4	0.3	0.1	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.7	2.3	0.0	0.0	1.5	0.9	1.8	1.3	0.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.9	15.3	0.0	0.0	14.1	13.6	7.3	6.9	5.8			
LnGrp LOS	B	B	A	A	B	B	A	A	A			
Approach Vol, veh/h		369			329			1654				
Approach Delay, s/veh		15.6			13.9			7.0				
Approach LOS		B			B			A				
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		28.3		17.4				17.4				
Change Period (Y+Rc), s		5.0		5.0				5.0				
Max Green Setting (Gmax), s		41.0		39.0				39.0				
Max Q Clear Time (g_c+I1), s		8.2		9.3				6.0				
Green Ext Time (p_c), s		15.1		2.2				1.6				
Intersection Summary												
HCM 6th Ctrl Delay			9.3									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	1622	509	476	1175	0	0	0	0
Future Volume (veh/h)	0	0	0	0	1622	509	476	1175	0	0	0	0
Initial Q (Qb), veh				0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00			
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach					No			No				
Adj Sat Flow, veh/h/ln				0	1870	1870	1870	1870	0			
Adj Flow Rate, veh/h				0	1744	547	512	1263	0			
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %				0	2	2	2	2	0			
Cap, veh/h				0	3121	746	784	2505	0			
Arrive On Green				0.00	0.49	0.49	0.39	0.39	0.00			
Sat Flow, veh/h				0	6696	1537	1781	6696	0			
Grp Volume(v), veh/h				0	1744	547	512	1263	0			
Grp Sat Flow(s),veh/h/ln				0	1609	1537	1781	1609	0			
Q Serve(g_s), s				0.0	15.2	22.6	19.6	11.9	0.0			
Cycle Q Clear(g_c), s				0.0	15.2	22.6	19.6	11.9	0.0			
Prop In Lane				0.00		1.00	1.00		0.00			
Lane Grp Cap(c), veh/h				0	3121	746	784	2505	0			
V/C Ratio(X)				0.00	0.56	0.73	0.65	0.50	0.00			
Avail Cap(c_a), veh/h				0	3476	830	919	2991	0			
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)				0.00	1.00	1.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh				0.0	14.5	16.4	20.8	18.5	0.0			
Incr Delay (d2), s/veh				0.0	0.2	3.0	1.3	0.2	0.0			
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln				0.0	5.1	7.8	7.9	4.2	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				0.0	14.6	19.4	22.1	18.6	0.0			
LnGrp LOS				A	B	B	C	B	A			
Approach Vol, veh/h					2291			1775				
Approach Delay, s/veh					15.8			19.6				
Approach LOS					B			B				

Timer - Assigned Phs	2							8				
Phs Duration (G+Y+Rc), s	36.0							43.6				
Change Period (Y+Rc), s	5.0							5.0				
Max Green Setting (Gmax), s	37.0							43.0				
Max Q Clear Time (g_c+I1), s	21.6							24.6				
Green Ext Time (p_c), s	9.4							14.0				

Intersection Summary												
HCM 6th Ctrl Delay			17.5									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	306	2067	0	0	0	0	0	1262	297	0	0	0
Future Volume (veh/h)	306	2067	0	0	0	0	0	1262	297	0	0	0
Initial Q (Qb), veh	0	0	0				0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.94			
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00			
Work Zone On Approach		No						No				
Adj Sat Flow, veh/h/ln	1870	1870	0				0	1870	1870			
Adj Flow Rate, veh/h	319	2153	0				0	1315	309			
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96			
Percent Heavy Veh, %	2	2	0				0	2	2			
Cap, veh/h	1002	3275	0				0	2310	537			
Arrive On Green	0.51	0.51	0.00				0.00	0.36	0.36			
Sat Flow, veh/h	1781	6696	0				0	6696	1495			
Grp Volume(v), veh/h	319	2153	0				0	1315	309			
Grp Sat Flow(s),veh/h/ln	1781	1609	0				0	1609	1495			
Q Serve(g_s), s	8.1	18.7	0.0				0.0	12.5	12.7			
Cycle Q Clear(g_c), s	8.1	18.7	0.0				0.0	12.5	12.7			
Prop In Lane	1.00		0.00				0.00		1.00			
Lane Grp Cap(c), veh/h	1002	3275	0				0	2310	537			
V/C Ratio(X)	0.32	0.66	0.00				0.00	0.57	0.58			
Avail Cap(c_a), veh/h	1105	3649	0				0	3140	730			
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00				0.00	1.00	1.00			
Uniform Delay (d), s/veh	11.1	13.7	0.0				0.0	19.6	19.6			
Incr Delay (d2), s/veh	0.2	0.4	0.0				0.0	0.2	1.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.9	6.1	0.0				0.0	4.4	4.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.3	14.1	0.0				0.0	19.8	20.6			
LnGrp LOS	B	B	A				A	B	C			
Approach Vol, veh/h		2472						1624				
Approach Delay, s/veh		13.7						19.9				
Approach LOS		B						B				

Timer - Assigned Phs		2		4								
Phs Duration (G+Y+Rc), s		32.2		43.6								
Change Period (Y+Rc), s		5.0		5.0								
Max Green Setting (Gmax), s		37.0		43.0								
Max Q Clear Time (g_c+I1), s		14.7		20.7								
Green Ext Time (p_c), s		11.7		17.9								

Intersection Summary												
HCM 6th Ctrl Delay			16.2									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	249	81	82	169	210	33	1051	30	64	916	45
Future Volume (veh/h)	109	249	81	82	169	210	33	1051	30	64	916	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.95	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	114	259	84	85	176	219	34	1095	31	67	954	47
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	318	451	146	167	313	451	292	1777	50	256	1735	85
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	986	1350	438	267	937	1349	560	3523	100	496	3440	169
Grp Volume(v), veh/h	114	0	343	245	0	235	34	552	574	67	493	508
Grp Sat Flow(s),veh/h/ln	986	0	1787	1106	0	1446	560	1777	1846	496	1777	1833
Q Serve(g_s), s	6.4	0.0	9.8	4.6	0.0	8.0	2.7	13.8	13.8	7.0	11.8	11.8
Cycle Q Clear(g_c), s	14.4	0.0	9.8	14.4	0.0	8.0	14.5	13.8	13.8	20.8	11.8	11.8
Prop In Lane	1.00		0.24	0.35		0.93	1.00		0.05	1.00		0.09
Lane Grp Cap(c), veh/h	318	0	597	448	0	483	292	896	931	256	896	925
V/C Ratio(X)	0.36	0.00	0.57	0.55	0.00	0.49	0.12	0.62	0.62	0.26	0.55	0.55
Avail Cap(c_a), veh/h	482	0	894	691	0	724	452	1406	1460	398	1406	1450
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	0.0	17.0	18.2	0.0	16.4	15.5	11.0	11.0	18.5	10.5	10.5
Incr Delay (d2), s/veh	0.7	0.0	0.9	1.0	0.0	0.8	0.2	0.7	0.7	0.5	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	3.8	3.1	0.0	2.5	0.3	4.7	4.9	0.8	4.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.8	0.0	17.9	19.3	0.0	17.2	15.7	11.7	11.7	19.1	11.1	11.0
LnGrp LOS	C	A	B	B	A	B	B	B	B	B	B	B
Approach Vol, veh/h		457			480			1160			1068	
Approach Delay, s/veh		19.1			18.2			11.8			11.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.2		25.7		36.2		25.7				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		49.0		31.0		49.0		31.0				
Max Q Clear Time (g_c+I1), s		16.5		16.4		22.8		16.4				
Green Ext Time (p_c), s		9.8		2.3		8.4		2.7				

Intersection Summary												
HCM 6th Ctrl Delay			13.8									
HCM 6th LOS			B									

APPENDIX D

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2028 PEAK PERIOD TRAFFIC
ANALYSIS WITHOUT PROJECT

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	160	0	0	223	72	82	1153	46	0	0	0
Future Volume (veh/h)	53	160	0	0	223	72	82	1153	46	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.98	1.00		0.95			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	57	172	0	0	240	77	88	1240	49			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	375	553	0	0	553	461	226	3441	701			
Arrive On Green	0.30	0.30	0.00	0.00	0.30	0.30	0.46	0.46	0.46			
Sat Flow, veh/h	1053	1870	0	0	1870	1558	487	7419	1512			
Grp Volume(v), veh/h	57	172	0	0	240	77	334	994	49			
Grp Sat Flow(s),veh/h/ln	1053	1870	0	0	1870	1558	1846	1515	1512			
Q Serve(g_s), s	1.9	3.0	0.0	0.0	4.3	1.5	4.9	4.4	0.7			
Cycle Q Clear(g_c), s	6.2	3.0	0.0	0.0	4.3	1.5	4.9	4.4	0.7			
Prop In Lane	1.00		0.00	0.00		1.00	0.26		1.00			
Lane Grp Cap(c), veh/h	375	553	0	0	553	461	856	2811	701			
V/C Ratio(X)	0.15	0.31	0.00	0.00	0.43	0.17	0.39	0.35	0.07			
Avail Cap(c_a), veh/h	1077	1799	0	0	1799	1498	1776	5829	1454			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	14.3	11.4	0.0	0.0	11.8	10.8	7.3	7.2	6.2			
Incr Delay (d2), s/veh	0.2	0.3	0.0	0.0	0.5	0.2	0.3	0.1	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.4	1.0	0.0	0.0	1.5	0.4	1.4	1.0	0.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.5	11.7	0.0	0.0	12.4	11.0	7.6	7.2	6.2			
LnGrp LOS	B	B	A	A	B	B	A	A	A			
Approach Vol, veh/h		229			317			1377				
Approach Delay, s/veh		12.4			12.0			7.3				
Approach LOS		B			B			A				
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		24.3		17.3				17.3				
Change Period (Y+Rc), s		5.0		5.0				5.0				
Max Green Setting (Gmax), s		40.0		40.0				40.0				
Max Q Clear Time (g_c+I1), s		6.9		8.2				6.3				
Green Ext Time (p_c), s		11.9		1.3				1.7				
Intersection Summary												
HCM 6th Ctrl Delay			8.7									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	1953	564	334	946	0	0	0	0
Future Volume (veh/h)	0	0	0	0	1953	564	334	946	0	0	0	0
Initial Q (Qb), veh				0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)				1.00		0.98	1.00		1.00			
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach					No			No				
Adj Sat Flow, veh/h/ln				0	1870	1870	1870	1870	0			
Adj Flow Rate, veh/h				0	2034	588	348	985	0			
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %				0	2	2	2	2	0			
Cap, veh/h				0	3665	885	629	1935	0			
Arrive On Green				0.00	0.57	0.57	0.30	0.30	0.00			
Sat Flow, veh/h				0	6696	1554	1781	6696	0			
Grp Volume(v), veh/h				0	2034	588	348	985	0			
Grp Sat Flow(s),veh/h/ln				0	1609	1554	1781	1609	0			
Q Serve(g_s), s				0.0	15.4	20.2	13.1	9.8	0.0			
Cycle Q Clear(g_c), s				0.0	15.4	20.2	13.1	9.8	0.0			
Prop In Lane				0.00		1.00	1.00		0.00			
Lane Grp Cap(c), veh/h				0	3665	885	629	1935	0			
V/C Ratio(X)				0.00	0.56	0.66	0.55	0.51	0.00			
Avail Cap(c_a), veh/h				0	4169	1007	786	2501	0			
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)				0.00	1.00	1.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh				0.0	10.5	11.5	23.4	22.3	0.0			
Incr Delay (d2), s/veh				0.0	0.1	1.4	0.8	0.2	0.0			
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln				0.0	4.8	6.4	5.4	3.5	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				0.0	10.6	12.9	24.2	22.5	0.0			
LnGrp LOS				A	B	B	C	C	A			
Approach Vol, veh/h					2622			1333				
Approach Delay, s/veh					11.1			22.9				
Approach LOS					B			C				

Timer - Assigned Phs	2							8				
Phs Duration (G+Y+Rc), s	28.2							49.0				
Change Period (Y+Rc), s	5.0							5.0				
Max Green Setting (Gmax), s	30.0							50.0				
Max Q Clear Time (g_c+I1), s	15.1							22.2				
Green Ext Time (p_c), s	7.0							21.7				

Intersection Summary												
HCM 6th Ctrl Delay			15.1									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	1623	0	0	0	0	0	1117	300	0	0	0
Future Volume (veh/h)	203	1623	0	0	0	0	0	1117	300	0	0	0
Initial Q (Qb), veh	0	0	0				0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.95			
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00			
Work Zone On Approach		No						No				
Adj Sat Flow, veh/h/ln	1870	1870	0				0	1870	1870			
Adj Flow Rate, veh/h	223	1784	0				0	1227	330			
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0				0	2	2			
Cap, veh/h	933	2991	0				0	2505	589			
Arrive On Green	0.46	0.46	0.00				0.00	0.39	0.39			
Sat Flow, veh/h	1781	6696	0				0	6696	1512			
Grp Volume(v), veh/h	223	1784	0				0	1227	330			
Grp Sat Flow(s),veh/h/ln	1781	1609	0				0	1609	1512			
Q Serve(g_s), s	5.3	14.1	0.0				0.0	9.9	11.7			
Cycle Q Clear(g_c), s	5.3	14.1	0.0				0.0	9.9	11.7			
Prop In Lane	1.00		0.00				0.00		1.00			
Lane Grp Cap(c), veh/h	933	2991	0				0	2505	589			
V/C Ratio(X)	0.24	0.60	0.00				0.00	0.49	0.56			
Avail Cap(c_a), veh/h	1144	3753	0				0	3753	882			
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00				0.00	1.00	1.00			
Uniform Delay (d), s/veh	11.2	13.6	0.0				0.0	15.8	16.4			
Incr Delay (d2), s/veh	0.1	0.2	0.0				0.0	0.1	0.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.9	4.5	0.0				0.0	3.3	3.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.4	13.8	0.0				0.0	16.0	17.2			
LnGrp LOS	B	B	A				A	B	B			
Approach Vol, veh/h		2007						1557				
Approach Delay, s/veh		13.5						16.2				
Approach LOS		B						B				

Timer - Assigned Phs		2		4								
Phs Duration (G+Y+Rc), s		31.7		36.9								
Change Period (Y+Rc), s		5.0		5.0								
Max Green Setting (Gmax), s		40.0		40.0								
Max Q Clear Time (g_c+I1), s		13.7		16.1								
Green Ext Time (p_c), s		12.0		15.8								

Intersection Summary												
HCM 6th Ctrl Delay			14.7									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	103	49	73	252	130	32	646	50	88	1017	62
Future Volume (veh/h)	41	103	49	73	252	130	32	646	50	88	1017	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.96	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	46	116	55	82	283	146	36	726	56	99	1143	70
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	304	367	174	199	579	287	251	1687	130	386	1719	105
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	951	1192	565	363	1881	932	459	3333	257	684	3396	208
Grp Volume(v), veh/h	46	0	171	274	0	237	36	387	395	99	598	615
Grp Sat Flow(s),veh/h/ln	951	0	1757	1661	0	1515	459	1777	1813	684	1777	1827
Q Serve(g_s), s	2.2	0.0	4.0	2.9	0.0	6.9	3.4	7.4	7.4	5.7	13.4	13.5
Cycle Q Clear(g_c), s	9.2	0.0	4.0	6.9	0.0	6.9	16.9	7.4	7.4	13.1	13.4	13.5
Prop In Lane	1.00		0.32	0.30		0.62	1.00		0.14	1.00		0.11
Lane Grp Cap(c), veh/h	304	0	540	598	0	466	251	900	918	386	900	925
V/C Ratio(X)	0.15	0.00	0.32	0.46	0.00	0.51	0.14	0.43	0.43	0.26	0.66	0.67
Avail Cap(c_a), veh/h	561	0	1014	1030	0	874	438	1621	1653	664	1621	1667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.0	0.0	14.3	15.2	0.0	15.3	16.2	8.4	8.4	12.5	9.9	9.9
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.5	0.0	0.9	0.3	0.3	0.3	0.3	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.5	2.5	0.0	2.2	0.3	2.3	2.4	0.8	4.3	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.3	0.0	14.6	15.7	0.0	16.1	16.4	8.7	8.7	12.9	10.7	10.7
LnGrp LOS	B	A	B	B	A	B	B	A	A	B	B	B
Approach Vol, veh/h		217			511			818			1312	
Approach Delay, s/veh		15.6			15.9			9.0			10.9	
Approach LOS		B			B			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.2		21.5		32.2		21.5				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		49.0		31.0		49.0		31.0				
Max Q Clear Time (g_c+I1), s		18.9		11.2		15.5		8.9				
Green Ext Time (p_c), s		6.2		1.1		11.7		3.3				

Intersection Summary												
HCM 6th Ctrl Delay			11.6									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	271	0	0	191	122	65	1479	57	0	0	0
Future Volume (veh/h)	80	271	0	0	191	122	65	1479	57	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.93			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	84	285	0	0	201	128	68	1557	60			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	347	507	0	0	507	427	158	3905	756			
Arrive On Green	0.27	0.27	0.00	0.00	0.27	0.27	0.51	0.51	0.51			
Sat Flow, veh/h	1047	1870	0	0	1870	1575	308	7607	1472			
Grp Volume(v), veh/h	84	285	0	0	201	128	409	1216	60			
Grp Sat Flow(s),veh/h/ln	1047	1870	0	0	1870	1575	1855	1515	1472			
Q Serve(g_s), s	3.3	6.1	0.0	0.0	4.1	3.0	6.4	5.7	1.0			
Cycle Q Clear(g_c), s	7.4	6.1	0.0	0.0	4.1	3.0	6.4	5.7	1.0			
Prop In Lane	1.00		0.00	0.00		1.00	0.17		1.00			
Lane Grp Cap(c), veh/h	347	507	0	0	507	427	952	3111	756			
V/C Ratio(X)	0.24	0.56	0.00	0.00	0.40	0.30	0.43	0.39	0.08			
Avail Cap(c_a), veh/h	945	1574	0	0	1574	1325	1641	5360	1302			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	16.8	14.5	0.0	0.0	13.8	13.4	7.0	6.9	5.7			
Incr Delay (d2), s/veh	0.4	1.0	0.0	0.0	0.5	0.4	0.3	0.1	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.7	2.3	0.0	0.0	1.5	0.9	1.9	1.3	0.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.2	15.5	0.0	0.0	14.3	13.8	7.3	6.9	5.8			
LnGrp LOS	B	B	A	A	B	B	A	A	A			
Approach Vol, veh/h		369			329			1685				
Approach Delay, s/veh		15.9			14.1			7.0				
Approach LOS		B			B			A				
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		28.8		17.6				17.6				
Change Period (Y+Rc), s		5.0		5.0				5.0				
Max Green Setting (Gmax), s		41.0		39.0				39.0				
Max Q Clear Time (g_c+I1), s		8.4		9.4				6.1				
Green Ext Time (p_c), s		15.4		2.2				1.6				
Intersection Summary												
HCM 6th Ctrl Delay			9.4									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	1654	519	486	1199	0	0	0	0
Future Volume (veh/h)	0	0	0	0	1654	519	486	1199	0	0	0	0
Initial Q (Qb), veh				0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00			
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach					No			No				
Adj Sat Flow, veh/h/ln				0	1870	1870	1870	1870	0			
Adj Flow Rate, veh/h				0	1778	558	523	1289	0			
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %				0	2	2	2	2	0			
Cap, veh/h				0	3156	754	777	2485	0			
Arrive On Green				0.00	0.49	0.49	0.39	0.39	0.00			
Sat Flow, veh/h				0	6696	1538	1781	6696	0			
Grp Volume(v), veh/h				0	1778	558	523	1289	0			
Grp Sat Flow(s),veh/h/ln				0	1609	1538	1781	1609	0			
Q Serve(g_s), s				0.0	15.8	23.5	20.7	12.5	0.0			
Cycle Q Clear(g_c), s				0.0	15.8	23.5	20.7	12.5	0.0			
Prop In Lane				0.00		1.00	1.00		0.00			
Lane Grp Cap(c), veh/h				0	3156	754	777	2485	0			
V/C Ratio(X)				0.00	0.56	0.74	0.67	0.52	0.00			
Avail Cap(c_a), veh/h				0	3491	834	880	2856	0			
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)				0.00	1.00	1.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh				0.0	14.5	16.5	21.6	19.1	0.0			
Incr Delay (d2), s/veh				0.0	0.2	3.2	1.7	0.2	0.0			
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln				0.0	5.3	8.2	8.5	4.4	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				0.0	14.7	19.7	23.3	19.3	0.0			
LnGrp LOS				A	B	B	C	B	A			
Approach Vol, veh/h					2336			1812				
Approach Delay, s/veh					15.9			20.4				
Approach LOS					B			C				

Timer - Assigned Phs	2							8				
Phs Duration (G+Y+Rc), s	36.3							44.8				
Change Period (Y+Rc), s	5.0							5.0				
Max Green Setting (Gmax), s	36.0							44.0				
Max Q Clear Time (g_c+I1), s	22.7							25.5				
Green Ext Time (p_c), s	8.6							14.2				

Intersection Summary		
HCM 6th Ctrl Delay	17.9	
HCM 6th LOS	B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	312	2108	0	0	0	0	0	1287	303	0	0	0
Future Volume (veh/h)	312	2108	0	0	0	0	0	1287	303	0	0	0
Initial Q (Qb), veh	0	0	0				0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.94			
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00			
Work Zone On Approach		No						No				
Adj Sat Flow, veh/h/ln	1870	1870	0				0	1870	1870			
Adj Flow Rate, veh/h	325	2196	0				0	1341	316			
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96			
Percent Heavy Veh, %	2	2	0				0	2	2			
Cap, veh/h	1011	3314	0				0	2286	531			
Arrive On Green	0.52	0.52	0.00				0.00	0.36	0.36			
Sat Flow, veh/h	1781	6696	0				0	6696	1494			
Grp Volume(v), veh/h	325	2196	0				0	1341	316			
Grp Sat Flow(s),veh/h/ln	1781	1609	0				0	1609	1494			
Q Serve(g_s), s	8.4	19.4	0.0				0.0	13.1	13.3			
Cycle Q Clear(g_c), s	8.4	19.4	0.0				0.0	13.1	13.3			
Prop In Lane	1.00		0.00				0.00		1.00			
Lane Grp Cap(c), veh/h	1011	3314	0				0	2286	531			
V/C Ratio(X)	0.32	0.66	0.00				0.00	0.59	0.60			
Avail Cap(c_a), veh/h	1109	3668	0				0	3001	697			
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00				0.00	1.00	1.00			
Uniform Delay (d), s/veh	11.1	13.8	0.0				0.0	20.3	20.3			
Incr Delay (d2), s/veh	0.2	0.4	0.0				0.0	0.2	1.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.0	6.4	0.0				0.0	4.7	4.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.3	14.2	0.0				0.0	20.5	21.4			
LnGrp LOS	B	B	A				A	C	C			
Approach Vol, veh/h		2521						1657				
Approach Delay, s/veh		13.8						20.7				
Approach LOS		B						C				

Timer - Assigned Phs		2		4								
Phs Duration (G+Y+Rc), s		32.4		44.8								
Change Period (Y+Rc), s		5.0		5.0								
Max Green Setting (Gmax), s		36.0		44.0								
Max Q Clear Time (g_c+I1), s		15.3		21.4								
Green Ext Time (p_c), s		11.4		18.4								

Intersection Summary												
HCM 6th Ctrl Delay			16.5									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	249	81	82	169	210	33	1093	30	64	953	45
Future Volume (veh/h)	109	249	81	82	169	210	33	1093	30	64	953	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.95	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	114	259	84	85	176	219	34	1139	31	67	993	47
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	309	447	145	162	305	445	283	1816	49	246	1775	84
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	986	1350	438	264	921	1344	540	3528	96	477	3448	163
Grp Volume(v), veh/h	114	0	343	244	0	236	34	574	596	67	512	528
Grp Sat Flow(s),veh/h/ln	986	0	1787	1082	0	1447	540	1777	1847	477	1777	1835
Q Serve(g_s), s	6.8	0.0	10.3	5.1	0.0	8.4	3.0	15.0	15.0	7.6	12.7	12.7
Cycle Q Clear(g_c), s	15.2	0.0	10.3	15.4	0.0	8.4	15.7	15.0	15.0	22.6	12.7	12.7
Prop In Lane	1.00		0.24	0.35		0.93	1.00		0.05	1.00		0.09
Lane Grp Cap(c), veh/h	309	0	592	433	0	479	283	915	951	246	915	945
V/C Ratio(X)	0.37	0.00	0.58	0.56	0.00	0.49	0.12	0.63	0.63	0.27	0.56	0.56
Avail Cap(c_a), veh/h	438	0	826	625	0	669	421	1369	1423	368	1369	1414
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	0.0	18.0	19.5	0.0	17.3	16.1	11.3	11.3	19.4	10.7	10.7
Incr Delay (d2), s/veh	0.7	0.0	0.9	1.2	0.0	0.8	0.2	0.7	0.7	0.6	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	4.0	3.3	0.0	2.7	0.4	5.1	5.3	0.8	4.3	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.2	0.0	18.9	20.7	0.0	18.1	16.3	12.0	12.0	20.0	11.3	11.2
LnGrp LOS	C	A	B	C	A	B	B	B	B	B	B	B
Approach Vol, veh/h		457			480			1204			1107	
Approach Delay, s/veh		20.2			19.4			12.1			11.8	
Approach LOS		C			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		38.4		26.5		38.4		26.5				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		50.0		30.0		50.0		30.0				
Max Q Clear Time (g_c+I1), s		17.7		17.2		24.6		17.4				
Green Ext Time (p_c), s		10.3		2.2		8.8		2.5				

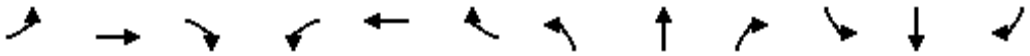
Intersection Summary												
HCM 6th Ctrl Delay			14.2									
HCM 6th LOS			B									

APPENDIX E

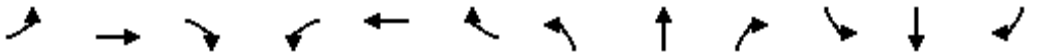
CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2028 PEAK PERIOD TRAFFIC
ANALYSIS WITH PROJECT

HCM 6th Signalized Intersection Summary
1: Piikoi St & Young St

03/22/2024



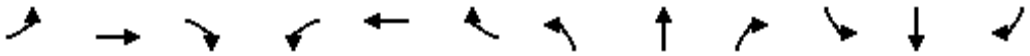
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	162	0	0	228	86	82	1153	54	0	0	0
Future Volume (veh/h)	53	162	0	0	228	86	82	1153	54	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.98	1.00		0.95			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	57	174	0	0	245	92	88	1240	58			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	372	558	0	0	558	465	225	3426	698			
Arrive On Green	0.30	0.30	0.00	0.00	0.30	0.30	0.46	0.46	0.46			
Sat Flow, veh/h	1034	1870	0	0	1870	1558	487	7419	1511			
Grp Volume(v), veh/h	57	174	0	0	245	92	334	994	58			
Grp Sat Flow(s),veh/h/ln	1034	1870	0	0	1870	1558	1846	1515	1511			
Q Serve(g_s), s	2.0	3.0	0.0	0.0	4.4	1.8	5.0	4.4	0.9			
Cycle Q Clear(g_c), s	6.4	3.0	0.0	0.0	4.4	1.8	5.0	4.4	0.9			
Prop In Lane	1.00		0.00	0.00		1.00	0.26		1.00			
Lane Grp Cap(c), veh/h	372	558	0	0	558	465	852	2798	698			
V/C Ratio(X)	0.15	0.31	0.00	0.00	0.44	0.20	0.39	0.36	0.08			
Avail Cap(c_a), veh/h	1080	1839	0	0	1839	1532	1727	5668	1414			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	14.4	11.3	0.0	0.0	11.8	10.9	7.4	7.2	6.3			
Incr Delay (d2), s/veh	0.2	0.3	0.0	0.0	0.5	0.2	0.3	0.1	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.4	1.1	0.0	0.0	1.6	0.5	1.4	1.0	0.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.6	11.6	0.0	0.0	12.4	11.1	7.7	7.3	6.3			
LnGrp LOS	B	B	A	A	B	B	A	A	A			
Approach Vol, veh/h		231			337			1386				
Approach Delay, s/veh		12.4			12.0			7.3				
Approach LOS		B			B			A				
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		24.3		17.4				17.4				
Change Period (Y+Rc), s		5.0		5.0				5.0				
Max Green Setting (Gmax), s		39.0		41.0				41.0				
Max Q Clear Time (g_c+I1), s		7.0		8.4				6.4				
Green Ext Time (p_c), s		11.8		1.3				1.8				
Intersection Summary												
HCM 6th Ctrl Delay			8.7									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	1953	564	338	956	0	0	0	0
Future Volume (veh/h)	0	0	0	0	1953	564	338	956	0	0	0	0
Initial Q (Qb), veh				0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)				1.00		0.98	1.00		1.00			
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach					No			No				
Adj Sat Flow, veh/h/ln				0	1870	1870	1870	1870	0			
Adj Flow Rate, veh/h				0	2034	588	352	996	0			
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %				0	2	2	2	2	0			
Cap, veh/h				0	3661	884	630	1940	0			
Arrive On Green				0.00	0.57	0.57	0.30	0.30	0.00			
Sat Flow, veh/h				0	6696	1554	1781	6696	0			
Grp Volume(v), veh/h				0	2034	588	352	996	0			
Grp Sat Flow(s),veh/h/ln				0	1609	1554	1781	1609	0			
Q Serve(g_s), s				0.0	15.4	20.3	13.3	9.9	0.0			
Cycle Q Clear(g_c), s				0.0	15.4	20.3	13.3	9.9	0.0			
Prop In Lane				0.00		1.00	1.00		0.00			
Lane Grp Cap(c), veh/h				0	3661	884	630	1940	0			
V/C Ratio(X)				0.00	0.56	0.66	0.56	0.51	0.00			
Avail Cap(c_a), veh/h				0	4163	1005	785	2498	0			
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)				0.00	1.00	1.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh				0.0	10.5	11.5	23.5	22.3	0.0			
Incr Delay (d2), s/veh				0.0	0.1	1.4	0.8	0.2	0.0			
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln				0.0	4.8	6.4	5.4	3.6	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				0.0	10.6	12.9	24.3	22.5	0.0			
LnGrp LOS				A	B	B	C	C	A			
Approach Vol, veh/h					2622			1348				
Approach Delay, s/veh					11.1			23.0				
Approach LOS					B			C				

Timer - Assigned Phs	2							8				
Phs Duration (G+Y+Rc), s	28.3							49.0				
Change Period (Y+Rc), s	5.0							5.0				
Max Green Setting (Gmax), s	30.0							50.0				
Max Q Clear Time (g_c+I1), s	15.3							22.3				
Green Ext Time (p_c), s	7.1							21.7				

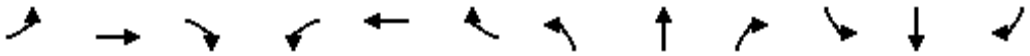
Intersection Summary		
HCM 6th Ctrl Delay	15.2	
HCM 6th LOS	B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	1623	0	0	0	0	0	1117	300	0	0	0
Future Volume (veh/h)	211	1623	0	0	0	0	0	1117	300	0	0	0
Initial Q (Qb), veh	0	0	0				0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.95			
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00			
Work Zone On Approach		No						No				
Adj Sat Flow, veh/h/ln	1870	1870	0				0	1870	1870			
Adj Flow Rate, veh/h	232	1784	0				0	1227	330			
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0				0	2	2			
Cap, veh/h	933	2993	0				0	2504	588			
Arrive On Green	0.47	0.47	0.00				0.00	0.39	0.39			
Sat Flow, veh/h	1781	6696	0				0	6696	1512			
Grp Volume(v), veh/h	232	1784	0				0	1227	330			
Grp Sat Flow(s),veh/h/ln	1781	1609	0				0	1609	1512			
Q Serve(g_s), s	5.5	14.1	0.0				0.0	9.9	11.7			
Cycle Q Clear(g_c), s	5.5	14.1	0.0				0.0	9.9	11.7			
Prop In Lane	1.00		0.00				0.00		1.00			
Lane Grp Cap(c), veh/h	933	2993	0				0	2504	588			
V/C Ratio(X)	0.25	0.60	0.00				0.00	0.49	0.56			
Avail Cap(c_a), veh/h	1143	3751	0				0	3751	881			
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00				0.00	1.00	1.00			
Uniform Delay (d), s/veh	11.3	13.6	0.0				0.0	15.8	16.4			
Incr Delay (d2), s/veh	0.1	0.2	0.0				0.0	0.1	0.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.0	4.6	0.0				0.0	3.3	3.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.4	13.8	0.0				0.0	16.0	17.2			
LnGrp LOS	B	B	A				A	B	B			
Approach Vol, veh/h		2016						1557				
Approach Delay, s/veh		13.5						16.2				
Approach LOS		B						B				

Timer - Assigned Phs		2		4								
Phs Duration (G+Y+Rc), s		31.7		36.9								
Change Period (Y+Rc), s		5.0		5.0								
Max Green Setting (Gmax), s		40.0		40.0								
Max Q Clear Time (g_c+I1), s		13.7		16.1								
Green Ext Time (p_c), s		12.0		15.8								

Intersection Summary												
HCM 6th Ctrl Delay			14.7									
HCM 6th LOS			B									



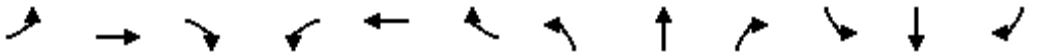
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	107	61	73	254	130	32	646	50	88	1017	68
Future Volume (veh/h)	41	107	61	73	254	130	32	646	50	88	1017	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.96	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	46	120	69	82	285	146	36	726	56	99	1143	76
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	305	344	198	194	577	288	247	1685	130	383	1707	113
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	950	1106	636	349	1854	923	456	3333	257	684	3377	224
Grp Volume(v), veh/h	46	0	189	273	0	240	36	387	395	99	601	618
Grp Sat Flow(s),veh/h/ln	950	0	1743	1610	0	1517	456	1777	1813	684	1777	1824
Q Serve(g_s), s	2.3	0.0	4.6	3.0	0.0	7.1	3.5	7.5	7.5	5.8	13.8	13.8
Cycle Q Clear(g_c), s	9.3	0.0	4.6	7.6	0.0	7.1	17.3	7.5	7.5	13.4	13.8	13.8
Prop In Lane	1.00		0.37	0.30		0.61	1.00		0.14	1.00		0.12
Lane Grp Cap(c), veh/h	305	0	543	587	0	472	247	898	916	383	898	922
V/C Ratio(X)	0.15	0.00	0.35	0.47	0.00	0.51	0.15	0.43	0.43	0.26	0.67	0.67
Avail Cap(c_a), veh/h	548	0	989	995	0	861	426	1594	1626	651	1594	1637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	14.5	15.4	0.0	15.4	16.6	8.5	8.5	12.8	10.1	10.1
Incr Delay (d2), s/veh	0.2	0.0	0.4	0.6	0.0	0.8	0.3	0.3	0.3	0.4	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.7	2.6	0.0	2.3	0.3	2.4	2.4	0.8	4.4	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.4	0.0	14.9	16.0	0.0	16.2	16.8	8.9	8.9	13.1	11.0	10.9
LnGrp LOS	B	A	B	B	A	B	B	A	A	B	B	B
Approach Vol, veh/h		235			513			818			1318	
Approach Delay, s/veh		15.8			16.1			9.2			11.1	
Approach LOS		B			B			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.6		22.0		32.6		22.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		49.0		31.0		49.0		31.0				
Max Q Clear Time (g_c+I1), s		19.3		11.3		15.8		9.6				
Green Ext Time (p_c), s		6.2		1.2		11.8		3.3				

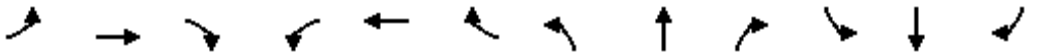
Intersection Summary												
HCM 6th Ctrl Delay			11.8									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary
1: Piikoi St & Young St

05/21/2024



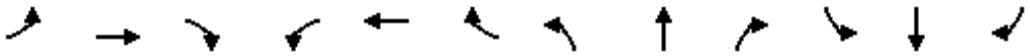
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	274	0	0	194	132	65	1479	70	0	0	0
Future Volume (veh/h)	80	274	0	0	194	132	65	1479	70	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.93			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	84	288	0	0	204	139	68	1557	74			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	344	510	0	0	510	430	158	3901	755			
Arrive On Green	0.27	0.27	0.00	0.00	0.27	0.27	0.51	0.51	0.51			
Sat Flow, veh/h	1034	1870	0	0	1870	1575	308	7607	1472			
Grp Volume(v), veh/h	84	288	0	0	204	139	409	1216	74			
Grp Sat Flow(s),veh/h/ln	1034	1870	0	0	1870	1575	1855	1515	1472			
Q Serve(g_s), s	3.4	6.2	0.0	0.0	4.2	3.3	6.4	5.7	1.2			
Cycle Q Clear(g_c), s	7.5	6.2	0.0	0.0	4.2	3.3	6.4	5.7	1.2			
Prop In Lane	1.00		0.00	0.00		1.00	0.17		1.00			
Lane Grp Cap(c), veh/h	344	510	0	0	510	430	951	3108	755			
V/C Ratio(X)	0.24	0.56	0.00	0.00	0.40	0.32	0.43	0.39	0.10			
Avail Cap(c_a), veh/h	927	1564	0	0	1564	1316	1630	5326	1294			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	16.9	14.6	0.0	0.0	13.8	13.5	7.1	6.9	5.8			
Incr Delay (d2), s/veh	0.4	1.0	0.0	0.0	0.5	0.4	0.3	0.1	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.7	2.4	0.0	0.0	1.6	1.0	1.9	1.3	0.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	15.6	0.0	0.0	14.3	14.0	7.4	7.0	5.9			
LnGrp LOS	B	B	A	A	B	B	A	A	A			
Approach Vol, veh/h		372			343			1699				
Approach Delay, s/veh		15.9			14.2			7.1				
Approach LOS		B			B			A				
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		28.9		17.7				17.7				
Change Period (Y+Rc), s		5.0		5.0				5.0				
Max Green Setting (Gmax), s		41.0		39.0				39.0				
Max Q Clear Time (g_c+I1), s		8.4		9.5				6.2				
Green Ext Time (p_c), s		15.5		2.2				1.7				
Intersection Summary												
HCM 6th Ctrl Delay			9.4									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	1654	519	489	1206	0	0	0	0
Future Volume (veh/h)	0	0	0	0	1654	519	489	1206	0	0	0	0
Initial Q (Qb), veh				0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00			
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach					No			No				
Adj Sat Flow, veh/h/ln				0	1870	1870	1870	1870	0			
Adj Flow Rate, veh/h				0	1778	558	526	1297	0			
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %				0	2	2	2	2	0			
Cap, veh/h				0	3151	753	778	2491	0			
Arrive On Green				0.00	0.49	0.49	0.39	0.39	0.00			
Sat Flow, veh/h				0	6696	1537	1781	6696	0			
Grp Volume(v), veh/h				0	1778	558	526	1297	0			
Grp Sat Flow(s),veh/h/ln				0	1609	1537	1781	1609	0			
Q Serve(g_s), s				0.0	15.8	23.6	20.9	12.6	0.0			
Cycle Q Clear(g_c), s				0.0	15.8	23.6	20.9	12.6	0.0			
Prop In Lane				0.00		1.00	1.00		0.00			
Lane Grp Cap(c), veh/h				0	3151	753	778	2491	0			
V/C Ratio(X)				0.00	0.56	0.74	0.68	0.52	0.00			
Avail Cap(c_a), veh/h				0	3484	832	878	2850	0			
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)				0.00	1.00	1.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh				0.0	14.6	16.6	21.7	19.1	0.0			
Incr Delay (d2), s/veh				0.0	0.2	3.2	1.8	0.2	0.0			
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln				0.0	5.3	8.2	8.6	4.5	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				0.0	14.8	19.8	23.4	19.3	0.0			
LnGrp LOS				A	B	B	C	B	A			
Approach Vol, veh/h					2336			1823				
Approach Delay, s/veh					16.0			20.5				
Approach LOS					B			C				

Timer - Assigned Phs	2							8				
Phs Duration (G+Y+Rc), s	36.5							44.8				
Change Period (Y+Rc), s	5.0							5.0				
Max Green Setting (Gmax), s	36.0							44.0				
Max Q Clear Time (g_c+I1), s	22.9							25.6				
Green Ext Time (p_c), s	8.6							14.2				

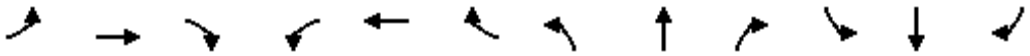
Intersection Summary		
HCM 6th Ctrl Delay		18.0
HCM 6th LOS		B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	325	2108	0	0	0	0	0	1287	303	0	0	0
Future Volume (veh/h)	325	2108	0	0	0	0	0	1287	303	0	0	0
Initial Q (Qb), veh	0	0	0				0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.94			
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00			
Work Zone On Approach		No						No				
Adj Sat Flow, veh/h/ln	1870	1870	0				0	1870	1870			
Adj Flow Rate, veh/h	339	2196	0				0	1341	316			
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96			
Percent Heavy Veh, %	2	2	0				0	2	2			
Cap, veh/h	1011	3315	0				0	2286	531			
Arrive On Green	0.52	0.52	0.00				0.00	0.36	0.36			
Sat Flow, veh/h	1781	6696	0				0	6696	1494			
Grp Volume(v), veh/h	339	2196	0				0	1341	316			
Grp Sat Flow(s),veh/h/ln	1781	1609	0				0	1609	1494			
Q Serve(g_s), s	8.8	19.4	0.0				0.0	13.1	13.4			
Cycle Q Clear(g_c), s	8.8	19.4	0.0				0.0	13.1	13.4			
Prop In Lane	1.00		0.00				0.00		1.00			
Lane Grp Cap(c), veh/h	1011	3315	0				0	2286	531			
V/C Ratio(X)	0.34	0.66	0.00				0.00	0.59	0.60			
Avail Cap(c_a), veh/h	1108	3666	0				0	3000	697			
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00				0.00	1.00	1.00			
Uniform Delay (d), s/veh	11.2	13.8	0.0				0.0	20.3	20.4			
Incr Delay (d2), s/veh	0.2	0.4	0.0				0.0	0.2	1.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.2	6.4	0.0				0.0	4.7	4.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.4	14.2	0.0				0.0	20.5	21.4			
LnGrp LOS	B	B	A				A	C	C			
Approach Vol, veh/h		2535						1657				
Approach Delay, s/veh		13.8						20.7				
Approach LOS		B						C				

Timer - Assigned Phs		2		4								
Phs Duration (G+Y+Rc), s		32.4		44.8								
Change Period (Y+Rc), s		5.0		5.0								
Max Green Setting (Gmax), s		36.0		44.0								
Max Q Clear Time (g_c+I1), s		15.4		21.4								
Green Ext Time (p_c), s		11.4		18.4								

Intersection Summary												
HCM 6th Ctrl Delay			16.5									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	253	92	82	174	210	33	1093	30	64	953	59
Future Volume (veh/h)	109	253	92	82	174	210	33	1093	30	64	953	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.95	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	114	264	96	85	181	219	34	1139	31	67	993	61
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	310	440	160	158	308	447	274	1808	49	242	1740	107
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	981	1306	475	253	913	1324	533	3528	96	477	3393	208
Grp Volume(v), veh/h	114	0	360	245	0	240	34	574	596	67	520	534
Grp Sat Flow(s),veh/h/ln	981	0	1780	1038	0	1451	533	1777	1847	477	1777	1825
Q Serve(g_s), s	7.0	0.0	11.2	5.5	0.0	8.8	3.1	15.5	15.5	7.8	13.4	13.4
Cycle Q Clear(g_c), s	15.7	0.0	11.2	16.7	0.0	8.8	16.6	15.5	15.5	23.3	13.4	13.4
Prop In Lane	1.00		0.27	0.35		0.91	1.00		0.05	1.00		0.11
Lane Grp Cap(c), veh/h	310	0	601	423	0	490	274	911	947	242	911	935
V/C Ratio(X)	0.37	0.00	0.60	0.58	0.00	0.49	0.12	0.63	0.63	0.28	0.57	0.57
Avail Cap(c_a), veh/h	421	0	801	586	0	653	400	1332	1385	355	1332	1368
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	0.0	18.3	20.1	0.0	17.5	16.9	11.7	11.7	20.1	11.2	11.2
Incr Delay (d2), s/veh	0.7	0.0	1.0	1.3	0.0	0.8	0.2	0.7	0.7	0.6	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	4.4	3.4	0.0	2.8	0.4	5.4	5.6	0.9	4.6	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.5	0.0	19.3	21.4	0.0	18.3	17.1	12.4	12.4	20.7	11.8	11.7
LnGrp LOS	C	A	B	C	A	B	B	B	B	C	B	B
Approach Vol, veh/h		474			485			1204			1121	
Approach Delay, s/veh		20.6			19.9			12.5			12.3	
Approach LOS		C			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		39.2		27.5		39.2		27.5				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		50.0		30.0		50.0		30.0				
Max Q Clear Time (g_c+I1), s		18.6		17.7		25.3		18.7				
Green Ext Time (p_c), s		10.2		2.3		8.8		2.4				

Intersection Summary												
HCM 6th Ctrl Delay			14.7									
HCM 6th LOS			B									

APPENDIX F

TRANSIT LOS

Multimodal Transit LOS Calculation

		Pensacola SB	Piikoi NB	South King EB	South Beretania WB	Keeaumoku SB
Inputs		**1**	**2**	**3**	**4**	**5**
	TRANSIT OPERATIONS INFORMATION					
	Number of local buses on street segment per hour (bus/h)	4	3	14	15	5
	Number of express buses stopping in segment per hour (bus/h)	0	0	0	0	0
t_{ex}	Average excess wait time (min)	1.5	1.5	3.6	4.6	3.0
L_f	Average passenger load factor (p/seat)	0.3	0.3	0.7	0.7	0.4
S	Average transit travel speed (mi/h)	7.0	7.0	8.2	11.2	6.8
l_{pt}	Average passenger trip length (mi)	0.9	0.9	2.8	2.8	2.1
	Is the segment in the CBD of a metro area of 5 million or more?	No	No	No	No	No
	TRANSIT AMENITY DATA					
p_{sh}	Percent stops in segment with a shelter	100%	0%	100%	100%	0%
p_{be}	Percent stops in segment with a bench	25%	0%	67%	100%	0%
	PEDESTRIAN ENVIRONMENT DATA					
W_A	Sidewalk width (ft) (Enter 0 if no sidewalk)	8.0	8.0	12.0	8.0	8.0
W_{buf}	Buffer width from sidewalk to street (ft)	12.5	0.0	12.5	5.0	0.0
	Does a continuous barrier exist between the street and sidewalk?	No	No	No	No	No
	Is the street divided?	No	No	No	No	No
	Are parking spaces striped?	Yes	No	Yes	No	No
p_{pk}	Proportion of on-street parking occupied	100%	0%	100%	0%	0%
W_{bl}	Bicycle lane width (ft)	12.5	0.0	12.5	5.0	0.0
W_{os}	Shoulder/parking lane width (ft)	7.0	0.0	8.5	0.0	0.0
W_{ol}	Outside travel lane (closest to sidewalk) width (ft)	17.0	11.0	13.0	10.0	12.0
v_m	Outside lane demand flow rate at midsegment (veh/h)	324	324	517	406	458
S_R	Average vehicle running speed, including intersection delay (mi/h)	25.0	25.0	30.0	30.0	30.0
Calculations						
f	Transit frequency (bus/h)	4	3	14	15	5
f_h	Headway factor	2.80	2.48	3.61	3.64	3.00
f_{pl}	Passenger load weighting factor	1.00	1.00	1.00	1.00	1.00
T_{at}	Perceived amenity time rate (min/mi)	1.5	0.0	0.5	0.5	0.0
T_{ex}	Excess wait time rate due to late arrivals (min/mi)	1.7	1.7	1.3	1.6	1.4
T_{ptt}	Perceived travel time rate (min/mi)	10.4	11.9	9.4	8.1	11.7
T_{btt}	Base travel time rate (min/mi)	4.0	4.0	4.0	4.0	4.0
f_{tt}	Perceived travel time factor	0.70	0.67	0.72	0.76	0.67
$s_{w\text{-}r}$	Transit wait-ride score	1.95	1.66	2.61	2.77	2.02
f_s	Motorized vehicle speed adjustment factor	0.25	0.25	0.36	0.36	0.36
f_v	Motorized vehicle volume adjustment factor	0.74	0.74	1.18	0.92	1.04
W_{aA}	Adjusted available sidewalk width (ft)	8.0	8.0	10.0	8.0	8.0
f_{sw}	Sidewalk width coefficient	3.60	3.60	3.00	3.60	3.60
f_b	Buffer area coefficient	1.00	1.00	1.00	1.00	1.00
W_t	Total width of outside lane, bike lane, and parking lane/shoulder (ft)	29.5	11.0	25.5	15.0	12.0
W_v	Effective total width as a function of traffic volume (ft)	29.5	11.0	25.5	15.0	12.0
W_1	Effective width of combined bike lane and shoulder (ft)	19.5	0.0	21.0	5.0	0.0
f_w	Cross-section adjustment factor	-5.98	-4.52	-5.96	-4.83	-4.55
I_p	Pedestrian environment score	1.05	2.51	1.62	2.50	2.90
	Pedestrian LOS	A	B	A	B	C
I_t	Transit LOS score	3.23	3.89	2.33	2.22	3.41
Output						
	Transit LOS	***C***	***D***	***B***	***B***	***C***

Appendix F Infrastructure Availability Letters

DEPARTMENT OF PLANNING AND PERMITTING

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET * HONOLULU, HAWAII 96813

Phone: (808) 768-8209 * Fax: (808) 768-4210

SEWER CONNECTION APPLICATION

APPLICATION NO.: **2023/SCA-1529** STATUS: **Approved with Conditions**

DATE RECEIVED: **12/14/2023** IWDP APP. NO.:

PROJECT NAME: **2023/SCA-1529 1111 Piikoi Street - 248 New Affordable Housing Units, Demolish Exiting Buildings**

$967,920.80
Estimated Wastewater System Facility Charge*

LOCATION:

Zone	Section	Plat	Parcel		
2	4	004	046	**1105 PIIKOI ST Honolulu / Downtown 96814**	**20,019** Sq. Ft.
2	4	004	078	**1216 YOUNG ST Honolulu / Downtown 96814**	**11,958** Sq. Ft.

SPECIFIC LOCATION: **1111 PIIKOI STREET**

APPLICANT: **GORDON RING**
2024 NORTH KING STREET SUITE 200
HONOLULU, HAWAII 96819-3494

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

OTHER USES:

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

PROPOSED UNITS	EXISTING UNITS	UNITS TO BE DEMOLISHED
No. of New Units: **248**	No. of Existing Units: **39**	No. of Units to be Demolished: **39**
Studios: **21**	Studios:	Studios:
1-Bedroom: **124**	1-Bedroom:	1-Bedroom:
2-Bedroom: **82**	2-Bedroom:	2-Bedroom:
3-Bedroom: **21**	3-Bedroom:	3-Bedroom:
4-Bedroom:	4-Bedroom:	4-Bedroom:
5-Bedroom:	5-Bedroom:	5-Bedroom:
6-Bedroom:	6-Bedroom:	6-Bedroom:

REMARKS **Project connects to 8-inch sewer main on Young Street. Submit construction plans for review and approval.**

Approved with Conditions **12/22/2023**

Valid 2-years after approval date. Construction plans shall be completed and approved within this 2-year period. Construction shall commence within 1-year after approval of plans.

EXPIRATION DATE: **12/21/2025**

** Applicable WSFC shall be collected at the prevailing rate in accordance with ROH 1990, Chapter 14, Sections 14-10.3, 14-10.4, 14-10.5 and Appendix 14-D.*

REVIEWED BY: ***Jing Meng***

Site Development Division, Wastewater Branch

ExternalID: **121399297-001** JobId: **121399297**

Initial Print Date: Friday December 22, 2023 2:16 PM

BOARD OF WATER SUPPLY
KA 'OIHANA WAI
CITY AND COUNTY OF HONOLULU

630 SOUTH BERETANIA STREET • HONOLULU, HAWAI'I 96843
Phone: (808) 748-5000 • www.boardofwatersupply.com

RICK BLANGIARDI
MAYOR
MEIA

ERNEST Y. W. LAU, P.E.
MANAGER AND CHIEF ENGINEER
MANAKIA A ME KAHU WILIKĪ

ERWIN KAWATA
DEPUTY MANAGER
HOPE MANAKIA

NĀ'ĀLEHU ANTHONY, Chair
KAPUA SPROAT, Vice Chair
BRYAN P. ANDAYA
JONATHAN KANESHIRO
EDWIN H. SNIFFEN, Ex-Officio
GENE C. ALBANO, P.E., Ex-Officio

December 27, 2023

Mr. Gordon Ring
R. M. Towill Corporation
2024 North King Street, Suite 200
Honolulu, Hawai'i 96819-3494

Dear Mr. Ring:

Subject: Your Letter Dated December 14, 2023 Regarding Availability of Water for the Proposed Affordable Housing Development at 1111 Pi'ikoi Street
Tax Map Key: 2-4-004: 046 & 078

Thank you for your letter regarding the proposed 21-story, 248-unit affordable housing project.

The existing water system is currently adequate to accommodate the proposed high-rise development. However, please be advised that the existing Honolulu water system capacity has been reduced due to the shut-down of the Halawa Shaft pumping station as a proactive measure to prevent fuel contamination from the Navy's Red Hill Bulk Storage Tank fuel releases. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval, pending evaluation of the water system conditions at that time on a first-come, first-served basis. The Board of Water Supply (BWS) reserves the right to change any position or information stated herein up until the final approval of the building permit application.

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

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

When water is made available, the applicant will be required to pay our Water System Facilities Charges (WSFC) for resource development, transmission, and daily storage.

Water conservation measures are required for all proposed developments. These measures include utilization of nonpotable water for irrigation using rain catchment, drought tolerant plants, xeriscape landscaping, efficient irrigation systems, such as a drip system and moisture sensors, and the use of Water Sense labeled ultra-low flow water fixtures and toilets.

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

For the request for deferral of WSFC until the Certificate of Occupancy is obtained pursuant to Section 201-H, HRS, please coordinate with Garon Hamasaki, Service Engineering Branch of our Customer Care Division at (808) 748-5472.

The BWS may waive the WSFC and new meter cost for qualified on-site affordable and homeless dwelling units, up to 500 dwelling units per year. The waivers will be evaluated when the building permit is submitted for approval. To qualify, the dwelling units must be certified as either affordable or homeless dwelling units by the appropriate agency of the City and County of Honolulu. Waiver of the WSFC will apply only to fixture units associated with the certified dwelling units. The amount of the meter waiver shall be calculated as a percentage of the number of certified dwelling units to the total number of dwelling units in the project. If the annual cap of 500 dwelling units has not been reached and a project is proposed that would qualify for more than the remaining number of dwelling units in that year, the Manager and Chief Engineer has the discretion to increase that year's limit.

The BWS has suspended fire flow tests on fire hydrants as a water conservation measure. However, you may use the following calculated flow data for Fire Hydrant No. M00770:

Static Pressure	71 psi
Residual Pressure	61 psi
Flow	2,000 gpm

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

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

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

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

Very truly yours,

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

Attachment

ATTACHMENT
24004047
24004048
24003021
24003012
PIIKOI ST
Piikoi St
24004046
NUUANU
24004078
M00770
Young St
METROPOLITAN 180 WEST
YOUNG ST
24004085
240
0 20 30ft

May 28, 2024

Mr. Kaloa Robinson
Vice President
Stanford Carr Development
1100 Alakea Street, 27th Floor
Honolulu, HI 96813

Dear Mr. Robinson:

Re: Hale Melia
1111 Piikoi Street

This is in response to your request for a “Will Serve” letter for the above project location.

We have an existing distribution circuit along Piikoi Street and Young Street that could potentially be used to serve your future project. Please keep in mind that this circuit may need to be upgraded or new circuit(s) brought into the area depending on the size of this project’s load.

Please note that we have received your service request and have started our preliminary review.

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

Sincerely,

Eric Shimono
Supervising Engineer
Customer Engineering Department

Appendix G Chapter 6E-42 Historic Preservation Review from SHPD

JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

DAWN N.S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RYAN K.P. KANAKAʻOLE
FIRST DEPUTY

DEAN D. UYENO
ACTING 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 | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA

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

April 26, 2024

IN REPLY REFER TO:
Project No.: 2024PR00180
Doc. No.: 2404LS09
Archaeology

Dawn Takeuchi-Apuna, Director
Department of Planning and Permitting
City and County of Honolulu
Frank F. Fasi Municipal Building
650 S. King Street, 7th Floor
Honolulu, Hawaiʻi 96813
c/o Ryan A. Mori
ryan.mori@honolulu.gov

Dear Ms. Takeuchi-Apuna:

SUBJECT: **Chapter 6E-42 Historic Preservation Review –**
1105 Piʻikoi St. and 1216 Young St., Honolulu – New mid-rise affordable housing
Owner's Name: TCG Piikoi LLC/r/n c/o Tradewind Capital Group, Inc.
Honolulu Ahupuaʻa, Kona District, Island of Oʻahu
TMK: (1) 2-4-004:046, 078

This letter provides the State Historic Preservation Division's (SHPD's) review of the proposed project titled *Tradewind Piikoi & Young Streets Development* located at 1105 Piikoi Street and 1216 Young Street. The initial submission for this project was received by the SHPD on February 7, 2024, which included a cover letter from Stanford Carr Development dated January 18, 2024, requesting a review, an HRS 6E Submittal Form, a TMK map, and project photos. At this time, the applicant has not applied for any permits and no construction plans have been completed. The subject parcels total 0.734 acres.

The applicants (developers), Stanford Carr Development and Tradewind Capital, Inc., propose the construction of a mid-rise affordable rental development. Additionally, the project will include the construction of a parking structure and other amenities. The project will be financed with low-income housing tax credits, private activity bonds, and rental housing revolving funds. Subsurface disturbance will include mass excavation and embankment for grading, excavation and trenching for footings and/or piles, and trenching for utilities. At this time, the exact extent of ground disturbance has not been determined. The buildings located on TMK: (1) 2-4-004:046 are currently being demolished (Project No. 2024PR00101, Doc. No. 2403LS12).

A review of our records indicates that the subject parcel has not been previously surveyed. According to the SHPD's Geographical Information System (GIS) a burial (Site 50-80-14-08854) is located within the vicinity of the subject parcel. The USDA soil survey (Foote et al. 1972) identifies the soils within the property and vicinity as Makiki clay loam (MkA) 0–2% slopes.

At this time, the SHPD has insufficient information to determine the potential for the project to impact subsurface historic properties and/or human burials. The project will involve extensive ground disturbance and potential exists for human remains, including displaced remains, to be present. Therefore, **SHPD requests an archaeological inventory survey** with subsurface testing be conducted in order to adequately identify subsurface historic properties, determine potential impacts to them, and ensure that appropriate mitigation is implemented. Additionally, SHPD

requests the project proponent and archaeological firm consult with our office regarding an appropriate testing strategy prior to initiation of the AIS.

The AIS shall be conducted by a qualified archaeologist to adequately identify and document any archaeological historic properties that may be present, assess their significance, provide a project effect recommendation, and provide appropriate mitigation recommendations. A list of permitted archaeological firms is provided on the SHPD website at: http://dlnr.hawaii.gov/shpd/about/branches/archaeology/.

When the AIS is completed, submit an AIS report meeting the requirements of HAR §13-276-5, along with a copy of this letter and the filing review fee ($450) to HICRIS Project No. 2024PR00180 using the Project Supplement option.

Please note, SHPD will notify the DPP when the AIS report and any required mitigation plans are accepted, and the permit issuance process may continue.

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

Aloha, Alan Downer

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

cc: Michael A. Kat, michael.kat@honolulu.gov
Chris Fong, cfong@tradewindcap.com
Kaloa Robinson, kaloa@stanfordcarr.com

JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

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CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
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LAND
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STATE OF HAWAII | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA

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

May 9, 2024

IN REPLY REFER TO:
Project No.: 2024PR00180
Doc. No.: 2405LS05
Archaeology

Dawn Takeuchi-Apuna, Director
Department of Planning and Permitting
City and County of Honolulu
Frank F. Fasi Municipal Building
650 S. King Street, 7th Floor
Honolulu, Hawaiʻi 96813
c/o Ryan A. Mori
ryan.mori@honolulu.gov

Dear Ms. Takeuchi-Apuna:

SUBJECT: **Chapter 6E-42 Historic Preservation Review – REVISED**
1105 Piʻikoi St. and 1216 Young St., Honolulu – New mid-rise affordable housing
Owner's Name: TCG Piikoi LLC/r/n c/o Tradewind Capital Group, Inc.
Honolulu Ahupuaʻa, Kona District, Island of Oʻahu
TMK: (1) 2-4-004:046, 078

This letter provides the State Historic Preservation Division's (SHPD's) **revised review** of the proposed project titled *Tradewind Piikoi & Young Streets Development* located at 1105 Piikoi Street and 1216 Young Street. The SHPD recently reviewed the proposed project (Project No. 2024PR00180, Doc. No. 2404LS09). As mentioned in the SHPD's previous letter the buildings located on TMK: (1) 2-4-004:046 are currently being demolished (Project No. 2024PR00101, Doc. No. 2403LS12). However, additional information has confirmed that an apartment building located on TMK: (1) 2-4-004:078 has not been yet been submitted to the DPP for review. The applicant, Stanford Carr Development, has confirmed that the building will be scheduled for demolition at a later date.

The two-story apartment building located on TMK: (1) 2-4-004:078 was built in 1968 and is considered a historic property per HRS §6E-2. At this time, SHPD has **insufficient information** regarding the proposed project's impact to significant historic properties. Per HAR §13-284-5(b)(5)(c), SHPD requests a Reconnaissance Level Survey (RLS) report for the entire project area (parcels 046 and 078). The RLS is considered an architectural survey report and thus subject to filing fees of $450 per HAR §13-284-4(3). The RLS report must be completed by a Secretary of the Interior (SOI)) qualified architect, architectural historian, or historic architect. Additionally, the report must include an assessment of integrity and site significance in accordance with Criteria a-e, as specified in HAR §13-284-6. The RLS is part of the identification and inventory of historic resources process and SHPD may request subsequent reports per HAR §13-284-8.

Please submit the RLS report and the required payment to HICRIS Project No. 2024PR00180 using the Project Supplement option. SHPD notes that although properties on parcel 046 have been recently demolished, the historical context portion of the RLS should include information and history about what was previously on the parcel 046.

In addition, SHPD's previous letter requested **an archaeological inventory survey** with subsurface testing be conducted in order to adequately identify subsurface historic properties, determine potential impacts to them, and ensure that appropriate mitigation is implemented. Additionally, SHPD's letter requests the project proponent and

archaeological firm consult with our office regarding an appropriate testing strategy prior to initiation of the AIS. The SHPD confirms that the AIS is still being requested.

The AIS shall be conducted by a qualified archaeologist to adequately identify and document any archaeological historic properties that may be present, assess their significance, provide a project effect recommendation, and provide appropriate mitigation recommendations. A list of permitted archaeological firms is provided on the SHPD website at: http://dlnr.hawaii.gov/shpd/about/branches/archaeology/.

When the AIS is completed, submit an AIS report meeting the requirements of HAR §13-276-5, along with a copy of this letter and the filing review fee ($450) to HICRIS Project No. 2024PR00180 using the Project Supplement option.

Please note, SHPD will notify the DPP when the RLS report and the AIS report and any required mitigation plans are accepted, and the permit issuance process may continue.

Please contact Mary Kodama, Historic Architect, at Mary.Kodama@hawaii.gov for any matters regarding architectural resources or Susan A. Lebo, Archaeology Branch Chief, at Susan.A.Lebo@hawaii.gov, for any matters regarding archaeological resources or this letter.

Aloha,
Susan A. Lebo

Susan A. Lebo, PhD
Archaeology Branch Chief
Acting Administrator, State Historic Preservation Division

cc: Michael A. Kat, michael.kat@honolulu.gov
Chris Fong, cfong@tradewindcap.com
Kaloa Robinson, kaloa@stanfordcarr.com

Appendix H Conceptual Design Plans

Conceptual plans are shown for illustrative purposes only and represent the same renderings shown to the Neighborhood Boards in April of 2024.

1111 PIIKOI STREET
STREET VIEW 1
04-10-2024

ALAKEA
DESIGN
GROUP

1111 PIIKOI STREET
STREET VIEW 2
04-10-2024

ALAKEA
DESIGN
GROUP

1111 PIIKOI STREET
STREET VIEW 3
04-10-2024

ALAKEA
DESIGN
GROUP

1111 PIIKOI STREET
AERIAL VIEW 1
04-10-2024

ALAKEA
DESIGN
GROUP

1111 PIIKOI STREET
AERIAL VIEW 2
04-10-2024

ALAKEA
DESIGN
GROUP

Appendix I Komohale Services LLC Corporate Resume

KOMOHALE SERVICES
1100 Alakea Street, 27th Floor
Honolulu, Hawaii 96813
Phone: (808) 547-2224
Contact: Pamela Witty-Oakland
Email: pamela@komohale.org

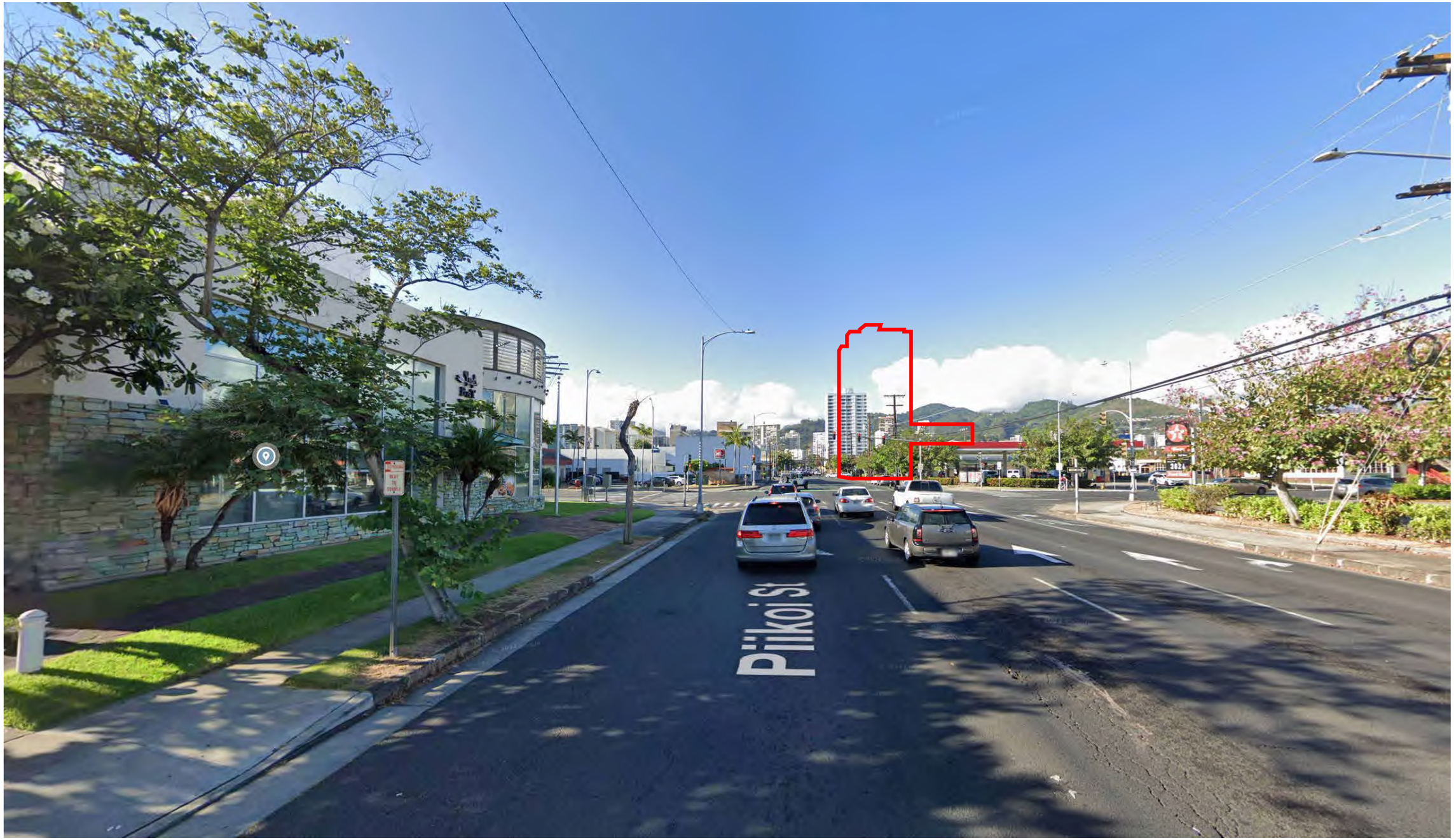
Envisioned and established in December 2020 by Stanford Carr Development, Komohale Services offers a full-spectrum of services and support for the residents of affordable rental housing. With a mission to provide educational, vocational, and lifestyle resources for residents to achieve their own personal best, Komohale Services coordinates programs within the properties, such as free income tax services, distribution of multilingual emergency prepareness materials, coordination of free financial literacy classes, hosting robotics classes for youth ages 8 to 13, coordination of COVID vaccine, testing and booster shots, and free vision screening.

Komohale Services contracts with eight affordable rental properties on Oahu, Maui and Hawaii island consisting of 1,550 rental units. Within each property electronic bulletin boards are available in common areas, at mailboxes, in laundry rooms, and in elevator lobbies to provide information on the programs and resources. In addition quarterly newsletters are shared featuring sponsored events and news of upcoming activities. The organization is committed to the development of service-rich affordable rental housing in an effort to re-define the typical model of low-income housing.

One specific program inspires households to "climb the housing ladder" with the support of counseling and matching funds available from a State of Hawaii grant in aid. The concept is modeled after the successful U.S. Department of Housing and Urban Development, Family Self Sufficiency program. Through education, coaching, counseling and a matching funds program, households are moved off of the federal rental subsidy. Leaving housing assistance demonstrates a vote of confidence in self, is a result of improved money management, and opens up an available unit for the more vulnerable family in need of affordable housing.

Each and every family has a unique set of experiences or path that has guided them to subsidized housing. Often it is simply a lack of leadership in the home, or on occasion the lack of a home. Komohale Services learns the story and provides the guidance and tools to redirect residents to achieve their own personal best. Whether it is better money management to avoid the next crisis, or an education that increases the earning power of the family and leads to home ownership, each resident is treated with the same dignity and respect.

Appendix J View Planes Analysis



PIIKOI STREET LOOKING MAUKA

1111 PIIKOI STREET
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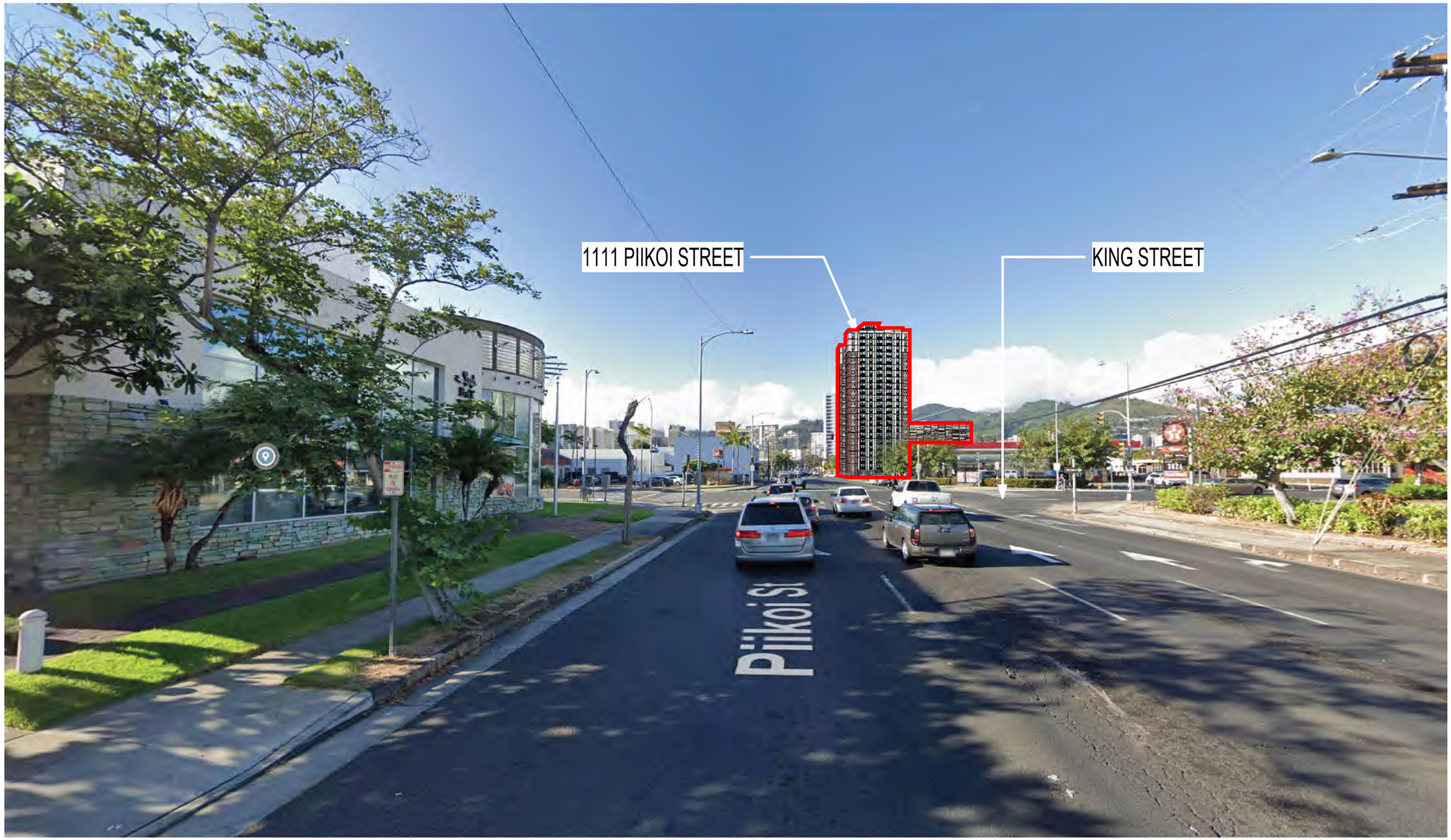
03/26/24

ALAKEA
DESIGN
GROUP



PIIKOI STREET LOOKING MAUKA

1111 PIIKOI STREET
SHT: SK240326.1 VIEW I - PROPOSED
03/26/24

ALAKEA
DESIGN
GROUP

PIIKOI STREET LOOKING MAKAI

1111 PIIKOI STREET
SHT: SK240326.2a VIEW 2 EXISTING
03/26/24

ALAKEA
DESIGN
GROUP

PIIKOI STREET LOOKING MAKAI

1111 PIIKOI STREET

SHT: SK240326.2 VIEW 2 - PROPOSED

03/26/24

ALAKEA DESIGN GROUP

BERETANIA STREET LOOKING EWA

1111 PIIKOI STREET
SHT: SK240326.3a VIEW 3 EXISTING
03/26/24

ALAKEA DESIGN GROUP

BERETANIA STREET LOOKING EWA

1111 PIIKOI STREET
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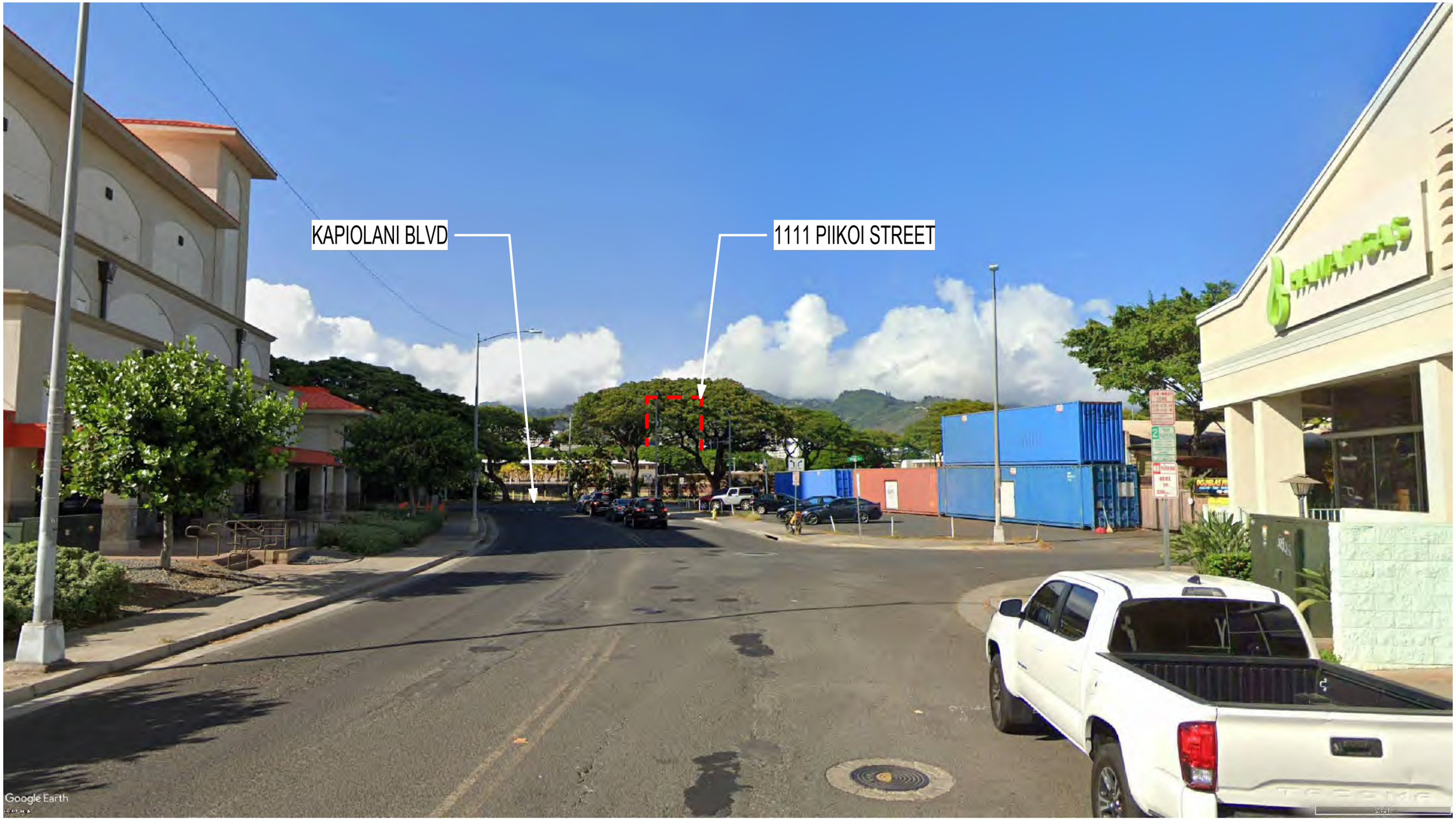
03/26/24

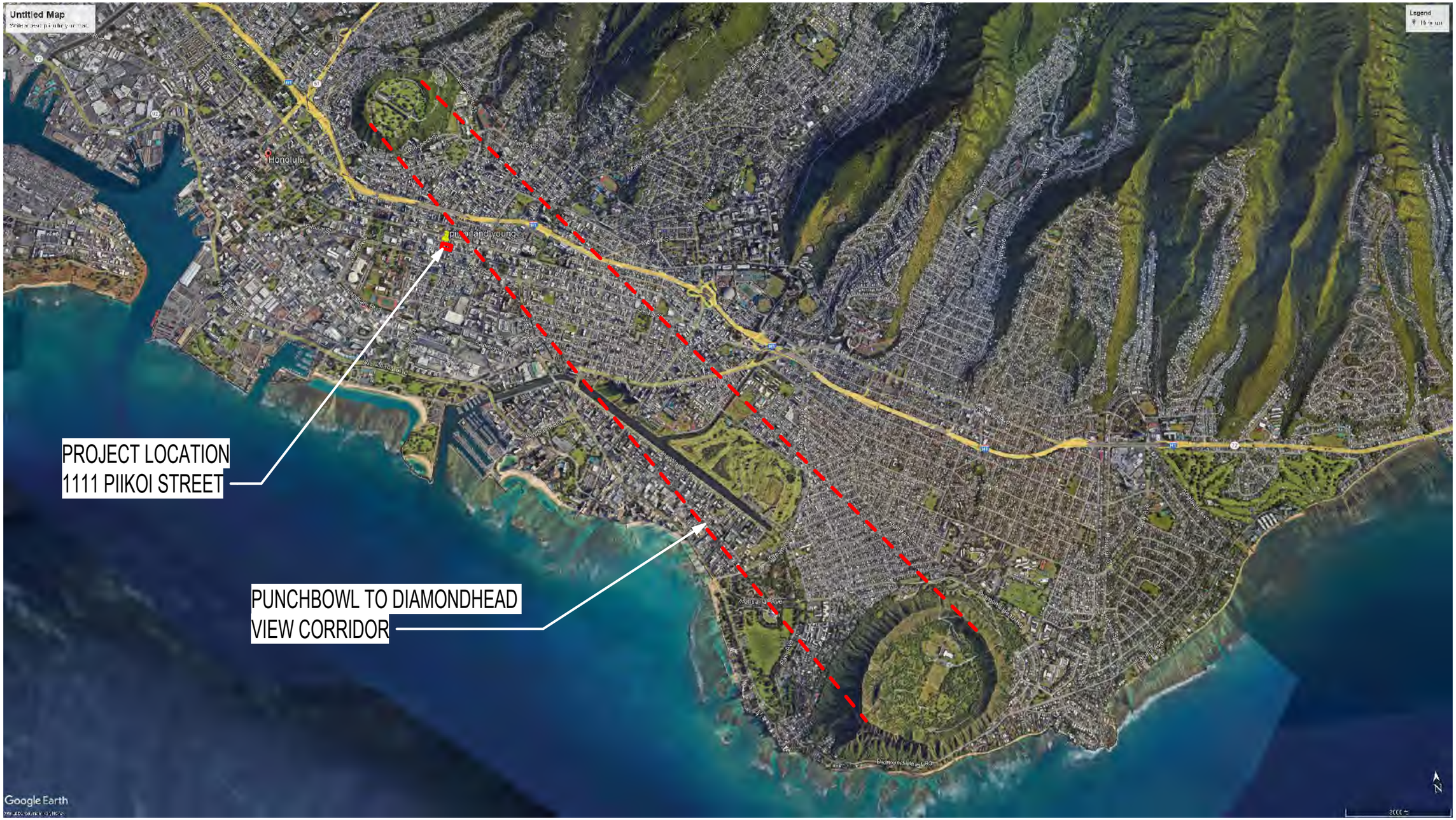
ALAKEA DESIGN GROUP



KAMAKEE STREET LOOKING MAUKA

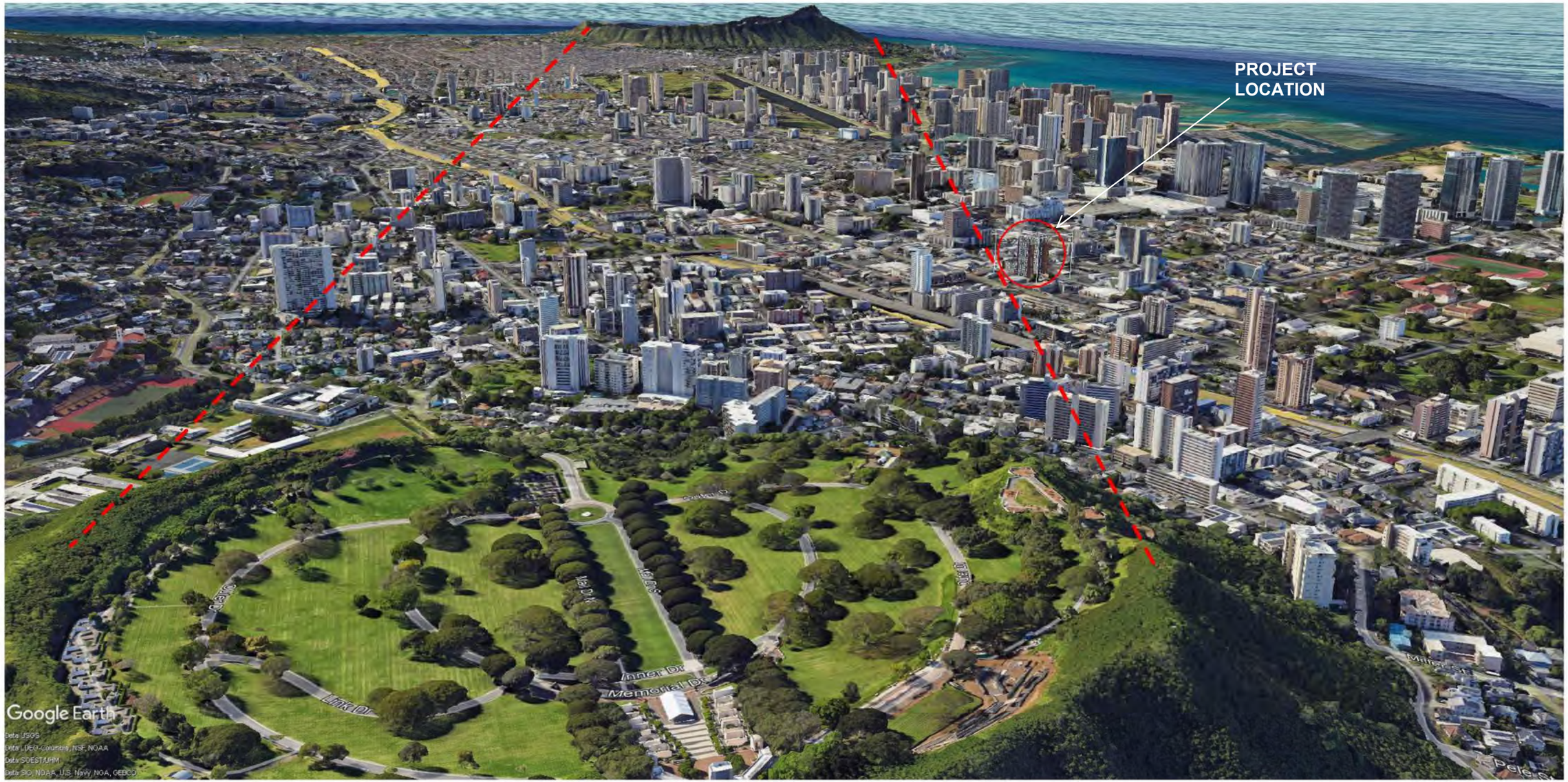
1111 PIIKOI STREET
SHT: SK240326.4 VIEW 4
03/26/24

ALAKEA
DESIGN
GROUP



1111 PIIKOI STREET
SHT: SK240326.5 PUNCHBOWL TO DIAMOND HEAD VIEW CORRIDOR
03/26/24

ALAKEA
DESIGN
GROUP



1111 PIIKOI STREET
SHT: SK240326.6 PUNCHBOWL TO DIAMOND HEAD CORRIDOR
05/15/24

ALAKEA
DESIGN
GROUP

Appendix K Geotechnical Report

REPORT OF GEOTECHNICAL ASSESSMENT

1111 Piikoi Street
Honolulu. Hawaii

PREPARED FOR:
Tradewind Capital Group
201 Merchant Street, Suite 2050
Honolulu, Hawaii 96813

NOVA Project Number: 10135-2023034

March 20, 2024

NOVA
PROFESSIONAL | PRACTICAL | PROVEN

March 20, 2024

TRADEWIND CAPITAL GROUP
201 Merchant Street, Suite 2050
Honolulu, Hawaii 96813

Attention: Mr. Kent Walker

Subject: Report of Geotechnical Assessment
1111 PIIKOI STREET
Honolulu, Hawaii
NOVA Project Number 10135-2023034

Dear Mr. Walker:

NOVA Engineering and Environmental, LLC. (NOVA) has completed the authorized Geotechnical Assessment for the proposed 1111 Piikoi Street Development in Honolulu, Hawaii. The work was performed in general accordance with our Proposal, dated November 10, 2023. This report briefly discusses our understanding of the project at the time of this study, describes the geotechnical consulting services provided by NOVA, and presents our findings, conclusions, and recommendations.

We appreciate your selection of NOVA and the opportunity to be of service on this project. If you have any questions, or if we may be of further assistance, please do not hesitate to contact us.

Sincerely,

NOVA Engineering and Environmental, LLC.

This work was conducted by me or under my personal supervision

James W. Niehoff, P.E.
Senior Geotechnical Engineer

David E. Peñalva
Senior Project Manager

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1.0 INTRODUCTION

1.1 PROJECT INFORMATION

Our understanding of this project is based on discussions and email correspondence with Mr. Christopher Fong with Tradewind Capital Group, and a review of provided schematic plans prepared by the Alakea Design Group.

Proposed Development

NOVA understands that the proposed development is to occupy a site at the northeastern corner of Piikoi and Young Streets in Honolulu (Figure 1, Appendix A). The development is to include a 23-story residential tower at the street corner and an attached 7 to 8 story parking deck to the east. The proposed structure is planned to be constructed close to existing grades, with no basement levels. A schematic drawing of the development is presented below.

The design of the structure is at a preliminary stage. For a building of this size, we anticipate column loads will range from about 1,000 kips in the parking garage section, to over 3,000 kips in the residential tower.

At the present time, the property is occupied by four 2 to 3-story multifamily housing structures, which are to be razed, The remaining portions of the site are occupied by at grade access drives and parking.

Floor Elevations / Site Grading

The project site is currently relatively flat and level at elevations ranging from about 23 to 25 feet above mean sea level. As noted above, it is expected that the structure will be built near existing grades with no below grade levels. We anticipate that site grading will generally be limited to about 2 to 3 feet.

2.0 FIELD AND LABORATORY EXPLORATION

2.1 FIELD EXPLORATION

Our field exploration for the proposed development was conducted in two phases carried out in December of 2023 and January through February of 2024. The exploration program included:

- A site reconnaissance by representatives of the project geotechnical engineer.
- Six soil test borings (B-1 through B-6) drilled to depths ranging from about 17 to 50 feet below the existing ground surface in locations exterior to the current buildings.
- Two percolation tests
- Three Refraction Microtremor (ReMi) geophysical tests.

Soil Test Borings: Exploratory boring locations were established in the field by Earth Engineers personnel, working under contract to NOVA using the provided site plans and by taping distances from site features and landmarks. The approximate locations of these borings are shown on Figure 2 in Appendix A.

The soil test borings were performed using the guidelines of ASTM Designation D-1586, "Penetration Test and Split-Barrel Sampling of Soils". A solid stem auger was used to advance the borings through the soil profile. Once hard materials were encountered, casing was advanced into the soil and rock using water under pressure. At regular intervals, soil and rock samples were obtained with a standard 1.4-inch I.D., 2.0-inch O.D., split-tube sampler. The sampler was first seated six inches and then driven an additional foot with blows of a 140-pound hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot is designated the "Penetration Resistance". As an automatic hammer was employed by the drill rig, the applied energy was greater than standard, and therefore the recorded blow counts are likely about 30 percent lower than “normal”. The penetration resistance, when properly interpreted, is an index to the soil strength and density. Representative portions of the soil samples, obtained from the sampler, were placed in sample containers and transported to a laboratory for further evaluation and testing.

Test Boring Records in Appendix B show the standard penetration test (SPT) resistances, or “N-values”, and present the soil conditions encountered in the borings. These records represent our interpretation of the subsurface conditions based on the field exploration data, visual examination of the split-barrel samples, laboratory test data, and generally accepted geotechnical engineering practices. The stratification lines and depth designations represent approximate boundaries between various subsurface strata. Actual transitions between materials may be gradual.

The groundwater levels reported on the Test Boring Records represent measurements made at the time of completion of the soil test borings, and after 24 hours, where noted. The soil test borings were subsequently backfilled with soil cuttings and bentonite.

Percolation Tests: We conducted a total of 2 percolation tests within the site in locations designated IT-1, and IT-2 on Figure 2 in Appendix A. In each test, a 6-inch diameter borehole was excavated to a depth of 5 feet. A six-inch layer of gravel was placed in the bottom of each hole, then the soil was saturated for a period of up to 4 hours. Subsequently, the holes were filled with 12 inches of water and the water level was monitored for a period of 10 minutes. The holes were refilled with water at the procedure repeated until the rate of drop stabilized. The results of these tests are presented on the attached data sheets in Appendix D.

Refraction Microtremor Survey: To assess the shear wave velocity profiles at the site to aid in determination of the Seismic Site Class, NOVA conducted Refraction Microtremor (ReMi) surveys within the site using three seismic array traverses. Two of these were conducted between buildings within the project site. The third was conducted along Young Street. The locations of these tests are presented on Figure 3 in Appendix A.

In the testing procedures, arrays of 24 geophones were inserted or placed on the ground on 5 to 15-foot centers along each traverse. Vibrations from traffic and other nearby sources were detected by the geophones and recorded by a seismograph. A series of recordings were obtained to allow for stacking and reinforcement of the data. The obtained data was processed by commercial software to generate shear wave velocity profiles to a depth of 100 feet below grade. The subsurface shear wave velocity profiles developed from the testing are presented on Figures 4 through 6 in Appendix A.

2.2 LABORATORY TESTING

The laboratory testing program included visual classification of the recovered split-spoon soil samples as well as grain size and Atterberg Limits tests on representative samples of soil. The visual classifications are presented on the Boring Logs attached in Appendix B. Other Laboratory Data is presented in Appendix C.

It should be noted that all soil samples will be properly disposed of 30 days following the submittal of this NOVA subsurface exploration report unless you request otherwise.

3.0 SUBSURFACE CONDITIONS

3.1 GEOLOGY

The project site is situated in the southeastern part of the island of Oahu in the Hawaiian Island Archipelago. The Hawaiian Islands were formed as the Pacific Tectonic Plate slid to the west over a relatively stationary mantle plume also referred to as a hot spot. This mantle plume produced a trail of shield cone volcanoes that resulted in islands atolls and seamounts stretching from just east of the present-day island of Hawaii (Big Island) to the Aleutian Trench. Presently, the hot spot is situated mostly under the big island of Hawaii. Volcanoes to the west and north are dormant.

Rising magma from the hot spot comes from deep inside the earth's mantle. This magma is of a chemical composition known as basalt and contains high concentrations of iron and magnesium minerals and relatively low amounts of silica and silicate minerals. Low silica magmas are characteristically low in viscosity and melt at higher temperatures. As a result, the magma produces volcanoes with liquid lava that flows over the ground surface such as that common in the islands. As the tectonic plate slowly moves off of the hot spot, the volcano is rafted away and the underlying magma can temporarily pause and become stationary. This allows the silica, silicate minerals such as feldspars and volatiles such as water, carbon dioxide, sulfur dioxide and others to float to the top of the magma chamber where they are superheated. The increase in concentration and viscosity of silicate minerals and volatiles occurs through various physical and chemical processes known as "magmatic differentiation". Eventually, fluctuations in the hot spot will cause a surge in the magma chamber causing a swelling that eventually produces a rupture in the ground surface and a venting of the top of the magma chamber. The venting causes a sudden drop in pressure in the magma chamber which causes superheated volatiles to flash and an explosive eruption where the viscous silicate mineral are ejected to be quenched in the atmosphere and rain down as volcanic ash and cinders.

Oahu is made up of two main volcanoes. The Waianae volcano was created from about 4 million years ago until about 2.9 million years ago and makes up the west one-third of the island. The Koolau volcano was created from about 3 million years ago until about 400,000 years ago and makes up the eastern two-thirds of the island. As these volcanoes grew, the ground surface rose and fell in response to the buildup of magma and the release of pressure during eruption. This oscillating of the ground surface created a complex of cracks, fissures and faults that caused sloughing of the island into the ocean creating massive landslides, likely generating numerous, enormous tsunamis. At the same time, sea levels rose and fell in response to glacial episodes due to vast amounts of water being sequestered on the continents in the form of glaciers and ice sheets. Coral reefs grew in a ring around the island at elevations near the prevailing sea

level. As sea levels dropped erosion carved drainages into the island and coral reefs grew around the fringes of the island. As sea level rose, the drainages were inundated to form lagoons and estuaries and the coral reefs moved inland. Meanwhile, erosion and sedimentation deposited silts and sands in the lagoon and estuary environments. Pyroclastic events deposited volcanic ash which quickly weathers into clay and cinder sands over the entire area.

The geologic processes discussed above have produced the present-day conditions at the project site. Subsurface conditions consist of surficial clayey silts underlain by coral reef deposits. Basalt is encountered at depths of about 20 to 40 feet in this portion of Oahu.

3.2 SOIL AND ROCK CONDITIONS

Based upon our review of the results of the soil test borings drilled within the project site, the subsurface profile within the area consists of about 4 to 6 feet of clayey silt. This upper material was found to be firm to hard in consistency with N-values ranging from 5 to 42 blows per foot.

Beneath the silt, a stratum of basaltic sands (cinders) was penetrated by the borings to a depth of about 15 feet below current grades. These sands were found to be relatively loose with N-values typically ranging from 3 to 11 blows per foot. An exception to this was found in boring B-5, where the cinders were found to be very dense.

Below a depth of 15 feet, a stratum of coral sands interbedded with intact coral was found by all of the test borings. The coral sands were generally in a medium dense to very dense condition. In Boring B-5, intact coral was cored from a depth of 15 to 20 feet.

All of the borings were taken to the depth of soil auger refusal, which occurred at depths of 17 to 40 feet below current site grades. The refusal material was cored in Boring B-1 and was found to consist of basaltic bedrock. Core recoveries ranged from 50 percent to 100 percent. The Rock Quality Designation was uniformly 0% due to the samples having multiple fractures and partings.

Refraction Microtremor tests revealed shear wave velocities ranging from about 700 to 1200 feet per second in the overburden soils to a depth of 15 feet. These increased. to about 1700 to 3100 feet per second in the coral strata and basalt bedrock.

The Test Boring Records in Appendix B should be reviewed to provide detailed descriptions of the subsurface conditions encountered at each boring location.

3.3 GROUNDWATER CONDITIONS

Groundwater in this portion of Oahu typically occurs as an unconfined or semi-confined aquifer. Recharge is provided by the infiltration of rainfall and surface water through the soil overburden. More permeable zones in the soil matrix, as well as fractures, joints and discontinuities in the underlying bedrock can affect groundwater conditions. Groundwater was encountered at depths of about 13 to 15 feet below current grades or about 10 feet above sea level.

Groundwater levels vary with changes in rainfall, construction activity, surface water runoff, and other site-specific factors. Consequently, the water table will likely vary from that recorded on the boring logs.

3.4 SEISMICITY

Seismic Parameters

The project site is located within a municipality that employs the 2018 Edition of the International Building Code. As part of this code, the design of structures must consider dynamic forces resulting from seismic events. These forces are dependent upon the magnitude of the earthquake event as well as the properties of the soils that underlie the site.

As part of the procedure to evaluate seismic forces, the code requires the evaluation of the Seismic Site Class, which categorizes the site based upon the characteristics of the subsurface profile within the upper 100 feet of the ground surface. To define the Seismic Site Class for this project, we considered the results of the shear wave velocity test conducted for the upper 100 feet of the subsurface profile.

The weighted average of the shear wave velocities in the upper 100 feet of the subsurface profile was Over 1900 feet/second. This is consistent with the characteristics of Seismic Site Class C as defined by the building code.

The seismic parameters associated with this site and the 2018 Edition of the International Building Code are presented in the following table.

Parameter	Value
Ss	0.576g
S1	0.169g
Fa	1.269
Fv	1.5

Liquefaction Potential

The soil test borings indicated some soils which are saturated, have non-cohesive sand and silt sized gradations, and have a loose to medium dense relative density. These soils are generally confined to depths between 6 and 15 feet below the ground surface. As these are above the water table, they should not be prone to liquefaction. Also, while the N-values recorded in the soil test borings were relatively low, the shear wave velocity data indicates that these materials have a shear wave velocity in excess of 700 feet per second. It has been found that soils with a normalized shear wave velocity of greater than about 650 feet per second are not prone to liquefaction.

Overall, we consider this site to have a relative low risk of seismically induced liquefaction.

Tsunami Risk

The Hawaiian version of the 2018 IBC indicates that structures be designed to withstand tsunamis if they lie within a tsunami inundation zone. As noted on the map below, the project site is not located with a tsunami evacuation zone.

4.0 GEOTECHNICAL EVALUATION

Based upon the results of soil test borings and geophysical tests conducted for this project, the site of the proposed 1111 Piikoi development appears to be underlain by conditions that are generally favorable for the proposed development from a geotechnical standpoint. The primary factor that will impact construction at this site is the presence of relatively loose and soft soils within the upper 15 to 20 feet of the ground surface. These soils are not considered suitable for support of the heavy structures associated with this development on a system of shallow foundations due to the potential for excessive total and differential settlement. To provide for proper support of the heavier structural elements, a system of deep foundations will be required. Typical deep foundation systems employed in the area include augercast piles and drilled piers.

Detailed recommendations pertaining to site preparation and foundation design and construction are presented in the following sections of this report.

5.0 SITE PREPARATION RECOMMENDATIONS

Recommendations for site preparation and foundation design are presented in the following sections of this report.

5.1 DEMOLITION, EXCAVATION, AND SURFACE PREPARATION

Prior to the initiation of construction, all existing structures, pavements, sidewalks, and other hardscape elements should be removed from the site. Any existing surface and underground utilities should be removed or rerouted.

It is anticipated that only relatively shallow excavations will be required within this site for construction of below grade building elements and utilities. Excavations extending to depths of 10 feet or less should encounter clayey silt and sandy overburden soils, which may be excavated with conventional earth moving equipment. With the anticipated depths of excavation, we expect that the overburden soils above the water table can be temporarily sloped from the base of the excavation to the surrounding ground surface at a grade of 2 horizontal to 1 vertical.

Where insufficient space is available to slope excavations, temporary shoring will be required. We anticipate that sheet piling will be used for temporary support of excavations on site. For the purposes of design, an equivalent fluid pressure of 45 psf per foot of excavation height should be employed in the design of the retention system. Lateral resistance will be supplied by the portion of the system extending below the base of the excavation. An equivalent passive pressure of 150 psf per foot of wall embedment may also be used in design, assuming that soils below the excavation base are saturated.

Dewatering

Groundwater may exist at or above the level of deeper excavations for utilities and elevator shafts. If cuts are to extend below a depth of 12 feet, some form of dewatering may be necessary. Considering the nature of materials within this site, ditches and sumps may be sufficient for dewatering to depths of up to about 15 feet below current grades. If deeper cuts are contemplated, well points may be required. It is recommended that the groundwater level be lowered to a point at least three feet below the lowest elevation of cut during the construction process.

Dewatering should be carried out with care so as not to impact adjacent existing construction as a result of pumping of sands or fines from the subsurface strata.

The discharge from dewatering systems should be handled in accordance with local regulatory criteria.

Surface Preparation

To properly prepare the site, we recommend that following demolition and site stripping, the underlying exposed subgrade soils be proofrolled and compacted using a 10 to 15-ton static weight smooth drum vibratory compactor. The compactor should make a minimum of 7 passes over the subgrade to densify the soil and to provide a relatively hard unyielding surface.

5.2 FILL PLACEMENT

Any structural fill to be placed should be free of organics or other deleterious materials, have a maximum particle size less than 3 inches, be relatively well graded, and have a liquid limit less than 45 and plasticity index less than 25. In our professional opinion, on-site soils will be appropriate for reuse as structural fill. We recommend that fill be moisture conditioned to within 3 percentage points below and 2 percentage points above optimum moisture as determined by ASTM D1557 (Modified Proctor). Given the moisture content of the native soils, it appears that the moisture will need to be adjusted prior to placing it as structural fill. If water must be added, it should be uniformly applied and thoroughly mixed into the soil by disking or scarifying.

Fill should be placed in relatively uniform horizontal lifts on the prepared subgrade. Each loose lift should be 1 foot or less in thickness. The type of compaction equipment used will ultimately determine the maximum lift thickness. Structural fill should be compacted to at least 95 percent of the Modified Proctor maximum dry density as determined by ASTM Designation D1557.

Each lift of compacted engineered fill should be tested by a representative of the Geotechnical Engineer prior to placement of subsequent lifts.

We expect that the contractor may request to reuse on-site concrete and asphaltic concrete generated from demolition as structural fill. This is acceptable provided the maximum particle size is no greater than 8-inches in diameter, the material is relatively well graded, and free of debris (rebar, metal, organics, etc.). This type of fill material typically cannot be density tested and will need to be approved by visual observation of the fill placement and compaction.

6.0 FOUNDATION RECOMMENDATIONS

As noted in previous sections of this report, we believe that structures associated with this development should be supported by augercast piles or a drilled pier foundation system extending to the top of relatively continuous basalt. The following sections present detailed recommendations for each of these foundation systems.

6.1 DRILLED PIERS

Based upon our evaluation of conditions found during this study, as well as our experience with nearby projects, drilled pier foundations represent a technically feasible option for support of the proposed development. Piers would derive their support from a combination of side shear in the overburden soils and coralline strata and by end bearing in the basalt bedrock. For the purposes of design, we recommend the following generalized side shear resistance values in the strata present within this site:

Material	Depth Range	Allowable Side Shear
Clayey Silts	0 – 5 feet	Neglect
Cinders	5 – 10 feet	0.5 ksf
Coral Detritus & Coral	10 – 40 feet*	1.5 ksf

* This formation was found to extend to depths of 17 to 40 feet in the soil test borings.

An end bearing value of 100 ksf may be used for piers extending into relatively continuous basalt bedrock.

Based upon the subsurface conditions encountered and the loads associated with the structures, we recommend that lighter structural loads be supported by 30 to 36-inch diameter drilled piers. Heavier columns should employ 48 to 60-inch diameter piers.

Drilled piers may be installed on a spacing of 3 pier diameters (center to center) with no reduction in capacity for group effects.

Uplift resistance will be limited to side shear in overburden materials. If additional uplift resistance is required, anchors may be installed into the basalt beneath the base of the piers, or supplemental support may be provided by micropiles. For anchors or micropiles extending into basaltic bedrock, a bond strength of 200 psi may be assumed. Anchors or micropiles should extend at least 10 feet into basalt.

Pier capacities for compressive and uplift loading conditions may be increased by 1/3 over that recommended above for temporary wind and seismic loading conditions.

Lateral Load Capacity

As noted previously, structural design is in an early stage and lateral loads exerted by columns and shear walls have not been determined, as yet. The following parameters may be employed in the assessment of the lateral capacity of piers for this development:

Depth	*Material*	*Effective Unit Wt*	*LPILE Parameters*			
			k	ε_{50}	*c*	ϕ
0 – 5’	Clayey Silt	120 pcf	100 pci	0.02	500 psf	0°
5 – 15’	Sand	125 pcf	60 pci	0	0	30°
15 – 40’	Coral Sand	65 pcf	125 pci	0	0	35°

Construction Considerations

Due to the relatively high groundwater table within the site, coupled with the presence of loose near surface sands, we recommend that the piers be installed using wet-hole slurry procedures. To prevent excessive sloughing of the ground surface, casing should be installed from the ground surface to the top of the basalt. To prevent the degradation of the materials on the sides of the borehole, drilling and concreting of each pier should take place on the same day. Pier installation should be observed by a representative of the geotechnical engineer to confirm that the borehole penetrates to intact basalt. As the depth and competence of the basalt will vary across the site, it should be anticipated that pier lengths will differ from location to location.

Concrete should be introduced into the pier using a tremie or concrete pump line discharging to the base of the pier. At least 5 feet of concrete should be introduced into the borehole before the discharge line is raised off the bottom. Concrete used in the piers should have a slump ranging from 6 to 9 inches at the point of discharge. The high slump will allow the concrete to displace the drilling fluid, and scour the sides of the borehole. A 5-foot excess head of concrete should be maintained above the discharge point throughout the concreting process to prevent caving or the formation of voids. The concrete pour should continue until all drilling fluid has been displaced and clean concrete appears at the top of the pier. It should be anticipated that piers will require 20 to 30 percent more concrete than the theoretical volume. Greater volumes of concrete may be required in isolated piers.

6.2 AUGERCAST (CFA) PILES

As an alternative to drilled shafts, augered cast in place piles or CFA piles may be employed for structural support. These piles are installed by drilling a hollow stem auger to the desired depth, then pumping concrete or grout through the tip as the

auger is withdrawn. This foundation derives its load-carrying capacity through side shear and end bearing similar to that of drilled piers. However, unlike drilled piers, auger-cast piles require no temporary casing or slurry. Auger-cast piles can be installed to depths ranging from about 65 feet to over 100 feet, depending upon the diameter of the auger.

For this project we recommend the use of 24-inch diameter CFA piles. Due to the limited depth of competent materials above bedrock, individual piles should be designed for an allowable load of 500 kips. Pile lengths will likely vary depending upon conditions encountered at specific foundation locations.

Piles may be installed on a spacing of 3 pier diameters (center to center) with no reduction in axial capacity for group effects.

For design purposes, it should be assumed that uplift resistance will be 125 kips per pile

Pile capacities for compressive and uplift loading conditions may be increased by 1/3 over that recommended above for temporary wind and seismic loading conditions.

For the loads associated with the proposed towers and podium, we anticipate total settlements of the tower to be on the order of 1 inch. Differential settlements between the tower and the parking garage should be about ½ inch.

Lateral Load Capacity

It is assumed that the piles recommended herein will be joined together in caps, grade beams or mats to furnish support for columns and walls. If they are restrained from angular deformation at the top and properly reinforced, the lateral load capacity for the 24-inch diameter piles should be 40 kips, which is equivalent to ½ the load capacity at 1 inch of deflection.

A reduction in the above lateral capacities will be required for pile groups. For piles spaced at 3 pile diameters on center, group effects will reduce effective lateral capacities of piles by about 50%.

Construction Considerations

Auger-cast piles represent a very specialized foundation system and require a high level of expertise for proper installation. Consequently, we recommend that only contractors experienced with this type of foundation and subsurface conditions be considered for this project.

We recommend that prior to production pile installation, a series of 5 to 7 indicator piles be drilled across the site to evaluate the capacity of the rig to drill and satisfactorily construct piles to the design depths, and to characterize the variability of subsurface conditions. One of these indicator piles should be grouted and load tested as described in the next section of this report.

Due to the potential for ground disturbance during the course of pile installation, it is recommended that adjacent piles not be drilled and grouted within a period of 8 to 12 hours.

A properly functioning Pile Installation Recorder (PIR) should be provided on the drill rig to assist in monitoring auger-cast-in-place pile installation. This PIR should be capable of monitoring the torque of the auger, the rate of penetration and the pressure and volume of grout pumped into each pile. The auger should be withdrawn with slow positive rotation at slow steady pull and should not be pulled until the grout has been pumped several feet above the downhole tip.

Pile installation should be monitored on a full-time basis by the geotechnical engineer. The engineer should monitor the progress of drilling, the overall depth of penetration, and grout takes and pressures. Grout cubes should be fabricated on a routine basis to evaluate the strength of the concrete mix.

Load Test

We recommend that at least one load test be conducted prior to production pile construction in general accordance with the Standard Method of Testing Piles under Axial Compressive Load, ASTM D1143. To test the load capacity of the pile proposed for this site, we recommend that a test pile be installed in an area where rock is relatively shallow and that it be instrumented with strain gauges at key strata breaks. The load test should be conducted to at least 2 ½ times the design load.

6.3 SLAB-ON-GRADE

Following site preparation as recommended herein, the exposed subgrade soil will consist of recompacted native soils or compacted structural fill. Slabs-on-grade may be adequately supported on these subgrade conditions subject to the recommendations in this report. Slabs-on-grade should be jointed around columns and along walls to reduce cracking due to minor differential movements.

An underdrain system is not required. However, we recommend a minimum of 6-inches of open graded aggregate beneath the slabs to:

- Reduce non-uniform support conditions;

- Provide a stable base to support construction traffic;
- Provide a base material that can be fine graded to design tolerances; and
- Create a capillary break to reduce wicking of water.

The aggregate should be compacted to 98 percent of the maximum dry density as determined by the modified Proctor compaction test (ASTM D 1557) and overlain by a conventional plastic vapor barrier.

6.4 BELOW GRADE WALLS

The magnitude and distribution of earth pressures against below grade walls depends on the deformation condition (rotation) of the wall, soil properties and water conditions. When the soil behind the wall is prevented from lateral strain, the resulting force is known as the at-rest earth pressure (K_O). If the retaining structure moves away from the soil mass, the earth pressure decreases with the increasing lateral expansion until a minimum pressure, known as the active earth pressure (K_A), is reached. If the wall is forced into the soil mass, the earth pressure increases until a maximum pressure, known as the passive earth pressure (K_P), is obtained.

Free-standing retaining walls are usually designed for active earth pressures. Rigid below grade walls are typically designed for at-rest earth pressures. If below grade walls will be backfilled before they are braced by floor slabs, they should also be designed to withstand active earth pressures as self-supporting cantilever walls. However, the earth pressures must be compatible with the wall rotation, which is limited by the wall rigidity, foundation support conditions and connections to adjoining structures. If active earth pressure development requires horizontal wall movements that cannot occur, or which are architecturally undesirable, walls should be designed for an intermediate pressure based on restraint conditions.

Based on our experience with similar soils and construction, we have provided the earth pressure estimates shown below:

Earth Pressure Condition	Earth Pressure Coefficient	Equivalent Fluid Pressure (pcf)	
		Above Water Table	Below Water Table
Active (K_a)	0.33	45	85
At-Rest (K_o)	0.50	60	95
Passive (K_p)	3.00	150	60

We recommend a value of 0.35 for the coefficient of friction (sliding resistance) between wall foundations and the underlying residual or fill soils.

The above lateral earth pressure recommendations assume that:

- The ground surface adjacent to the wall is level,
- Heavy construction equipment does not operate within 5 feet of the walls,
- Foundations or other significant surcharge loads are located outside the wall a distance at least equal to the wall height,
- For active earth pressure, wall must rotate about base, with top lateral movements of about 0.002 H to 0.004 H, where H is wall height.
- For passive earth pressure to develop, wall must move horizontally to mobilize resistance.

7.0 DRAINAGE

The City and County of Honolulu Storm Water BMP Guide requires that a portion of storm water falling on a developed parcel be handled through on-site discharge, provided that soils incorporate sufficiently high permeability. Two percolation tests were conducted within the development site to assess the ability of the soils to accept stormwater discharge. The results of these ranged from 1-½ inches per hour in the upper clayey silt to greater than 100 inches per hour in the volcanic cinder layer.

Soils with infiltration rates greater than 0.5 inch per hour are considered to be suitable for on-site infiltration systems, according to the BMP Guide. Considering the results of the tests conducted within the proposed construction sites, the subsurface strata appear to be suitable for on-site infiltration systems.

8.0 ADDITIONAL EXPLORATION

As noted previously, at the time of this study, four buildings occupied the project site, which limited access to our drilling equipment. The depth to bedrock varied widely in the 6 borings that were drilled as part of this study. Given these circumstances, we recommend that a series of 3 to 4 supplemental borings be drilled following the demolition of the existing buildings. As subsurface conditions were relatively uniform within the upper 15 feet of the subsurface profile, the new borings would be focused primarily on strata below this depth, and, in particular, the depth to sound bedrock. This information will assist in both the design of foundations and in estimating project costs.

9.0 LIMITATIONS

The findings, conclusions and recommendations presented in this report represent our professional opinions concerning subsurface conditions at the site. The opinions presented are relative to the dates of our site work and should not be relied on to represent conditions at significantly later dates or at locations not explored. The opinions included herein are based on information provided to us, the data obtained at specific locations during the study and our experience. If additional information becomes available that might impact our geotechnical opinions, it will be necessary for NOVA to review the information, reassess the potential concerns, and re-evaluate our conclusions and recommendations.

Regardless of the thoroughness of a geotechnical exploration, there is the possibility that conditions between test locations will differ from those encountered at specific test locations, that conditions are not as anticipated by the designers and/or the contractors, or that either natural events or the construction process have altered the subsurface conditions. These variations are an inherent risk associated with subsurface conditions in this region and the approximate methods used to obtain the data. These variations may not be apparent until construction.

This report is intended for the sole use of Tradewind Capital Group for the above noted project. The scope of work performed during this study may not satisfy other user's requirements. Use of this report or the findings, conclusions or recommendations by others will be at the sole risk of the user. NOVA is not responsible or liable for the interpretation by others of the data in this report, nor their conclusions, recommendations or opinions.

Our professional services have been performed, our findings obtained, our conclusions derived and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices in the State of Hawaii. This warranty is in lieu of all other statements or warranties, either expressed or implied.

APPENDIX A

Figures

Figure 1		Site Location Plan 1111 Piikoi Street Honolulu, Hawaii	NOVA
Project Number 10135-2023034	Prepared by: JWN		

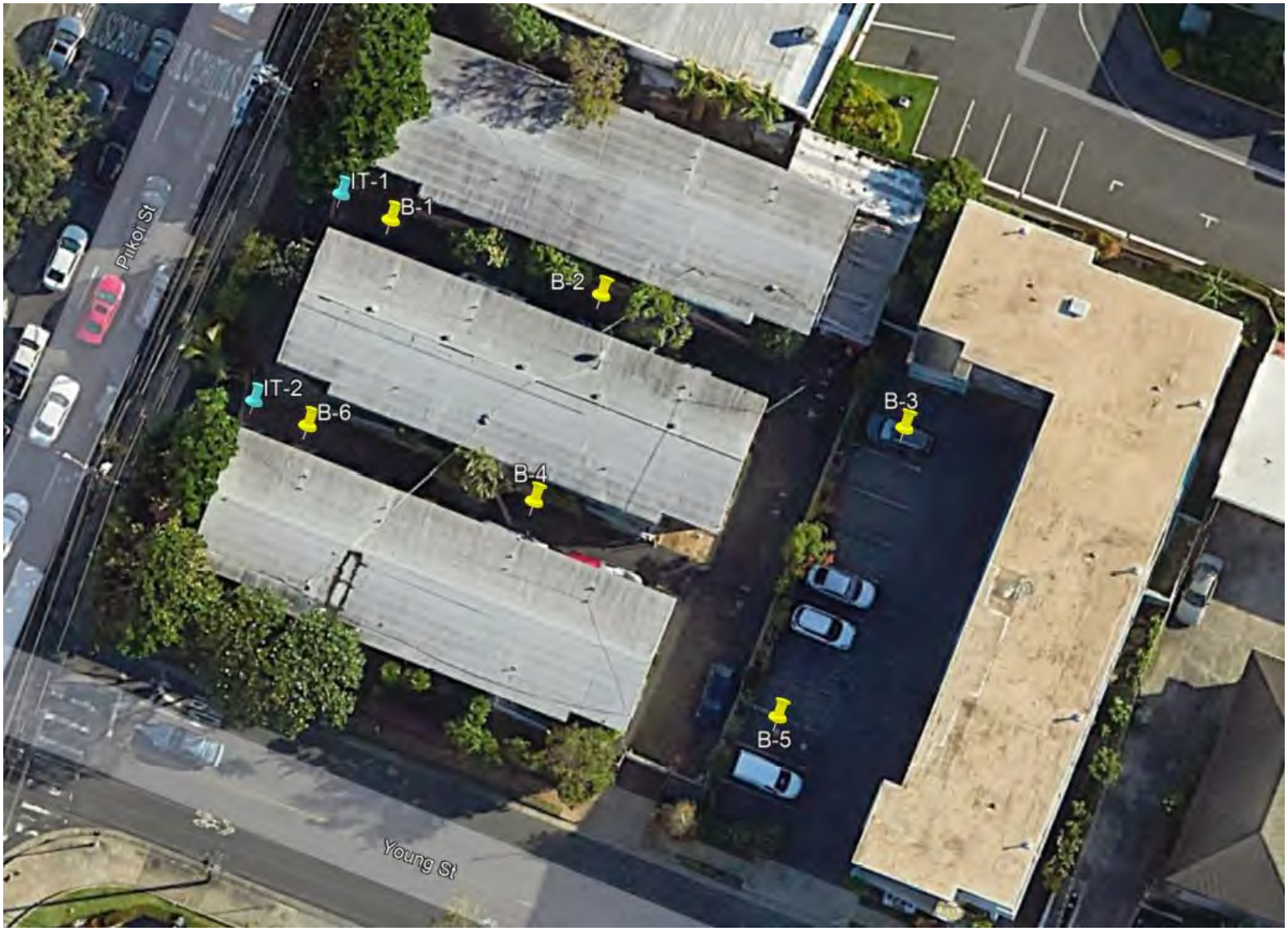


Figure 2		**Boring Location Plan** **1111 Piikoi Street** **Honolulu, Hawaii**	NOVA
Project Number 10135-2023034	Prepared by: JWN		

Figure 3		**Refraction Microtremor Location Plan** **1111 Piikoi Street** **Honolulu, Hawaii**	NOVA
Project Number 10135-2023034	Prepared by: JWN		

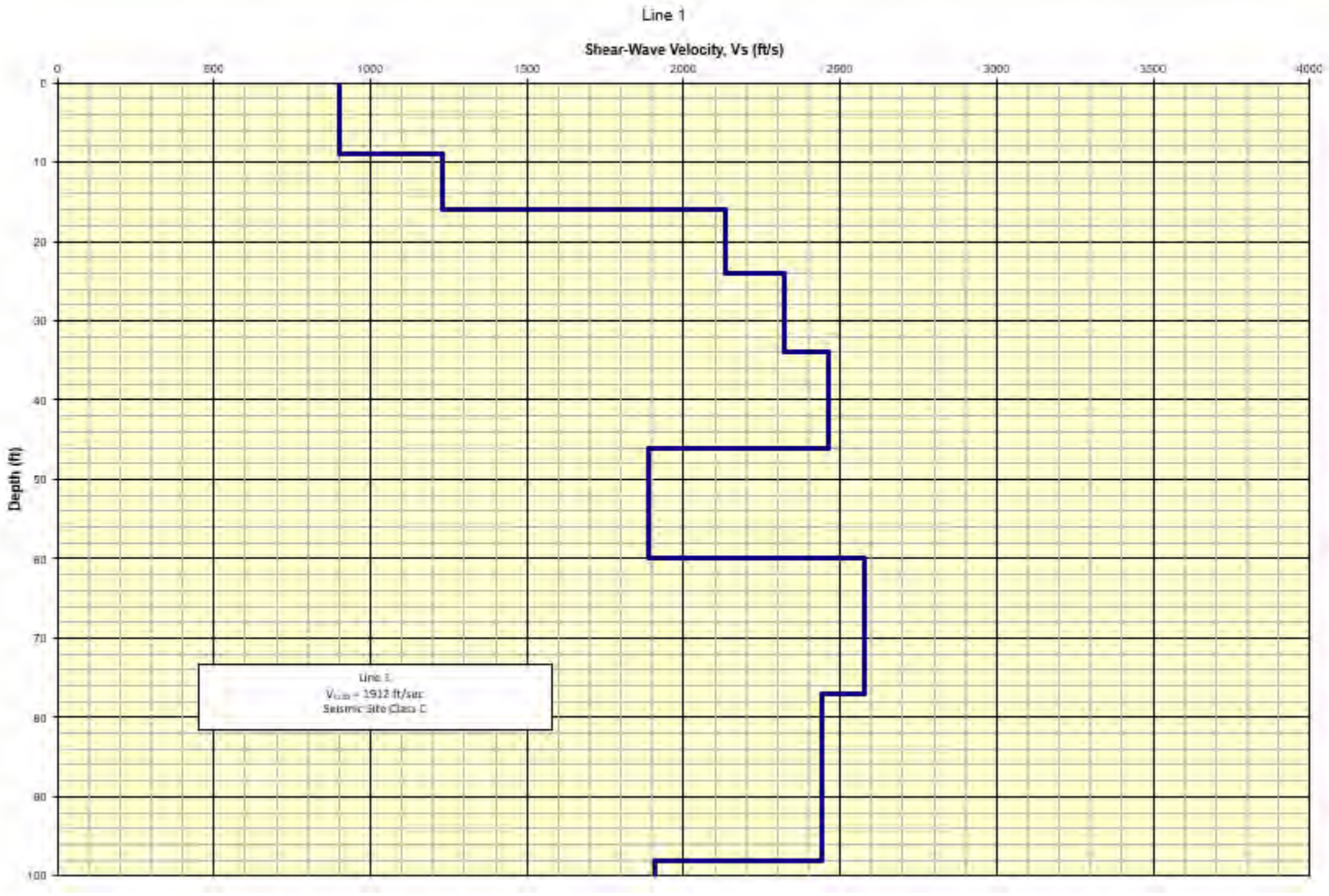


Figure 4		**ReMi Line 1 Results** **1111 Piikoi Street** **Honolulu, Hawaii**	NOVA
Project Number 10135-2023034	Prepared by: JWN		

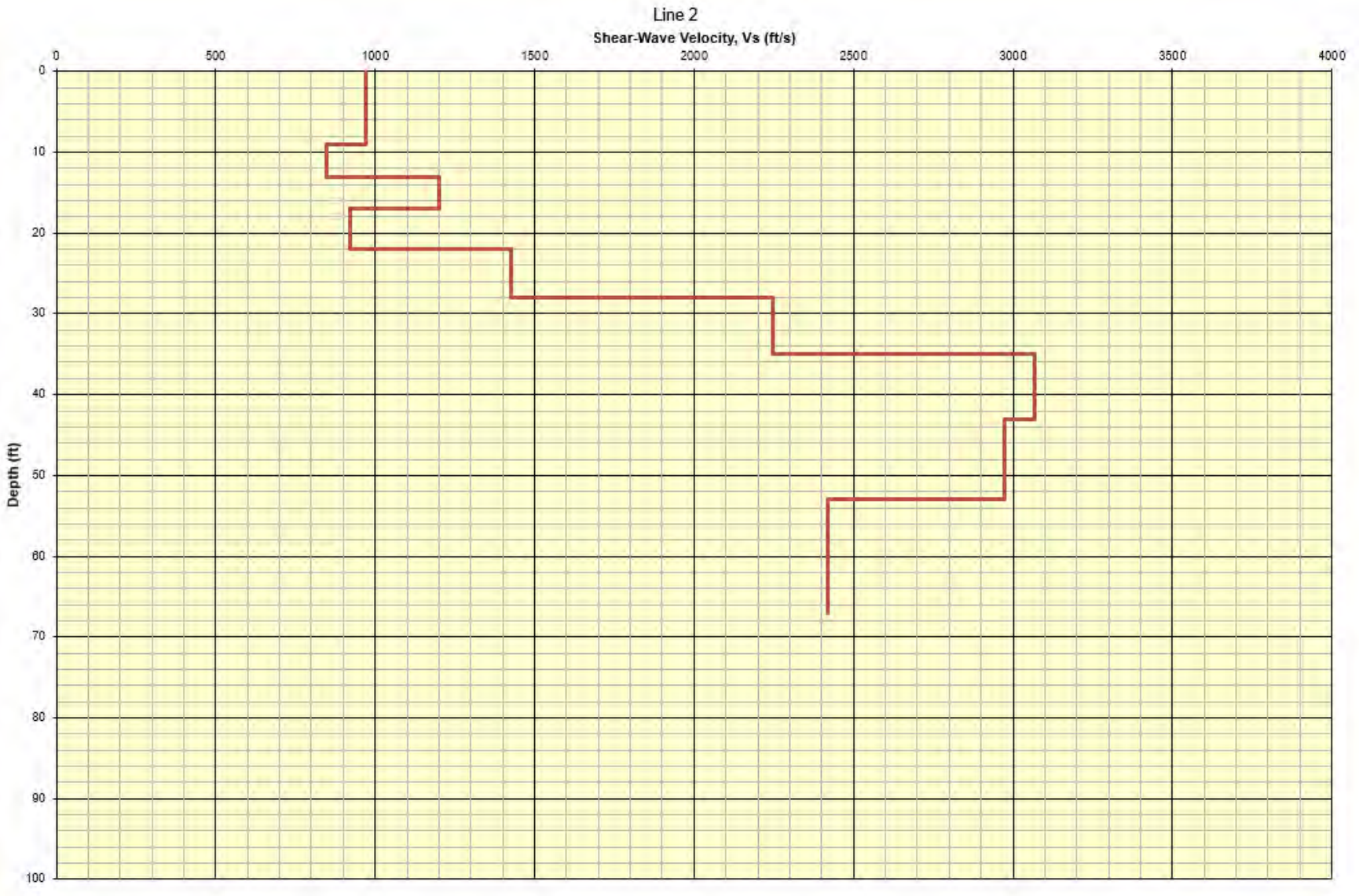


Figure 5		**ReMi Line 2 Results** **1111 Piikoi Street** **Honolulu, Hawaii**	NOVA
Project Number 10135-2023034	Prepared by: JWN		

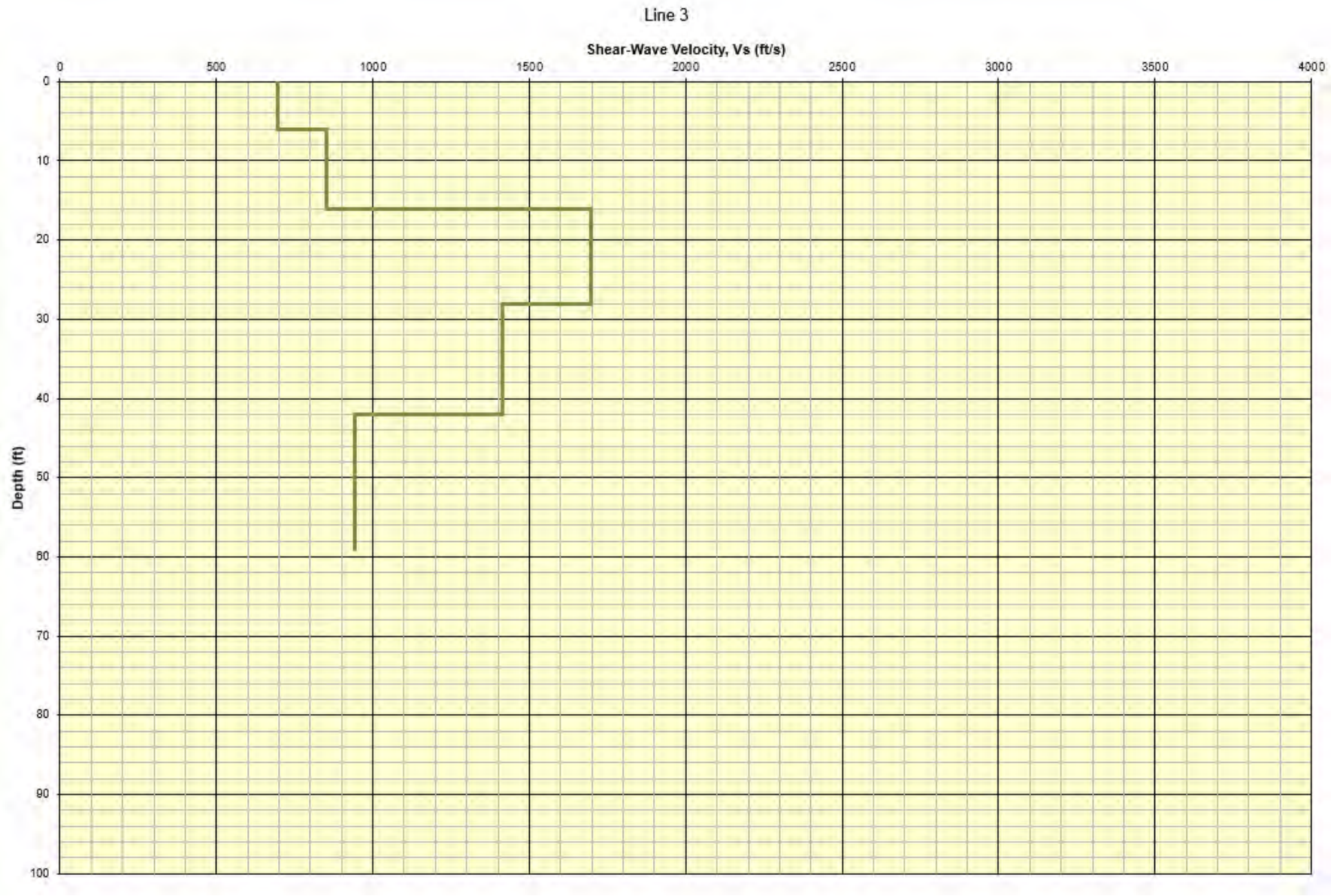


Figure 6		**ReMi Line 3 Results** **1111 Piikoi Street** **Honolulu, Hawaii**	NOVA
Project Number 10135-2023034	Prepared by: JWN		

APPENDIX B

Boring Logs

NOVA Engineering & Environmental, LLC

TEST BORING RECORD

Project Name: Young & Piikio Street Site
Project Number: 10135-2023034
Date Started: 1/22/2024
Date Completed: 1/24/2024

Driller: GeoTek Hawaii
Method: Hollow Stem Auger
Logged by: Sara

Boring B-1

Depth	Description	Elevation	Sample	N_{60}	Shear Strength (tsf)		Remarks
	Stiff to hard brown elastic clayey silt (MH)		S-1 S-2	7 34			
6			S-3	15			
	Loose black sand (volcanic cinders)		S-4	6			
14							▼ Groundwater at 13 feet after 24 hours
	Loose to dense fine white coralline sand		S-5	7			
			S-6	11			
			S-7	13			
			S-8	40			
40							
	Grey to black basalt 40 – 41' Recovery 50% RQD = 0% 41 – 43' Recovery 50% RQD = 0% 43 – 44' Recovery 100% RQD = 0% 44 – 46' Recovery 92% RQD = 0% 46 – 50' Recovery 25% RQD = 0%						
50	Boring Terminated at 50 feet						

10
20
30
40
50
60
70

NOVA Engineering & Environmental, LLC

TEST BORING RECORD

Project Name: Young & Piikio Street Site
Project Number: 10135-2023034
Date Started: 1/24/2024
Date Completed: 1/24/2024

Driller: GeoTek Hawaii
Method: Hollow Stem Auger
Logged by: Sara

Boring B-2

Depth	Description	Elevation	Sample	N_{60}	Shear Strength (tsf)		Remarks
	Stiff to hard brown elastic clayey silt (MH)		S-1	12			
			S-2	35			
6			S-3	13			
	Loose black sand (volcanic cinders)		S-4	5			
14							
	Loose to dense fine white coralline sand		S-5	7			▼ Groundwater at 17 feet after 24 hours
			S-6	15			
			S-7	12			
			S-8	35			
32			S-9	87			
	Auger Refusal at 32 feet						

10
20
30
40
50
60
70

NOVA Engineering & Environmental, LLC

TEST BORING RECORD

Project Name: Young & Piikio Street Site
Project Number: 10135-2023034
Date Started: 1/26/2024
Date Completed: 1/26/2024

Driller: GeoTek Hawaii
Method: Hollow Stem Auger
Logged by: Sara

Boring B-3

Depth	Description	Elevation	Sample	N_{60}	Shear Strength (tsf)		Remarks
	Stiff to hard brown elastic clayey silt (MH)		S-1	10			
			S-2	28			
6			S-3	41			
	Loose black sand (volcanic cinders)						
10			S-4	3			
14							▼
	Very dense fine white coralline sand		S-5	70			
17			S-6	98			Groundwater at 15 feet at time of boring
	Auger Refusal at 17 feet						
20							
30							
40							
50							
60							
70							

NOVA Engineering & Environmental, LLC

TEST BORING RECORD

Project Name: Young & Piikio Street Site
Project Number: 10135-2023034
Date Started: 2/2/2024
Date Completed: 2/2/2024

Driller: GeoTek Hawaii
Method: Hollow Stem Auger
Logged by: Sara

Boring B-4

Depth	Description	Elevation	Sample	N_{60}	Shear Strength (tsf)		Remarks
	Stiff to hard brown elastic clayey silt (MH)		S-1	15			
			S-2	16			
6			S-3	23			
	Loose black sand (volcanic cinders)		S-4	7			
14							
	Loose to dense fine white coralline sand		S-5	WOH			▽ Groundwater at 18 feet at time of boring
			S-6	17			
			S-7	32			
			S-8	40			
34			S-9	50+			
	Auger Refusal at 34 feet						

10
20
30
40
50
60
70

NOVA Engineering & Environmental, LLC

TEST BORING RECORD

Project Name: Young & Piikio Street Site
Project Number: 10135-2023034
Date Started: 1/25/2024
Date Completed: 1/25/2024

Driller: GeoTek Hawaii
Method: Hollow Stem Auger
Logged by: Sara

Boring B-5

Depth	Description	Elevation	Sample	N_{60}	Shear Strength (tsf)		Remarks
	Stiff brown elastic clayey silt (MH)		S-1	7			
			S-2	13			
6			S-3	7			
	Loose to very dense black sand (volcanic cinders)						
10			S-4	50+			
15			S-5	74			
	Coralline Limestone						Groundwater not recorded
	16 – 17.5' Recovery 78% RQD = 0%						
	17.5 – 20' Recovery 90% RQD = 0%						
20	Boring Terminated at 20 feet						
30							
40							
50							
60							
70							

NOVA Engineering & Environmental, LLC

TEST BORING RECORD

Project Name: Young & Piikio Street Site
Project Number: 10135-2023034
Date Started: 1/24/2024
Date Completed: 1/24/2024

Driller: GeoTek Hawaii
Method: Hollow Stem Auger
Logged by: Sara

Boring B-6

Depth	Description	Elevation	Sample	N_{60}	Shear Strength (tsf)		Remarks
	Stiff to hard brown elastic clayey silt (MH)						
4							
	Loose black sand (volcanic cinders)		S-1	6			
10			S-2	11			
15							▽
	Loose to dense fine white coralline sand		S-3	48			Groundwater at 15 feet at time of boring
20			S-4	14			
			S-5	16			
30			S-6	49			
			S-7	23			
38			S-8	25/1"			
40	Boring terminated at 38 feet – auger refusal						
50							
60							
70							

APPENDIX C

Laboratory Tests

EARTH ENGINEERS, INC. LAB TEST DATA REPORT

PROJECT NAME: 20-Story Residential, Piikoi and Young Street, Honolulu
PROJECT #: 23-291 LAB #:
LAB TECHNICIAN: Sarah
DATE COMPLETED: 2/12/2024

Moistures-P200								
Boring	B-1	B-1	B-1	B-1	B-1	B-1		
Sample								
Depth	0 - 1.5	5.0 - 6.0	6.0 - 6.5	10.0 - 11.5	20.0 - 21.5	30.0 - 31.5		
Pan #	M-19	M-8	M-11	M-14	B3	B7		
Pan weight (g)	8.60	8.68	8.59	8.83	208.17	216.35		
Pan + Soil - Wet (g)	120.04	111.19	118.83	114.79	431.62	435.35		
Pan + Soil - Dry (g)	95.52	88.20	103.25	104.97	384.33	386.78		
Pan+Washed (g)					373.3	357.11		
Moisture	**28.2%**	**28.9%**	**16.5%**	**10.2%**	**26.8%**	**28.5%**		
%Passing #200					**6.3%**	**17.4%**		

Moistures-P200								
Boring	B-2	B-2	B-2	B-2			IT-1	IT-2
Sample								
Depth	0 - 1.5	5.0 - 6.5	10.0 - 11.5	32.0 - 33.0			5	5
Pan #	M-24	M-3	M-15	B4				
Pan weight (g)	8.80	8.65	8.59	211.18				
Pan + Soil - Wet (g)	113.50	109.41	113.03	426.70				
Pan + Soil - Dry (g)	87.58	85.72	108.37	389.86				
Pan+Washed (g)				367.81				
Moisture	**32.9%**	**30.7%**	**4.7%**	**20.6%**				
%Passing #200				**12.3%**				

Moistures-P200								
Boring	B-3	B-3	B-3	B-3				
Sample								
Depth	0 - 1.5	2.0 - 3.5	10.0 - 11.5	17.0 - 18.5				
Pan #	M-4	M-21	M-6	B1				
Pan weight (g)	8.55	8.68	8.59	214.65				
Pan + Soil - Wet (g)	111.13	121.38	114.90	432.95				
Pan + Soil - Dry (g)	90.85	96.21	98.91	401.78				
Pan+Washed (g)				375.40				
Moisture	**24.6%**	**28.8%**	**17.7%**	**16.7%**				
%Passing #200				**14.1%**				

Moistures-P200								
Boring	B-5	B-5	B-5	B-5				
Sample								
Depth	0 - 1.5	2.0 - 3.5	10.0 - 11.5	15.0 - 16.5				
Pan #	M-12	M-9	M-20	B5				
Pan weight (g)	8.63	8.64	8.6	214.42				
Pan + Soil - Wet (g)	120.49	112.41	114.60	438.17				
Pan + Soil - Dry (g)	92.54	85.83	106.85	405.81				
Pan+Washed (g)				379.80				
Moisture	**33.3%**	**34.4%**	**7.9%**	**16.9%**				
%Passing #200				**13.6%**				

Moistures-P200								
Boring	B-4	B-4	B-4					
Sample								
Depth	2.5 - 4.0	5.0 - 6.5	10.0 - 11.5					
Pan #	M-22	M-5	M-23					
Pan weight (g)	8.67	8.57	8.68					
Pan + Soil - Wet (g)	112.94	127.39	117.49					
Pan + Soil - Dry (g)	88.42	98.97	106.69					
Pan+Washed (g)								
Moisture	**30.7%**	**31.4%**	**11.0%**					
%Passing #200								

Moistures-P200								
Boring	B-6	B-6	B-6	B-6				
Sample								
Depth	5.0 - 6.5	10.0 - 11.5	25.0 - 26.5	35.0 - 36.5				
Pan #	M-25	M-26	B-8	823				
Pan weight (g)	8.78	8.64	211.17	216.71				
Pan + Soil - Wet (g)	110.07	118.66	420.00	449.66				
Pan + Soil - Dry (g)	82.98	114.85	371.26	382.01				
Pan+Washed (g)			354.45	241.52				
Moisture	**36.5%**	**3.6%**	**30.4%**	**40.9%**				
%Passing #200			**10.5%**	**85.0%**				

Earth Engineers, Inc.

LAB TEST RESULTS
REPORT OF ATTERBERG LIMITS
ASTM D 4318

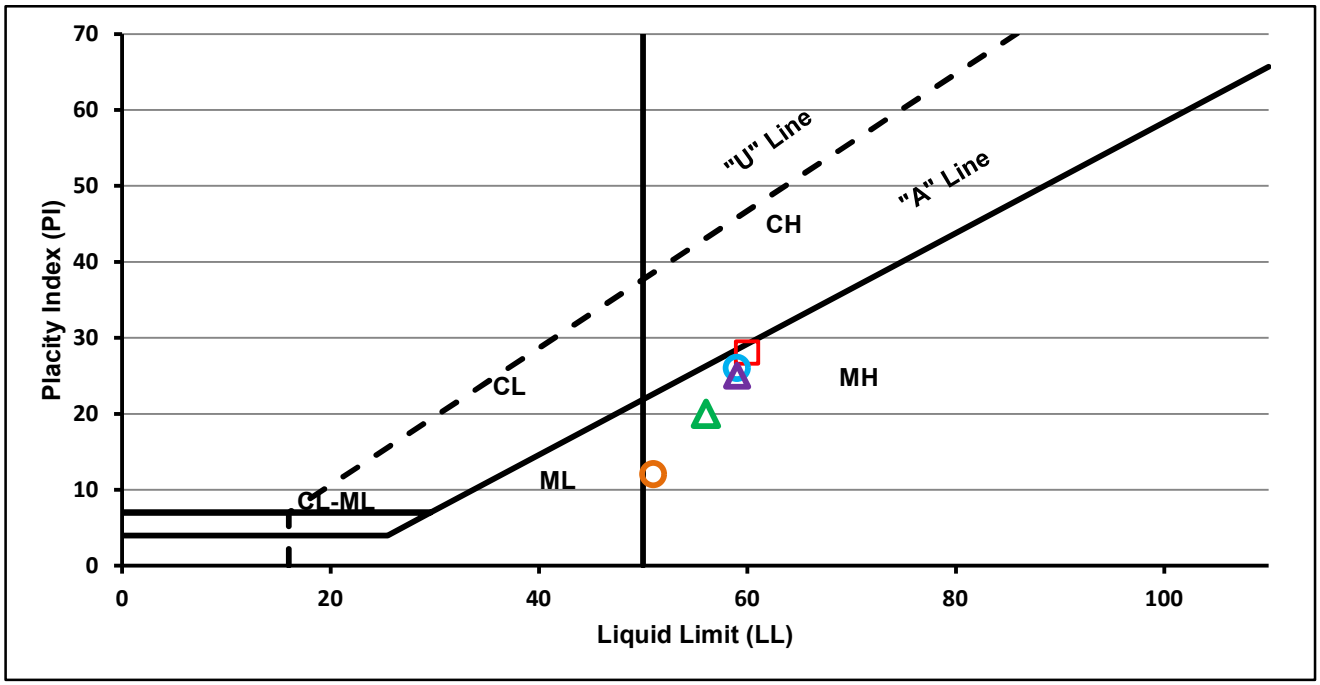
TESTED FOR: Nova Engineering and Environmental LLC

PROJECT: 20-Story Residential, Piikoi and Young Street, Honolulu

DATE: 2/13/2024

OUR REPORT NO.: 23-291-1

TEST DATA



Location	Depth (feet)	Description (USCS)	Moisture Content, %	% Passing #200 Sieve	Atterberg Limits		
					LL	PL	PI
△ B-2	5.0-6.5	Elastic Silt	30.7		56	36	20
□ B-4	5.0-6.5	Elastic Silt	31.4		60	32	28
○ B-3	2.0-3.5	Elastic Silt	28.8		59	33	26
◮ B-5	2.0-3.5	Elastic Silt	34.4		59	34	25
○ B-6	35.0-36.5	Elastic Silt	40.9	85	51	39	12

Lab Technician: Sarah

Respectfully Submitted,
Earth Engineers, Inc.

Remarks:

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APPENDIX D

Infiltration Test Data

EPA FALLING HEAD PERCOLATION TEST DATA SHEET

(DESIGN MANUAL – ONSITE WASTEWATER TREATMENT AND DISPOSAL SYSTEMS, EPA, 1980)

PERCOLATION TEST HOLE NO. IT-1 **(3 MINIMUM)**

PROJECT NAME: 20-Story Residential

PROJECT LOCATION: Piikoi and Young Street, Honolulu

EEI PROJECT NUMBER: 23-291

TEST HOLE LOCATION: west of B-1

TEST PERFORMED BY: Laura

TABLE 1: TEST HOLE PREPARATION **DATE:** 2/2/24

		SPECIFICATION
HOLE DIAMETER (INCHES)	6"	6 INCHES
TEST HOLE DEPTH (feet)	5'	INFILTRATION SYSTEM BOTTOM
METHOD OF SCRATCHING SIDEWALLS OF HOLE		POINTED INSTRUMENT
GRAVEL THICKNESS @ BOTTOM OF HOLE (INCHES)	2"	2 INCHES OF ½ TO ¾-INCH GRAVEL

TABLE 2: SOIL LOG

DEPTH	DESCRIPTION
@5'	brown silty clay

TABLE 3: PRESOAKING OF TEST HOLE

START TIME/DATE	STOP TIME/DATE	TOTAL PRESOAK TIME	MIN. WATER HEAD (INCHES)	SPECIFICATION
8:05 am 2/2/24			12"	MAINTAIN AT LEAST 12 INCHES H_2O AT LEAST 4 HRS (CLAY – OVERNIGHT); IF 12 INCHES DRAINS IN UNDER 10 MINUTES TWICE THEN OK TO START TEST IMMEDIATELY

TABLE 4: FALLING HEAD PERCOLATION TEST DATA **DATE:** 2/2/24

**START TEST 15 TO 30 HOURS AFTER PRESOAKING BEGINS—SANDY SOIL START IMMEDIATELY*

TRIAL	START TIME	STOP TIME	TOTAL TIME (MINUTES) *A*	INITIAL H_2O DEPTH (INCHES)	FINAL H_2O DEPTH (INCHES)	WATER LEVEL DROP (INCHES) *B*	PERC RATE (MINUTES/INCH) *A / B*
1	12:30	1:00	(30) / 10 / __	51 1/4"	52"	3/4"	40
2	1:00	1:15	30 / 10 / (15)	52"	52 1/4"	1/4"	60
3	1:15	1:30	30 / 10 / 15	52 1/4"	52 1/2"	1/4"	60
4	1:30	1:45	30 / 10 / 15	52 1/2"	52 3/4"	1/4"	60
5	1:45	2:00	30 / 10 / 15	52 3/4"	53"	1/4"	60
6			30 / 10 / 15				

PERCOLATION RATE ($I_{measured}$): 60 **MINUTES PER INCH (USE FINAL TEST)**

EPA FALLING HEAD PERCOLATION TEST DATA SHEET

(DESIGN MANUAL – ONSITE WASTEWATER TREATMENT AND DISPOSAL SYSTEMS, EPA, 1980)

PERCOLATION TEST HOLE NO. IT-2 **(3 MINIMUM)**

PROJECT NAME: 20-Story Residential

PROJECT LOCATION: Piikoi and Young Street, Honolulu

EEI PROJECT NUMBER: 23-291

TEST HOLE LOCATION: in B-6

TEST PERFORMED BY: Laura

TABLE 1: TEST HOLE PREPARATION **DATE:** 2/2/24

		SPECIFICATION
HOLE DIAMETER (INCHES)	6"	6 INCHES
TEST HOLE DEPTH (Feet)	5'	INFILTRATION SYSTEM BOTTOM
METHOD OF SCRATCHING SIDEWALLS OF HOLE		POINTED INSTRUMENT
GRAVEL THICKNESS @ BOTTOM OF HOLE (INCHES)	2"	2 INCHES OF ½ TO ¾-INCH GRAVEL

TABLE 2: SOIL LOG

DEPTH	DESCRIPTION
@5'	volcanic cinder, black sand

TABLE 3: PRESOAKING OF TEST HOLE

START TIME/DATE	STOP TIME/DATE	TOTAL PRESOAK TIME	MIN. WATER HEAD (INCHES)	SPECIFICATION
drained 4 times, under 5 min each, therefore test started	immediately		12"	MAINTAIN AT LEAST 12 INCHES H_2O AT LEAST 4 HRS (CLAY – OVERNIGHT); IF 12 INCHES DRAINS IN UNDER 10 MINUTES TWICE THEN OK TO START TEST IMMEDIATELY

TABLE 4: FALLING HEAD PERCOLATION TEST DATA **DATE:** 2/2/24

**START TEST 15 TO 30 HOURS AFTER PRESOAKING BEGINS—SANDY SOIL START IMMEDIATELY*

TRIAL	START TIME	STOP TIME	TOTAL TIME (MINUTES) *A*	INITIAL H_2O DEPTH (INCHES)	FINAL H_2O DEPTH (INCHES)	WATER LEVEL DROP (INCHES) *B*	PERC RATE (MINUTES/INCH) *A / B*
1			1.68	(6)	0	6"	0.27
2			1.90	(6)	0	6"	0.38
3			1.7	(6)	0	6"	0.28
4			1.83	(6)	0	6"	0.31
5			1.78	(6)	0	6"	0.30
6				(6)	0	6"	

PERCOLATION RATE ($I_{measured}$): _____ **MINUTES PER INCH (USE FINAL TEST)**

average rate = 0.3 min/inch

Appendix L 2021 HUD Comprehensive Housing Market Analysis for Urban Honolulu, HI

The COVID-19 pandemic has resulted in unprecedented large and rapid changes in many data series, and similarly unprecedented large policy responses, making analysis of, and longer run predictions for, the economy and housing markets exceptionally difficult and uncertain. HUD will continue to monitor market conditions in the HMA and provide an updated report/ addendum in the future.

COMPREHENSIVE HOUSING MARKET ANALYSIS

Urban Honolulu, Hawaii

U.S. Department of Housing and Urban Development,
Office of Policy Development and Research

As of January 1, 2021

Share on:

Executive Summary

Housing Market Area Description

The Urban Honolulu Housing Market Area (HMA) is coterminous with the Urban Honolulu, HI Metropolitan Statistical Area (MSA) and is defined as Honolulu County. The county mainly includes the island of O'ahu and most of the Northwestern Hawaiian Islands—a collection of small islands and atolls that are largely uninhabited. Honolulu County contains the largest share of the Hawaiian population, despite being the second smallest county by land area in the state (following Kalawao County on the island of Molokai).

The current population of the HMA is estimated at 970,600.

Honolulu, which means "place of shelter" in the Hawaiian language, is the largest city in Hawaii and the state capital. The city is home to Fort Shafter and the Tripler Army Medical Center, which are among the nine U.S. military installations in the HMA. The largest installation in the HMA is Joint Base Pearl Harbor-Hickam, which is located 8 miles west of the city of Honolulu. In addition to the military, the HMA has a prominent tourism industry, and the area typically receives approximately 60 percent of all visitors to Hawaii.

Tools and Resources

Find interim updates for this metropolitan area, and select geographies nationally, at PD&R's Market-at-a-Glance tool.
Additional data for the HMA can be found in this report's supplemental tables.
For information on HUD-supported activity in this area, see the Community Assessment Reporting Tool.

Market Qualifiers

Economy

Weak: Nonfarm payrolls in the Urban Honolulu HMA declined during 2020 by 53,000 jobs, or 11.2 percent, to a total of 418,800 jobs.

After 8 consecutive years of economic expansion following the Great Recession, economic conditions in the HMA have weakened since 2019. Nonfarm payroll losses that began in 2019 had deepened by 2020 following interventions to slow the spread of COVID-19. The tourism industry has been severely impacted during the pandemic, and industry job losses led overall declines in both the HMA and the state. The gradual reopening of businesses in the second quarter of 2020 and the introduction of the Hawaii Safe Travels program by the fourth quarter of 2020 had a positive impact on the HMA economy by contributing to a partial recovery in jobs during the past 8 months. That recovery is expected to continue during the 3-year forecast period, and nonfarm payroll growth in the HMA is expected to average 2.2 percent a year.

Sales Market

Slightly Tight: The average home sales price in the Urban Honolulu HMA rose 5 percent, to $731,000, during 2020, and the inventory of homes for sale has declined nearly every year since 2010.

The sales housing market in the HMA is slightly tight despite the contraction in the economy, with an estimated 0.9-percent vacancy rate, down from 1.1 percent in 2010 because of a reduced number of homes for sale. During the next 3 years, demand is estimated for 1,900 new homes, which is expected to increase slightly in the second and third years of the forecast period from improved household growth as the economy continues to recover. The 790 homes under construction will satisfy some of the forecast demand.

Rental Market

Slightly Tight: Renter household growth since 2010 in the Urban Honolulu HMA has more than offset the production of year-round rental units, contributing to the overall tightening of rental market conditions.

Rental housing market conditions in the HMA are slightly tight. The overall vacancy rate is estimated at 4.9 percent, down from 5.9 percent in 2010 when conditions were balanced. An increase in renter households since 2010 has contributed to the absorption of vacant rental units and the decline in the vacancy rate. During the forecast period, demand in the HMA is expected for 2,025 rental units. The 1,500 rental units under construction will satisfy a portion of demand during the forecast period.

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3-Year Housing Demand Forecast

		Sales Market	Rental Market
Urban Honolulu HMA	Total Demand	1,900 Homes	2,025 Units
	Under Construction	790 Homes	1,500 Units

Notes: Total demand is for year-round households only. Demand is the estimated production necessary to achieve balanced market conditions by the end of the forecast period on January 1, 2024. Housing under construction is as of January 1, 2021, and excludes seasonal housing underway.
Source: Estimates by the analyst

Economic Conditions

Largest Sector: Government Sector

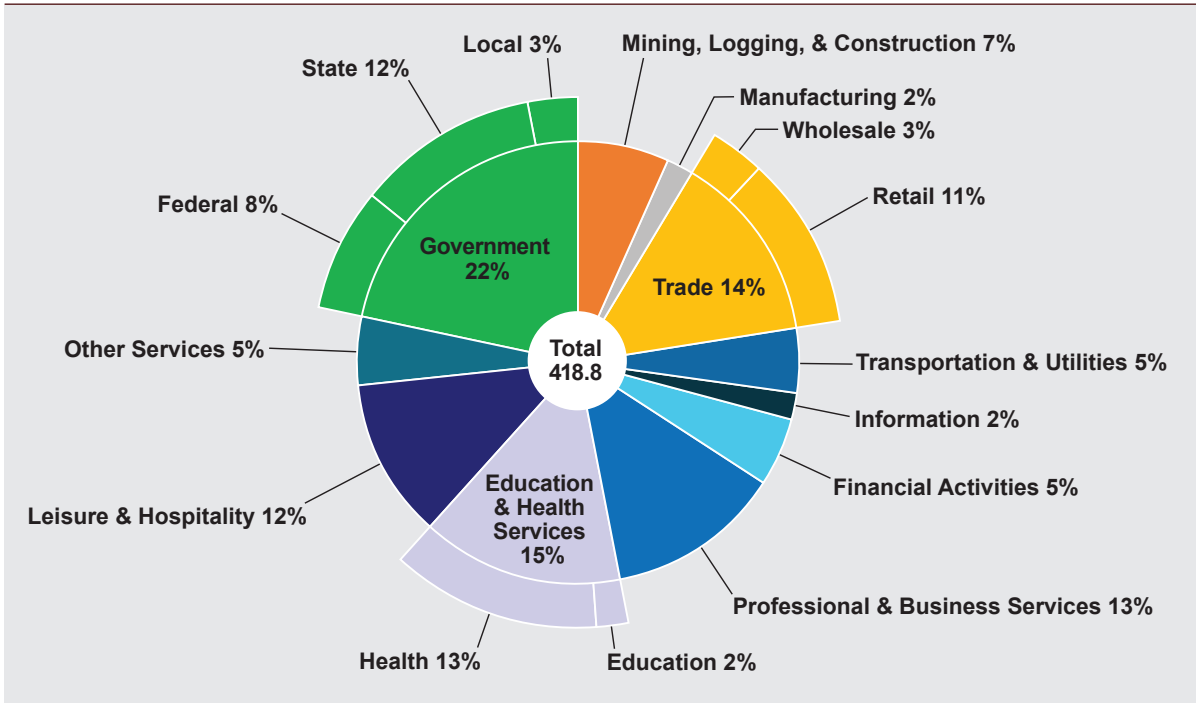
The military and the tourism industry have traditionally supported economic growth in the HMA; before the COVID-19 pandemic, they contributed a combined $10 billion in annual economic impact on Hawaii from 2017 through 2019 (Chamber of Commerce Hawaii and Hawaii Tourism Authority).

Economic Factors in the HMA

Since the mid-20th century, the Urban Honolulu HMA has been a major employment center for the military and the tourism industry. Although U.S. military presence in the HMA dates to the late 1880s, it was the move of the U.S. Pacific Fleet to Pearl Harbor less than a year before the Pearl Harbor attack during World War II that contributed to the prominence of the military in the HMA. The military continues to be the single largest economic factor in the HMA, even after the rise in tourism during the mid-20th century. Greater commercialization of air travel during the 1950s, along with Hawaii achieving statehood in 1959, helped transform the HMA into a major tourist destination by the early 1960s. Since then, the HMA has been among the most popular tourist destinations in the nation, and the area has typically received approximately 60 percent of all visitors to Hawaii each year (Hawaii Tourism Authority). Before the COVID-19 pandemic, the number of annual visitors and visitor spending in the HMA each increased an average of 4 percent a year from 2011 through 2019, reaching nearly 6.2 million visitors and more than $8.1 billion in spending by the end of 2019 (Hawaii Tourism Authority). Those gains supported the leisure and hospitality sector following the Great Recession, which had been the second largest sector in the HMA until recently (Figure 1). As in all areas throughout the nation, countermeasures to slow the spread of COVID-19 impacted the tourism industry during 2020, contributing to a significant contraction in overall job growth—see the Current Economic Conditions section for more details.

The presence of the military is vital to the economy in the HMA, which has all six branches of the U.S. armed forces. Nine of the 11 military installations across the state are in the HMA, including Joint Base

Figure 1. Share of Nonfarm Payroll Jobs in the Urban Honolulu HMA, by Sector



Notes: Military jobs are not included in these data. Total nonfarm payroll is in thousands. Percentages may not add to 100 percent due to rounding. Based on 12-month averages through December 2020.
Source: U.S. Bureau of Labor Statistics

Pearl Harbor-Hickam (Photo 1), Schofield Barracks, and Marine Corps Base Hawaii, which are the three largest employers in the HMA (Table 1). Military installations throughout the HMA employ more than 50,350 military and 15,100 civilian personnel combined, which account for 97 and 73 percent of respective personnel throughout Hawaii (Defense Manpower Data Center, 2020). The military supports growth in the defense industry through the award of contracts to private businesses within the HMA. The Department of the Navy is the largest contracting entity in Hawaii, with more than $9 billion in defense contracts awarded during the past decade (Hawaii Defense Economy). In addition, the total value of non-Navy defense contracts in Hawaii is more than $2 billion annually, with nearly all that occurring in the HMA.

Photo 1. Joint Base Pearl Harbor-Hickam

Source: MilitaryBases.com

Table 1. Major Employers in the Urban Honolulu HMA

Name of Employer	Nonfarm Payroll Sector	Number of Employees
Joint Base Pearl Harbor-Hickam	Government	23,400
Schofield Barracks	Government	17,600
Marine Corps Base Hawaii	Government	9,400
The Queen's Health Systems	Education & Health Services	7,475
Hawaii Pacific Health	Education & Health Services	7,275
Fort Shafter	Government	6,700
Hawaiian Electric Industries, Inc.	Transportation & Utilities	3,850
Hawaii Health Systems Corporation	Education & Health Services	2,550
Kaiser Foundation Health Plan, Inc.	Education & Health Services	2,475
Securitas Security Services USA, Inc.	Professional & Business Services	2,300

Notes: Data include military personnel, who are generally not included in employment survey data. Data exclude local school districts.
Sources: Hawaii Department of Budget and Fiscal Services; Defense Manpower Data Center

Economic Periods of Significance in the HMA

A Period of Expansion: 2001 Through 2007

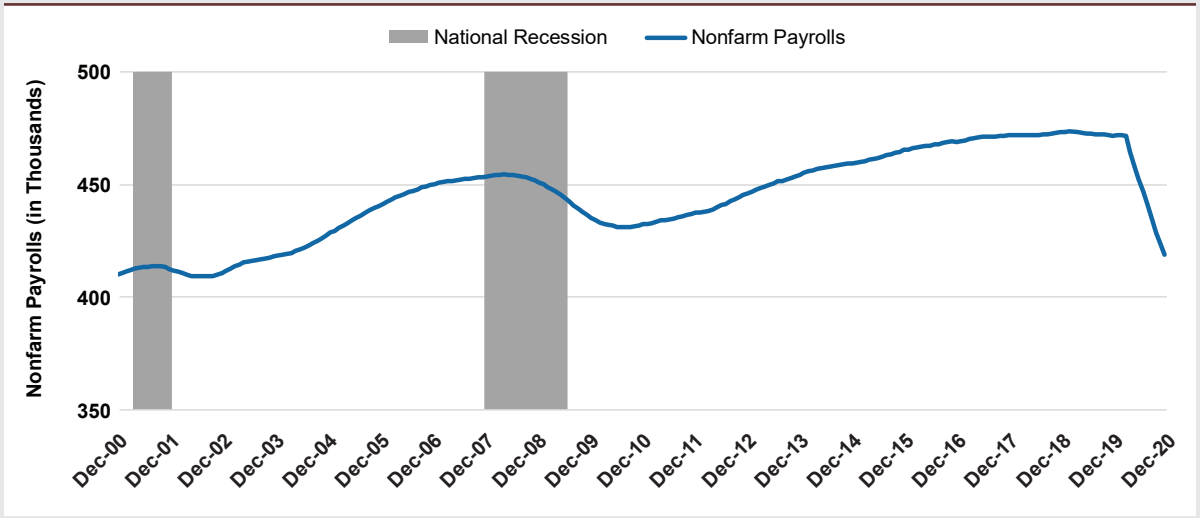
Nonfarm payroll growth in the HMA averaged 6,100 jobs, or 1.4 percent, a year from 2001 through 2007 (Figure 2), accounting for 59 percent of job growth in Hawaii. The rate of growth in the HMA was above the 0.6-percent annual rate for the nation because the HMA was less affected by the national recession of the early 2000s. Approximately 62 percent of the net job gain in the HMA occurred in the education and health services; the mining, logging, and construction; and the professional and business services sectors, up by averages of 1,400, 1,300, and 1,100 jobs, or 2.7, 6.2, and 2.2 percent, a year, respectively. Gains in the health care and social assistance industry accounted for more than three-fourths of the growth in the education and health services sector. Jobs added in the administrative support industry contributed nearly one-half of the increase in the professional and business services sector. The mining, logging, and construction sector had the largest

percentage gain, mostly because of growth in the construction subsector. Greater residential building activity from strong sales housing market conditions during most of the period partly contributed to subsector gains.

The Great Recession and the Urban Honolulu HMA: 2008 Through 2010

By the end of 2007, the Great Recession began, and payrolls in the HMA declined by an average of 7,100 jobs, or 1.6 percent, a year from 2008 through 2010. Overall, the rate of decrease in the HMA was below Hawaii and the nation, which declined by averages of 2.1 and 1.9 percent, respectively, a year. More than two-thirds of the payrolls decline in the HMA was attributable to losses in the leisure and hospitality; the mining, logging, and construction; and the transportation and utilities sectors, down respectively by averages of 1,300, 1,700, and 1,700 jobs, or 2.0, 6.7, and 7.4 percent, annually. The entire loss in the mining, logging, and construction sector resulted from reductions in the construction subsector, partly in response to reduced housing development. In the leisure and hospitality sector, the number of visitors to the HMA declined 9 percent during the period to 4.3 million by 2010 (State of Hawaii Data Book), contributing to an average annual loss of 1,100 jobs in the accommodation and food services industry. Fewer visitors also partly led to an average of nearly 1,800 jobs lost annually in the air and water transportation industries of the HMA, contributing to the decline in the transportation and utilities sector. Losses during the period included 1,900 positions at Aloha Airlines Inc and 1,000 jobs at Norwegian Cruise Line America when its second cruise ship was pulled out of service.

Figure 2. 12-Month Average Nonfarm Payrolls in the Urban Honolulu HMA



Notes: Military jobs are not included in these data. Data represent a 12-month moving average.
Sources: U.S. Bureau of Labor Statistics; National Bureau of Economic Research

Economic Recovery and Expansion: 2011 Through 2018

Following the economic contraction, nonfarm payrolls in the HMA expanded by an average of 5,100 jobs, or 1.1 percent, annually from 2011 through 2018, accounting for 63 percent of jobs added in Hawaii. The rate of growth, however, was slower than the period of expansion during the previous decade and below the rates for both Hawaii and the nation, which were up by respective averages of 1.4 and 1.7 percent annually. Despite slower growth, nonfarm payrolls in the HMA had surpassed prerecession levels by the end of 2013. Overall nonfarm payroll gains from 2011 through 2018 were led by the leisure and hospitality; the education and health services; and the mining, logging, and construction sectors, which accounted for a combined 65 percent of job gains in the HMA. An increase of 700 jobs at hospitals throughout the HMA contributed to growth in the education and health services sector, which was up by an average of 800 jobs, or 1.2 percent, a year. The leisure and hospitality sector added the most jobs during the 8-year

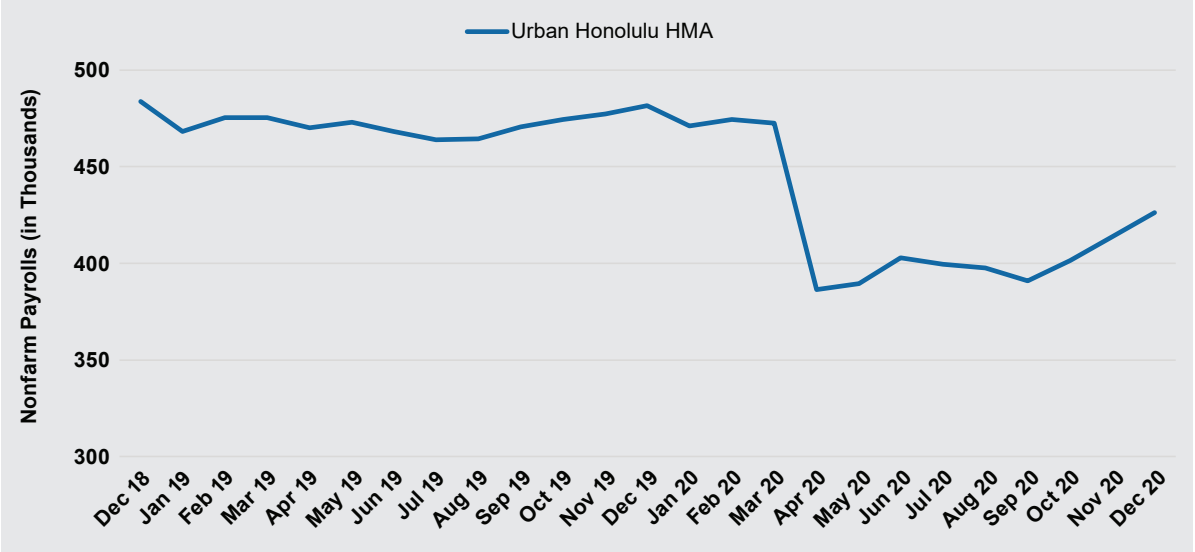
period, up by an average of 1,800 jobs, or 2.7 percent, annually because of increased tourism following the Great Recession. The number of visitors to the HMA increased 37 percent from 2011 through 2018; that increase partly influenced the construction of eight hotels at a combined cost of nearly $938 million, adding more than 620 jobs in the leisure and hospitality sector. That construction also contributed to job gains in the mining, logging, and construction sector, which was also up 2.7 percent, or by 700 jobs. In addition to hotel construction, greater levels of residential building activity resulting from generally tighter sales and rental market conditions following the Great Recession also contributed to sector gains.

Current Economic Conditions: A Contraction in 2019 and the COVID-19 Pandemic

Unlike many areas in the nation, economic conditions in the HMA began to weaken by 2019, when nonfarm payrolls declined by 1,500 jobs, or 0.3 percent. The slight contraction in 2019 occurred mostly because of job losses in the manufacturing sector—as the HMA shifted away from food production—and a rise in e-commerce that negatively impacted the retail trade subsector. During 2019, payrolls in the manufacturing sector were down by 500 jobs, or 1.3 percent, whereas jobs in the wholesale and retail trade sector were down by 1,300 jobs, or 2.1 percent, mostly due to 1,200 jobs lost in the retail trade subsector.

Those year-over-year job losses continued at a slow pace during the first 2 months of 2020 before contracting significantly in March and April of 2020 following interventions taken in mid-March to slow the spread of COVID-19—including enforcing physical distancing and discouraging nonessential travel. Nonfarm payrolls in the HMA declined sharply by 87,900 jobs, or 18.5 percent, from March to April 2020 (not seasonally adjusted, Figure 3). By the third quarter of 2020, businesses began a measured reopening, and by the end of December 2020, the HMA was in Tier 2 of the Hawaii State phased reopening plan—which allows nonessential travel and many establishments to operate while adhering to state-mandated social distancing requirements and health safety standards. Overall, approximately 20 percent of all businesses in Hawaii that closed at the onset of the pandemic had reopened by the end of the year, ranking fifth among states in the nation in terms of the percentage of businesses reopening (*Pacific Business News*). In addition, the Hawaii Safe Travels program was introduced by the fourth quarter of 2020, which, along with the measured reopening, has contributed to a partial

Figure 3. Monthly Nonfarm Payrolls in the Urban Honolulu HMA



Note: Not seasonally adjusted monthly data.
Source: U.S. Bureau of Labor Statistics

recovery in jobs during the past 8 months. From May through December 2020, nonfarm payrolls in the HMA increased by 39,800 jobs. That gain, however, did not offset losses earlier in the year, and nonfarm payrolls in the HMA decreased overall during 2020 by 53,000 jobs, or 11.2 percent, compared with the number of jobs during 2019 (Table 2). The rate of job decline in the HMA was slower than losses in Hawaii but faster than the nation, which had respective job declines of 12.6 and 5.8 percent.

Job losses in the HMA during 2020 occurred in nearly all sectors of the economy, with the greatest declines in sectors that rely heavily on nonessential in-person interactions. Many of those jobs were in the leisure and hospitality sector, which had contracted more severely than the other sectors. Nonfarm payrolls in the sector declined by 27,400 jobs, or 36.1 percent, accounting for nearly 52 percent of the overall job loss in the HMA. A portion of those losses resulted from layoffs of full-time employees at businesses with a total staff of at least 50 people. Since March 2020, more than 7,275 of those full-time employees had been laid off because of either temporary or permanent closures of 29 hotels and restaurants throughout the HMA (Hawaii Workforce Development Council, Hawaii Worker Adjustment and Retraining Notification).

Notable losses during 2020 also occurred in the transportation and utilities and the government sectors, largely resulting from pandemic-related

Table 2. 12-Month Average Nonfarm Payroll Jobs (1,000s) in the Urban Honolulu HMA, by Sector

	12 Months Ending December 2019	12 Months Ending December 2020	Absolute Change	Percentage Change
Total Nonfarm Payroll Jobs	**471.8**	**418.8**	**-53.0**	**-11.2**
Goods-Producing Sectors	38.0	36.7	-1.3	-3.4
Mining, Logging, & Construction	27.0	27.5	0.5	1.9
Manufacturing	11.0	9.2	-1.8	-16.4
Service-Providing Sectors	433.8	382.1	-51.7	-11.9
Wholesale & Retail Trade	61.8	57.4	-4.4	-7.1
Transportation & Utilities	24.4	20.0	-4.4	-18.0
Information	7.4	6.5	-0.9	-12.2
Financial Activities	23.0	21.9	-1.1	-4.8
Professional & Business Services	57.2	52.6	-4.6	-8.0
Education & Health Services	65.5	63.2	-2.3	-3.5
Leisure & Hospitality	75.8	48.4	-27.4	-36.1
Other Services	21.7	19.7	-2.0	-9.2
Government	97.2	92.4	-4.8	-4.9

Notes: Military jobs are not included in these data. Based on 12-month averages through December 2019 and December 2020. Numbers may not add to totals due to rounding. Data are in thousands.
Source: U.S. Bureau of Labor Statistics

countermeasures to keep people safe. The transportation and utilities sector had the second fastest rate of job decline in the HMA, down 18.0 percent, or by 4,400 jobs. The financial strain from reduced passenger travel since the onset of the pandemic had contributed to more than 1,050 layoffs at Hawaiian Airlines by July 2020. Overall, the air transportation industry lost 1,900 jobs during 2020, compared with a 400-job gain during 2019. In the government sector, jobs were down by 4,800, or 4.9 percent, which accounted for the second largest decrease in nonfarm payrolls during 2020. The public educational services industry was particularly impacted by the pandemic; a combined 4,400 jobs were lost in the educational services industry of the state government subsector, which accounted for the largest share of job losses in the government sector overall.

In contrast to those sector declines, the mining, logging, and construction sector increased by 500 jobs, or 1.9 percent. Sector gains resulted from continued growth in construction, which had been deemed essential since the onset of the pandemic. Greater development of rental housing along with construction in the transit, medical, and defense industries partly contributed to that growth. Among those developments, the

Honolulu High-Capacity Transit Corridor Project began construction on a 20-mile light rail line, extending from the Ewa Plain area of west O'ahu to downtown Honolulu (indicated as a purple line in Map 1). The first phase of the line is currently under way, with completion of the first set of stations expected in late 2021. One of the stations underway is adjacent to the recently expanded $38 million Queen's Medical Center West O'ahu, which added an ambulatory medical center in the summer of 2020. Additional hospital expansions that were under way during 2020 include the $16 million Kaiser Permanente in Kapolei, also in west O'ahu, with completion expected in late 2021. In the defense industry, construction projects include the $301 million command-and-control facility at the Joint Base Pearl Harbor-Hickam. Completion of the facility is expected in early 2022. In addition, the $12.7 million initial overhaul of the Pearl Harbor drydock that began in May 2020 was completed in October 2020. The project is part of a $2.0 to $4.0 billion drydock facility that is currently planned by the U.S. Navy, which will be used for ship and submarine repairs at the base.

COVID-19 and the HMA Tourism Industry

As in all areas throughout the nation, the tourism industry in the HMA was severely impacted by the COVID-19 pandemic. Travel restrictions and social-distancing measures to keep people safe have resulted in a low number of visitors to the

Map 1. Honolulu High-Capacity Transit Corridor

Source: Honolulu Authority for Rapid Transportation

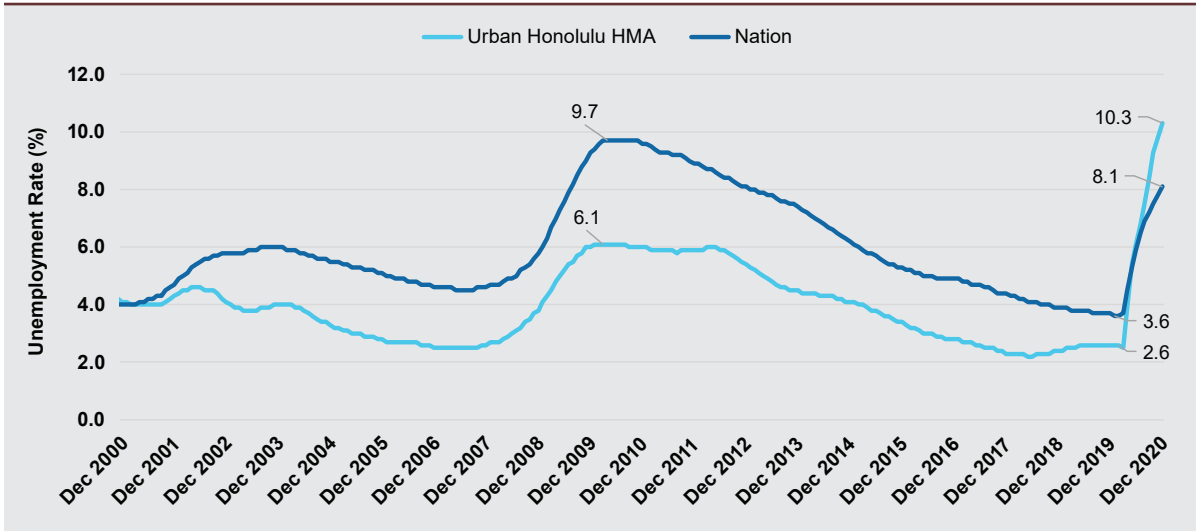
HMA; however, the Hawaii Safe Travels program contributed to an improvement in the number of visitors in recent months. The travel program allowed some travelers to forego the required 10- to 14-day quarantine period with an approved negative COVID-19 test result. The program started with inter-island travel before expanding to include all domestic U.S. travelers to the Hawaiian Islands. Visitors to the HMA totaled 112,856 in December 2020, increasing nearly two-fold each month since the travel program began in October 2020. Before the program, monthly visitors to the HMA averaged only 10,600 from May to September 2020. As the program facilitated greater domestic travel, the volume of domestic visitors reached 70 percent of their pre-pandemic levels. Despite that increase, the total number of visitors to the HMA in December 2020 was down 80 percent from the 558,346 visitors a year ago because of a loss in international visitors, which continued to suppress hotel occupancy. In December 2020, hotel occupancy in the HMA was only 23.6 percent—down

from 83.1 percent a year ago—whereas hotel revenue decreased 84 percent to $36.7 million from $226.0 million a year ago (Hawaii Tourism Authority). As of December 2020, the HMA had a total of 847 available hotel rooms, down nearly 11 percent from a year ago partly due to rooms taken offline for hotel renovations. Despite the downturn in the leisure and hospitality sector, hotel property owners had taken advantage of reduced visitor occupancy by temporarily closing and upgrading their hotels. Outrigger Reef Waikiki Beach Resort began an $80 million renovation of its 635-room property in March 2020, which will add new amenities and a combined 23 rooms and suites when it fully reopens in April 2021. In addition, the Kaimana Beach Hotel closed during early 2020 to renovate all 122 rooms before reopening in December 2020.

Unemployment Trends

As the economy of the HMA contracted during 2020, the average unemployment rate increased to 10.3 percent from 2.6 percent a year earlier and was higher than the previous peak of 6.1 percent during the 12 months ending January 2010 (Figure 4). In comparison, the average unemployment rate in the HMA during 2020 was lower than that of Hawaii but higher than that of the nation, which had respective rates of 11.8 and 8.1 percent. The recent increase in the average unemployment rate in the HMA follows the nearly 8 consecutive years of decline that occurred from 2011 through 2018—a period when economic conditions were strong.

Figure 4. 12-Month Average Unemployment Rate in the Urban Honolulu HMA and the Nation



Note: Based on the 12-month moving average.
Source: U.S. Bureau of Labor Statistics

Employment Forecast

During the 3-year forecast period, the easing of social-distancing restrictions and greater travel to the HMA are expected to contribute to continued job recovery that began in May 2020. As a result, nonfarm payrolls in the HMA are expected to increase an average of 2.2 percent annually, reflecting modest job gains in the first year of the forecast period before accelerating slightly by the second year. Notable payroll gains are expected in the mining, logging, and construction; the education and health services; and the leisure and hospitality sectors. Continued residential development and work on the Honolulu High-Capacity Transit Corridor is expected to support jobs in the construction subsector during the next 3 years. The second phase of the transit corridor is expected to be completed in 2022, with completion of the third phase by 2025. In the education and health services sector, the Kaiser Permanente expansion in Kapolei is expected to add jobs when completed during the first year of the forecast; jobs in the leisure and hospitality sector, however, are expected to continue recovering, although at a slower pace than the other sectors. Contributing to sector gains will be the $549 million Mana'olana Place that is currently underway. The development will have 125 hotel rooms and will include 107 luxury condominium units in a section called The Residences at Mandarin Oriental. Both the hotel and the residential units will be in a single

36-story tower. The hotel portion is expected to add approximately 40 jobs in the leisure and hospitality sector when it is completed in 2023. Additionally, although not included in the nonfarm payroll data, Schofield Barracks is expected to add nearly 200 military personnel by the end of 2021 (U.S. Army), contributing to overall economic stability in the HMA.

Population and Households

Current Population: 970,600

The population of the HMA has declined nearly each year since 2013, as higher home prices and reductions in military personnel during part of that period have contributed to net out-migration from the HMA.

Current Population Facts

The population of the Urban Honolulu HMA is estimated at 970,600 as of January 1, 2021 (Table 3). Overall, the HMA accounts for approximately 69 percent of the resident population in Hawaii, which had a population of nearly 1.42 million as of July 2019 (U.S. Census Bureau). More than one-third of HMA residents live in the largest city, Honolulu, which has 345,100 residents.

Resident Population and Demographic Trends

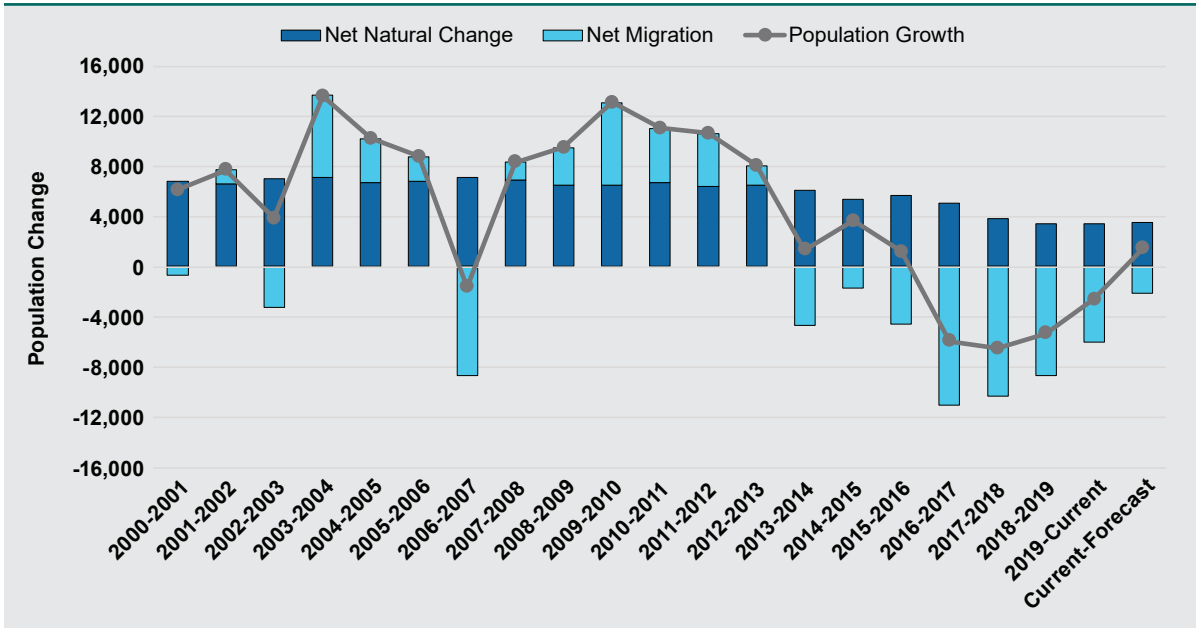
Overall resident population growth and trends in migration in the HMA during most of the period since 2000 have been influenced by economic conditions, mortgage lending standards, housing prices, and significant changes in the number of military personnel—some of whom bring dependents. In addition, net natural change also supported overall population growth in the HMA during the period (Figure 5).

Table 3. Urban Honolulu HMA Population and Household Quick Facts

		2010	Current	Forecast
Population Quick Facts	**Population**	953,207	970,600	975,000
	Average Annual Change	7,700	1,625	1,450
	Percentage Change	0.8	0.2	0.2
		2010	**Current**	**Forecast**
Household Quick Facts	**Households**	311,047	319,300	320,900
	Average Annual Change	2,450	770	530
	Percentage Change	0.8	0.2	0.2

Notes: Average annual changes and percentage changes are based on averages from 2000 to 2010, 2010 to current, and current to forecast. The forecast period is from the current date (January 1, 2021) to January 1, 2024.
Sources: 2000 and 2010—2000 Census and 2010 Census; current and forecast—estimates by the analyst

Figure 5. Components of Population Change in the Urban Honolulu HMA, 2000 Through the Forecast



Notes: Net natural change and net migration totals are average annual totals over the time period. The forecast period is from the current date (January 1, 2021) to January 1, 2024.
Sources: U.S. Census Bureau; current to forecast—estimates by the analyst

During the early 2000s, before the sales housing market expansion, population growth in the HMA was slow, averaging 5,575 people, or 0.6 percent, a year from 2000 to 2003. Despite the economic expansion during most of that period, net out-migration occurred nearly each year, averaging 1,200 people annually—a portion of which was attributed to 400 fewer military personnel in 2003. Lenient mortgage-lending standards coupled with strong economic conditions that characterized the subsequent housing market expansion of the early-to-mid 2000s have contributed to increased homebuying and a surge in the number of residents moving to the HMA. From 2003 to 2006, population growth accelerated to an average of 1.2 percent, or 10,900 people, annually, with net in-migration averaging 4,000 people a year. People mainly came from Asia, with a smaller portion coming from both the Los Angeles-Long Beach-Anaheim, CA and San Diego-Carlsbad, CA MSAs (Internal Revenue Service migration data). That migration was due to the proximity to the mainland and flows between military bases. The strong military presence in the HMA also supported people coming from the Washington-Arlington-Alexandria, DC-VA-MD-WV MSA, trends that are similar to the most recent data (Table 4).

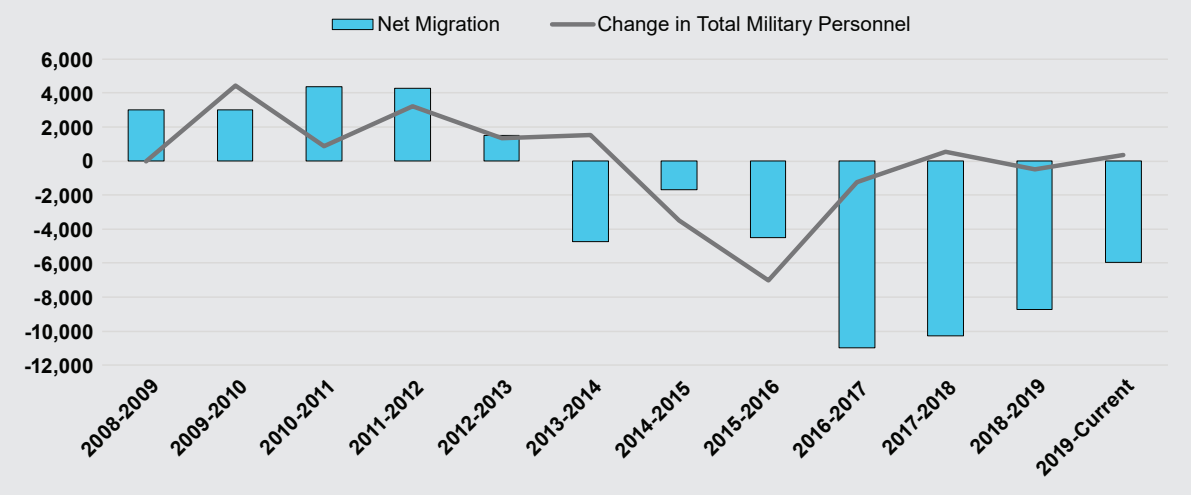
Net out-migration returned by the end of 2006 as home prices rose at the height of the housing market expansion, contributing to net out-migration of 8,725 people and a decline in the population by 1,625 people, or 0.2 percent, from 2006 to 2007. Significantly fewer people moved to the HMA from international locations and an even greater number of HMA residents moved to the mainland (Internal Revenue Service migration data)—including the Las Vegas, NV MSA, where home prices averaged at least $118,100 less than the HMA. By the end of 2007, the draw of residents away from the HMA to purchase homes elsewhere slowed as housing markets across the nation began to weaken. In addition, gains in military personnel occurred each year from 2009 to 2013 (Figure 6). As a result, net

Table 4. Migration Flows in the Urban Honolulu HMA: 2014–2018

Into the HMA	
Asia	7,620
Los Angeles-Long Beach-Anaheim, CA MSA	2,343
San Diego-Carlsbad, CA MSA	1,662
Washington-Arlington-Alexandria, DC-VA-MD-WV MSA	1,616
Out of the HMA	
Las Vegas-Henderson-Paradise, NV MSA	2,450
Washington-Arlington-Alexandria, DC-VA-MD-WV MSA	2,311
Los Angeles-Long Beach-Anaheim, CA MSA	2,281
San Diego-Carlsbad, CA MSA	2,245

MSA = metropolitan statistical area.
Note: 2014–2018 American Community Survey, 5-year data.
Source: U.S. Census Metro-to-Metro Migration Flows

Figure 6. Military Personnel and Net Migration Trends in the Urban Honolulu HMA



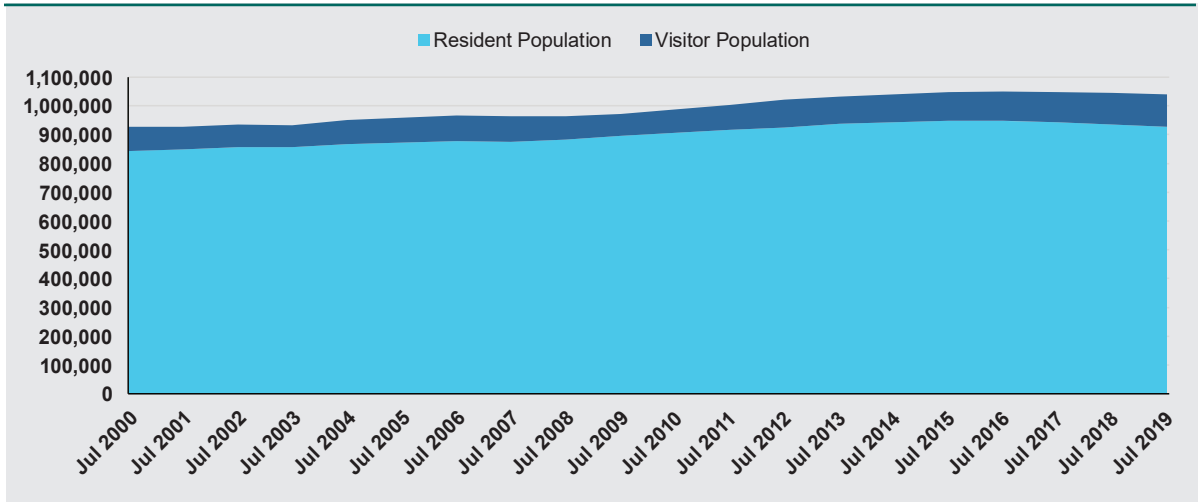
Note: The current date is January 1, 2021.
Sources: U.S. Census Bureau; Defense Manpower Data Center

in-migration returned overall from 2007 to 2013, averaging 3,525 people annually, and population growth accelerated to an average of 1.1 percent, or 10,100 people, a year. Since 2013, the escalation in home prices and a significant reduction in the number of military personnel during part of that period contributed to net out-migration returning to an average of 6,650 people a year. As a result, the population of the HMA declined by an average of 2,050, or 0.2 percent, a year; however, that rate of decline was slower than during the early 2000s.

Visitor Population in the Urban Honolulu HMA

In any given year, longer termed visitors, or those who might stay in the HMA for as long as 3 to 6 months out of a year, contribute significantly to the de facto population in the HMA, which may place additional pressures on the HMA housing markets. From 2000 to 2019, the visitor population added approximately 8 to 11 percent above the resident population (Figure 7), the latter of which increased nearly each year. Overall, visitor population in the HMA increased by an average of nearly 3,400, or 3.5 percent, annually from 2000 to 2019, reaching a high of 113,500 by 2019 (Hawaii State Department of Business, Economic Development and Tourism). It is expected that this had slowed dramatically during 2020 due reduced tourism during the COVID-19 pandemic.

Figure 7. De Facto Population in the Urban Honolulu HMA



Notes: The de facto population is defined as the number of persons physically present in an area, regardless of military status or usual place of residence. Resident population in this figure are those who are physically present in the HMA. 2019 data are the most recent available.
Sources: U.S. Census Bureau; Hawaii State Department of Business, Economic Development and Tourism

Resident Household Trends

Net out-migration from the HMA since 2013 has contributed to reduced resident household growth compared with the 2000s. The number of households in the HMA is currently estimated at 319,300, up an average of 770, or 0.2 percent, annually since 2010, compared with an average increase of 2,450, or 0.8 percent, annually during the 2000s. Despite rising home prices since the Great Recession and the current economic contraction, the proportion of owner households in the HMA increased from 56.1 percent in 2010 to 56.5 percent currently (Figure 8). That increase was partly due to the development of residential communities, which added a greater number of affordable sales housing in recent years—see the Home Sales Market section below for more details.

Military Household Trends

Overall, military household growth has increased since 2017, with notable increases in the number of military personnel; however, personnel levels remain below peak levels in 2014 due to reductions in force that occurred from 2015 to 2017. Overall, military households have been predominantly renters since

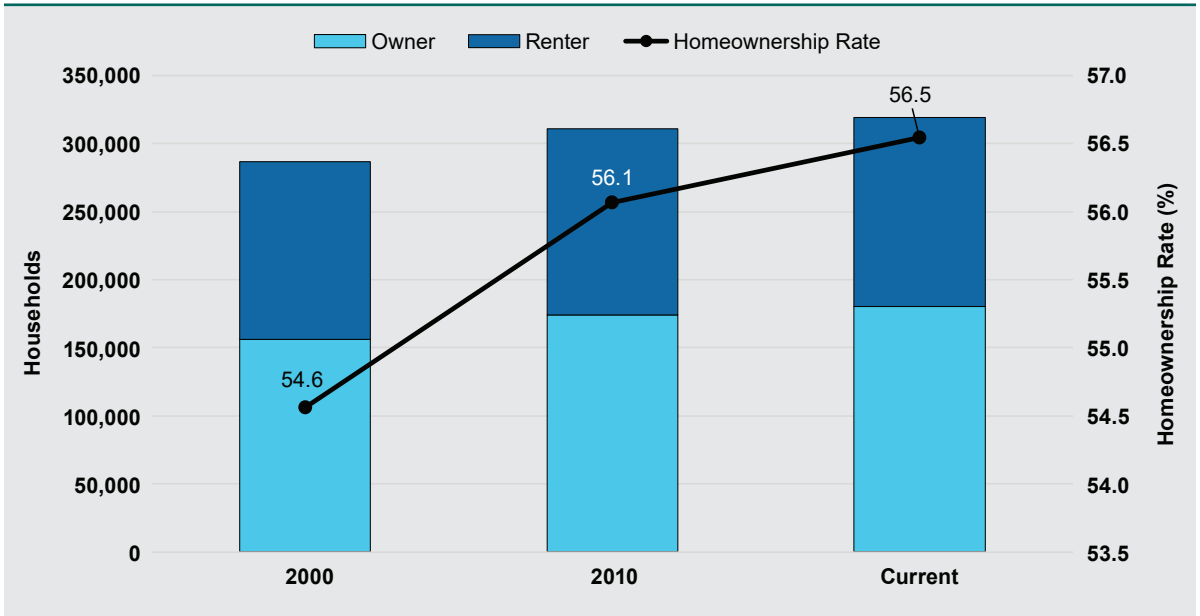
2010. Currently, these households account for an estimated 18 percent of renter households and 3 percent of owner households in the HMA, similar to the percentage in 2010. With respect to overall household growth in the HMA, growth in military households since 2010 has accounted for 8 percent of total renter household growth but less than 1 percent of owner household growth.

Forecast

During the next 3 years, the resident population of the HMA is expected to increase by an average of 1,450, or 0.2 percent, a year, to reach 975,000 by the end of the forecast, reflecting reduced net out-migration during the first and second years and a return to net in-migration by the third year. Improved economic conditions, greater availability of telework, sustained growth in military personnel, and an increase in affordable housing are all expected to contribute to improved migration trends during the forecast period.

As migration improves, the number of households in the HMA is expected to grow during the forecast by an average of 530, or 0.2 percent, annually to reach 320,900. The share of owner households is expected to continue increasing, reaching 56.6 percent of the total households in the HMA by the end of the forecast period. Military households are also expected to grow and account for a greater share of total renter households but a reduced share of owner households. Military renter households are expected to account for 19 percent of total renter households, whereas military owner households are expected to account for less than 2 percent of total owner households by the end of the forecast period.

Figure 8. Households by Tenure and Homeownership Rate in the Urban Honolulu HMA



Note: The current date is January 1, 2021.
Sources: 2000 and 2010—2000 Census and 2010 Census; current—estimates by the analyst

Home Sales Market

Market Conditions: Slightly Tight

Despite recent job losses and net out-migration from the Urban Honolulu HMA each year since 2013, significantly lower levels of homes for sale have contributed to the tightening of sales market conditions compared with both a year ago and 2010.

Sales Market Conditions

The sales housing market in the Urban Honolulu HMA is slightly tight. Current conditions tightened from balanced conditions a year ago and in 2010 but improved from tighter conditions during most of the mid to late 2010s. The estimated sales vacancy rate is currently 0.9 percent, down from 1.1 percent in 2010. The overall decline in the vacancy rate partly resulted from a 29-percent decrease in the inventory of homes for sale since 2008—from a peak of 6,550 during 2008 when the market was weakest to 4,675 during 2020 (CoreLogic, Inc.). The number of homes for sale declined 10 percent in 2020 alone, partly because some homeowners were reluctant to list their homes for sale during the COVID-19 pandemic. In addition, the relatively sustained rate of purchases of homes by absentee owners for occasional use—which have accounted for approximately one-half of home sales since 2010—has contributed to the reduction in the available inventory both since 2010 and during the past year. The lower level of homes for sale led to a tightening of market conditions despite net out-migration each year since 2013. The months' supply of homes for sale declined to a low of 3.3 months in December 2020, compared with 6.2 months in March 2010. Months of supply in the HMA are generally higher than those in the nation (Table 5) because of a smaller pool of qualified buyers for homes priced at the higher end of the market.

New and Existing Home Sales

Home sales in the HMA were generally high during the mid-2000s, averaging 22,600 homes sold annually from 2005 through 2007 (Zonda; Figure 9). The number of homes sold annually was the highest average in more than a decade despite net out-migration during part of that period. Lenient mortgage lending standards during the early to mid-2000s allowed a greater proportion of households to purchase homes and, along with a large number of absentee owner purchases (Figure 10), had contributed to a higher level of sales during that period. As lending standards had tightened and the economy had contracted by the end of the 2000s, home sales declined during 2008 and 2009 by an average of 4,550 homes, or 28 percent, a year, reaching a low of 9,950 homes sold in 2009. Declines in regular resales and new home sales accounted for the entire decrease, which were down by respective averages of 3,650 and 1,150 homes,

Table 5. Home Sales Quick Facts in the Urban Honolulu HMA

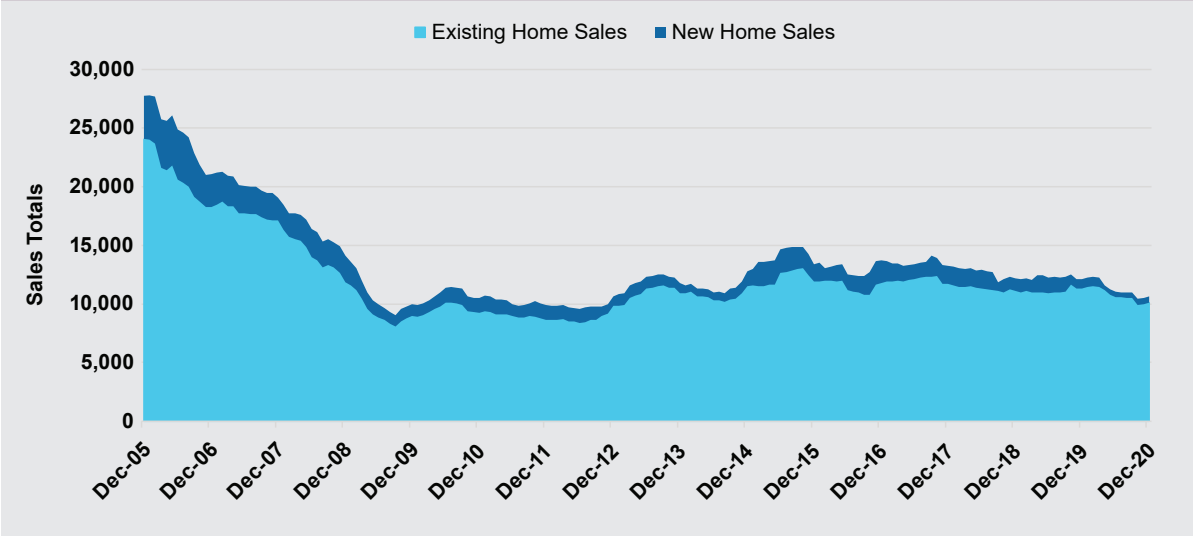
		Urban Honolulu HMA	Nation
Home Sales Quick Facts	**Vacancy Rate**	0.9%	NA
	Months of Supply	3.3	1.6
	Existing Home Sales	10,150	5,640,000
	1-Year Change	-10%	6%
	New Home Sales	530	811,000
	1-Year Change	-35%	19%
	Existing Home Sales Price	$736,900	$295,500
	1-Year Change	5%	9%
	New Home Sales Price	$617,100	$333,100
	1-Year Change	1%	4%
	Mortgage Delinquency Rate	5.0%	4.0%

NA = data not available.
Notes: The vacancy rate is as of January 1, 2021. Home sales and prices are for the 12 months ending December 2020. Months of supply and mortgage delinquency data are as of December 2020. Urban Honolulu HMA home prices are the average for 2020, and national home prices are the median for 2020.
Sources: Vacancy rate—estimates by the analyst; months of supply—CoreLogic, Inc.; Urban Honolulu HMA home sales and prices—Zonda; national home sales and prices—National Association of Realtors® and Census Bureau/HUD

or 29 percent each, a year. Real estate owned (REO) sales were essentially unchanged during that 2-year period. The contraction in the sales market, however, was short, and home sales in the HMA increased during 2010 by 600 homes, or 6 percent, to 10,550 homes sold. Regular resales and new home sales, which were up by 270 and 280 homes, or 3 and 29 percent, respectively, accounted for most of the gain; REO sales also increased, up by only 40 homes, or 3 percent, that year.

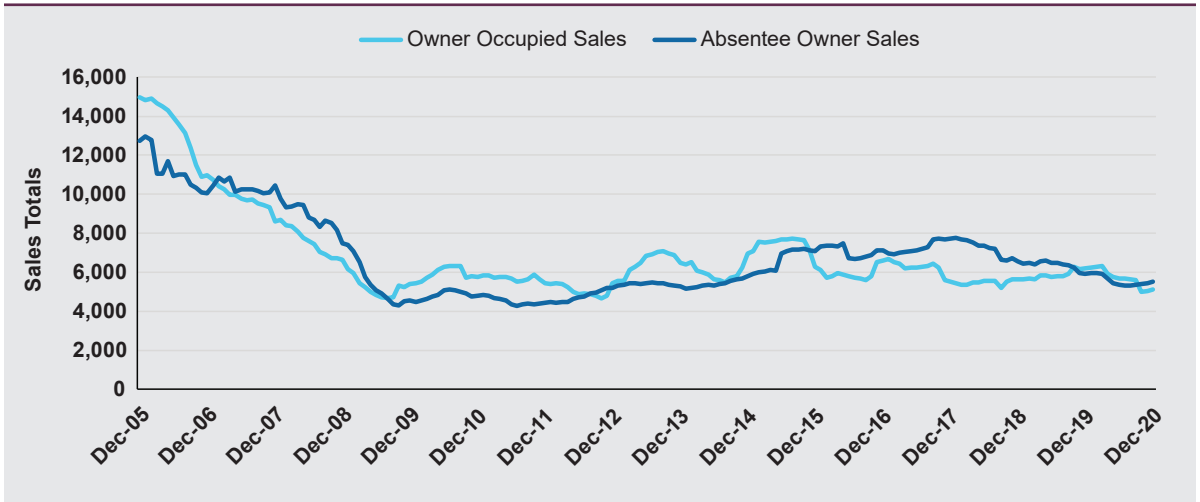
Since 2011, new and existing home sales have been relatively stable despite variations in net migration. This stability was partly attributed to the sizable share of absentee-owner purchases, which continued to account for roughly one-half of home sales in the HMA. From 2011 through 2019, new and existing home sales averaged 12,200 homes sold. During that period, gains in regular resales, which averaged 250 homes annually, were partly offset by declines in REO and new home sales, down by a combined average of 90 homes a year. Since 2019, home sales, however, have declined due to reduced available inventory. During 2020, a total of 10,650 homes were sold, down by 1,450 homes, or 12 percent, from 2019. Regular resales accounted for 71 percent of that overall decrease, which were down by 1,025 homes, or 12 percent, followed by new home sales, which declined by 290 homes, or 35 percent.

Figure 9. 12-Month Sales Totals by Type in the Urban Honolulu HMA



Source: Zonda

Figure 10. 12-Month Sales by Occupancy Type in the Urban Honolulu HMA



Source: Zonda

Condominium Sales

Overall, since the mid-2000s, condominiums have accounted for nearly two-thirds of total home sales in the HMA, with single-family homes and townhomes accounting for the remaining one-third. A limited supply of developable land near job centers and resort areas, high development costs, and demand for both affordable and luxury sales housing contributed to the large share of condominiums in the HMA. As a result, trends in condominium sales have been similar to trends in total home sales since the mid-2000s. From 2005 through 2007, condominium sales averaged 16,050 homes sold annually before declining in 2008 and 2009, at an average of 32 percent annually, to a low of 6,325 homes sold in 2009 (Figure 11). As with total home sales, condominium sales increased during 2010, up by 250 homes, or 4 percent, before rising to an average of 7,800 homes sold annually from 2011 through 2019. Recently, low inventories of existing condominiums for sale have largely contributed to a decrease in overall condominium sales. During 2020, condominium sales declined by 1,575 homes, or 20 percent, to 6,200 homes sold. More than three-fourths of that decline was attributed to a decrease in existing condominium sales, which were down by 1,225 homes, or 17 percent.

New and Existing Home Sales Prices

Low inventory levels during 2020 have also caused home prices in the HMA to rise. The

Figure 11. 12-Month Condominium Sales by Type in the Urban Honolulu HMA

Source: Zonda

average home sales price increased 5 percent during 2020, to $731,000. That price, however, was still down from a high of $736,100 during 2017 because of price declines that averaged 3 percent a year during 2018 and 2019 despite strong market conditions during both those years. An increase in the completion of new homes at lower prices and a decrease in new luxury condominiums contributed to declining prices in 2018 and 2019; those trends have also caused the average new home sales price to be lower than the average existing home sales price each year since 2018 (Figure 12). During 2020, new home prices averaged $617,100, up 5 percent from a year ago, but below the average existing home price of $736,900, up 1 percent from a year ago. In terms of home sales by price range, homes priced near the lower- to mid-range accounted for a larger share of total home sales during 2020 (Figure 13), reflecting a slowdown in luxury home sales priced above $800,000 and contributing to an overall easing in the growth of home prices.

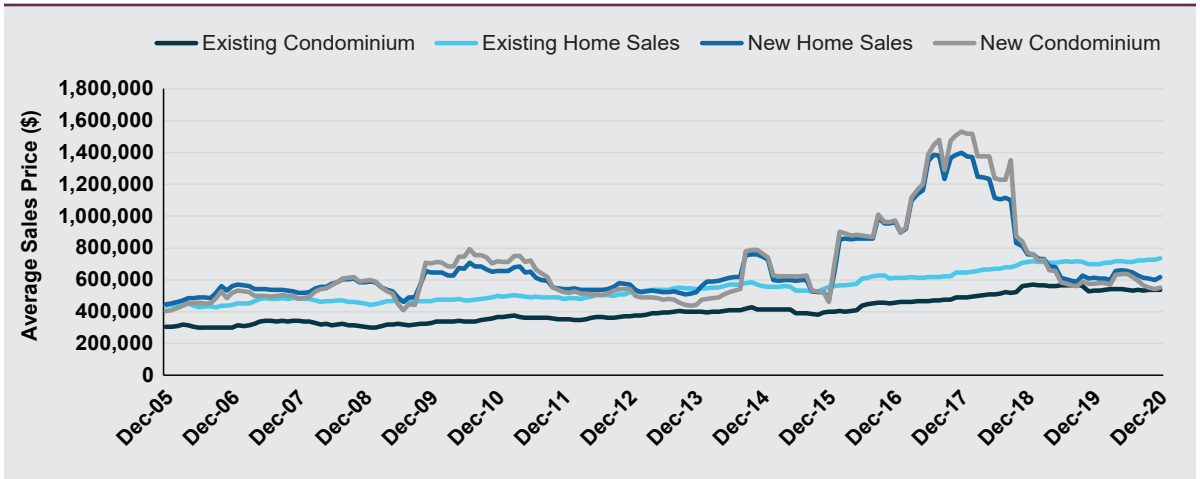
Overall growth in home prices during 2020 was more moderate compared with price gains during most of the mid to late 2010s; during that period, market conditions were tighter and a substantial amount of luxury homes were sold—particularly new luxury condominiums. From 2015 through 2017, home sales prices rose nearly each year, and growth averaged 8 percent annually, reaching $737,100 by 2017. During that same period, prices for new condominiums rose even faster, up an average of 26 percent a year

before peaking at $1,397,500 in 2017. That gain in new condominium prices resulted from the sale of luxury condominiums. Before that surge in home prices, new and existing home sales prices increased nearly each year at a more moderate pace, up an average of 5 percent a year, from $526,500 in 2012 to $577,900 in 2014. Growth in new condominium prices was also lower, although still high, up an average of 19 percent a year to $764,300. Before the tightening of the sales market, home prices generally rose in the years leading up to and immediately following the Great Recession, a trend that was unlike many other areas in the nation that were more heavily impacted by the housing market crisis. New and existing home sales increased nearly each year from 2006 through 2011, up an average of 1 percent annually from $456,100 in 2006 to $489,200 by 2011; new condominium prices during the period, however, were essentially unchanged at $521,100.

Delinquent Mortgages and REO Properties

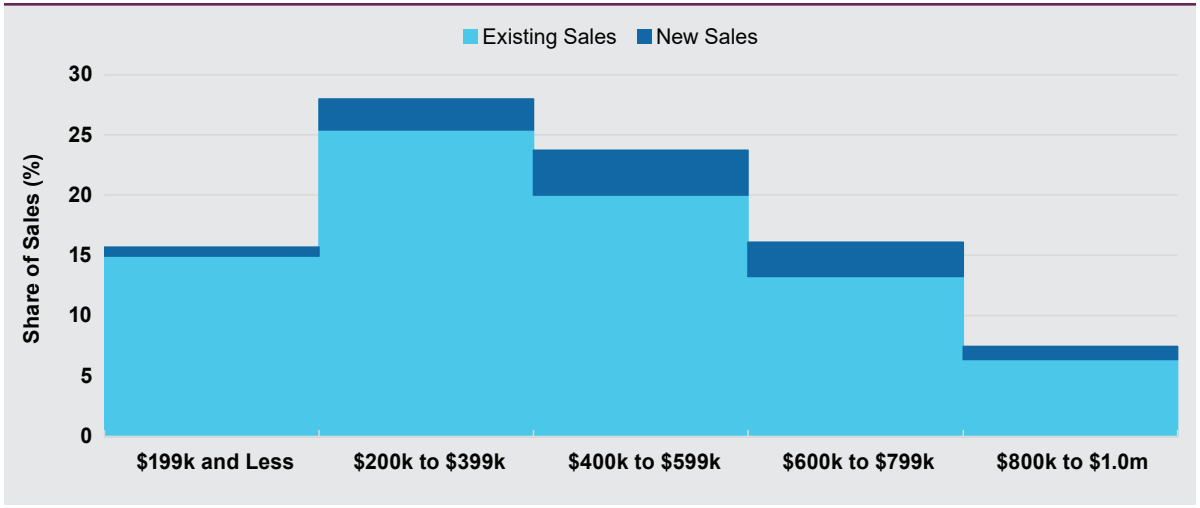
The overall improvement in sales housing market conditions in the HMA since 2010 has led to a reduction in the rate of seriously delinquent mortgages and REO properties. As of December 2020, 5.0 percent of home loans in the HMA were seriously delinquent or had transitioned into REO status. That rate was still below the peak of 5.2 percent in February 2010 but was

Figure 12. 12-Month Average Sales Price by Type of Sales in the Urban Honolulu HMA



Source: Zonda

Figure 13. Share of Overall Sales by Price Range During the 12 Months Ending December 2020 in the Urban Honolulu HMA



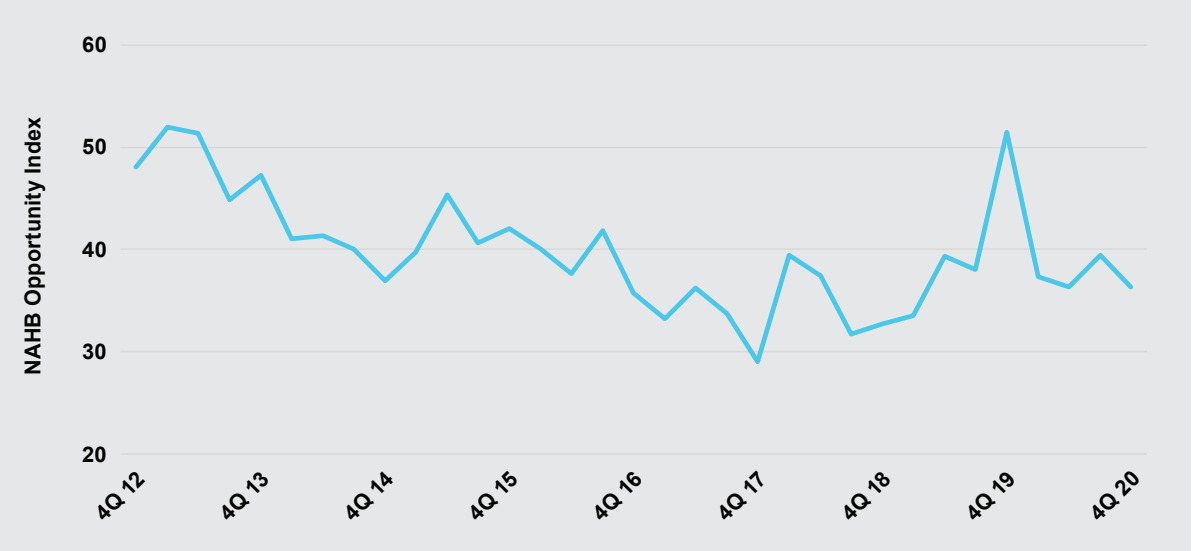
Note: New and existing sales include single-family homes, townhomes, and condominium units.
Source: Zonda

higher than the 1.7-percent rate in December 2019 (CoreLogic, Inc.). The current rate is below the 5.9-percent rate for Hawaii and above the 4.0-percent rate for the nation. The recent increase in the rate began in June 2020 as some homeowners struggled with mortgage payments during the pandemic. The rise in the rate partly reflects an increase in the number of loans in forbearance, which peaked at 5,100 home loans in August 2020. That number has since declined, month-over-month, to nearly 4,600 home loans in December 2020 but is still 29 percent higher than June 2020.

Owner Housing Affordability in the HMA

With an increase in the number of lower priced homes since 2018, overall affordability in the HMA has slightly improved. This improvement is in contrast to a general decline in affordability that occurred from 2013 to 2017, as home prices escalated each year during that period. The National Association of Home Builders (NAHB)/ Wells Fargo Housing Opportunity Index for the HMA—which represents the share of homes sold that would have been affordable to a family earning the local median income—was 36.3 during the fourth quarter of 2020. The index for the HMA was up from a low of 29.0 during the fourth quarter of 2017 but below the peak of 51.5 in the fourth quarter of 2019 (Figure 14). The Urban Honolulu HMA was the 25th least affordable area in the nation during the fourth quarter of 2020, when 244, or 91 percent, of the 268 ranked metropolitan areas in the nation were more affordable than the HMA.

Figure 14. Urban Honolulu HMA Housing Opportunity Index



NAHB = National Association of Home Builders. 4Q = fourth quarter.
Sources: NAHB; Wells Fargo

First-Time Homebuyers in the HMA

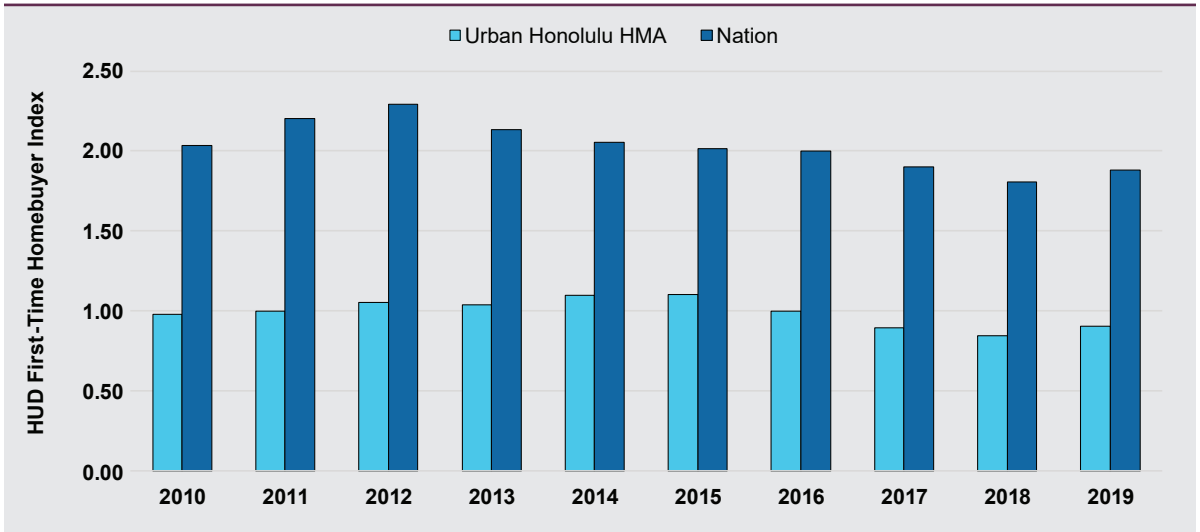
Despite improved affordability in the HMA, first-time homebuyers continue to experience difficulties entering homeownership. The HUD First-Time Homebuyer Affordability Index measures the median household income for householders ages 25 to 44 years old relative to the income needed to purchase the 25th-percentile-priced home. The index has declined nearly each year since peaking at 1.1 in 2015, when the median income for householders ages 25 to 44 years old was greater than the income needed to afford the 25th-percentile-priced home (Figure 15). During 2019, the index for the HMA was 0.90, up from 0.84 in 2018, reflecting a 3-percent over-the-year increase in the 25th-percentile-priced home to $408,800 and a 4-percent gain in the median income of householders ages 25 to 44 years old. The national index also increased, from 1.81 in 2018 to 1.88 in 2019, and has remained above 1.00 every year during the past decade.

Sales Construction Activity

Home sales building activity in the HMA, as measured by the number of single-family homes, townhomes, and condominiums permitted, has generally included a greater number of condominiums since 2010 (Figure 16). Approximately 22 percent of building activity during the 2000s consisted of condominiums, a proportion that has more than doubled since 2010, reflecting greater development of condominiums in the city of Honolulu. A portion of those homes were constructed to satisfy investor or seasonal demand for homes in the HMA. Lower density development, including single-family homes and townhomes, has generally occurred outside of the city in rezoned land that had once been set aside for agriculture.

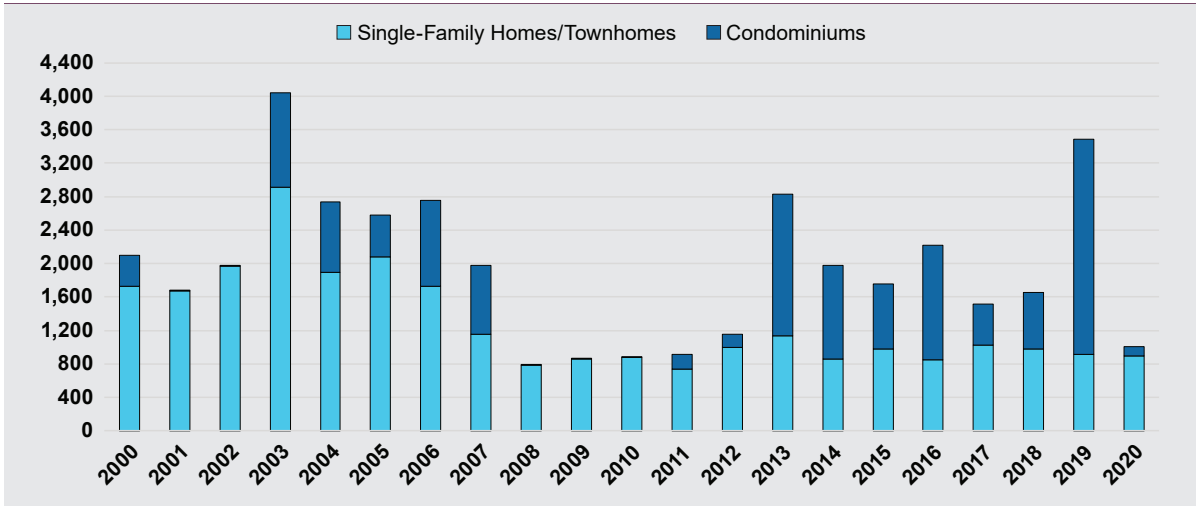
During the early 2000s, an average of 1,925 homes were permitted annually from 2000 through 2002 before increasing to nearly 4,050 homes permitted in 2003. Sales construction activity slowed in 2004 despite overall strong sales market conditions and averaged 2,500 homes a year from 2004 through 2007. As the sales market contracted in 2008 and 2009, sales construction activity decreased and remained at a lower level through 2012 despite the subsequent improvement in sales market conditions. From 2008 through 2012, an average of 920 homes were permitted annually, down 63 percent from the 2004-through-2007 average. By 2013, sales construction activity increased more than 100 percent from the previous year and averaged

Figure 15. Urban Honolulu HMA HUD First-Time Homebuyer Affordability Index



Sources: American Community Survey, 1-year data; Federal Housing Finance Agency; Zonda

Figure 16. Annual Sales Construction Activity in the Urban Honolulu HMA



Notes: Construction activity includes single-family homes, townhomes, and condominiums. Total activity shown here includes both seasonal and year-round housing. Data are through December 2020.
Sources: U.S. Census Bureau, Building Permits Survey; 2000 through 2019—final data and estimates by the analyst; 2020—preliminary data and estimates by the analyst

2,000 homes permitted annually from 2013 through 2018 before reaching a high of 3,475 homes in 2019. The construction of homes for sale slowed during 2020, partly in response to the number of homes that began construction during 2019 and are still under way. During 2020, 1,000 homes were permitted, a decrease of 2,475 homes, or 71 percent, from 2019 (preliminary data; estimates by the analyst).

Current Construction and Completed Developments: Single-Family Homes and Townhomes

Currently, single-family home and townhome development has been concentrated in the west O'ahu area, which includes the Ewa Plain (Photo 2)—located 20 miles from downtown Honolulu on former sugar plantations. Ho'opili in the Ewa Plain is the largest master-planned community underway, with a total of 11,750 homes planned at buildout and more than 500 homes already completed since construction began in 2016. Buildout of the entire community is expected in the next 20 to 30 years. Overall, approximately 70 percent of homes planned at buildout will be market rate, with the remaining 30 percent set aside for low- to moderate-income households. Neighborhoods under construction in Ho'opili include Liko at Ho'opili and Aulu at Ho'opili, with 14 single-family homes that have been completed. Prices for three-bedroom homes start at $743,000, and prices for four-bedroom homes start at $779,300. The sale of homes at these developments began earlier in 2020 and were by lottery due to the desirability of the location and the shortage of new single-family homes for sale in the HMA. Construction at Iliahi at Ho'opili is also under way, with 156 single-family homes and townhomes planned at buildout and 29 homes already completed. Three-bedroom homes start at $650,300, and four-bedroom homes start at $760,300. In terms of recently completed single-family developments, Haloa at Ho'opili was recently completed in 2019, with 140 townhomes at market-rate prices that start in the $500,000s. Of the 140 townhomes, 56 were set aside for low- to moderate-income households who qualify under the Hawaii Housing Finance & Development Corporation (HHDFC) rules for income and asset restrictions. Prices for those homes start in the $300,000s.

Photo 2. Recently Built Single-Family Homes in Ewa Plain

Source: HomeQuest Hawaii, LLC

Current Construction and Completed Developments: Condominiums

Recent condominium development continues to be concentrated in the city of Honolulu. Several condominium developments are under construction, including the 531-unit The Central Ala Moana. A total of 310 of those units will be affordable—reserved for individuals who qualify under the HHDFC rules—and the remaining 221 units will be market rate. The property began construction in 2019 and is entirely sold out, with prices for market-rate one-, two-, and three-bedroom units that started at $580,000, $777,000, and $990,000, respectively. Completion of the property is expected by late 2021. In addition, the 751-unit ʻAʻaliʻi, located in the Ward Village of the city of Honolulu, is the largest multifamily development currently

under way, with 673 condominium units and 78 affordable apartment units. Of the 673 condominium units, 150 will be income-restricted under the HHDFC rules. The property began construction in late 2018 and is expected to be completed by mid-2021. Currently, 80 percent of the units have been sold, with prices that have ranged from $400,000 for studio units to $1.5 million for luxury two-bedroom units. The 180-unit Ohana Hale is also under way, which will have 108 affordable units and 72 market-rate units. The affordable units will start at $286,700, whereas the market-rate units will start at $553,200. Lastly, a few luxury properties are under way, including The Residences at Mandarin Oriental, with 107 luxury condominium units. The residences will have a starting price of $3.5 million and will be first offered to current Mandarin Oriental clients before being offered to the public.

Forecast

During the next 3 years, demand for year-round sales housing is estimated for 1,900 new homes (Table 6), which is expected to increase slightly in the second and third years of the forecast period from increased owner household growth. The 790 homes currently under construction in the HMA will satisfy only a portion of demand in the first year of the forecast. In addition, the homes underway only represent those that have not already been sold and exclude those that are intended for seasonal or occasional use.

Table 6. Demand for New Homes in the Urban Honolulu HMA During the Forecast Period

	Sales Units
Demand	1,900 Homes
Under Construction	790 Homes

Notes: Demand is for year-round households to the end of the forecast period on January 1, 2024. Homes under construction are as of January 1, 2021, and exclude seasonal housing underway.
Source: Estimates by the analyst

Rental Market

Market Conditions: Slightly Tight

Rental market conditions remain tighter than in 2010 despite an increase in inventory, a slowdown in household growth, and potentially fewer longer termed visitors during 2020.

Current Conditions

The rental housing market in the Urban Honolulu HMA is slightly tight. The overall rental vacancy rate currently is estimated at 4.9 percent, down from 5.9 percent in 2010 when conditions were balanced (Table 7). The overall tightening of the rental market occurred because renter household growth in the HMA, despite the recent slowdown, more than offset an increase in the production of year-round rental units since 2010 and potentially fewer longer term visitors during 2020.

Single-Family Home Rentals

Approximately 36 percent of renter households in the HMA lived in single-family homes in 2019 (2019 American Community Survey [ACS] 1-year data). Overall, the rental market for single-family homes remains tight, essentially unchanged from conditions a year ago and during the early 2010s. The average vacancy rate for professionally managed single-family rental homes during December 2020 was 2.3 percent, unchanged from a year ago but up only slightly from 2.2 percent in December 2012 (CoreLogic, Inc.). By number of bedrooms, vacancy rates ranged from 2.1 percent for three-bedroom homes to 2.9 percent for one-bedroom homes. Average rents for single-family homes generally increased from a year earlier, ranging from a 1-percent increase for four-bedroom homes to a 3-percent increase for three-bedroom homes. The average rents for two-bedroom homes, however, declined 2 percent. Overall, rents have increased an average 2 to 4 percent a year depending on the number of bedrooms since December 2012, with average monthly rents for one-, two-, three-, and four-bedroom homes currently at $1,991, $2,403, $3,133, and $3,473, respectively.

Table 7. Rental Market Quick Facts in the Urban Honolulu HMA

Rental Market Quick Facts		2010 (%)	Current (%)
	Rental Vacancy Rate	5.9	4.9
		2010 (%)	**2019 (%)**
	Occupied Rental Units by Structure		
	Single-Family Attached & Detached	38.0	36.0
	Multifamily (2–4 Units)	13.0	12.0
	Multifamily (5+ Units)	49.0	52.0
	Other (Including Mobile Homes)	0.0	0.0

Notes: The current date is January 1, 2021. Percentages may not add to 100 due to rounding.
Sources: 2010 and 2019 American Community Survey, 1-year data; Moody's Analytics REIS

Apartment Market Trends

More than one-half of all renters in the HMA reside in structures with five or more units (2019 ACS 1-year data), and a portion of these units are in apartment buildings with the remainder being individually rented condominium units. Overall, current apartment market conditions have remained slightly tight despite an increase in apartment completions during the past year and potentially fewer seasonal visitors, many of whom stay in the HMA during the winter months. Demand for apartment units in the HMA continued to be strong during the recent economic downturn because those units are relatively more affordable. The vacancy rate for properties with 50 or more units was 4.0 percent during the fourth quarter of 2020 (RealPage, Inc., Figure 17). The rate was down from 4.5 percent during the same quarter a year earlier and from a peak of 11.3 percent in the fourth quarter of 2008, a period when there was a considerable number of apartment completions.

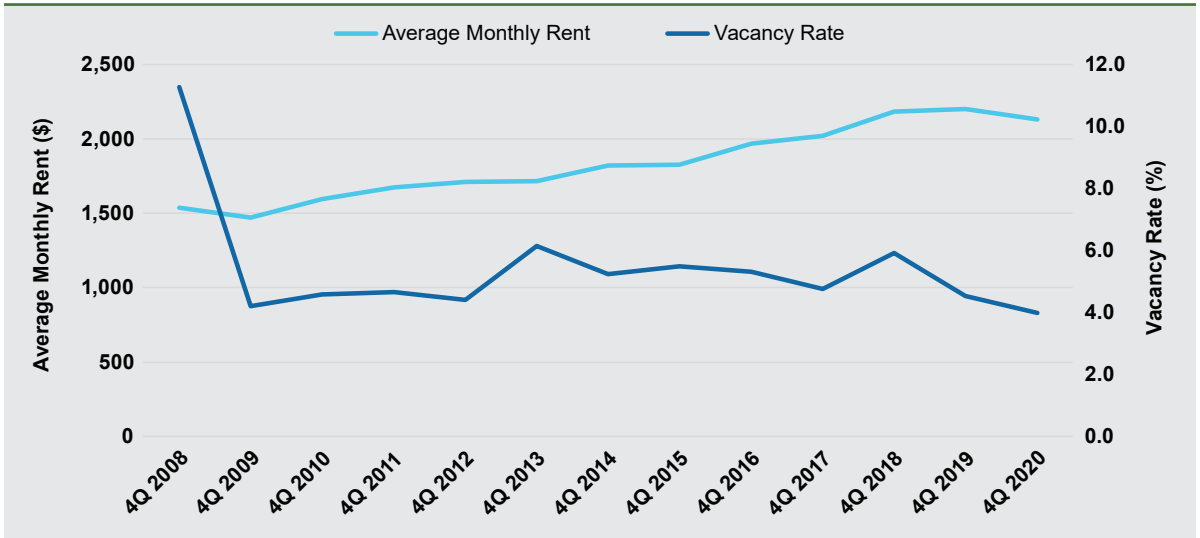
Newer apartments added to the rental supply since 2008 had partly supported an increase in the average apartment rent, which was up an average of 3 percent a year from 2008 to 2019. Recently, however, the average apartment rent declined 3 percent during the fourth quarter of 2020 to $2,130 from $2,203 during the fourth quarter of 2019, partly in response to reduced rents at newly completed luxury properties. During the COVID-19 pandemic, new luxury apartments in the HMA became more challenging to lease due to job losses.

The tightest market area in the HMA also has the lowest average rents. The Wahiawa-Mililani area, adjacent to Schofield Barracks, has the lowest vacancy rate in the HMA—estimated at 2.2 percent—and an average rent of $1,700, about 3 percent below the average in the city of Honolulu. The Wahiawa-Mililani area contains the largest share of apartments in the HMA due to its proximity to jobs and military bases. The city of Honolulu has an estimated vacancy rate of 4.0 percent and an average rent of $1,750. The highest rent area in the HMA was in the Ewa Plain, where rents averaged $2,700 and the vacancy rate was 4.1 percent.

Military Housing

The HMA is home to approximately 50,350 military personnel, a portion of whom are accompanied by dependents. More than two-thirds of military personnel that live off-base rent versus own their home. Nearly 80 percent

Figure 17. Apartment Rents and Vacancy Rates in the Urban Honolulu HMA



4Q = fourth quarter.
Source: RealPage, Inc.

of off-base rental military housing—managed under contract to the Department of Defense for exclusive use by active duty military and their dependents—are single-family homes and townhomes, with garden-style apartments accounting for the remaining 20 percent (Photo 3). Currently, rental housing for the military includes approximately 17,000 rental single-family homes, townhomes, and apartments in multiple neighborhoods managed by three rental communities— Hickam Communities, Island Palm Communities, and Ohana Military Communities. The vacancy rate for military rental housing is currently estimated to be less than 1.0 percent. Outside of these three communities, more than 7,900 military households rent units throughout the HMA. During the mid-2000s to early 2010s, several military townhome communities were constructed or renovated. Developments during that period include the completion of 1,208 new homes and the renovation of 1,126 existing homes by Hickam Communities and the construction and renovation of a combined 7,756 homes by Island Palm Communities. Currently, there are no plans to add additional rental military housing in the HMA.

Rental Construction Activity

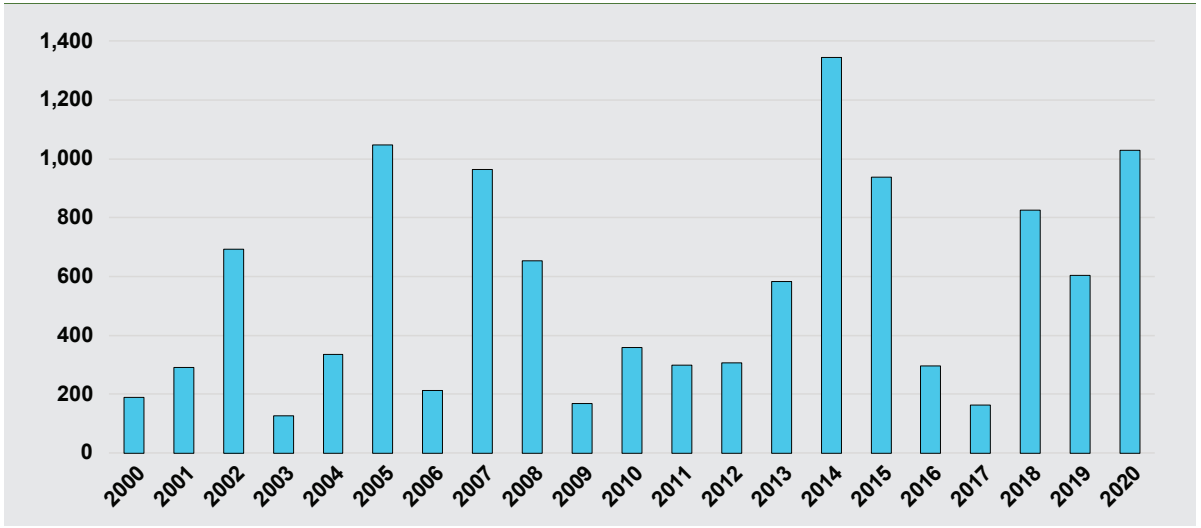
Overall, rental construction activity, as measured by the number of rental units permitted, in the HMA has varied widely since 2000 (Figure 18). That variation largely resulted from developer responses to the pace

of absorption of newly completed units during the past two decades. Construction levels at the beginning of the 2000s were relatively low and averaged only 240 units permitted a year from 2000 through 2001 before rising to 690 units permitted by 2002 (U.S. Census Bureau and estimates by the analyst). As those newer units were being absorbed, construction slowed to an average of 230 units permitted annually during 2003 and 2004, before increasing sharply to 1,050 units by 2005 in response to household growth and net in-migration during the period. Construction subsequently eased to 210 units permitted by 2006, partly because of net out-migration during part of that year, before rising to an average of 810 units annually during 2007 and 2008 as net in-migration resumed. Despite continued net in-migration, rental construction activity slowed to an average of 280 units annually from 2009 through 2012. That lower level of construction has contributed to tighter rental market conditions since 2010, and developers responded by increasing production. Rental construction rose to 580 units in 2013 before increasing considerably to an average of 1,150 units annually during 2014 and 2015. As those units were completed, development slowed once more to an average of 230 units annually during 2016 and 2017. Since 2018, tight rental market conditions have contributed to an increase in rental construction activity, which has averaged 820 units permitted a year from 2018 through 2020.

Photo 3. Military Rental Housing Honolulu

Source: MilitaryBases.com

Figure 18. Annual Rental Construction Activity in the Urban Honolulu HMA



Notes: Construction activity includes apartments and other multifamily units intended for rental occupancy. Total activity shown here includes both seasonal and year-round housing. Data are through December 2020.
Sources: U.S. Census Bureau, Building Permits Survey; 2000 through 2019—final data and estimates by the analyst; 2020—preliminary data and estimates by the analyst

Current Construction and Recently Completed Developments

Approximately 2,575 apartment units were either completed since 2018 or are currently under construction in the HMA. Nearly two-thirds of those units are in the city of Honolulu, with approximately one-third in the Ewa Plain of west O'ahu. Of the apartments that have been completed since 2018, approximately 85 percent have been either affordable or part of mixed-income apartment developments. Among those properties is the 16-story tower, Nohona Hale, which was completed in 2019 with 110 affordable units in downtown Honolulu. The property is the first micro-housing development in the HMA, with unit sizes averaging 285 square feet and rents that range from $500 to $995 a month, depending on income, for a 300-square foot studio unit. The most recently completed low-income housing tax credit (LIHTC) development in the HMA is the 128-unit Hale Kewalo Apartments building, which was completed in the city of Honolulu in 2019. The 11-story building offers units that are affordable to households with incomes at 30, 50, and 60 percent of the area median income (AMI); rents for those units range from $656 for one-bedroom units to $1,819 for three-bedroom units. In addition, Kulia at Ho'opili in the Ho'opili master-planned community was completed in October 2020, with 120 units that are also affordable to households with incomes at 30, 50, and 60 percent of the AMI. The development is close to one of the Honolulu High-Capacity Transit Corridor stations that is under way. Rents, depending on income, will range from $595 to $1,150 for one-bedroom units, $720 to $1,320 for two-bedroom units, and $825 to $1,590 for three-bedroom units.

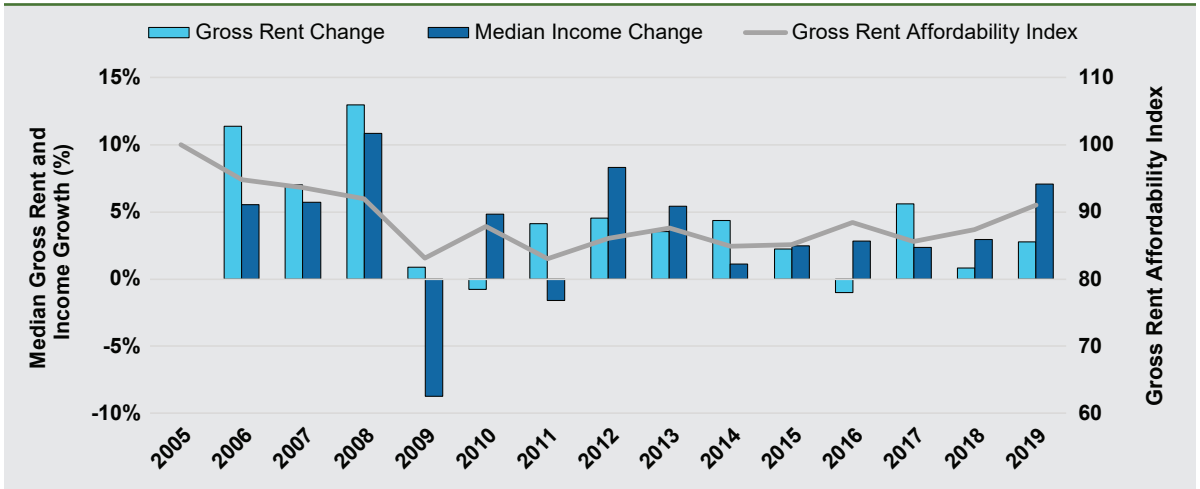
Developments under construction include Hale Kalele, with 200 units in the city of Honolulu. Units will be affordable to households with incomes at 30 to 60 percent of the AMI, with rents depending on income ranging from $584 for studio units to $1,575 for two-bedroom units. Construction is expected to be completed in 2021. In addition, the 318-unit The Element at Ho'opili in the Ho'opili master-planned community will offer market-rate and a limited number of affordable units in a garden-style rental community. The first phase of the development was recently completed in 2020, with final completion of the development expected in late 2021. Market-rate rents at the property start at $2,145 for one-bedroom units, $2,575 for two-bedroom units, and $3,145 for three-bedroom units. A few one-bedroom units have been set aside for households earning 60 percent of the AMI; rents for those units start at $1,483.

Rental Housing Affordability

Overall Affordability Issues

Overall affordability in the HMA has been slightly improving because of growth in the number of affordable rental units since 2018. Overall, the increase in median income has been greater than the increase in median gross rent in the HMA, but overall affordability remains below what it was in 2005 (Figure 19). The median

Figure 19. Urban Honolulu HMA Gross Rent Affordability Index



Notes: Rental affordability is for the Urban Honolulu HMA. The Gross Rent Affordability Index differs from the HUD Rental Affordability Index publishing on the U.S. Housing Market Conditions website because the former is based on combined rent and utilities expenditure.
Source: American Community Survey, 1-year data

renter household income increased 37 percent, from a low of $47,118 in 2011 to $64,573 by 2019, whereas the median gross monthly rent rose 25 percent from $1,419 to $1,774. As a result, the HUD Gross Rent Affordability Index, a measure of median renter household income relative to qualifying income for the median-priced rental unit, has increased. The index was 91.0 during 2019, up from 87.4 in 2018 and 83.0 in 2011. The index, however, is below the 2005 level of 100.0, before the housing market decline and subsequent recession.

Renter Cost Burdens

Despite the general improvement in rental affordability since 2011, an estimated 24.9 percent of all renter households in the HMA were cost-burdened during the 2013-through-2017 period (Table 8). These households were spending between 30 and 49 percent of their income on rent, whereas a greater proportion, 27.3 percent, in the HMA were severely cost-burdened, spending more than 50 percent of income toward rent. Nationwide, a lower proportion of renter households were cost-burdened and severely cost-burdened compared with the HMA, at 21.8 and 22.9 percent, respectively. A greater proportion of lower income renter households, those with incomes less than 50 percent of the area median family income (AMFI), had severe cost burdens. Approximately 56.9 percent of renter households with incomes less than 50 percent of the AMFI in the HMA were paying more than 50 percent of their incomes toward rent, compared with 50.1 percent nationwide.

Table 8. Percentage of Cost-Burdened Renter Households by Income

	Cost-Burdened: 30–49 Percent of Income Toward Rent		Severely Cost-Burdened: More than 50 Percent of Income Toward Rent	
	Urban Honolulu HMA	Nation	Urban Honolulu HMA	Nation
Renter Households with Income <50% HAMFI	21.1	25.6	56.9	50.1
Total Renter Households	24.9	21.8	27.3	22.9

HAMFI = HUD Area Median Family Income.
Source: Consolidated Planning/CHAS Data, 2013–2017 American Community Survey 5-year estimates (huduser.gov)

Homelessness

Nearly 4,450 people throughout the HMA were homeless, which accounted for nearly 69 percent of all homeless people throughout Hawaii in 2020 (Point-in-Time Count). Of the number of people that were homeless in the HMA, 53 percent were unsheltered, which is a higher proportion compared with approximately 39 percent throughout the nation, Puerto Rico, and the U.S. territories.

Policy Initiatives

Statewide policy initiatives are under way to address affordability issues and homelessness in the HMA. The Housing First initiative was introduced statewide in 2018, facilitating access to transitional and permanent supportive emergency housing for the homeless population. In addition, links between housing and key services—including mental health and job resources—were facilitated by the Institute of Human Services, which has served more than 5,100 homeless individuals in the HMA since 2008. Plans to add additional housing for the homeless are under way. The proposed Kahauiki Village (Photo 4) is planned for 144 one- and two-bedroom homes to be built in six phases on 11 acres of land that will provide long-term, permanent, and affordable housing for homeless families with children in the HMA. The first and second phases, with a combined 60 units, have been completed, and another 30 units are under way. The development is a unique public and private partnership in the HMA, consisting of the county, the state, nonprofit organizations, and community partners.

In addition, the state of Hawaii established a goal to build 22,500 affordable rental units statewide by the end of 2026 under Act 127. Some of the measures include reaffirming inclusionary zoning practices to require that a certain percentage of new housing units be targeted toward lower income households and streamlining zoning guidelines to allow developments to move forward in a timely manner. In the HMA, vacant and underutilized state lands have been identified as sites for additional affordable housing. These targeted areas are located near O'ahu rail stations, public transportation, employment centers, and

key services. Currently, a net addition of up to a combined 10,600 units in 10 developments have been planned for the HMA; 5 of those developments have already begun construction and will add a net of approximately 4,175 affordable units by the end of the forecast period.

Current Affordable Housing Options: LIHTC, PBRA, HCV

The LIHTC program is the primary source of funding for new affordable rental housing in the nation. Since 2010, 3,150 LIHTC units, or an average of nearly 340 units annually, have been placed in service in the HMA, accounting for 78 percent of all units placed in Hawaii. From 2000 through 2009, approximately 2,400 LIHTC units were placed in service in the HMA, or an average of approximately 240 units annually, accounting for 77 percent of all units placed in the state. Approximately 45 percent of all LIHTC units placed in service in the HMA since 2010 have been in the city of Honolulu, with another 20 percent in the Ewa Plain area.

In addition to LIHTC, income-eligible residents may qualify for project-based rental assistance (PBRA) or housing choice vouchers (HCVs) through the local public housing authority (PHA). The PHAs in the HMA administered more than 6,275 HCVs in 2020 (Table 9). The waitlists for HCVs and public housing in the HMA are currently closed, with a waiting time of up to 6 years for those on the HCV list and 3 years for those waiting for public housing. Nearly 15,900 subsidized units are available through project-based rental assistance and other programs (Picture of Subsidized Households). The number of households that have an HCV in the HMA has increased 15 percent, or an average of 1.5 percent annually, since 2010. The increase in assisted households occurred as an inflation-adjusted rent subsidy from HUD has increased 6.6 percent since 2010; during the same time, the inflation-adjusted tenant contribution for HCVs went down 0.7 percent. By comparison, in the nation, the total number of voucher households has increased 13.4 percent and the inflation-adjusted HUD subsidy has increased 0.1 percent since 2010, whereas the inflation-adjusted tenant contribution has decreased 0.5 percent.

Photo 4. Kahauiki Village

Source: Kahauiki Village 2018

Table 9. Picture of Subsidized Households

	Urban Honolulu HMA	HMA Change Since 2010	National Total	National Change Since 2010
Total Assisted Households (2020)	12,473	6.9%	4,599,832	3.9%
Total Housing Voucher Households (2020)	6,284	15.3%	2,313,166	13.4%
Average HCV Tenant Monthly Contribution	$532	-0.7%	$386	-0.5%
Average Monthly HUD Subsidy	$1,310	6.6%	$834	0.1%

HCV = Housing Choice Voucher.
Note: Dollar changes are inflation adjusted using the Consumer Price Index for All Urban Consumers (CPI-U).
Source: HUD Picture of Subsidized Households

Forecast

Overall, current tight rental market conditions are expected to ease slightly during the next 3 years as a portion of short-term rentals transition to the year-round rental market under Ordinance 19-18; that transition will increase the supply of available year-round rental housing by at least 1,800 units through the forecast period (City and County of Honolulu, Department of Planning & Permitting). Under the ordinance, the number of short-term rental units that can be owned will be reduced to one per owner for units located outside of designated resort areas and there will be increased enforcement of Non-Conforming Use Certificates, which are needed to legally operate short-term rentals.

Rental demand during the forecast period is estimated for 2,025 new year-round rental units in the HMA (Table 10). Demand is expected to increase during the second and the third year of the forecast from increased in-migration. The 1,500 rental units under construction are expected to meet all the demand during the first year and a portion of demand in the second year of the forecast period. The units underway exclude those that would be intended for seasonal or occasional use.

Table 10. Demand for New Rental Units in the Urban Honolulu HMA During the Forecast Period

	Rental Units
Demand	2,025 Units
Under Construction	1,500 Units

Notes: Demand is for year-round households to the end of the forecast period on January 1, 2024. Units under construction are as of January 1, 2021, and exclude seasonal housing underway.
Source: Estimates by the analyst

Terminology Definitions and Notes

A. Definitions

Cost Burdened	Spending more than 30 percent of household income on housing costs.
De Facto Population	The de facto population is defined as the number of persons physically present in an area, regardless of military status or usual place of residence. It includes visitors present but excludes residents temporarily absent, both calculated as an average daily census.
Demand	All demand estimates in this report are for the total year-round housing production needed to achieve a balanced sales or rental market at the end of the forecast period and do not contain any estimates for seasonal or vacation housing. The demand estimates in the analysis are not a forecast of building activity. They are estimates of the total housing production needed to achieve a balanced market at the end of the 3-year forecast period given conditions on the as-of date of the analysis, growth, losses, and excess vacancies. These estimates do not account for units currently under construction or units in the development pipeline.
Forecast Period	1/1/2021–1/1/2024—Estimates by the analyst.
Hawaii Worker Adjustment and Retraining Notification Act	Requires covered employers, or those that employ or have employed in the preceding 12 months 50 or more full-time employees, to provide advance notice to employees affected by plant closings and mass layoffs. Employees must have been employed for at least 6 months of the 12 months preceding the date of required notice in order to be counted.
Hawaii Safe Travels	A travel program that was implemented in October 2020 in order to facilitate domestic travel to the Hawaiian Islands—starting with inter-island travel before expanding to include all domestic U.S. travelers to the Hawaiian Islands. The program allowed travelers to forgo the required 10- to 14-day quarantine period with an approved negative COVID-19 test result. Individual Hawaiian counties may opt in or out of this program.
Home Sales/ Home Sales Prices	Unless otherwise stated, includes new and existing single-family homes, townhomes, and condominiums.

Homes/ Units Under Construction	**Units under construction represent sales or rental housing for year-round residents of the HMA and do not include units that would be intended for occasional visitors to the HMA.**
Net Natural Change	**Net natural change is resident births minus resident deaths.**
Nonfarm Payroll Jobs	**Includes civilian nonfarm payroll jobs as defined by the U.S. Bureau of Labor Statistics. These data exclude military personnel.**
Other Vacant Units	**In this analysis conducted by the U.S. Department of Housing and Urban Development (HUD), other vacant units include all vacant units that are not available for sale or for rent. The term, therefore, includes units rented or sold but not occupied; held for seasonal, recreational, or occasional use; used by migrant workers; and the category specified as "other" vacant by the U.S. Census Bureau.**
Population	**Only includes resident population. This contrasts with the de facto population, which is the sum of resident and visitor populations.**
Regular Resales	**These are existing home sales that include short sales but exclude real estate owned sales.**
Rental Market/ Rental Vacancy Rate	**Includes apartments and other rental units such as single-family homes, multifamily homes, and mobile homes.**
Residential Building Permits	**Residential building permits do not necessarily reflect all residential building activity that occurs in an HMA. Some residential units may be constructed with a different type of building permit. For example, some residential units might be classified as commercial structures and would not be reflected in the residential building permits. The building permits in this report include an estimate of this additional construction activity. The sales and rental permits in this report may also include a portion of residential structures that are intended for the seasonal market.**
Seriously Delinquent Mortgages	**Mortgages 90+ days delinquent or in foreclosure.**
Short-Term Rentals	**Properties that rent for 30 days or less.**

Year-Round	**Year-round households are those that reside in the HMA for 12 months out of the year or specify the HMA as their usual place of residence.** **Year-round homes or rental units refer to sales or rental housing that is generally made available to year-round households. Year-round housing can include pricing structures that cater to year-round residents or minimum length-of-stay occupancy rules.**

B. Notes on Geography

1.	**The metropolitan statistical area definition noted in this report is based on the delineations established by the Office of Management and Budget (OMB) in the OMB Bulletin dated February 28, 2013.**
2.	**Urbanized areas are defined using the U.S. Census Bureau 2010 Census Urban and Rural Classification and the Urban Area Criteria.**

C. Additional Notes

1.	**The National Association of Home Buyers (NAHB)/Wells Fargo Housing Opportunity Index represents the share of homes sold in the HMA that would have been affordable to a family earning the local median income, based on standard mortgage underwriting criteria.**
2.	**This analysis has been prepared for the assistance and guidance of HUD in its operations. The factual information, findings, and conclusions may also be useful to builders, mortgagees, and others concerned with local housing market conditions and trends. The analysis does not purport to make determinations regarding the acceptability of any mortgage insurance proposals that may be under consideration by the Department.**
3.	**The factual framework for this analysis follows the guidelines and methods developed by the Economic and Market Analysis HMA within HUD. The analysis and findings are as thorough and current as possible based on information available on the as-of date from local and national sources. As such, findings or conclusions may be modified by subsequent developments. HUD expresses its appreciation to those industry sources and state and local government officials who provided data and information on local economic and housing market conditions.**

D. Photo/Map Credits

Cover Photo	**iStock**

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Appendix M Use Exhibit

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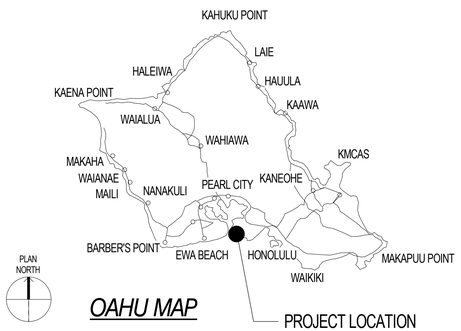
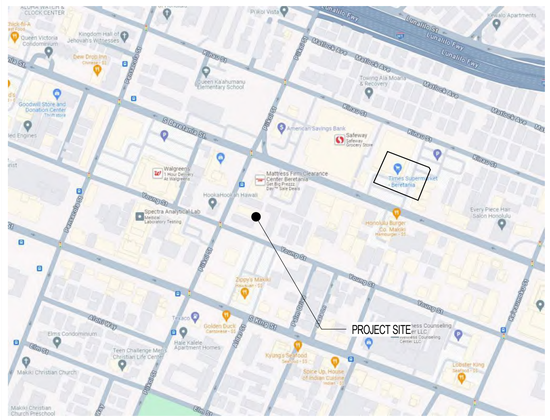
LOCATION MAP





SHEET INDEX

SHEET NUMBER	SHEET NAME
000	TITLE SHEET
G-000	COVER SHEET
C-101	DEMOLITION PLAN
C-102	GRADING PLAN
C-103	SITE AND UTILITY PLAN
L-101	LANDSCAPE
A-100	SITE PLAN
A-101	1ST FLOOR PLAN
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A-124	ROOF PLAN
A-201	NORTH ELEVATION
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A-203	SOUTH ELEVATION
A-204	WEST ELEVATION
A-301	LONGITUDINAL SECTION
A-302	TRANSVERSE SECTION
A-401	ENLARGED PLANS
A-402	ENLARGED PLANS
A-403	ENLARGED PLANS
A-404	ENLARGED PLANS
A-405	ENLARGED ADA PLANS
A-406	ENLARGED ADA PLANS

REVISIONS

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Checked By: Checker
Date: Issue Date
Project Number: WXXXXX-XX-D-XXXX

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Chief, Traffic Review Branch, DPP — DATE

Chief, Wastewater Branch, DPP — DATE

Manager and Chief Engineer, BWS (For work affecting BWS facilities in City/State R/W and BWS Easements only) — DATE

ENGINEER	GR
DRAFTSMAN	GR
CHECKED BY	GR
SCALE	AS SHOWN
DATE	MAY 2024
DPP FILE NO.	2024/CP-XXX

DEMOLITION PLAN

DEMOLITION PLAN
SCALE: 1" = 10'

GRAPHIC SCALE: 10' 5' 0 10' 20'
1" = 10'

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Manager and Chief Engineer, BWS (For work affecting BWS facilities in City/State R/W and BWS Easements only)	DATE

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GRADING PLAN

GRADING PLAN
SCALE: 1" = 10'

GRAPHIC SCALE: 10' 0 5' 10' 20' — 1" = 10'

PIIKOI ST. (CITY)

YOUNG ST. (CITY)

PARCEL FIRST
LOT 1
20,019 SQ. FT.

PARCEL SECOND
LOT 2
11,958 SQ. FT.

FF=17.00

LIMITS OF GRADING

TRUE NORTH
1"=10'

RMTC JOB NO.: 1-23765-0E

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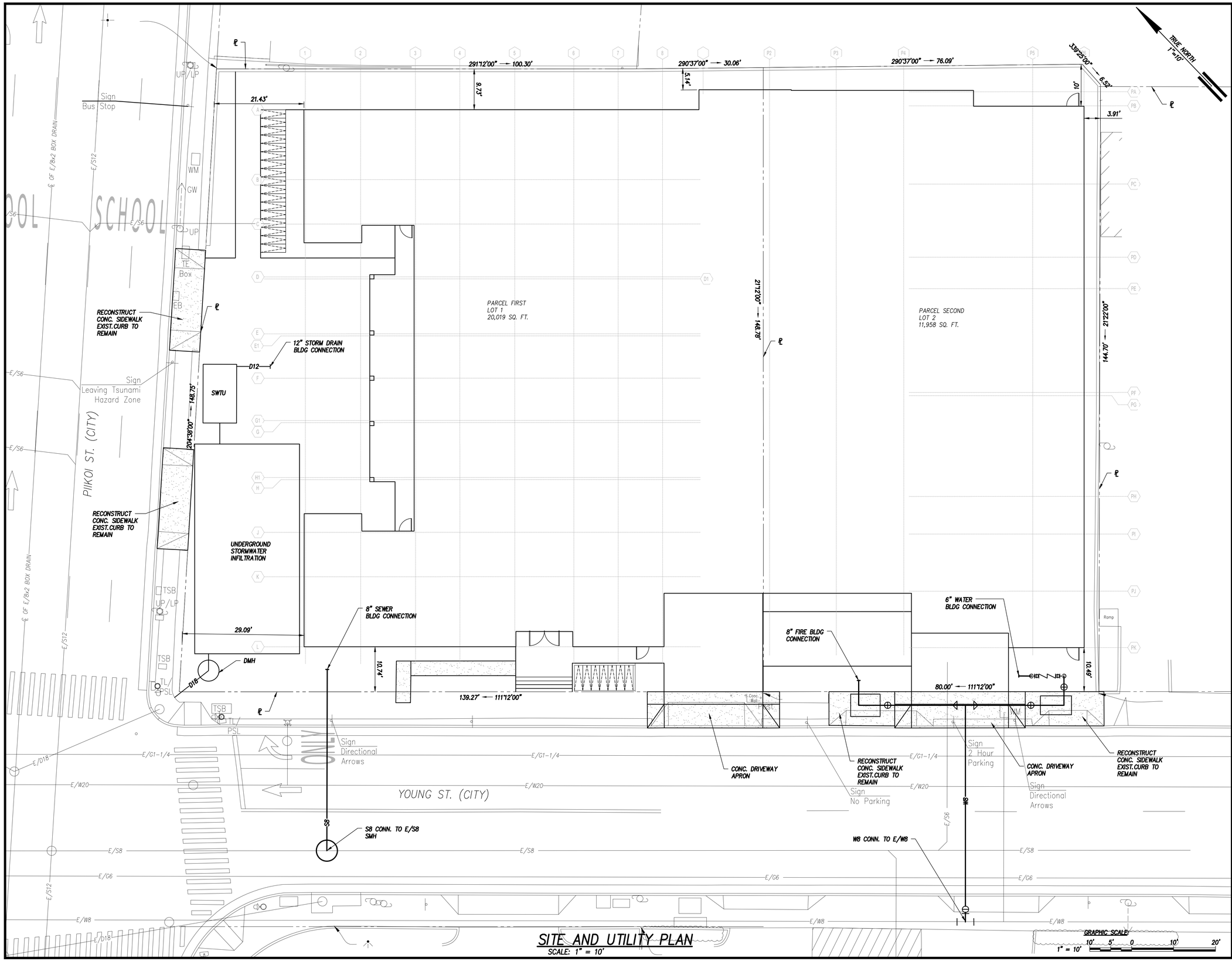

SITE AND UTILITY PLAN
SCALE: 1" = 10'

1105 PIIKOI STREET

SITE IMPROVEMENTS

1105 PIIKOI STREET
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SITE AND UTILITY PLAN

RMTC JOB NO.: 1-23765-0E

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SHEET OF 9 SHEETS

FILE	POCKET	FOLDER	NO.

MEDIUM CANOPY TREE, TYP. SUCH AS:
WHITE TECOMA
CRAPE MYRTLE
DWARF HAU

PERIMETER HEDGE, TYP. SUCH AS:
HULA GIRL HIBISCUS
NAUPAKA
GOLDEN ERANTHAMUM

PERIMETER FENCE WITH LOCKING GATE, TYP.

CONCRETE BUMP OUT FOR FOR FUTRE BENCH, TYP.

FLOWERING TREE, TYP. SUCH AS:
SINGAPORE PLUMERIA
PINK PLUMERIA

LAWN, TYP. SUCH AS:
ST. AUGUSTINE GRASS
SEASHORE PASPALUM
ZOYSIA EL TORO

24" WIDE GRAVEL MAINTENANCE STRIP AGAINST BUILDING, TYP.

GROUND COVERS, TYP. SUCH AS:
POHINAHINA
DWARF LAUAE
POTHOS

ACCENT SHRUBS, TYP. SUCH AS:
GREEN TI
TIARE
QUEEN EMMA SPIDER LILY

PIIKOI STREET

PANAX

SCREENING SHRUBS, TYP. SUCH AS:
PANAX

FUTURE BACKFLOW PREVENTER LOCATION

SCREENING SHRUBS, TYP. SUCH AS:
ARECA PALM
COPPER PLANT

SMALL TREE, TYP. SUCH AS:
PLUMERIA PUDICA
LIGNUM VITAE

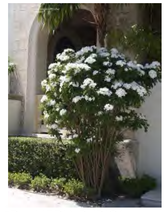
YOUNG STREET

SHURBS SUCH AS:
SHELL GINGER
NAUPAKA

FLOWERING/MEDIUM/SMALL TREES

SINGAPORE PLUMERIA

PINK PLUMERIA


PLUMERIA PUDICA

LIGNUM VITAE

WHITE TECOMA

CRAPE MYRTLE

SCREENING SHRUBS

ARECA PALM

COPPER LEAF

SHRUBS AND GROUND COVERS

HULA GIRL HIBUSCUS

NAUPAKA

SHELL GINGER

GREEN TI WITH POHINAHINA

DWARF LAUAE

ST. AUGUSTINE GRASS

1105 PIIKOI STREET APARTMENTS

CONCEPTUAL LANDSCAPE PLAN

July 08, 2024

GRAPHIC SCALE: 1" = 10'-0"
0 2.5 5 10 20

PBR HAWAII & ASSOCIATES, INC.

P:\PROJECTS\OAHU\1111 Piikoi Street Apartments_4286-01\GRAPHICS\CAD\LANDSCAPE\X-PLNT.dwg

GROSS FLOOR AREA OVER LOT AREA

GROSS TOWER	205,364	SF	LOT AREA:	31,977.00	SF	294088 / 31977	= 9.20
GROSS PARKING	88,724	SF					
	294,088						

FAR

GROSS TOWER	205,364	SF	LOT AREA:	31,977.00	SF	205364 / 31977	= 6.42

ZONING

LOCATION:	1105 PIIKOI STREET, HONOULU HAWAII 96814		
TAX MAP KEY:	2-4-004:046 AND 078		
LOT AREA:	LOT 046	20,019 SF	0.46 ACRES
	LOT 078	11,958 SF	0.27 ACRES
	TOTAL	31,977 SF	0.73 ACRES
ZONING:	BMX-3 COMMUNITY BUSINESS DISTRICT		
FLOOD ZONE:	X - BEYOND 500 YEAR FLOOD PLAIN		
SMA/SHORELINE:	NOT IN SMA		
STATE LAND USE:	URBAN DISTRICT		
SETBACKS:	FRONT: PIIKOI ST	22'-0" (10' + 12' ROAD WIDENING)	
	SIDE: YOUNG STREET	10'-0"	
	SIDE AND REAR	10'-0" FOR MULTI FAMILY/0' FOR OTHER USES	
HEIGHT LIMIT:	ALLOWED	150'-0"	
	BUILDING ROOF HEIGHT	198'-10"	
	MECHANICAL ROOF HEIGHT	210'-7"	
	WIND TURBINE HEIGHT	221-10"	
	EXEMPTION/PROVIDED	198'-10"	
MAXIMUM DENSITY (FAR):	ALLOWED FAR	= 3.5 BMX-3 / 7.0 MAX	
	PROVIDED FAR	= 6.42	
FLOOR CALCS:			
LEVELS 8-23	9,090 X (16)	= 145,440	SF
LEVELS 4-7	7,686 X (4)	= 30,744	SF
LEVEL 3	8609	= 8,609	SF
LEVEL 2	8184	= 8,184	SF
LEVEL 1	12387	= 12,387	SF
TOTAL		= 205,364	SF
FAR	205,364 / 31977	= 6.42	SF
TRANSITIONAL HEIGHT SETBACKS	REQUIRED	REQD ABOVE 40' / 1:10 SLOPE AFTER 40'-0"	
	EXEMPTION/PROVIDED	TOWER IS ABOVE 40'-0" AND ENCROACHES	
BIKE PARKING	TOTAL NUMBER OF UNITS = 247		
	SHORT TERM REQUIRED 1/10 UNITS = 25	EXEMPTION/PROVIDED = 25	
	LONG TERM REQUIRED 1/2 UNITS = 124	EXEMPTION/PROVIDED = 46	
PARKING	RESIDENTIAL UNIT TOTAL SF =	154902	SF
	PARKING REQUIRED 1/1000SF =	155	STALLS
	PROVIDED =	243	STALLS

UNIT BREAKDOWN

BEDRM CT	BATHRM CT	UNIT TYPE	AREA	COUNT	TOT. AREA
0	1	TYPE 1	393	1	393
0	1	TYPE 2	335	16	5,360
STUDIO				17	
1	1	TYPE 3	677	1	677
1	1	TYPE 4	534	20	10,680
1	1	TYPE 4R	534	20	10,680
1	1	TYPE 4A	534	3	1,602
1	1	TYPE 4RA	534	2	1,068
1	1	TYPE 5	519	16	8,304
1	1	TYPE 5R	519	16	8,304
1	1	TYPE 6	540	16	8,640
1 BEDROOM				94	
2	1	TYPE 7	676	22	14,872
2	1	TYPE 7R	676	23	15,548
2	1	TYPE 8	714	22	15,708
2	1	TYPE 8R	714	22	15,708
2	1	TYPE 8A	768	1	768
2	1	TYPE 9	717	20	14,340
2	1	TYPE 9R	717	4	2,868
2	1	TYPE 9A	744	3	2,232
2	1	TYPE 9RA	744	2	1,488
2 BEDROOM				119	
3	1	TYPE 10	922	16	14,752
3	1	TYPE 11	910	1	910
3 BEDROOM				17	
TOTAL UNITS:				**247**	
TOTAL RESIDENTIAL AREA (SF)					**154,902**

GROUND FLOOR USES BY AREA

LAND			GROUND FLOOR USES		
PARCEL 1 - PIIKOI	20,019	SF	OPEN SPACE	8,462	SF
PARCEL 2 - YOUNG ST.	11,958	SF	BIKE STOR - PIIKOI	244	SF
			BIKE STOR - YOUNG	60	SF
			TOWER	9,190	SF
			PARKING	12,192	SF
			SURFACE VEHICULAR	1,829	SF
Total	**31,977**	**SF**	**TOTAL**	**31,977**	**SF**
				-	

PARKING BREAKDOWN

COMPACT		
LEVEL	TYPE	COUNT
7	COMPACT STALL	2
6	COMPACT STALL	2
5	COMPACT STALL	2
4	COMPACT STALL	2
3	COMPACT STALL	2
2	COMPACT STALL	3
1	COMPACT STALL	
		13

STANDARD		
LEVEL	TYPE	COUNT
7	STANDARD STALL	35
6	STANDARD STALL	35
5	STANDARD STALL	35
4	STANDARD STALL	35
3	STANDARD STALL	31
2	STANDARD STALL	32
1	STANDARD STALL	13
		216

ADA		
LEVEL	TYPE	COUNT
7	ADA STALL	2
6	ADA STALL	2
5	ADA STALL	2
4	ADA STALL	2
3	ADA STALL	2
2	ADA STALL	2
1	ADA STALL VAN	2
		14

TYPE	COUNT
ADA STALL 8'-0"X18'-0"	12
ADA VAN STALL 8'-0"X18'-0"	2
STANDARD STALL 8'-3"X18'-0"	216
COMPACT STALL 7'-6"X16'-0"	13
TOTAL PARKING	**243**
TOTAL RESIDENTIAL AREA	**154902**
REQ.D PARKING RES AREA/1000	**155**

STANDARD ADA: 12
VAN ADA: 2
TOTAL REQUIRED: 14

BUILDING HEIGHT

BLDG	FLOORS	HEIGHT	DESCRIPTION
RESIDENTIAL TOWER	23	221'10"	23 STORY TOWER, 7 STORY PARKING GARAGE

UNIT COUNT

UNIT COUNT LEVEL	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 4R	TYPE 5	TYPE 5R	TYPE 6	TYPE 7	TYPE 7R	TYPE 8	TYPE 8R	TYPE 9	TYPE 9R	TYPE 10	TYPE 11	UNITS
23		1		1	1	1	1	1	1	1	1	1	1		1		12
22		1		1	1	1	1	1	1	1	1	1	1		1		12
21		1		1	1	1	1	1	1	1	1	1	1		1		12
20		1		1	1	1	1	1	1	1	1	1	1		1		12
19		1		1	1	1	1	1	1	1	1	1	1		1		12
18		1		1	1	1	1	1	1	1	1	1	1		1		12
17		1		1	1	1	1	1	1	1	1	1	1		1		12
16		1		1	1	1	1	1	1	1	1	1	1		1		12
15		1		1	1	1	1	1	1	1	1	1	1		1		12
14		1		1	1	1	1	1	1	1	1	1	1		1		12
13		1		1	1	1	1	1	1	1	1	1	1		1		12
12		1		1	1	1	1	1	1	1	1	1	1		1		12
11		1		1	1	1	1	1	1	1	1	1	1		1		12
10		1		1	1	1	1	1	1	1	1	1	1		1		12
9		1		1	1	1	1	1	1	1	1	1	1		1		12
8		1		1	1	1	1	1	1	1	1	1	1		1		12
7				1	1				1	1	1	1	1	1			8
6				1	1				1	1	1	1	1	1			8
5				1	1				1	1	1	1	1	1			8
4				1	1				1	1	1	1	1	1			8
3				1	1				1	1	1	1	1	1			8
2				1	1				1	1	1	1	1	1			8
1	1		1	1						1	1		1			1	7
SUB TOTAL	1	16	1	23	22	16	16	16	22	23	23	22	23	6	16	1	
TOTAL NUMBER OF UNITS																	247

		0BR	1BR	2BR	3BR	TOTAL
	ACCESSIBLE UNITS	1	5	6	1	13
	COMMUNICATION UNITS	1	1	2	1	5

EXP OF LICENSE: 4/4/2024

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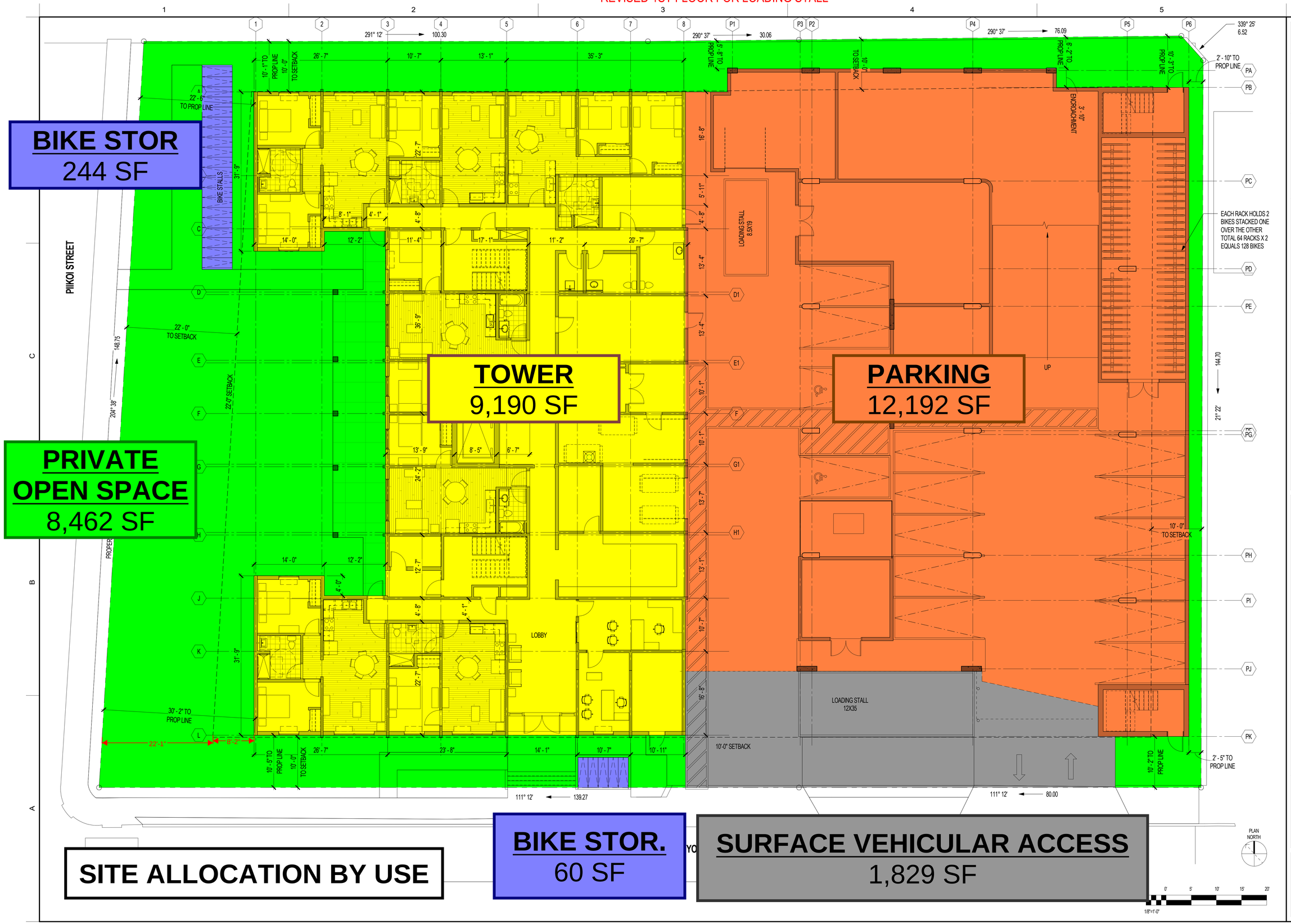
ALAKEA DESIGN GROUP, LLC
ARCHITECTURE PLANNING INTERIOR DESIGN
1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH: 808-547-2270

PROJECT NAME: 1105 PIIKOI STREET
PROJECT ADDRESS: 1105 PIIKOI STREET; TMK: (1) 2 4 004 046, (1) 2 4 004 078
DESCRIPTION: PROJECT DATA

SHEET NUMBER
G-101

PRINTED TIME STAMP: 5/24/2024 10:16:20 AM

REVISED 1ST FLOOR FOR LOADING STALL



PRINTED TIME STAMP: 7/8/2024 1:03:12 PM

REVISED 1ST FLOOR FOR LOADING STALL

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Project Number: WXXXXX-XX-D-XXXX

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PROJECT NAME: 1105 PIIKOI STREET
PROJECT ADDRESS: 1105 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078
DESCRIPTION: SITE PLAN

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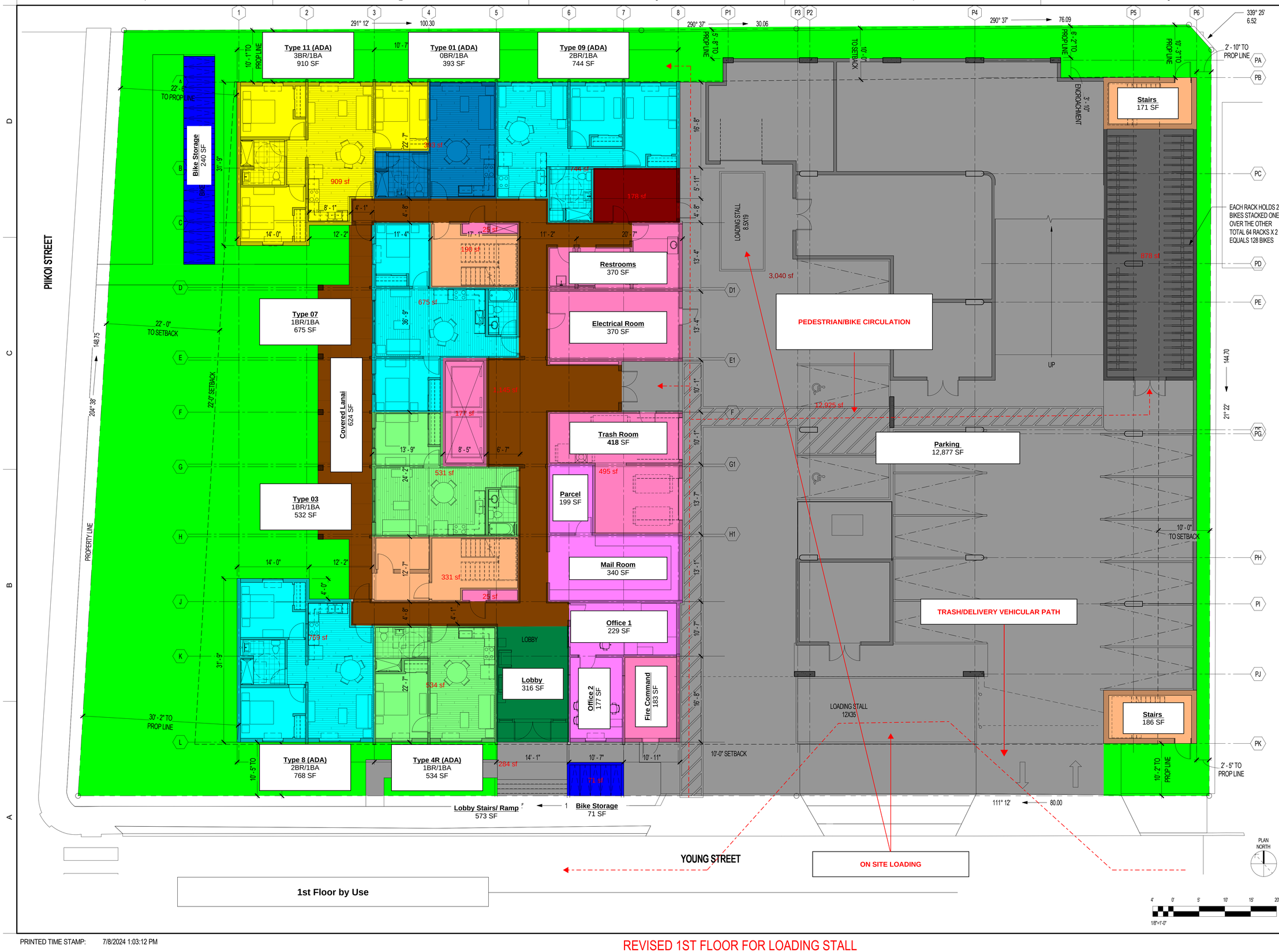
ARCHITECTURE PLANNING INTERIOR DESIGN
1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH: 808-547-2270

SHEET NUMBER
A-100

REVISED 1ST FLOOR FOR LOADING STALL



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PROJECT NAME: 1111 PIIKOI STREET
PROJECT ADDRESS: 1111 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078
DESCRIPTION: 1ST FLOOR PLAN

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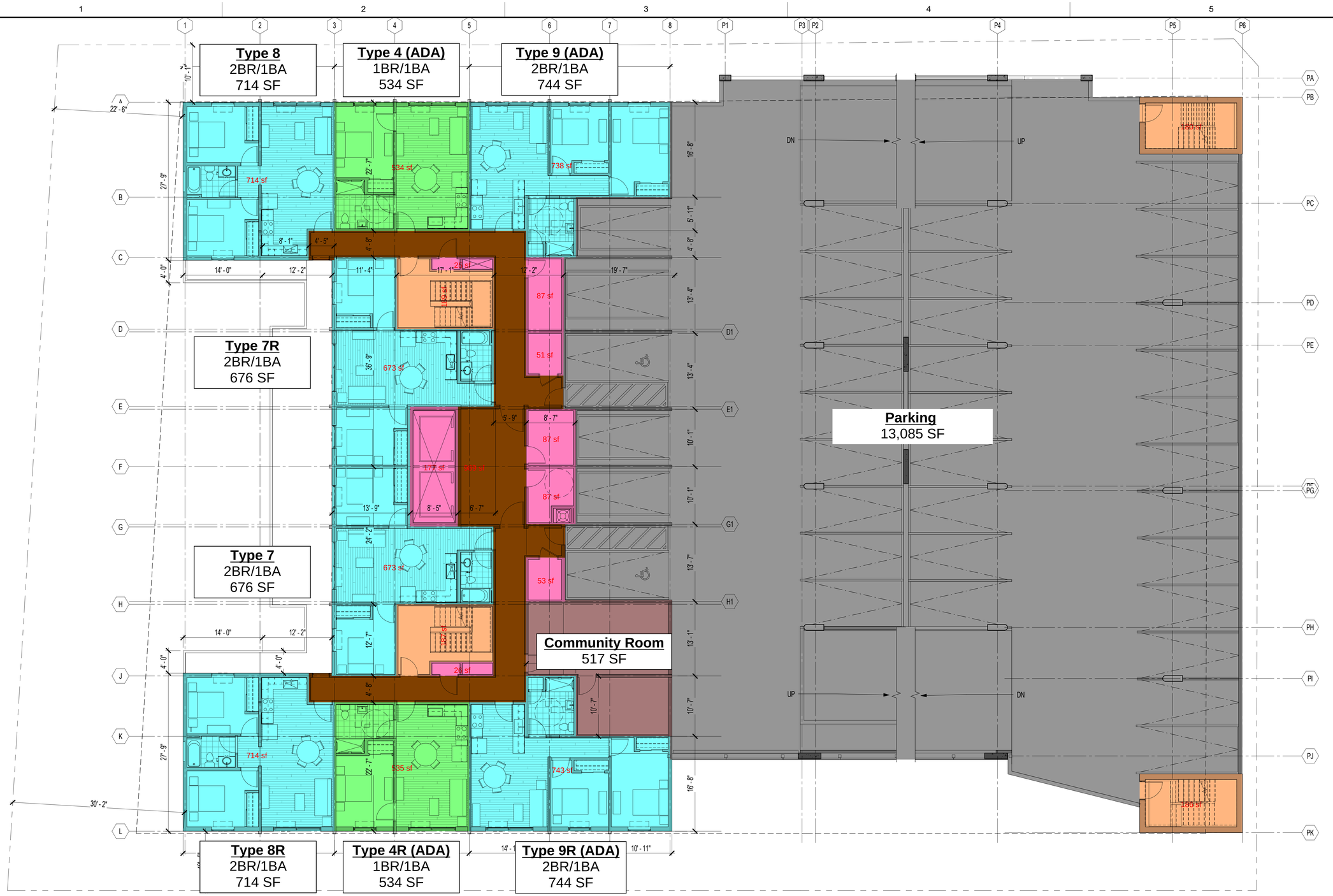

2nd Floor by Use

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PROJECT ADDRESS: 1105 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078
DESCRIPTION: 2ND FLOOR PLAN

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ARCHITECTURE PLANNING INTERIOR DESIGN
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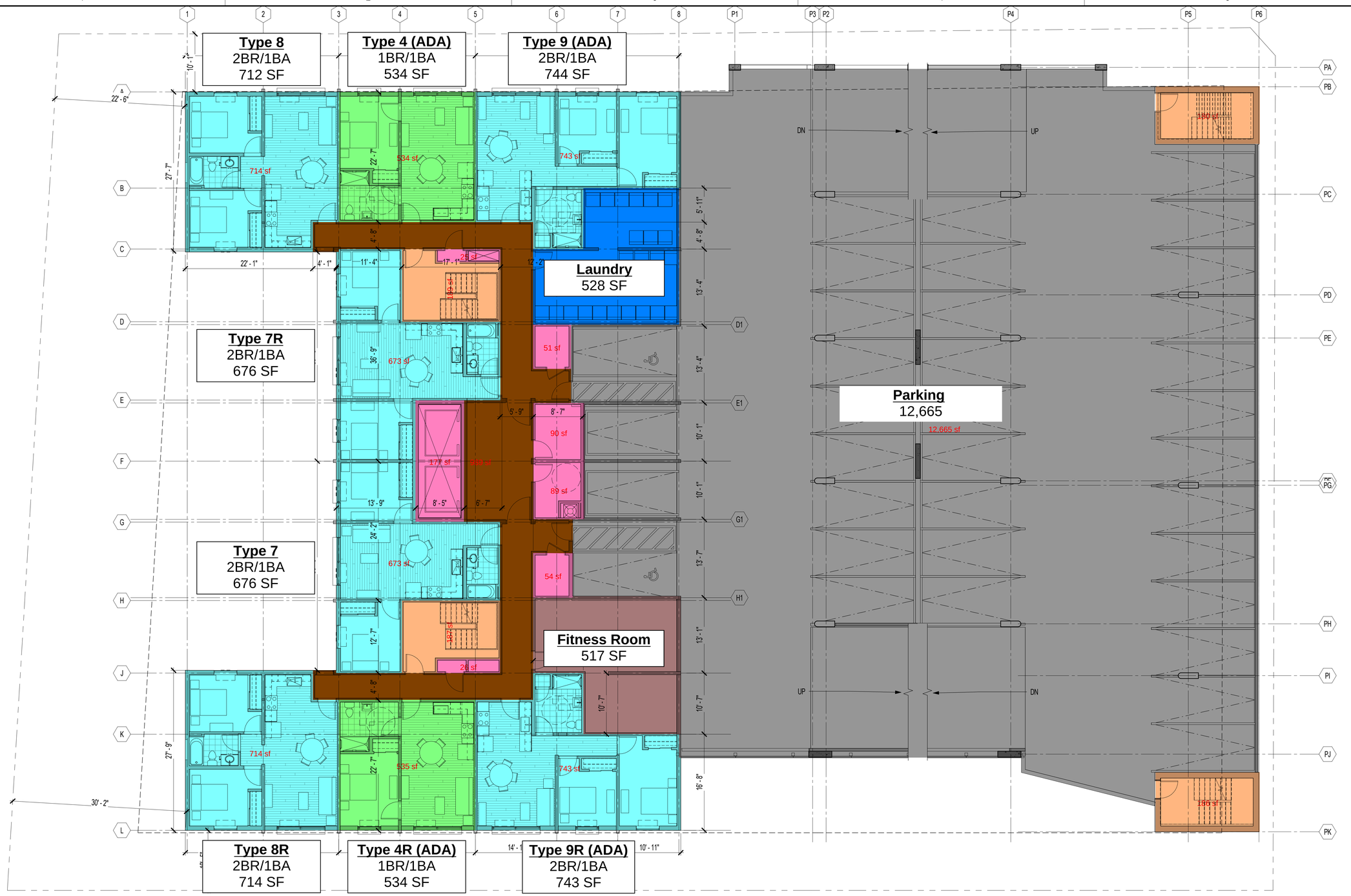
SHEET NUMBER
A-102

1/8"=1'-0"



3RD FLOOR PLAN

3rd Floor by Use

PLAN NORTH

1/8"=1'-0"

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PROJECT NAME: 1105 PIIKOI STREET
PROJECT ADDRESS: 1105 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078
DESCRIPTION: 3RD FLOOR PLAN

ALAKEA DESIGN GROUP, LLC
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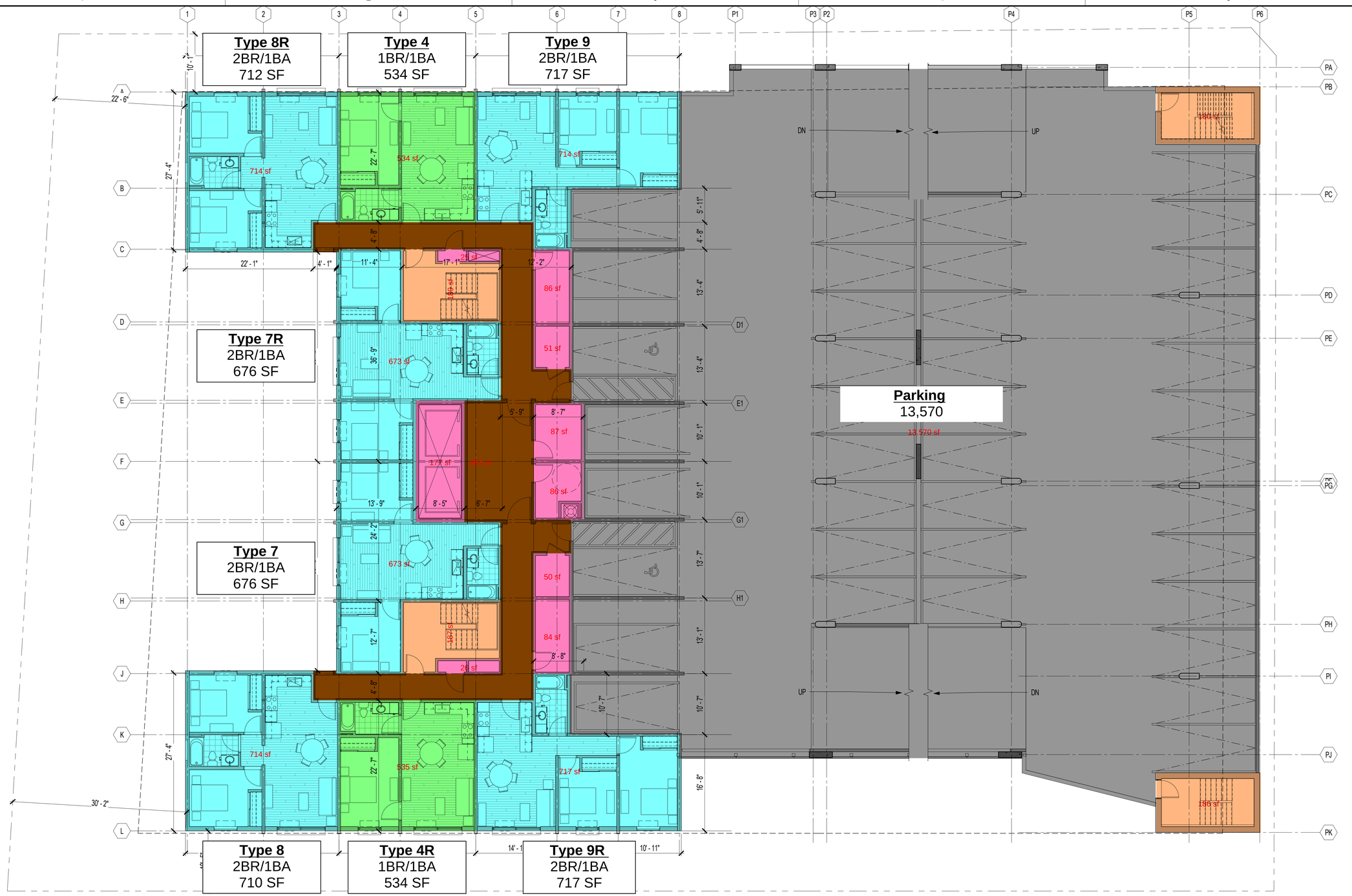
1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH: 808-547-2270

SHEET NUMBER
A-103



4th - 7th Floor by Use

PLAN NORTH

1/8"=1'-0"

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PROJECT NAME: 1105 PIIKOI STREET

PROJECT ADDRESS: 1105 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078

DESCRIPTION: 4TH TO 7TH FLOOR PLAN

ALAKEA DESIGN GROUP, LLC
ARCHITECTURE PLANNING INTERIOR DESIGN
1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH: 808-547-2270

SHEET NUMBER

A-104

Typical Floor by Use

PLAN NORTH

4' 0' 5' 10' 15' 20'
1/8"=1'-0"

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PROJECT NAME: 1105 PIIKOI STREET
PROJECT ADDRESS: 1105 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078
DESCRIPTION: 8TH TO 23RD FLOOR PLAN

ALAKEA DESIGN GROUP, LLC
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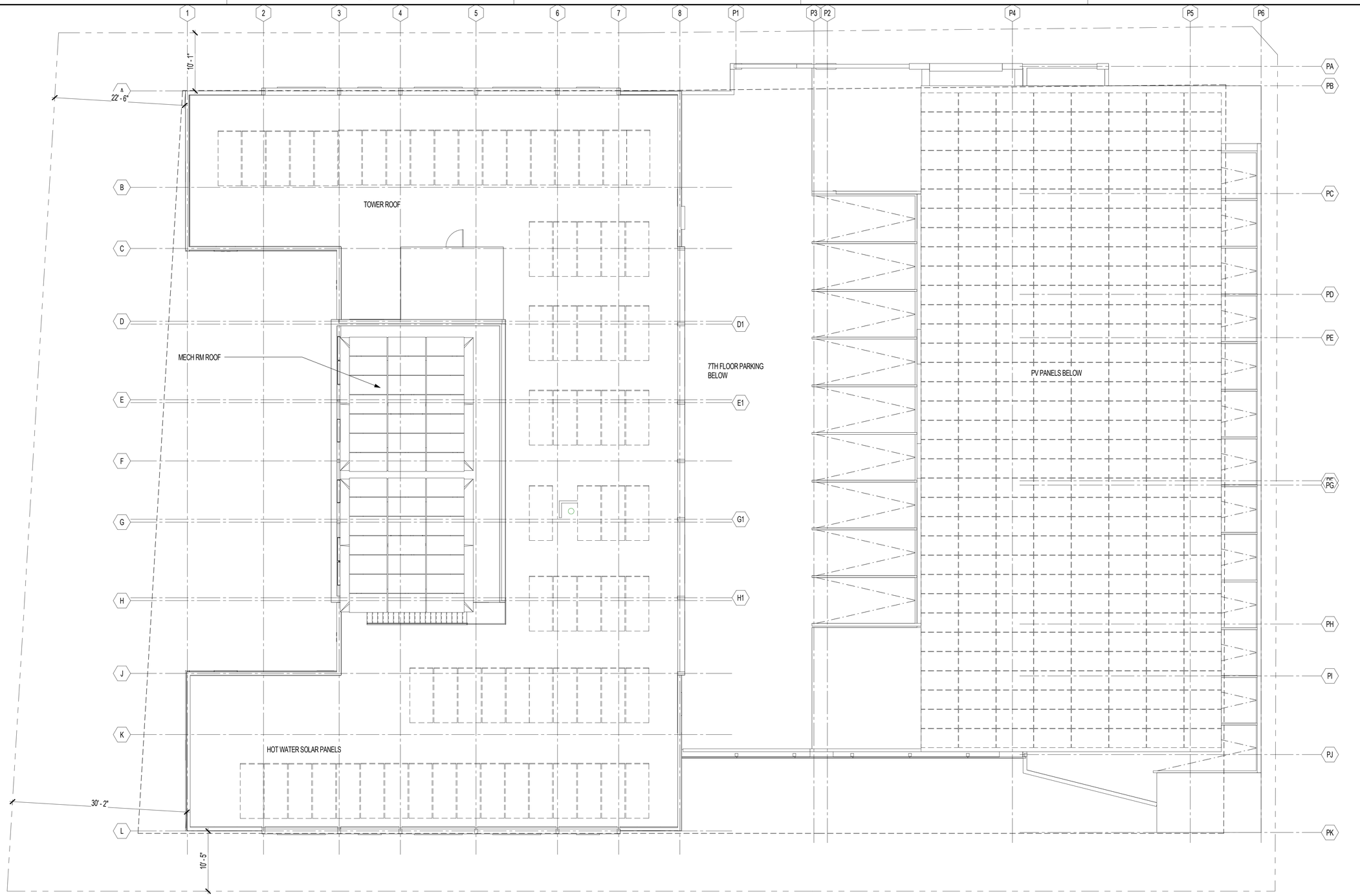
SHEET NUMBER
A-108



1 ROOF PLAN
1/8" = 1'-0"

4' 0' 5' 10' 15' 20'
1/8"=1'-0"

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PROJECT NAME: 1105 PIIKOI STREET
PROJECT ADDRESS: 1105 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078
DESCRIPTION: ROOF PLAN

ALAKEA DESIGN GROUP, LLC
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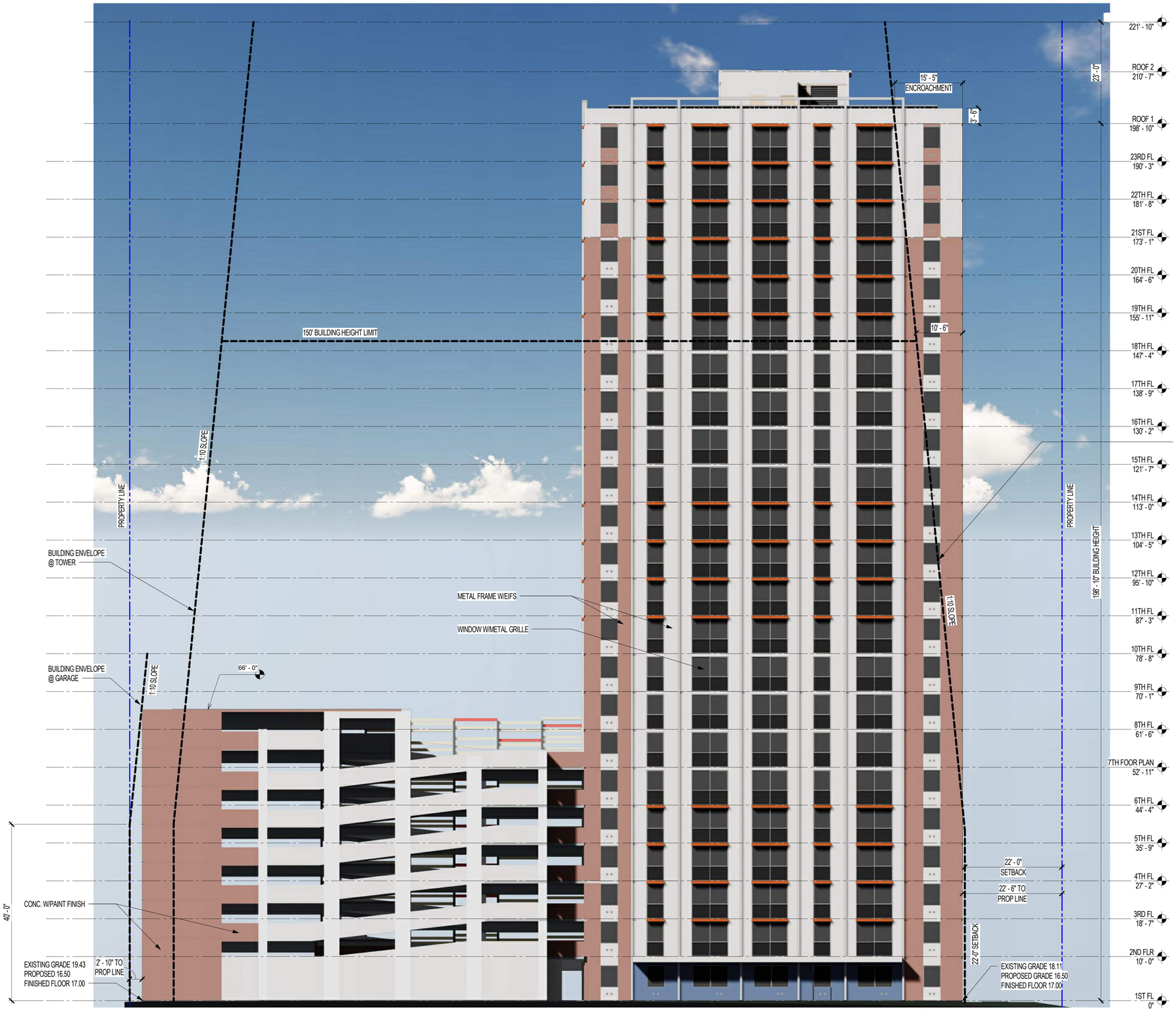
1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH: 808-547-2270

SHEET NUMBER
A-124

PRINTED TIME STAMP: 5/24/2024 10:16:00 AM



1 NORTH ELEVATION (MAUKA)
3/32" = 1'-0"

8' 4' 0' 8' 16' 24'
3/32"=1'-0"

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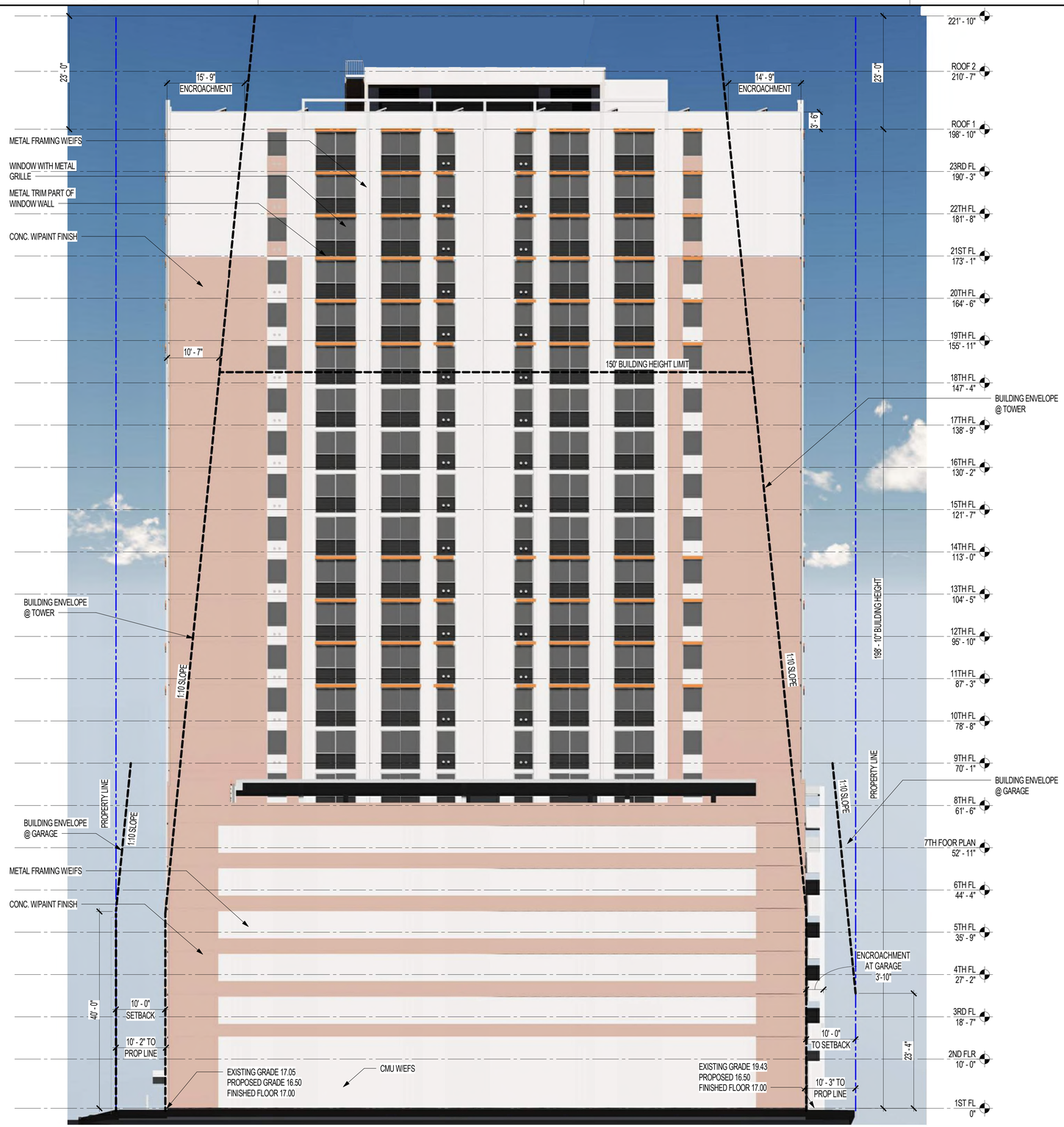
PROJECT NAME: 1111 PIIKOI STREET
PROJECT ADDRESS: 1111 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078
DESCRIPTION: NORTH ELEVATION

ALAKEA DESIGN GROUP, LLC
ARCHITECTURE PLANNING INTERIOR DESIGN
1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH: 808-547-2270

SHEET NUMBER
A-201

PRINTED TIME STAMP: 7/8/2024 8:43:13 AM



1 EAST ELEVATION (DIAMOND HEAD)
3/32" = 1'-0"

8' 4' 0' 8' 16' 24'
3/32"=1'-0"

REVISIONS							
Rev	Date:	Description	By:	Rev	Date:	Description	By:

Drawn By: Author
Checked By: Checker
Date: Issue Date
Project Number: WXXXXX-XX-D-XXXX

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PROJECT NAME: 1111 PIIKOI STREET
PROJECT ADDRESS: 1111 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078
DESCRIPTION: EAST ELEVATION

ALAKEA DESIGN GROUP, LLC
ARCHITECTURE PLANNING INTERIOR DESIGN
1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH: 808-547-2270

SHEET NUMBER
A-202

PRINTED TIME STAMP: 7/8/2024 8:43:17 AM

1 SOUTH ELEVATION (YOUNG STREET)

3/32" = 1'-0"

8' 4' 0' 8' 16' 24'

3/32"=1'-0"

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Date: Issue Date

Project Number: WXXXXX-XX-D-XXXX

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PROJECT NAME: 1111 PIIKOI STREET

PROJECT ADDRESS: 1111 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078

DESCRIPTION: SOUTH ELEVATION

ALAKEA DESIGN GROUP, LLC
ARCHITECTURE PLANNING INTERIOR DESIGN
1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH: 808-547-2270

SHEET NUMBER

A-203

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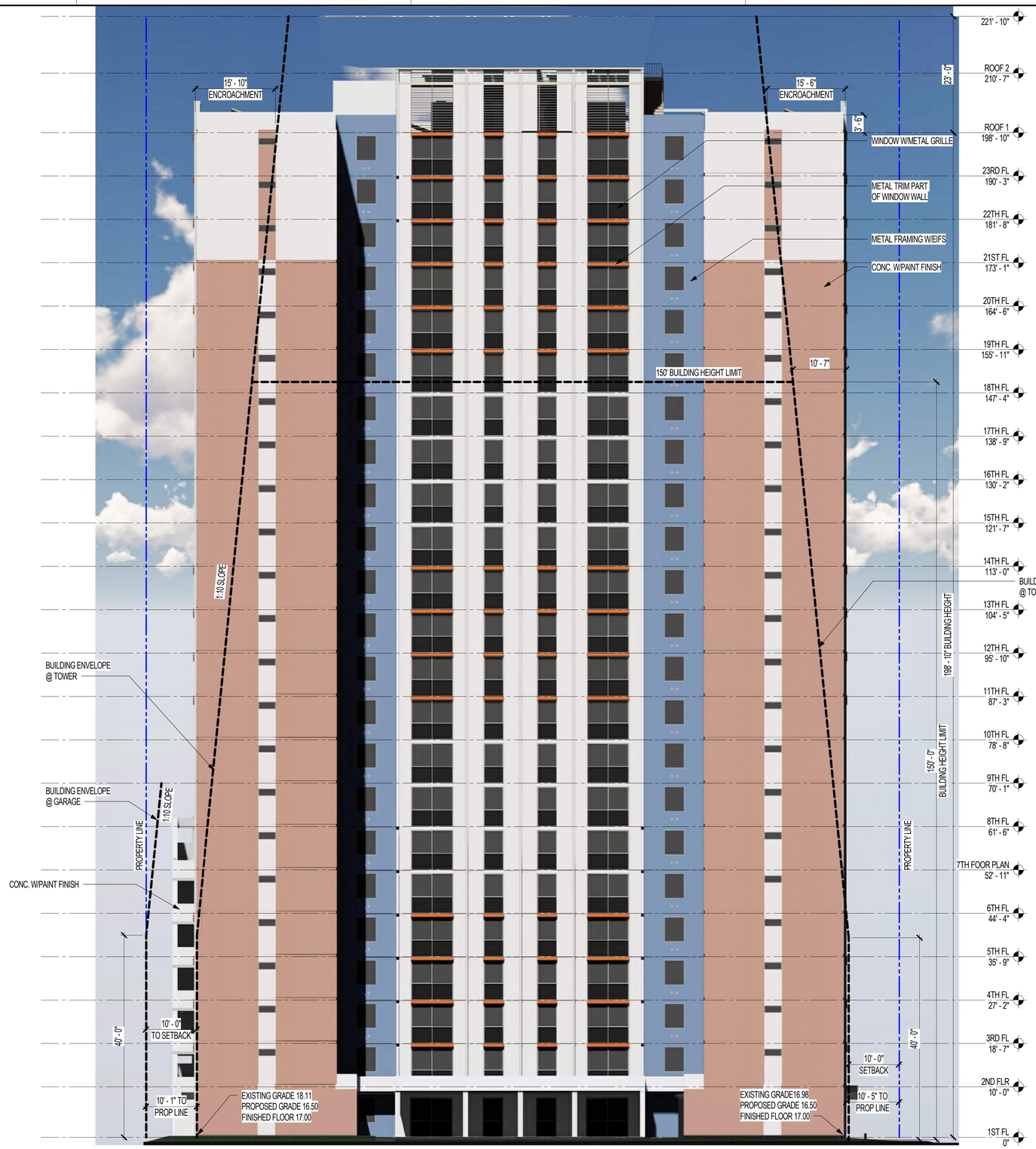

1 WEST ELEVATION (PIIKOI STREET)

3/32" = 1'-0"

8' 4' 0' 8' 16' 24'

3/32"=1'-0"

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Date: Issue Date

Project Number: WXXXXX-XX-D-XXXX

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PROJECT NAME: 1111 PIIKOI STREET

PROJECT ADDRESS: 1111 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078

DESCRIPTION: WEST ELEVATION

ALAKEA DESIGN GROUP, LLC
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1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH: 808-547-2270

SHEET NUMBER

A-204

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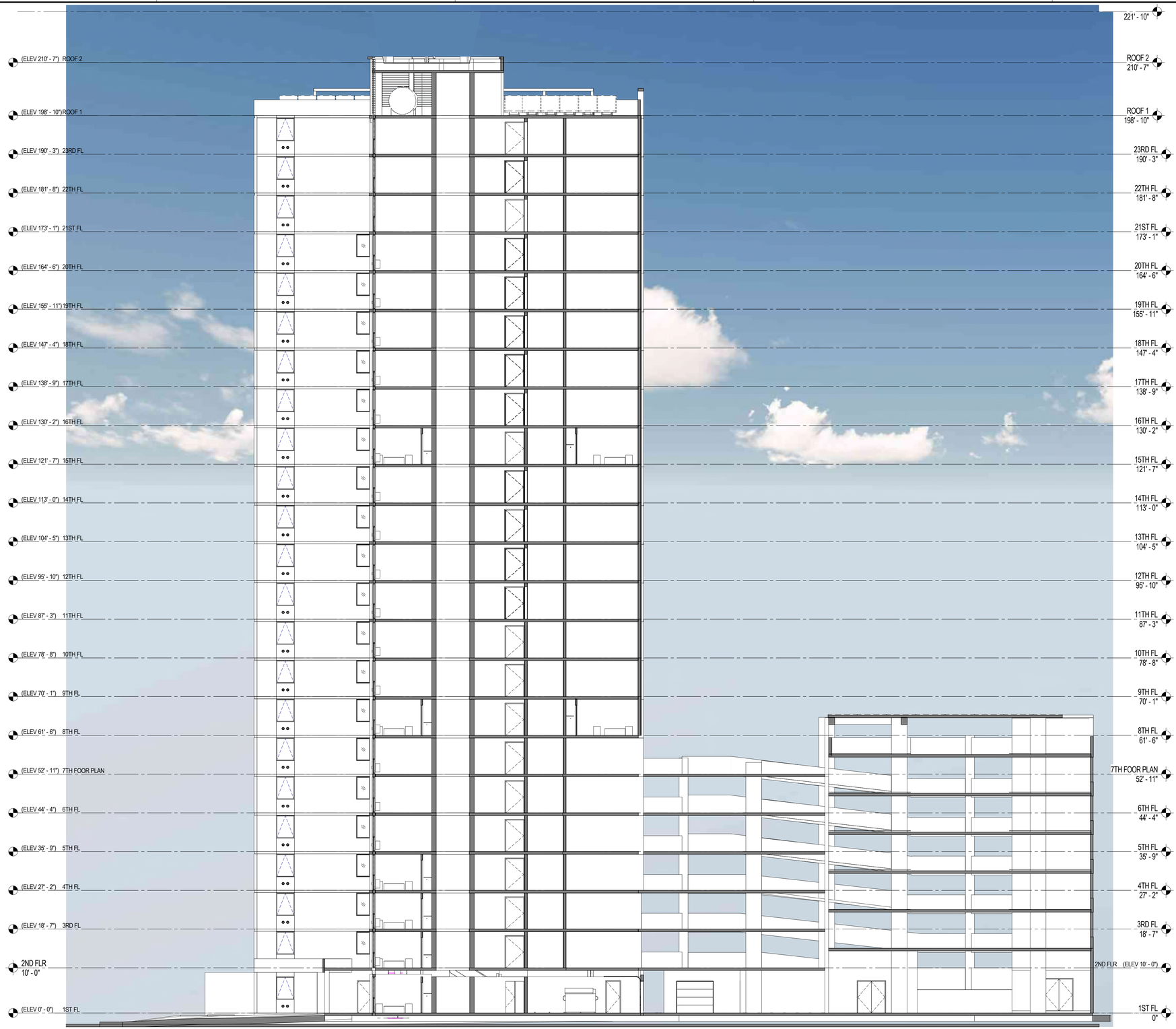

1 LONGITUDINAL SECTION1
3/32" = 1'-0"

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Date: Issue Date
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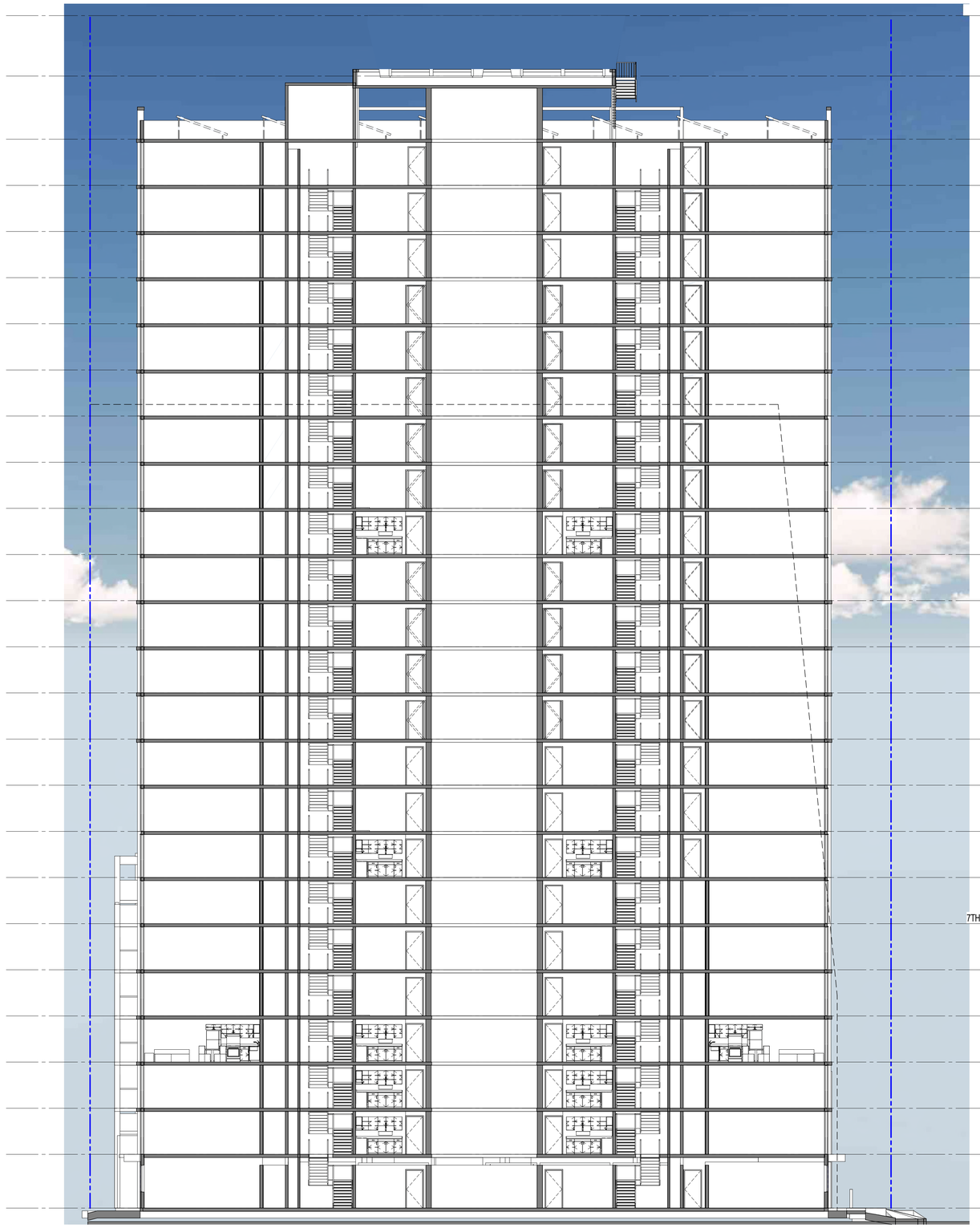
PROJECT NAME: 1105 PIIKOI STREET
PROJECT ADDRESS: 1105 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078
DESCRIPTION: LONGITUDINAL SECTION

ALAKEA DESIGN GROUP, LLC
ARCHITECTURE PLANNING INTERIOR DESIGN
1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH: 808-547-2270

SHEET NUMBER
A-301



1 TRANSVERSE SECTION
3/32" = 1'-0"

8' 4' 0' 8' 16' 24'
3/32"=1'-0"

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PROJECT ADDRESS: 1105 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078
DESCRIPTION: TRANSVERSE SECTION

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A-302

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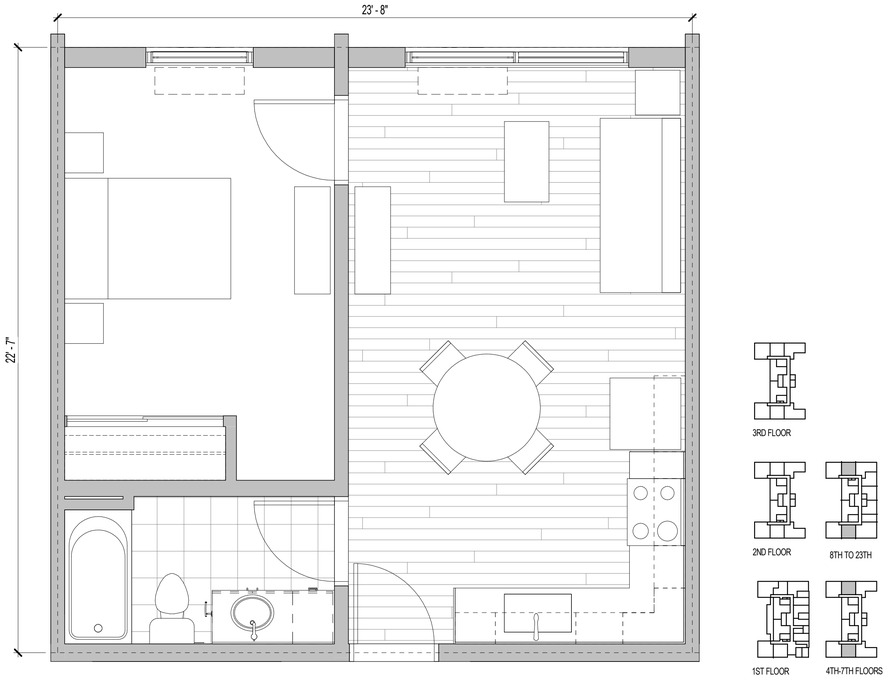

3 ENLARGED PLAN - TYPE 4 - 1BR/1BA (534 SF)
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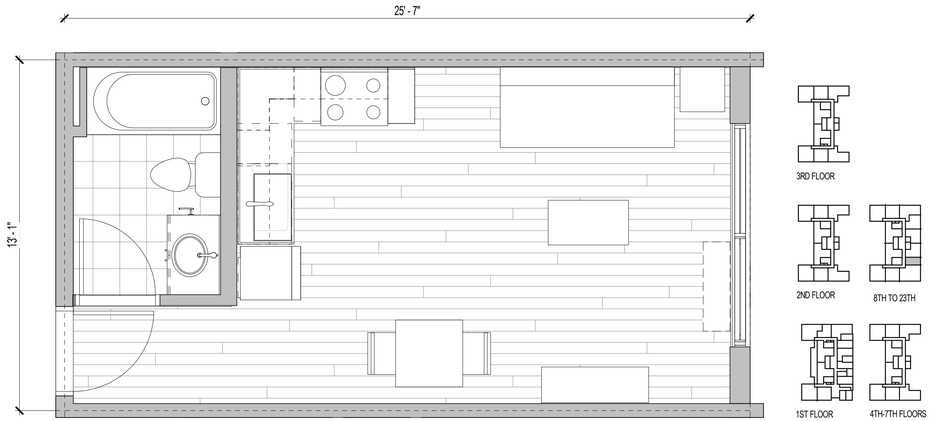

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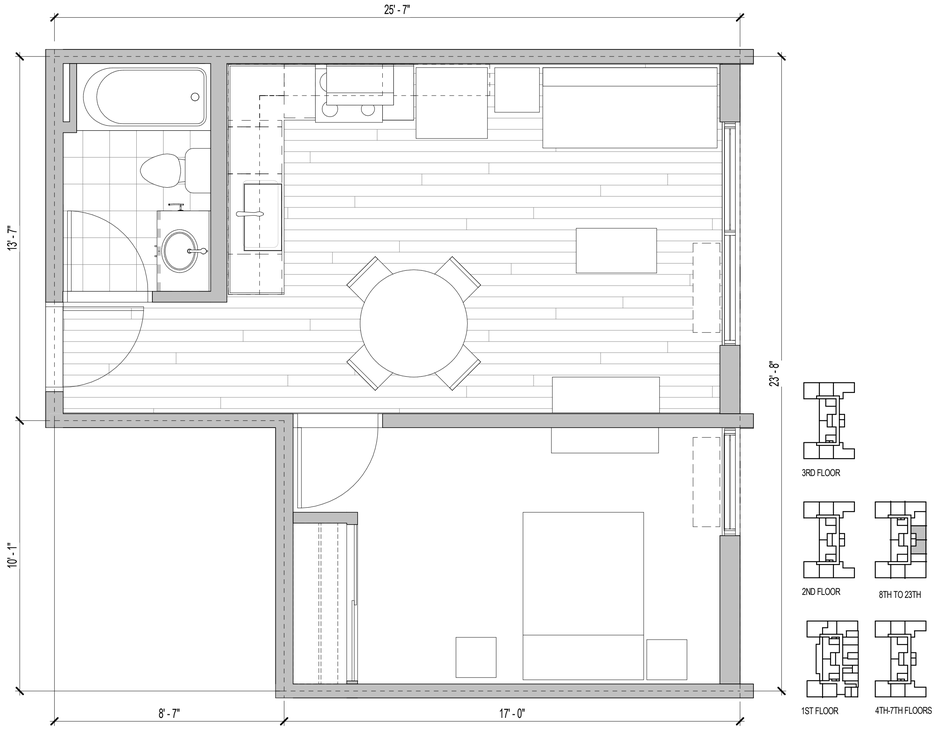

4 ENLARGED PLAN - TYPE 5 - 1BR/1BA (519 SF)
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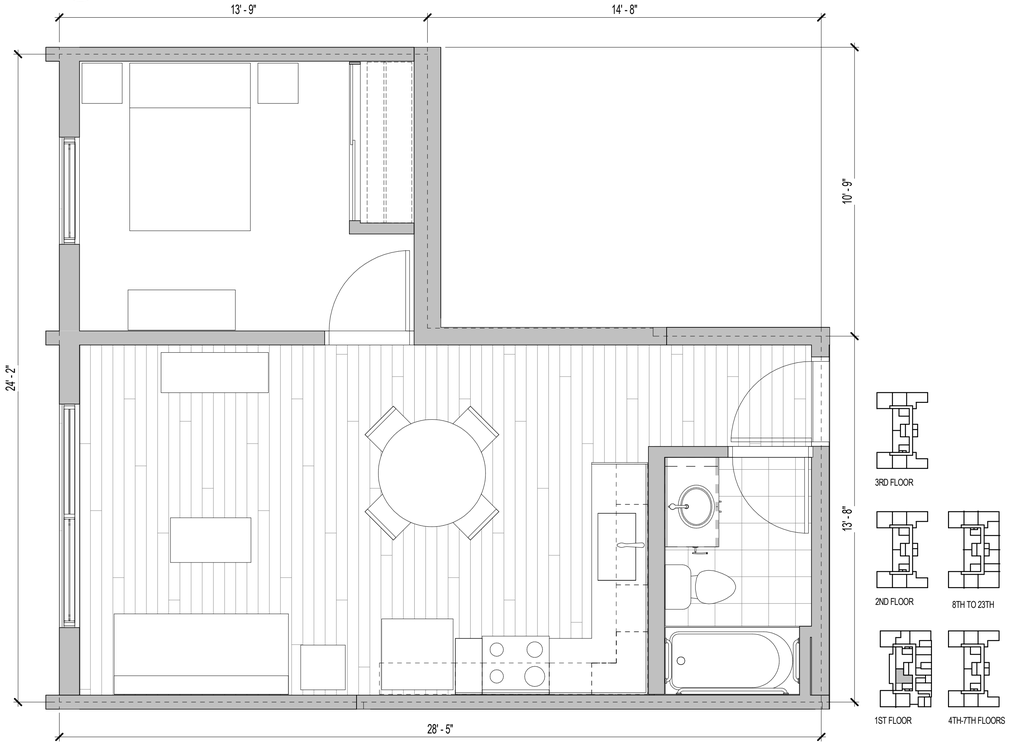

2 ENLARGED PLAN - TYPE 3 - 1BR/1BA (677 SF)
3/8" = 1'-0"

2' 0' 2' 4' 6'
3/8"=1'-0"

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PROJECT NAME: 1105 PIIKOI STREET
PROJECT ADDRESS: 1105 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078
DESCRIPTION: ENLARGED PLANS

ALAKEA DESIGN GROUP, LLC
ARCHITECTURE PLANNING INTERIOR DESIGN
1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH: 808-547-2270

SHEET NUMBER
A-401

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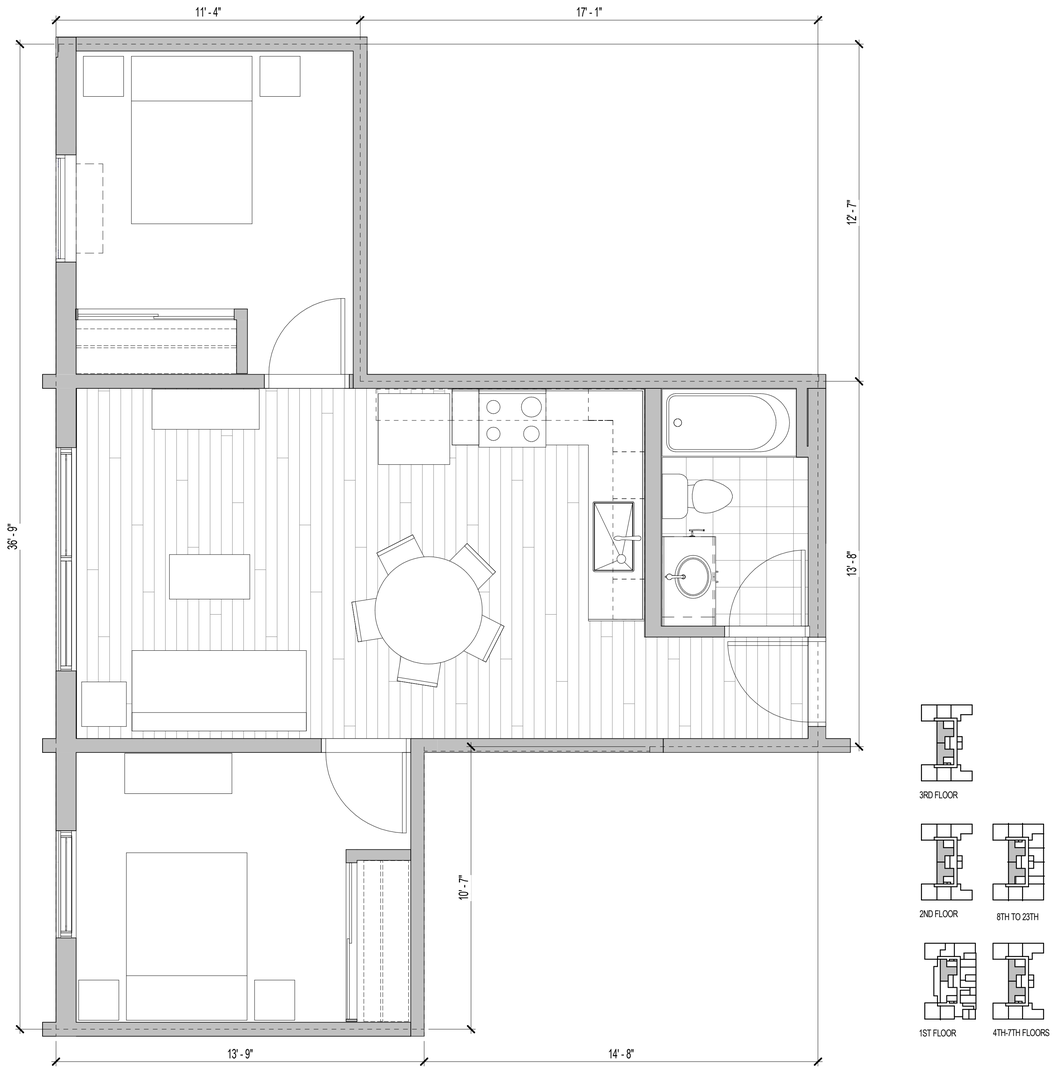
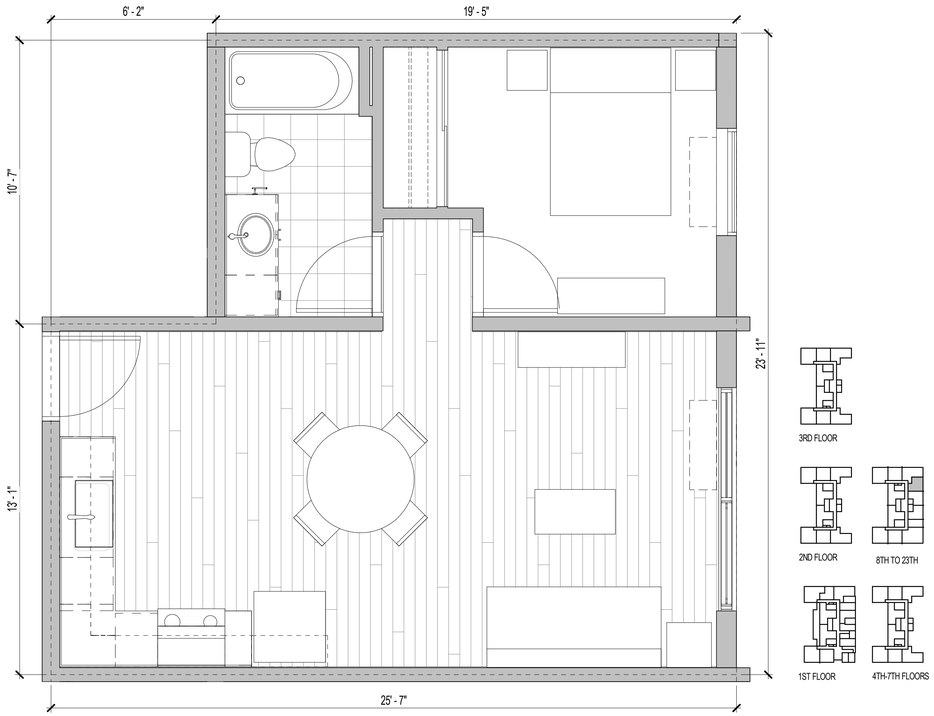


2 ENLARGED PLAN - TYPE 7 - 2BR/1BA (676 SF)
3/8" = 1'-0"



1 ENLARGED PLAN - TYPE 6 - 1BR/1BA (540 SF)
3/8" = 1'-0"

2' 0' 2' 4' 6'
3/8"=1'-0"

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PROJECT ADDRESS: 1105 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078
DESCRIPTION: ENLARGED PLANS

ALAKEA DESIGN GROUP, LLC
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1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH: 808-547-2270

SHEET NUMBER
A-402

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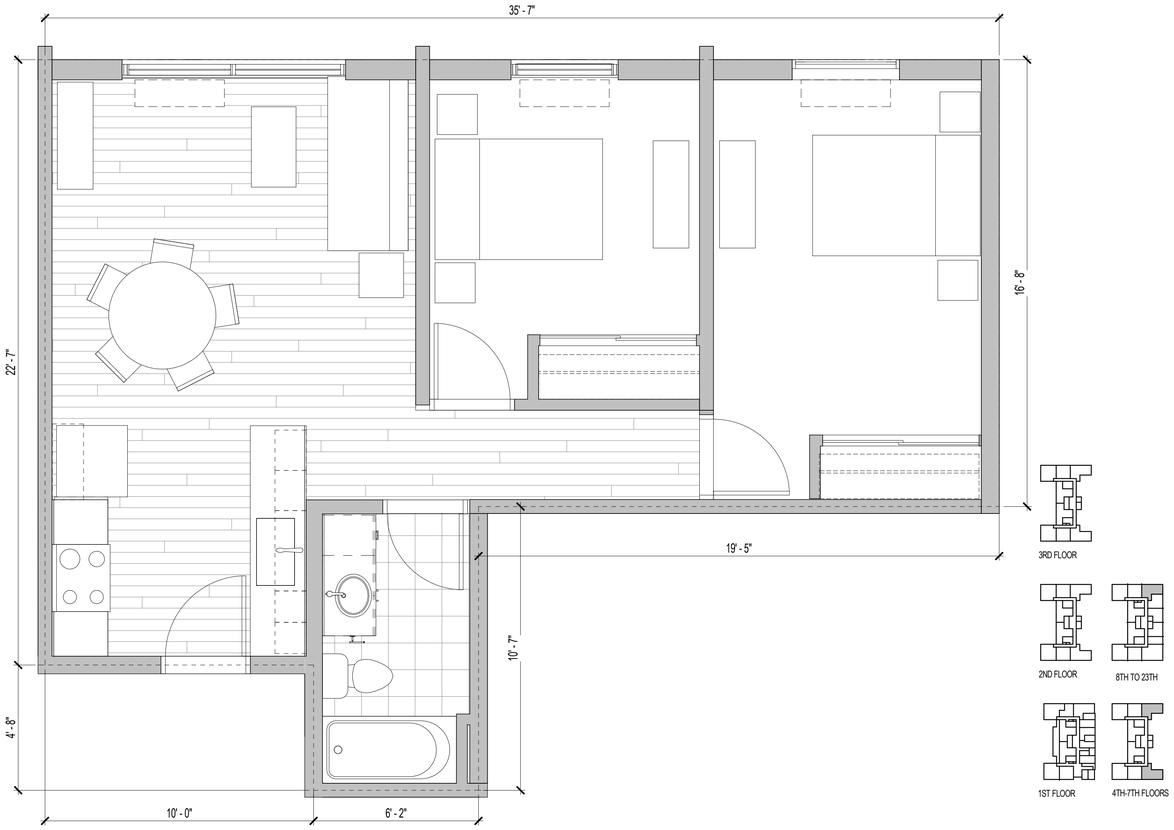
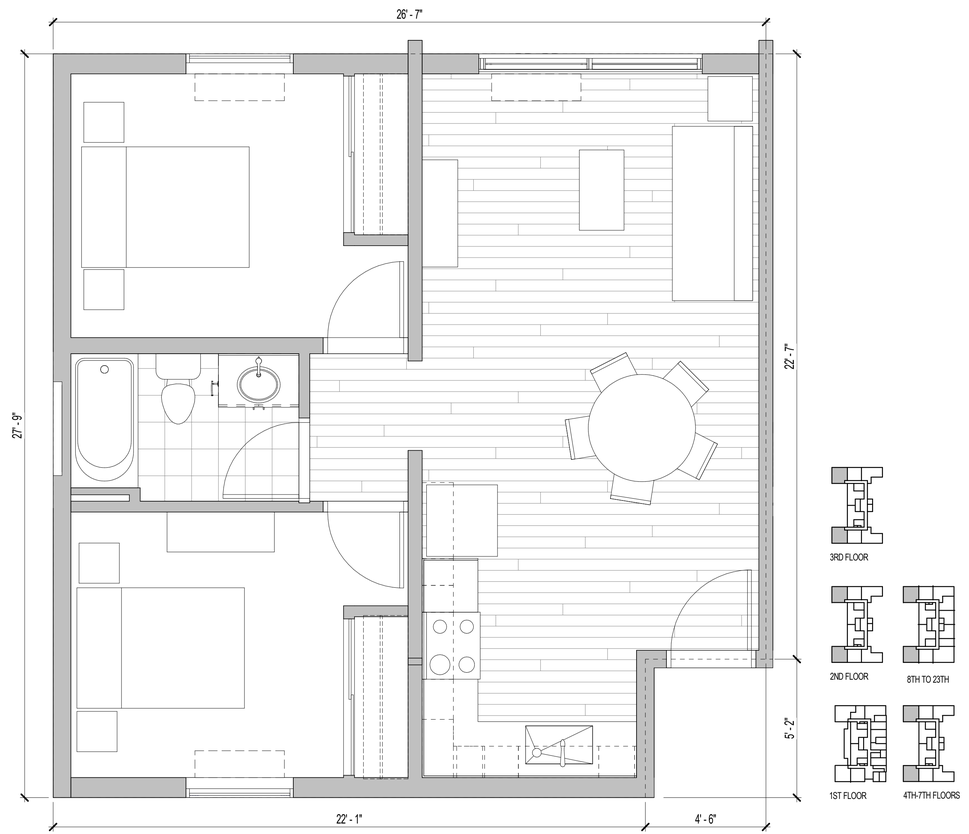


2 ENLARGED PLAN - TYPE 9 - 2BR/1BA (717 SF)
3/8" = 1'-0"



1 ENLARGED PLAN - TYPE 8 - 2BR/ABA (714 SF)
3/8" = 1'-0"

2' 0' 2' 4' 6'
3/8"=1'-0"

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PROJECT NAME: 1105 PIIKOI STREET
PROJECT ADDRESS: 1105 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078
DESCRIPTION: ENLARGED PLANS

ALAKEA DESIGN GROUP, LLC
ARCHITECTURE PLANNING INTERIOR DESIGN
1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH: 808-547-2270

SHEET NUMBER
A-403

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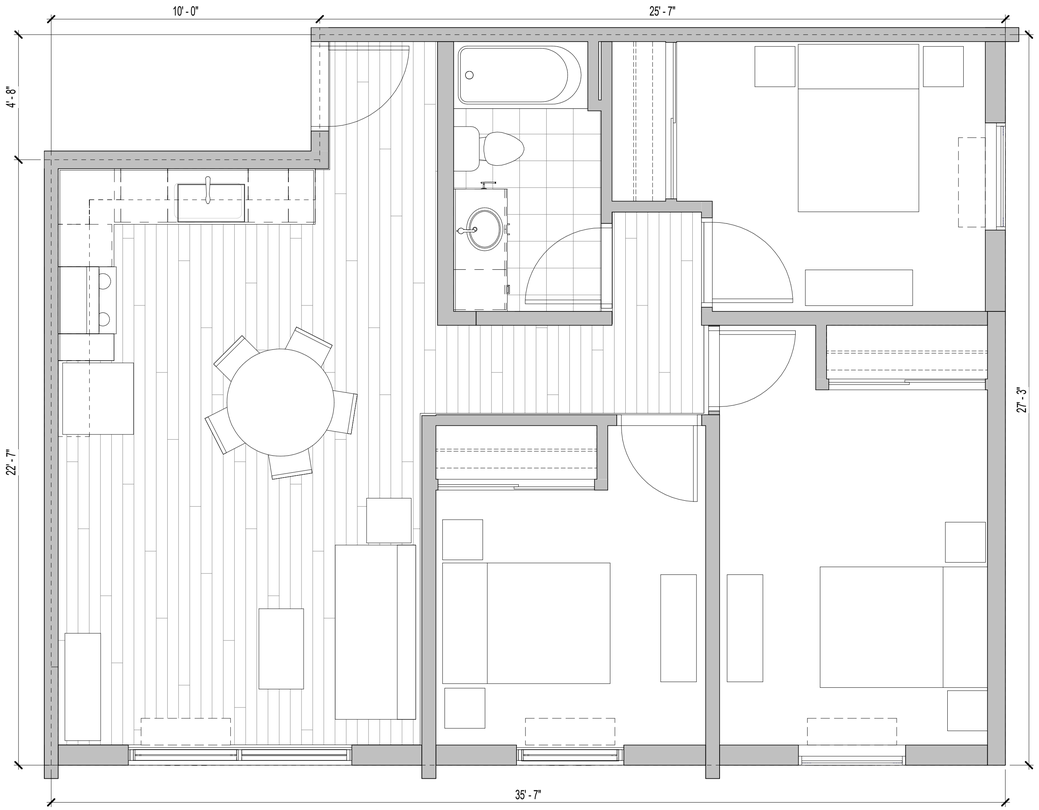

1 ENLARGED PLAN - TYPE 10 - 3BR/1BA (922 SF)
3/8" = 1'-0"

2' 0' 2' 4' 6'
3/8"=1'-0"

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PROJECT NAME: 1105 PIIKOI STREET
PROJECT ADDRESS: 1105 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078
DESCRIPTION: ENLARGED PLANS

ALAKEA DESIGN GROUP, LLC
ARCHITECTURE PLANNING INTERIOR DESIGN
1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH: 808-547-2270

SHEET NUMBER
A-404

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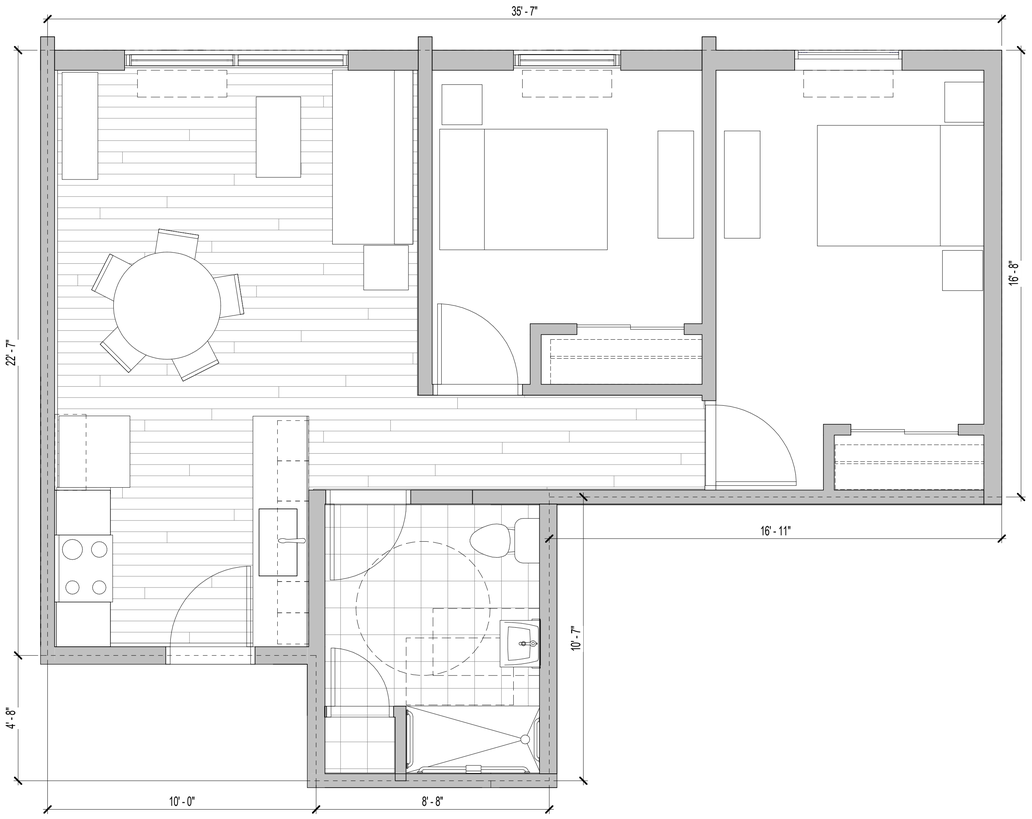

3 ENLARGED PLAN - TYPE 9 (ADA) - 2BR/1BA (744 SF)
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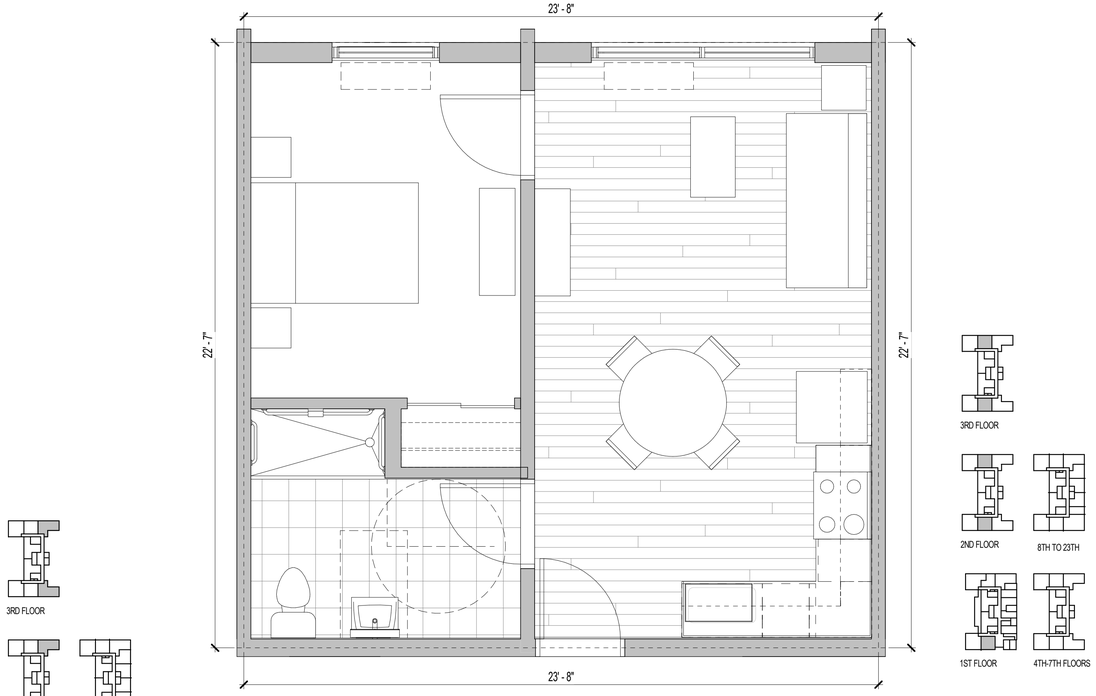
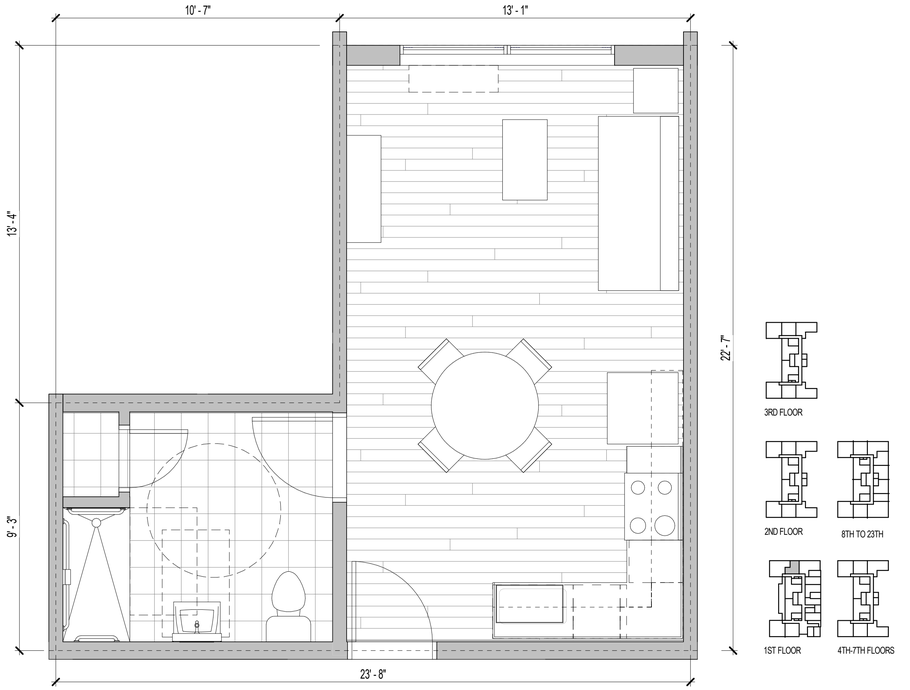


2 ENLARGED PLAN - TYPE 4 (ADA) - 1BR/1BA (534 SF)
3/8" = 1'-0"



1 ENLARGED PLAN - TYPE 1 (ADA) - 0BR/1BA (393 SF)
3/8" = 1'-0"

2' 0' 2' 4' 6'
3/8"=1'-0"

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DESCRIPTION: ENLARGED ADA PLANS

ALAKEA DESIGN GROUP, LLC
ARCHITECTURE PLANNING INTERIOR DESIGN
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SHEET NUMBER
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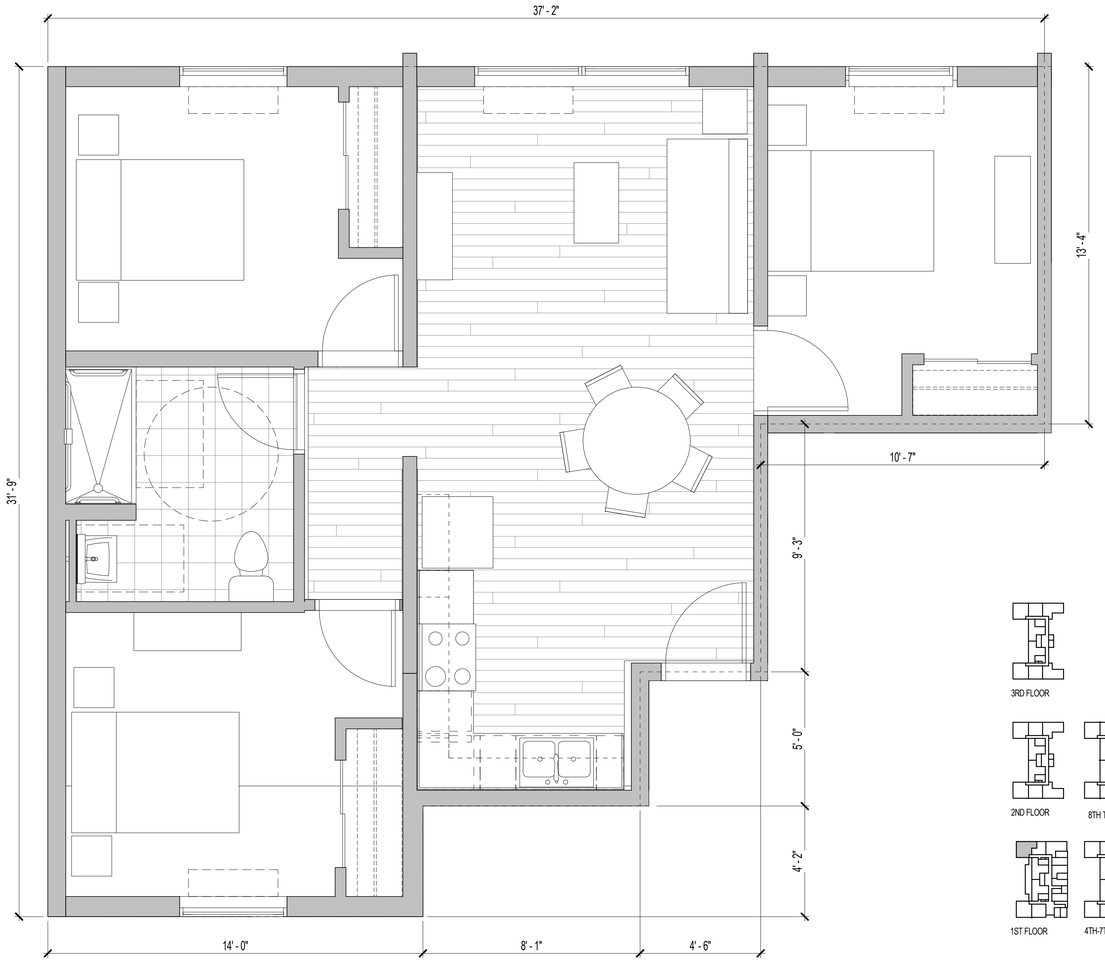

1 ENLARGED PLAN - TYPE 11 (ADA) - 3BR/1BA (910 SF)

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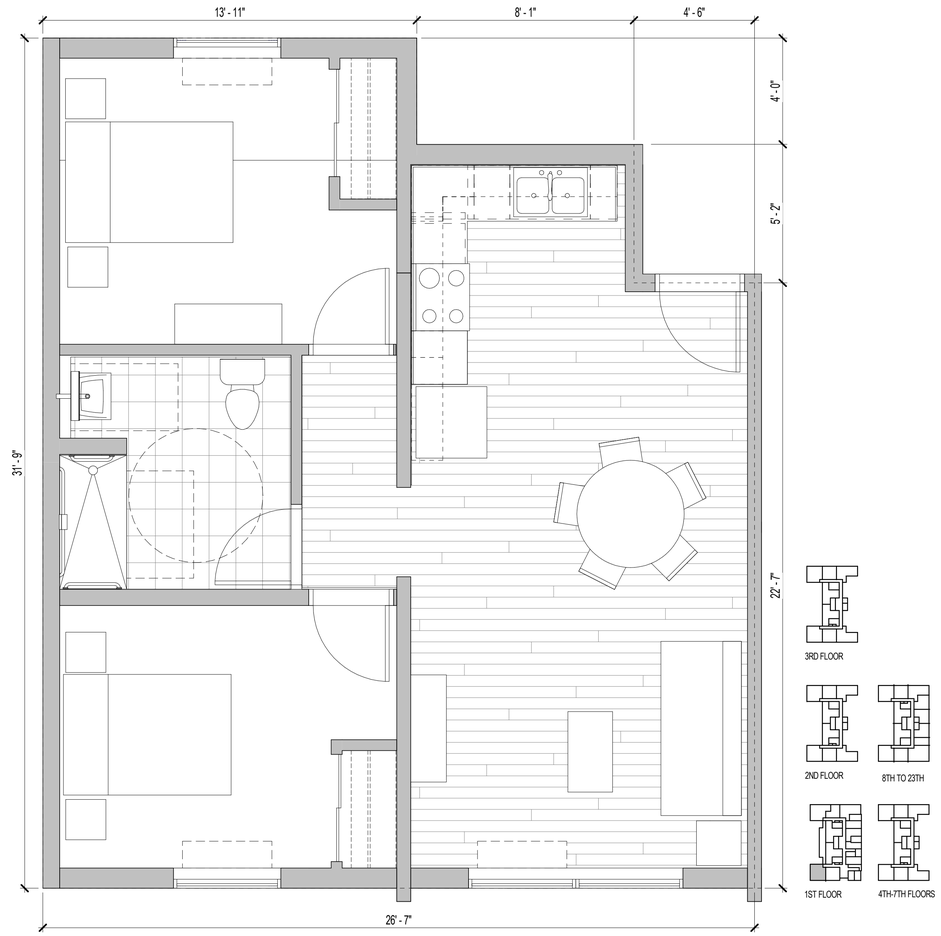

3 ENLARGED PLAN - TYPE 8 (ADA) - 2BR/1BA (768 SF)

3/8" = 1'-0"

2' 0' 2' 4' 6'

3/8"=1'-0"

Rev	Date:	Description	By:	Rev	Date:	Description	By:

REVISIONS

Drawn By: Author

Checked By: Checker

Date: Issue Date

Project Number: WXXXXX-XX-D-XXXX

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PROJECT NAME: 1105 PIIKOI STREET

PROJECT ADDRESS: 1105 PIIKOI STREET, TMK: (1) 2 4 004 046, (1) 2 4 004 078

DESCRIPTION: ENLARGED ADA PLANS

ALAKEA DESIGN GROUP, LLC

ARCHITECTURE PLANNING INTERIOR DESIGN

1100 ALAKEA STREET - SUITE 1500 - HONOLULU, HAWAII 96813 PH: 808-547-2270

SHEET NUMBER

A-406

PRINTED TIME STAMP: 5/24/2024 10:16:20 AM

Appendix N Tenant Notice Letter

April 6, 2024

1216 Young Street
Unit 101

Dear [redacted],

We are hand delivering this letter to inform you of an important update regarding the building you currently reside in. After careful consideration and planning, it has been decided that the property will undergo redevelopment to provide affordable housing opportunities to more individuals in our community.

As a result of this redevelopment project, all current residents will be required to vacate the premises by January 31, 2025. We realize this news may come as a surprise, and we want to assure you that our team will be available to address your concerns and answer questions.

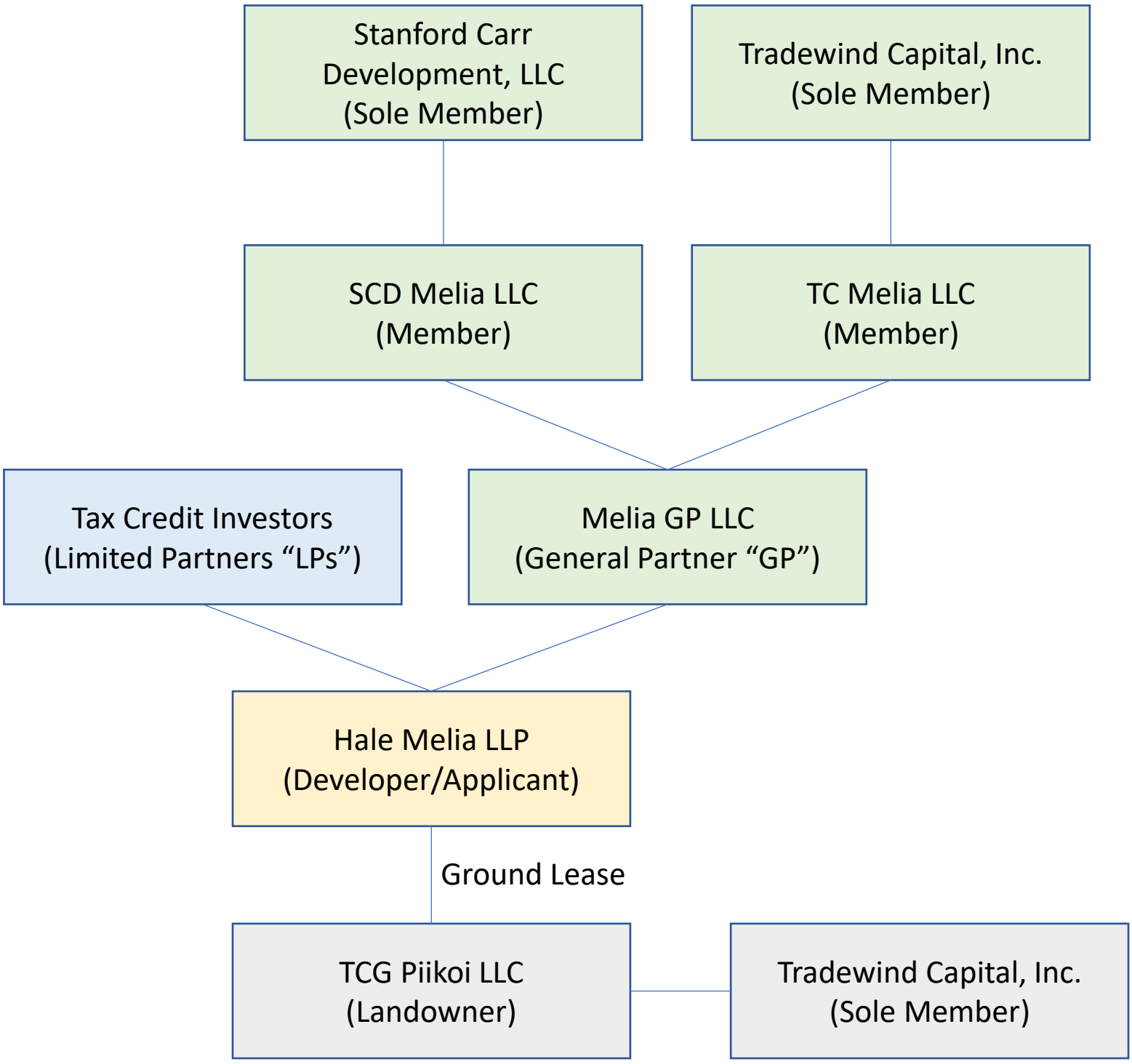
If you believe you may qualify for residence in the future affordable housing redevelopment project, we would like to explore if and how you might be able to be among the first to apply.

Your understanding and cooperation are greatly appreciated. More detailed information will be forthcoming. Until then, please do not hesitate to reach out to Chris Fong at (808) 762-6095 for assistance or clarification regarding the relocation process. Keith Hiranaka is available to answer any questions regarding your lease at (808) 220-3917.

Sincerely,

Chris Fong
Project team member
TCG Young LLC

Appendix O Project Org Chart


Stanford Carr Development, LLC (Sole Member)
Tradewind Capital, Inc. (Sole Member)
SCD Melia LLC (Member)
TC Melia LLC (Member)
Tax Credit Investors (Limited Partners "LPs")
Melia GP LLC (General Partner "GP")
Hale Melia LLP (Developer/Applicant)
Ground Lease
TCG Piikoi LLC (Landowner)
Tradewind Capital, Inc. (Sole Member)

Appendix P Complete Streets Program

Honolulu / URBAN CORE COMPLETE STREETS

Project Description

The Opportunity

Urban Honolulu is transforming. In accordance with smart growth principles and transit oriented development, the city is concentrating future development within Honolulu's urban growth boundary and in proximity to future rail stations.

This densification will require a sustainable transportation network within the urban core, including transportation alternatives for those that can't or don't wish to use a car for all of their daily trips. With this transformation, Honolulu can realize the social, economic, and environmental benefits of becoming a more safe and walkable city.

Through its complete streets program, the City and County of Honolulu is committed to implementing complete streets solutions that improve safety, accessibility, and comfort for all users, encourage physical activity, and reflect community needs and character.

The Project

The Honolulu Urban Core Complete Streets project is looking at opportunities for integrating complete streets solutions into approximately 16 miles of roadways within Honolulu's urban core that are planned for reconstruction, repaving, or restriping.

The project area spans diverse neighborhoods from Chinatown to Kaimuki. It includes some of the densest corridors on Oahu, home to key neighborhoods, business districts, schools, shopping centers, cultural institutions, government facilities, and medical facilities.

The project team will collect and analyze data, study existing transportation patterns, and work closely with community members and stakeholders to identify and design solutions that balance the needs of all users and modes in the urban core, including pedestrians, vehicles, bicyclists, and transit patrons.

The Process: How will we get there?

Tasks & Timeline

- **Data Collection** — August 2017
- **Stakeholder Outreach** — September-October 2017
- **Community Events** — November 2017
- **Preliminary Concepts and Draft Transportation Assessment** — October 2017
- **Revised Concepts and Transportation Assessment** — December 2017
- **Final Designs** — February 2018

The Solutions

The project will consider solutions appropriate to each street, including:

- Roadway and Intersection Design
- Sidewalks and Paths
- Landscaping and Trees
- Pedestrian Crossings
- Transit Stops
- Bike Facilities

Get Involved

Learn more about the project and sign up for e-mail updates at:

completestreets@honolulu.gov

Send your comments or questions to:

www.honolulu.gov/completestreets

Your Opinion Matters

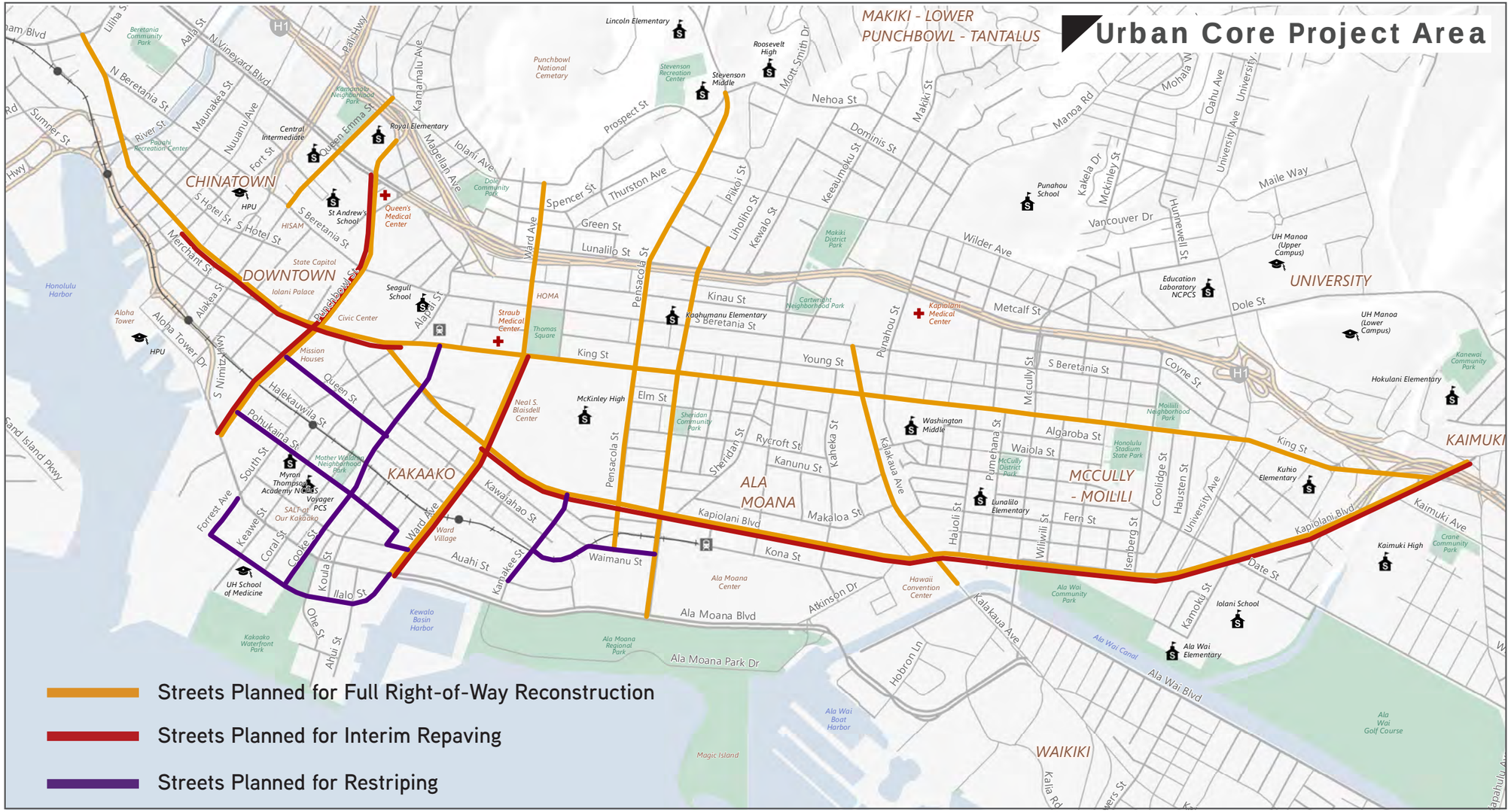
Community Engagement

Community input is critical to the process of identifying solutions that balance the needs of the neighborhood's diverse users and match community character. We need your input!

- **How do you move around the area?**
- **What streetscape features make your neighborhood unique?**
- **What obstacles do you encounter while traveling through the area?**
- **How could better transportation options improve your everyday life?**

We will share proposals for improvements to key streets and intersections, and will look to you to help us understand how you use them, and how to best address safety for all users in your community.

Urban Core Project Area



*Note: Other current projects are addressing solutions for Kalihi, Waikiki, Upper Nuuanu, Liliha and University Avenue. Visit www.honolulu.gov/completestreets to learn more!

Sidewalk Corner Bulbout

Pauahi St at Bethel St, Honolulu

Urban Roundabout

Keeaumoku St, Honolulu

Road Diet with Bike Lanes

Kamehameha IV Rd, Honolulu

Possible Complete Streets Solutions

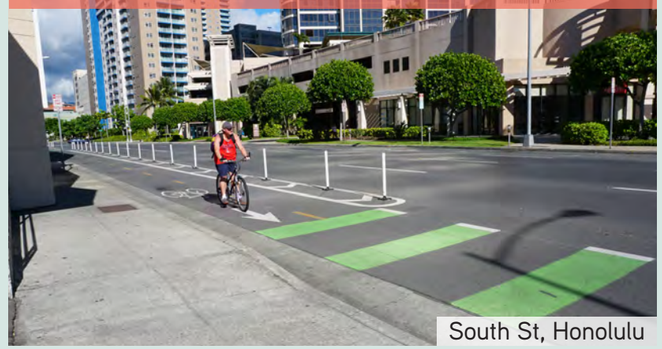
All-way Pedestrian Crossing

King St at Kekaulike St, Honolulu

Landscaped Median/Crossing Island

Kailua Road, Kailua

Protected Bike Lane


South St, Honolulu

Rectangular Rapid Flashing Beacon

Davis, CA

Appendix Q TCG Piikoi LLC Ownership

DCCA State of Hawaii

Downloaded on June 7, 2024.
The information provided below is not a certification of good standing and does not constitute any other certification by the State.
Website URL: http://hbe.ehawaii.gov/documents

Business Information

MASTER NAME	TCG PIIKOI LLC
BUSINESS TYPE	Domestic Limited Liability Company (LLC)
FILE NUMBER	176044 C5
STATUS	Active
ORGANIZED IN	Hawaii UNITED STATES
REGISTRATION DATE	Jun 28, 2017
MAILING ADDRESS	201 MERCHANT ST STE 2050 HONOLULU, Hawaii 96813 UNITED STATES
TERM	AT-WILL
MANAGED BY	MANAGER(S)
AGENT NAME	TRADEWIND CAPITAL, INC.
AGENT ADDRESS	201 MERCHANT ST STE 2050 HONOLULU, Hawaii 96813 UNITED STATES

Annual Filings

FILING YEAR	DATE RECEIVED	STATUS
2024	Apr 10, 2024	Processed
2023	Apr 4, 2023	Processed
2022	Apr 6, 2022	Processed
2021	Apr 1, 2021	Processed
2020	Apr 9, 2020	Processed
2019	Jun 10, 2019	Processed
2018	May 14, 2018	Processed

Officers

NAME	OFFICE	DATE
TRADEWIND CAPITAL, INC.	MGR	Apr 1, 2023

REVISED 3/6/2024
Report date unchanged

STATUS REPORT

This Report (and any revisions thereto) is issued for the sole benefit of the Purchaser of this Report identified in the Order No. referenced below. Title Guaranty of Hawaii, LLC's responsibility for any actual loss incurred by reason of any incorrectness herein is limited to the lesser of $3,500 or two times the amount paid for this Report.

SCHEDULE A

Title Guaranty of Hawaii, LLC (the "Company") hereby reports as follows as to the title of the Parties named in Schedule A in and to the title to land described in Schedule C, subject to the matters set forth in Schedule B, based solely upon an abstract and examination of the following Indices in the State of Hawaii: (a) the Office of the Clerks of the Circuit Court of the Judicial Circuit within which the land is located; (b) the Office of the Clerk of the District Court of the United States for the District of Hawaii; (c) the Office of the Registrar of Conveyances; and (d) the Office of the Real Property Tax Assessment Division of the County within which the land is located.

TCG PIIKOI LLC,
a Hawaii limited liability company,
as Tenant in Severalty,
as Fee Owner

This report is subject to the Conditions and Stipulations set forth in Schedule D and is dated as of February 26, 2024 at 8:00 a.m.

Inquiries concerning this report should be directed to:
Title Officer - Nanette Kodate; Office: (808)533-5887
Email: nkodate@tghawaii.com
Please reference Title Order No. 7311462316.

SCHEDULE B
EXCEPTIONS

1. Real Property Taxes, if any, that may be due and owing.

   Tax Key: (1) 2-4-004-046 Area Assessed: 20,019 square feet

   Real Property Tax Website: (1) 2-4-004-046

   -Note:- Attention is invited to the fact that the premises covered herein may be subject to possible rollback or retroactive property taxes.

2. Any and all matters not shown in the Indices described in Schedule A.

3. Mineral and water rights of any nature.

4. SETBACK 10' WIDE

   PURPOSE : building
   REFERENCED : on survey prepared by Erik S. Kaneshiro, Land Surveyor, with Austin Tsutsumi & Associates, Inc., dated March 6, 2017.

5. SETBACK 12' WIDE

   PURPOSE : street
   REFERENCED : on survey prepared by Erik S. Kaneshiro, Land Surveyor, with Austin Tsutsumi & Associates, Inc., dated March 6, 2017.

6. Discrepancies, conflicts in boundary lines, shortage in area, encroachments or any other matters which a correct survey or archaeological study would disclose.

7. Any unrecorded leases and matters arising from or affecting the same.

8. Any lien (or claim of lien) for services, labor or material arising from an improvement or work related to the land described in Schedule C herein.

END OF SCHEDULE B

SCHEDULE C

All of that certain parcel of land (being portion(s) of the land(s) described in and covered by Royal Patent Grant Number 365 to H. N. Crabbe and Royal Patent Grant Number 372 to Mrs. M. P. Whitney) situate, lying and being at Kulaokahua, Honolulu, City and County of Honolulu, State of Hawaii, being PARCEL 1, and thus bounded and described:

Beginning at the west corner of this piece of land at the east corner of Young and Piikoi Streets, the true azimuth and distance from a Government Survey Street Monument in the intersection of Young and Piikoi Streets, being 247° 45' 14.39 feet, the coordinates of said Street Monument referred to Government Survey Triangulation Station "PUNCHBOWL" being 4,173.23 feet south and 1,889.41 feet east, and running by true azimuths measured clockwise from South:

1.	204°	38'	148.75	feet along the southeasterly side of Piikoi Street;
2.	291°	12'	100.30	feet along Grant 365 to H. N. Crabbe;
3.	290°	37'	30.06	feet;
4.	21°	12'	148.78	feet;
5.	111°	12'	139.27	feet along the northeasterly side of Young Street to the point of beginning and containing an area of 20,019 square feet, more or less.

BEING THE PREMISES ACQUIRED BY SPECIAL LIMITED WARRANTY DEED

GRANTOR : THOMAS K. KAULUKUKUI, JR., PATRICK K.S.L. YIM, and CLAIRE L. ASAM, Trustees of the Lili'uokalani Trust under an unrecorded Trust Instrument made by Her Late Majesty Queen Lili'uokalani dated December 2, 1909, as amended

GRANTEE : TCG PIIKOI LLC, a Hawaii limited liability company, as Tenant in Severalty

DATED : effective July 12, 2017
RECORDED : Document No. A-64020064

END OF SCHEDULE C

GENERAL NOTES

1. There is hereby omitted from any covenants, conditions and reservations contained herein any covenant or restriction based on race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law. Lawful restrictions under state or federal law on the age of occupants in senior housing or housing for older persons shall not be construed as restrictions based on familial status.

SCHEDULE D

CONDITIONS AND STIPULATIONS

1. This Status Report (which term shall include any revisions thereto) is a report of the record title only, based solely upon an abstract and examination of the Indices described in Schedule A as of the date of the Report. No responsibility is assumed for (a) matters which may affect the title but either were not disclosed or were incorrectly disclosed in said indices at the date hereof; or (b) matters created, suffered, assumed, or agreed to by Purchaser; or (c) matters not shown herein but actually know to Purchaser. Title Guaranty of Hawaii, Incorporated (the "Company") makes no representation as to the legal effect, validity or priority of matters shown or referred to herein.

2. If the Report is incorrect in any respect, the responsibility of the Company shall be limited to the resulting actual loss, including any attorney's fees and legal costs, but in no event shall exceed the lesser of $3,500 or two times the amount paid for the Report. Upon payment of any loss hereunder, the Company shall be subrogated to all rights the Purchaser may have against any person or property as a result of such loss.

3. If the Purchaser of this Report shall suffer an actual loss by reason of the incorrectness of the Report, the Purchaser shall promptly notify the Company in writing. After receipt of such notice, the Company shall be allowed a reasonable time in which to investigate the claim. At its sole option, the Company may litigate the validity of the claim, negotiate a settlement or pay to Purchaser the amount the Company is obligated to pay under this Report. The Company's responsibility hereunder constitutes indemnity only and nothing herein shall obligate the Company to assume the defense of the Purchaser with respect to any claim made hereunder.

4. This report is the entire contract between the Purchaser and the Company and any claim by Purchaser against the Company, arising hereunder, shall be enforceable only in accordance with the provisions herein.

5. Notice required to be given the Company shall include the Order Number of this Report and shall be addressed to Title Guaranty of Hawaii, LLC, P.O. Box 3084, Honolulu, HI 96802, Attention: Legal Department.

STATUS REPORT

This Report (and any revisions thereto) is issued for the sole benefit of the Purchaser of this Report identified in the Order No. referenced below. Title Guaranty of Hawaii, LLC's responsibility for any actual loss incurred by reason of any incorrectness herein is limited to the lesser of $3,500 or two times the amount paid for this Report.

SCHEDULE A

Title Guaranty of Hawaii, LLC (the "Company") hereby reports as follows as to the title of the Parties named in Schedule A in and to the title to land described in Schedule C, subject to the matters set forth in Schedule B, based solely upon an abstract and examination of the following Indices in the State of Hawaii: (a) the Office of the Clerks of the Circuit Court of the Judicial Circuit within which the land is located; (b) the Office of the Clerk of the District Court of the United States for the District of Hawaii; (c) the Office of the Registrar of Conveyances; and (d) the Office of the Real Property Tax Assessment Division of the County within which the land is located.

TCG PIIKOI LLC,
a Hawaii limited liability company,
as Tenant in Severalty,
as Fee Owner

This report is subject to the Conditions and Stipulations set forth in Schedule D and is dated as of May 30, 2024 at 8:00 a.m.

Inquiries concerning this report should be directed to:
Title Officer - Nanette Kodate; Office: (808)533-5887
Email: nkodate@tghawaii.com
Please reference Title Order No. 7311462321.

SCHEDULE B
EXCEPTIONS

1. Real Property Taxes, if any, that may be due and owing.

   Tax Key: (1) 2-4-004-078 Area Assessed: 11,958 square feet

   Real Property Tax Website: (1) 2-4-004-078

   -Note:- Attention is invited to the fact that the premises covered herein may be subject to possible rollback or retroactive property taxes.

2. Any and all matters not shown in the Indices described in Schedule A.

3. Mineral and water rights of any nature.

4. SETBACK 10 FEET WIDE

   PURPOSE : building
   REFERENCED : on survey prepared by Erik S. Kaneshiro, Land Surveyor, with Austin Tsutsumi & Associates, Inc., dated March 6, 2017.

5. Discrepancies, conflicts in boundary lines, shortage in area, encroachments or any other matters which a correct survey or archaeological study would disclose.

6. Any unrecorded leases and matters arising from or affecting the same.

7. Any lien (or claim of lien) for services, labor or material arising from an improvement or work related to the land described in Schedule C herein.

END OF SCHEDULE B

SCHEDULE C

All of that certain parcel of land (being portion(s) of the land(s) described in and covered by Royal Patent Grant Number 365 to H. N. Crabbe and Royal Patent Grant Number 372 to Mrs. M. P. Whitney) situate, lying and being on the northeasterly side of Young Street, about 150 feet southeasterly from Piikoi Street, at Kulaokahua, Honolulu, City and County of Honolulu, State of Hawaii, being LOT 2, and thus bounded and described:

Beginning at the west corner of this piece of land on the northeasterly side of Young Street, the true traverse from a Government Survey Street Monument in the intersection of Young and Piikoi Streets being 274° 45' 14.39 feet and 291° 12' 139.27 feet, the coordinates of said street monument referred to Government Survey Triangulation Station "PUNCHBOWL" being 4,173.23 feet south and 1,889.41 feet east, and running by true azimuths measured clockwise from South:

1.	21°	12'	148.78	feet;
2.	290°	37'	76.09	feet;
3.	339°	25'	6.52	feet;
4.	21°	22'	144.70	feet along Grant 374 to J. M. Robinson and Company;
5.	111°	12'	80.00	feet along the northeasterly side of Young Street to the point of beginning and containing an area of 11,958 square feet, more or less.

BEING THE PREMISES ACQUIRED BY SPECIAL LIMITED WARRANTY DEED

GRANTOR	:	THOMAS K. KAULUKUKUI, JR., PATRICK K.S.L. YIM, and CLAIRE L. ASAM, Trustees of the Lili'uokalani Trust under an unrecorded Trust Instrument made by Her Late Majesty Queen Lili'uokalani dated December 2, 1909, as amended
GRANTEE	:	TCG YOUNG LLC, a Hawaii limited liability company, as Tenant in Severalty
DATED	:	effective July 12, 2017
RECORDED	:	Document No. A-64020065

END OF SCHEDULE C

GENERAL NOTES

1. There is hereby omitted from any covenants, conditions and reservations contained herein any covenant or restriction based on race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law. Lawful restrictions under state or federal law on the age of occupants in senior housing or housing for older persons shall not be construed as restrictions based on familial status.

2. NOTICE OF MERGER recorded as Document No. A-88920688 on May 6, 2024, sets forth the merger of TCG YOUNG LLC, a Hawaii limited liability company, with and into TCG PIIKOI LLC, a Hawaii limited liability company, effective as of April 30, 2024.

SCHEDULE D

CONDITIONS AND STIPULATIONS

1. This Status Report (which term shall include any revisions thereto) is a report of the record title only, based solely upon an abstract and examination of the Indices described in Schedule A as of the date of the Report. No responsibility is assumed for (a) matters which may affect the title but either were not disclosed or were incorrectly disclosed in said indices at the date hereof; or (b) matters created, suffered, assumed, or agreed to by Purchaser; or (c) matters not shown herein but actually know to Purchaser. Title Guaranty of Hawaii, Incorporated (the "Company") makes no representation as to the legal effect, validity or priority of matters shown or referred to herein.

2. If the Report is incorrect in any respect, the responsibility of the Company shall be limited to the resulting actual loss, including any attorney's fees and legal costs, but in no event shall exceed the lesser of $3,500 or two times the amount paid for the Report. Upon payment of any loss hereunder, the Company shall be subrogated to all rights the Purchaser may have against any person or property as a result of such loss.

3. If the Purchaser of this Report shall suffer an actual loss by reason of the incorrectness of the Report, the Purchaser shall promptly notify the Company in writing. After receipt of such notice, the Company shall be allowed a reasonable time in which to investigate the claim. At its sole option, the Company may litigate the validity of the claim, negotiate a settlement or pay to Purchaser the amount the Company is obligated to pay under this Report. The Company's responsibility hereunder constitutes indemnity only and nothing herein shall obligate the Company to assume the defense of the Purchaser with respect to any claim made hereunder.

4. This report is the entire contract between the Purchaser and the Company and any claim by Purchaser against the Company, arising hereunder, shall be enforceable only in accordance with the provisions herein.

5. Notice required to be given the Company shall include the Order Number of this Report and shall be addressed to Title Guaranty of Hawaii, LLC, P.O. Box 3084, Honolulu, HI 96802, Attention: Legal Department.