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**HAWAII HOUSING FINANCE
AND DEVELOPMENT CORPORATION**

2010 OCT 15 P 2:54
LAND USE COMMISSION
STATE OF HAWAII

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of

HAWAII HOUSING FINANCE AND
DEVELOPMENT CORPORATION and
FOREST CITY HAWAII KONA, LLC

To Amend the Agricultural Land Use District
Boundaries into the Urban Land Use District
for certain lands situate at Keahuolu, North
Kona; consisting of approximately 271.837
acres, Tax Map Key Nos. (3) 7-4-021:020
(por.), (3) 7-4-021:024, (3) 7-4-021:025, (3) 7-
4-021:026, (3) 7-4-021:027

DOCKET NO. A10-788

PETITIONER'S LIST OF REBUTTAL
EXHIBITS; EXHIBITS 88 - 108;
CERTIFICATE OF SERVICE

**PETITIONER'S LIST OF REBUTTAL EXHIBITS; EXHIBITS 88 - 108;
CERTIFICATE OF SERVICE**

DOCKET NO.: **A10-788/KAMAKANA VILLAGES AT KEAHUOLU**

PETITIONERS: **FOREST CITY HAWAII KONA, LLC AND HAWAII HOUSING FINANCE & DEVELOPMENT CORPORATION**

PETITIONER'S LIST OF REBUTTAL EXHIBITS

EXHIBIT NUMBER	DESCRIPTION	PARTY: OBJECTIONS	ADMIT
For Exhibits 1 - 37, <i>see</i> the Petitioner's Exhibit filed with the corresponding Exhibit number in this Docket A10-788 with that certain Petition for Land Use District Boundary Amendment filed September 7, 2010.			
For Petitioner's Exhibits 38, 40, 42, 43, 45, 46, 48, 49, 50, 52, 54, 55, 56, 58, 60, 62, 64, 65, 66, 68, 69, 71, 72, 73, 75, 77, 78, 80 - 85 and 87, <i>see</i> Petitioner's First List of Exhibits, filed with the Land Use Commission on October 11, 2010.			
88	Hawaii County Code Section 25-2-46		
89	HRS Chapter 201H List of Exemptions for Kamakana Villages (October 8, 2010)		
90	Liliuokalani Trust Final Environmental Impact Statement Keahuolu Lands (October 23, 1990) Appendix I, Transportation Impact Analysis		
91	Queen Liliuokalani Trust LUC Annual Report (August 16, 2010)		
92	Final Environmental Assessment - Kona Commons - Queen Liliuokalani Trust (March 11, 2008); p.1, 5, Fig. 1, Dept of Transportation comment letter (February 22, 2008); Belt Collins response letter (March 11, 2008)		
93	Kailua Park Master Plan Draft Environmental Assessment (August 2010); Fig.1, p.2-1, 4-3, 4-8.		

Petitioner reserves its rights to amend or supplement its Rebuttal Exhibits.

A10-788 | Petitioner's List of Rebuttal Exhibits

DOCKET NO.: **A10-788/KAMAKANA VILLAGES AT KEAHUOLU**

PETITIONERS: **FOREST CITY HAWAII KONA, LLC AND HAWAII HOUSING FINANCE & DEVELOPMENT CORPORATION**

PETITIONER'S LIST OF REBUTTAL EXHIBITS

EXHIBIT NUMBER	DESCRIPTION	PARTY: OBJECTIONS	ADMIT
94	From Vision to Reality, ULI J.C. Nichols Prize for Visionaries in Urban Development		
95	New Urbanism Epitomized (Fall 2008)		
96	Colorado Expressions (April/May 2008) - Stapleton		
97	Press Release (April 5, 2007); Forest City Public Private Partnership with Department of Navy - Ford Island and Marine Corps Base Hawaii		
98	Press Release (November 5, 2007); Forest City Receives Two National Awards for Military Housing Projects on Oahu		
99	Press Release (December 17, 2007); Forest City Completion of Homes at U.S. Navy Community of Catlin Park		
100	Construction Preview 2008; Forest City Hawaii Military Communities Privatization & Initiatives		
101	Press Release (March 25, 2008); Forest City Military Communities Completion of Homes at Manana Marine Corps Base		

Petitioner reserves its rights to amend or supplement its Rebuttal Exhibits.

A10-788 | Petitioner's List of Rebuttal Exhibits

DOCKET NO.: **A10-788/KAMAKANA VILLAGES AT KEAHUOLU**

PETITIONERS: **FOREST CITY HAWAII KONA, LLC AND HAWAII HOUSING FINANCE & DEVELOPMENT CORPORATION**

PETITIONER'S LIST OF REBUTTAL EXHIBITS

EXHIBIT NUMBER	DESCRIPTION	PARTY: OBJECTIONS	ADMIT
102	Press Release (June 16, 2008) Forest City Military Communities High Efficiency Photovoltaic Solar Power System at Halsey Terrace		
103	Press Release (December 10, 2008) Forest City Military Communities Completion of Homes at Waikulu neighborhood on Marine Corps Base		
104	Press Release (May 28, 2010) Forest City Military Communities Completion of Waikulu Neighborhood on Marine Corps Base Hawaii		
105	Press Release (June 3, 2009) Forest City Military Communities Historic Neighborhood Restoration for Nob Hill neighborhood on Ford Island		
106	ULI J.C. Nichols Prize for Visionaries in Urban Development (2006) New Urbanist Pioneer, Peter Calthorpe		
107	Palani Road/Uluaoa Street intersection		
108	KHON2 - Construction Project Aims to Revitalize Big Island (September 21, 2010)		

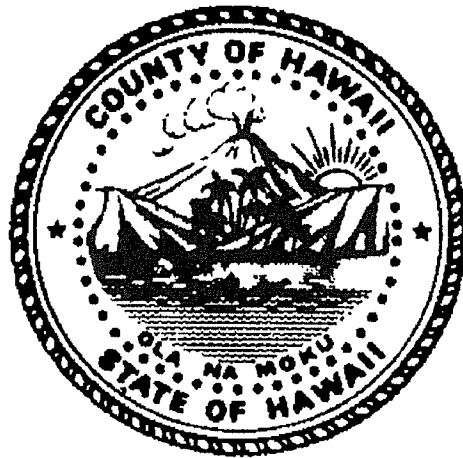
Petitioner reserves its rights to amend or supplement its Rebuttal Exhibits.

A10-788 | Petitioner's List of Rebuttal Exhibits

THE HAWAII COUNTY CODE

1983 (2005 Edition, as amended)

Updated to include: **Supplement 10 (7-2010)**
Contains ordinances effective through: **06-30-10**



A CODIFICATION OF THE GENERAL ORDINANCES
OF THE COUNTY OF HAWAII
STATE OF HAWAII

Office of the County Clerk
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720
(808) 961-8255

Volume 2

Petitioner's
Exhibit no. 88

- (b) Changes or alterations of conditions of any change of zone ordinance shall be processed in the same manner as a zone change, unless the council authorizes the changes or alterations to be made by the director. A request for any change or alteration of conditions shall be submitted in writing to the director, in lieu of the application required for an applicant-initiated change of zone. The request shall be accompanied by a filing fee of \$250.
 - (c) Failure to fulfill any conditions of the zone change within the specified time limitations, or any extensions thereto, may be grounds for the enactment of an ordinance making further zone changes or for rezoning the affected property back to its original zoning designation or a more appropriate zoning designation, upon initiation by either the director or the council in accordance with section 25-2-43.
- (1996, Ord. No. 96-160, sec. 2; ratified April 6, 1999.)

Section 25-2-45. Nonsignificant zoning changes.

- (a) The director may administratively grant any nonsignificant zoning change. A nonsignificant zoning change must comply with the designations for the property set forth in the general plan and any development plan adopted by ordinance, and not result in an increase or decrease in any zoning designation affecting more than five percent of the area, or one acre, of any lot, whichever is less.
 - (b) The applicant for a nonsignificant zoning change shall give notice to surrounding owners and lessees of record, pursuant to section 25-2-4, and shall post a sign for public notification as provided by section 25-2-12.
- (1996, Ord. No. 96-160, sec. 2; ratified April 6, 1999; Am. 2008, Ord. No. 08-48, sec. 2.)

Section 25-2-46. Concurrency requirements.

- (a) Purpose. In addition to requirements otherwise imposed, this section creates concurrency standards for roads and water supply in change of zone actions.
- (b) Applicability. This section applies to any application for change of zoning district, or for an extension of time to perform a condition of zoning, received by the planning department after the effective date of this ordinance.
- (c) Definitions. As used in this section:
 - “Acceptable level of service” means that the level of service of a transportation facility at the a.m. and p.m. peak hour is “D” or better.
 - “Approved development” means development for which zoning has been granted by the County.
 - “Critical road area” means a geographical area where any of the transportation facilities serving the area have been determined by the council to be worse than the acceptable level of service.
 - “Immediate vicinity of a project” means the area in which transportation facilities will be required to mitigate impacts caused primarily by the project.
 - “Level of service, or LOS” means a qualitative measure describing operational conditions within a traffic stream, and shall be determined using the procedures in the latest edition of the Highway Capacity Manual, Transportation Research Board.
 - “Mitigation” means specific actions to reduce traffic congestion. Mitigation is of two types: “local mitigation” which consists of improvements to roads and intersections that are in the immediate vicinity of a project, including channelization of intersections, turn lanes into a project and similar improvements. “Area mitigation” consists of improvements which increase the capacity of an arterial or other major road, such as additional lanes, in the general region containing the project, or construction of a new arterial or collector road in the general area containing the project, or improvements to public transportation such as buses or park and ride facilities, sufficient to offset the traffic demand generated by the project.
 - “Occupancy” means (1) the issuance of a certificate of occupancy for a commercial, multifamily, industrial building, hotel or other structure requiring a certificate of occupancy; (2) the issuance of a building permit for residential buildings that do not require a certificate of occupancy; or (3) final subdivision approval for subdivisions where dwellings are allowed, but dwellings are not being constructed before sale of any lot.

“Project area” means the area in which the project is expected to have an impact on the level of service of transportation facilities.

“Reasonable assumptions” means the percentage of full build-out that is expected to occur during the twenty-year period after the date of the application, as determined by the planning director.

“Transportation facilities” means State and County highways, roads, and public transportation facilities.

“Worse than the acceptable level of service” means that the level of service at the a.m. or p.m. peak is “E” or “F”.

- (d) Traffic impact analysis report required.
- (1) A traffic impact analysis report (TIAR), prepared or updated within six months before the submission of the application, shall be included with the application for any change of zone that can generate fifty or more peak hour trips. The determination of peak hour trips shall be based on the Institute of Transportation Engineers, “Trip Generation Handbook”, or any other nationally recognized source. When the number of trips depends upon the exact future uses of the site, and those are unknown at the time of rezoning (for example, the types of commercial uses), the determination shall be based upon a typical mix of uses found in that zoning type in the community. The TIAR shall be certified as having been conducted in accordance with best practices by a professional engineer licensed in the State of Hawai‘i.
 - (2) The TIAR shall assess impacts to transportation facilities in the immediate vicinity and general area of the project, and to the transportation facilities serving the project area.
 - (3) The TIAR shall include projections for future growth in traffic, for a minimum of five, ten, and twenty years, and shall include other approved or proposed development that is expected to impact the project area, with reasonable assumptions about the build-out of such development.
 - (4) The TIAR shall present an assessment of the impacts of the project on LOS and an evaluation of alternative plans for mitigating those impacts. The evaluation shall include budgetary cost estimates for the capital and operating costs of promising alternative plans.
- (e) Mitigation required.
- (1) If the LOS for any transportation facility in the project area is (A) currently worse than the acceptable level of service, or (B) projected to become worse than the acceptable level of service during the five year period of the TIAR, any rezoning of the property, if approved, shall contain conditions that require mitigation of adverse traffic effects before occupancy of the project is permitted, or that occupancy be delayed until the level of service has reached the acceptable level and is no longer projected to be worse than the acceptable level.
 - (2) Where the LOS deficiency is due to roadway or intersection deficiencies in the immediate vicinity of the project, the conditions of zoning shall require local mitigation. Where the deficiency in LOS is due to insufficient capacity in the transportation facilities serving the project area, the conditions of zoning shall require area mitigation.
 - (3) If there is more than one way to mitigate an adverse effect, the director shall present to the council the pros and cons of the alternatives.
- (f) Mitigation requirements will be deemed satisfied when:
- (1) A public agency has committed funds for area mitigation that will remove the LOS deficiency. In the case of the State, commitment of funds means that the governor has released funds to complete the improvement. In the case of the County, commitment of funds means that the council has appropriated funds to complete the improvement; or
 - (2) The private developer’s commitment to implement mitigation has been secured by bond or equivalent security, or mandatory participation in an improvement district, community facilities district, or other equivalent means of guaranteeing performance.

- (g) A developer's area mitigation expenses shall be credited against any fair share or similar fee requirement for roads. A developer's local mitigation expenses shall be credited against any fair share or similar fee requirement for roads if the council determines that the mitigation substantially benefits the general public and was not necessary primarily for the benefit of the project. In general, roads that are necessary for access to or within a development or turn lanes for a private project shall not qualify for fair share credit.
- (h) The following types of rezoning applications shall be required to submit a TIAR when required by this section, but shall not be required to perform area mitigation:
- (1) Residential or other rezonings where the applicant commits, and the conditions of zoning require, that the project earn at least two times the number of affordable housing credits otherwise required under chapter 11, County affordable housing policy, provided further that the applicant shall be entitled to the full amount of "excess credits" under section 11-15, County affordable housing policy, based on the number of affordable housing credits normally required.
 - (2) Rezoning to CV, CN, MCX, PD, or ML where the council determines that the project will reduce regional traffic congestion by providing necessary commercial or light industrial opportunities to serve an area where there is a shortage of available space zoned for such uses, and substantial residential development has already been approved, provided that conditions of zoning shall ensure that any commercial development be of a scale consistent with the standards of a "neighborhood center" as described in the general plan.
- (i) The restrictions on occupancy shall not apply to the construction of infrastructure such as water tanks, roads, sewage treatment plants, or other project elements that do not generate substantial traffic.
- (j) The council may designate critical road areas by ordinance.
- (k) In a critical road area, all rezonings shall be subject to local and area mitigation, except as stated in subsection (h).
- (l) In order to determine whether a rezoning application meets the TIAR threshold of fifty or more peak hour trips, and to prevent applicants from going below the TIAR threshold by dividing a project into segments, the director shall review all development proposed on the same or adjacent properties, and shall include traffic that may be generated by any development application approved after the effective date of this ordinance, or by any other pending development application, if it is on a portion of the same lot or tax map key parcel, or an adjoining lot or tax map key parcel, or in the immediate vicinity of the development.
- (m) A change of zone application shall not be granted unless: (1) the department of water supply has determined that it can meet the water requirements of the project and issue water commitments using its existing system; or (2) specific improvements to the existing public water system, or a private water system equivalent to the requirements of the department of water supply will be provided to meet the water needs of the project and conditions of zoning delay occupancy until the necessary improvements are actually constructed.
- (n) To facilitate the development of village centers in rural areas that are not currently served by a public water system, the council may waive the water supply requirements for rezonings for commercial or light industrial uses in areas that do not currently have a public water system, and where the department of water supply has no plans to build a public water system, and which are (1) designated as an "urban and rural center" or "industrial area" on table 14-5 of the general plan and (2) designated for urban use on the land use pattern allocation guide map of the general plan; provided that conditions of zoning shall require water supply consistent with public health and safety needs such as sanitation and fire-fighting.
- (o) Nothing in this section shall limit the ability of the council to impose reasonable roadway or water improvement requirements on changes of zone or to deny change of zone applications to the extent otherwise allowed by law.

(2007, Ord. No. 07-99, sec. 2.)

Jennifer A. Benck

From: Jennifer A. Benck
Sent: Friday, October 08, 2010 4:46 PM
To: 'ohcdplanning@co.hawaii.hi.us'; ohcd@co.hawaii.hi.us; Bobby Jean Leithead-Todd (bjltodd@co.hawaii.hi.us); Arai, Daryn; pfujimoto@co.hawaii.hi.us; Deanne Bugado (dbugado@co.hawaii.hi.us); Margaret K. Masunaga (mkmasunaga@co.hawaii.hi.us); Kiran Emler (kemler@co.hawaii.hi.us); 'wlee@co.hawaii.hi.us'
Cc: Steven S.C. Lim; Randle, Race; 'Wallenstrom, Jon'
Subject: Kamakana Villages 201H Exemptions
Attachments: Kamakana 201H Exemptions Blackline 10-8-10.pdf; Kamakana II 201H Exemption List to OHCD Clean 10-8-10.pdf

OHCD, Planning Department and Department of Public Works

In follow up to the meeting with County agencies on Monday, 10/4, and the County Housing Agency meeting on 10/5, attached please find a revised 201H Exemption List for the Kamakana Villages at Keahuolu Project. Also attached is a blackline showing the changes made to the original 201H Exemption List that was submitted to OHCD on September 1, 2010 (as Exhibit 11 to the 201H Application). As you will see, this revised Exemption List has considerably fewer requested exemptions than the original List (the original List had 91 exemptions, the revised List has 56 exemptions).

We anticipate that the attached List will be used at the County Council reading of the 201H Resolution.

Thanks for all of your feedback and work on this matter.
Please let me know if you have any questions or have any trouble reading the attachments.

Jennifer

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Thank you.

**Petitioner's
Exhibit no. 89**

10/15/2010

Exhibit B to County of Hawaii Resolution No. _____ (the "**Keahuolu 201H Resolution**")

HRS § 201H Exemptions
Kamakana Villages at Keahuolu
TMK Nos. (3) 7-4-021: 020, 024, 025, 026, 027

Applicant/Master Developer - Forest City Hawaii Kona, LLC ("**Forest City**")
Co-Applicant - Hawaii Housing Finance and Development Corporation ("**HHFDC**")
Kamakana Villages at Keahuolu (the "**Project**")

HRS §201H-38 provides in relevant part:

(a) The corporation may develop on behalf of the State or with an eligible developer, or may assist under a government assistance program in the development of, housing projects that shall be exempt from all statutes, ordinances, charter provisions, and rules of any government agency relating to planning, zoning, construction standards for subdivisions, development and improvement of land, and the construction of dwelling units thereon; provided that:

- (1) The corporation finds the housing project is consistent with the purpose and intent of this chapter, and meets minimum requirements of health and safety;
- (2) The development of the proposed housing project does not contravene any safety standards, tariffs, or rates and fees approved by the public utilities commission for public utilities or of the various boards of water supply authorized under chapter 54;

HRS §201H-44 provides in relevant part:

(a) In connection with the development of any dwelling units under this chapter, the corporation may also develop commercial, industrial, and other properties if it determines that the uses can be an integral part of the development and can help to preserve the lifestyles of the purchasers of dwelling units in the development. The corporation may designate any portions of the development for commercial, industrial, or other use and shall have all the powers granted under this chapter with respect thereto, including the power to bypass statutes, ordinances, charter provisions, and rules of any government agency pursuant to section 201H-38. For this purpose, the corporation may use any of the funds authorized under this chapter.

EXHIBIT 11

Exhibit B to County of Hawaii Resolution No. _____ (the "**Keahuolu 201H Resolution**")
HRS § 201H Exemptions
Kamakana Villages at Keahuolu
TMK Nos. (3) 7-4-021: 020, 024, 025, 026, 027

Pursuant to HRS Chapter 201H, Kamakana Villages at Keahuolu shall be exempt from the following:

HCC Sec.		HCC Sec.		HCC Sec.	
5-1.0.11	Building Permit Fees and Processing	23-26	Reservation for parks, playgrounds, and public building sites	25-3-5	Application of district regulations
5-1.0.12	Building Permit Fees and Processing	23-29	Block sizes	25-4-2	Conditions for construction of buildings designed for human occupancy
				25-4-8	Temporary real estate offices and model homes
		23-32	Lot size, shape and setback line		
Table 3A	Building Permit Fees			25-4-31	Minimum building site area; minimum average width
Chapter 8	Dedication of Land; Park Dedication Code	23-35	Lot side lines	25-4-32	Reduction of building site below minimum area
9-31	Permit issuance; fees	23-41	Minimum right of way and pavement widths	25-4-40	General requirements for yards and open space
9-39	Fee payment			25-4-42	Corner building sites
9-40	Fee schedule	23-45	Intersection angles; corner radius	25-4-43	Fences and accessory structures
				25-4-44	Permitted projections into yards and open space
		23-50	Grades and curves	25-4-47	Minimum distance between main buildings on same building site
		23-52	Alleys	25-4-51	Required number and location of parking spaces
17-28	Plumbing Schedule of Fees	23-53	Private streets	25-4-53	Minimum dimensions of parking spaces
		23-54	Utilities location within streets and State highways		
				25-4-56	Off-street loading requirements
				25-4-58	Dimension of loading spaces
		23-62	Tentative approval of preliminary plat	25-4-59	Location and improvement of loading spaces
		23-76	No conveyance of land prior to approval for recordation	25-4-59.3	Landscaping and screening for parking lots and loading spaces
		23-86	Requirements for dedicable streets	25-5-72	Permitted uses
21-22	Construction specifications	23-88	Nondedicable street; private dead-end street	25-5-73	Height limit
				25-5-74	Minimum building site area
22-3.8	Sidewalk use permit; criteria for granting	23-93	Street lights	25-5-75	Minimum building site average width
		23-94	Street name and traffic signs	25-5-76	Minimum yards
		23-95	Right of way improvement	25-5-77	Other regulations
22-4.9	Standards for driveway approaches				
23-10	Acceptance of highways; compliance with this chapter				
23-11	Public utility or public rights-of-way subdivisions	25-2-44	Conditions on change of zone	17-6	Landscaping requirements
		25-2-46	Concurrency requirements		
23-22	Compliance with design standards required	25-2-61	Applicability; use permit required		
23-23	Compliance with State and County regulations required				

Exhibit B to County of Hawaii Resolution No. _____ (the "**Keahuolu 201H Resolution**")

HRS § 201H Exemptions
 Kamakana Villages at Keahuolu
 TMK Nos. (3) 7-4-021: 020, 024, 025, 026, 027

	HAWAII COUNTY CODE STANDARD Chapter 5, Hawaii County Code, Building Code	HRS 201H EXEMPTION
1	Hawaii County Code Sec. 5-1.0.11 (Building Permit Fees and processing) Hawaii County Code Sec. 5-1.0.12 TABLE NO. 3-A BUILDING PERMIT FEES	Exemption from permit fees for affordable dwellings and their respective accessory occupancies. <i>[Exemption requested in the interest of minimizing costs in order to provide affordable housing units. This exemption equates to approximately \$300 per affordable home. Based on the project schedule averaging 67 affordable homes per year, this is approximately \$20,000/yr for 18 years.]</i> Extend time for expiration of permit from 120 days to 180 days. <i>[Exemption requested in order to maximize economies of scale for permit submittals, and minimize costs of re-filing permits or requesting extensions.]</i> Exemption from any otherwise applicable time periods for the processing of permits and other applications. The County of Hawaii shall expeditiously process any application for an agency approval or permit for the Project as follows: (a) the agency receiving the application shall notify the applicant within 15 business days of receipt of any deficiencies in said application, and in the absence of such notification the application shall be deemed a proper application, filed as of the date of submittal to the agency; (b) the agency shall take final action on any application no later than 60 days after filing, and in the absence of further action by the agency, all such applications shall be deemed approved no later than 120 days after submittal of said application to the applicable County agency. This exemption shall not apply to any approvals that require final action by the Planning Commission or the County Council. <i>[Exemption requested in order to set durations for permit processing. Applicant willing to work with PD and DPW on a mutually agreeable permit processing procedures for the Project. This will encourage the timely development of homes and encourage development in transit-oriented core of Kona.]</i>

EXHIBIT 11

Exhibit B to County of Hawaii Resolution No. _____ (the "**Keahuolu 201H Resolution**")

HRS § 201H Exemptions
 Kamakana Villages at Keahuolu
 TMK Nos. (3) 7-4-021: 020, 024, 025, 026, 027

HAWAII COUNTY CODE STANDARD		HRS 201H EXEMPTION																																							
Chapter 8 HCC, Dedication of Land																																									
2	Hawaii County Code Chapter 8, Article 1	Exemption from any applicable land dedication and/or in lieu of fee requirements under Hawaii County Code Chapter 8. However, Project will contribute, subject to County approval, the following estimated fees:																																							
<table border="1"> <thead> <tr> <th colspan="5">Estimated fees to be paid per market homes in the Project</th> </tr> <tr> <th></th> <th>Per MF</th> <th>Per SF</th> <th>Total of 18 years</th> <th>Average per year</th> </tr> </thead> <tbody> <tr> <td>Police</td> <td>\$120</td> <td>\$280</td> <td>\$240,120</td> <td>\$13,340</td> </tr> <tr> <td>Fire</td> <td>\$371</td> <td>\$554</td> <td>\$546,021</td> <td>\$30,333</td> </tr> <tr> <td>Solid Waste</td> <td>\$165</td> <td>\$242</td> <td>\$240,075</td> <td>\$13,338</td> </tr> <tr> <td>Total</td> <td>\$656</td> <td>\$1,076</td> <td>\$1,026,216</td> <td>\$57,012</td> </tr> </tbody> </table>						Estimated fees to be paid per market homes in the Project						Per MF	Per SF	Total of 18 years	Average per year	Police	\$120	\$280	\$240,120	\$13,340	Fire	\$371	\$554	\$546,021	\$30,333	Solid Waste	\$165	\$242	\$240,075	\$13,338	Total	\$656	\$1,076	\$1,026,216	\$57,012						
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NOTE, per Section 8-4(a)(9), any subdivision involving the construction of homes pursuant to chapter 359G, Hawaii Revised Statutes is exempt from the requirements under Chapter 8, Article 1. HRS chapter 359G was repealed in 1987 and replaced by HRS chapter 201E, which was repealed in 1997 and replaced by HRS chapter 201G, which was repealed in 2006 and replaced by HRS chapter 201H.																																									
NOTE: Project plans to provide roads and parks in excess of standard Fair Share requirements. County parks will be designed in consultation with County Parks & Recreation with construction approved by Parks & Recreation. See table below.																																									
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EXHIBIT 11

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HAWAII COUNTY CODE STANDARD	HRS 201H EXEMPTION							
Hawaii County Code Chapter 8, Article 1 (continued)	<u>Other Land for Cultural, Recreational and Public Use</u>							
	Estimated Acres	Land Value - \$/Ac	Estimated Land Costs	Estimated Total Cost				
Open Space & Pocket Parks	18.39	\$300,000	\$5,517,000	\$5,517,000				
Archeological Preserves	9.02	\$300,000	\$2,706,000	\$2,706,000				
Elementary School	13.00	\$300,000	\$3,900,000	\$3,900,000				
Civic/School Sites	4.26	\$300,000	\$1,278,000	\$1,278,000				
Total	44.67			\$13,401,000				
	<u>Estimated Key Public Road Improvements</u>							
	Est Construction Cost	LF	ROW	Est Acres	Land - \$/Ac	Est. Land Cost	Est. Total Costs	
Anc K Hwy	N/A	N/A	N/A	1.02	\$300k/ac	\$305,400	\$305,400	
Manawalea Ext	\$5,675,000	2,700	80	4.96	\$300k/ac	\$1,487,603	\$7,162,603	
Palani & Queen K Int.	\$1,220,000				\$300k/ac	N/A	\$1,220,000	
Makala & Anc K Int	\$525,000				\$300k/ac	N/A	\$525,000	
Anc K and Kealahou Pkwy Int	\$800,000				\$300k/ac	N/A	\$800,000	
Kcanalchu Dr. Ext	\$1,891,667	890	80	1.63	\$300k/ac	\$490,358	\$2,382,025	
School St Ext	\$2,740,000	4,535	66	6.87	\$300k/ac	\$2,061,364	\$4,801,364	
Main St	\$2,215,400	2,915	94	6.29	\$300k/ac	\$1,887,121	\$4,102,521	
Total		11,040					\$21,298,913	
Other - Project intersections on Palani & Anc K Hwy	\$4,200,000						\$4,200,000	
Note - Public road improvements based upon TIAR submitted to DOT in 2010.								

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	Hawaii County Code Chapter 8, Article 1 (continued)	Estimated Fees Requested to be Waived for Affordable Units Only				
			Per MF	Per SF	Total of 18 years	Average per year
		Police	\$120	\$280	\$145,240	\$8,069
		Fire	\$371	\$554	\$439,372	\$24,410
		Solid Waste	\$165	\$242	\$195,272	\$10,848
		Total	\$656	\$1,076	\$779,884	\$43,327
		County Standard Fair Share Contribution Table - Provided for Comparison Purposes				
			Per MF	Per SF	Fee Total	
		Parks & Rec	\$3,800	\$5,800	\$10,176,000	
		Police	\$120	\$280	\$385,360	
		Fire	\$371	\$554	\$985,393	
		Solid Waste	\$165	\$242	\$435,347	
		Road & Traffic	\$3,260	\$5,200	\$8,878,140	
		Project Total			\$20,860,240	
	Chapter 9, HCC, Electricity					
3	Hawaii County Code Sec. 9-31 (Permit issuance; fees) Hawaii County Code Sec. 9-39 (Fee payment) Hawaii County Code Sec. 9-40 (Fee schedule)	<p>Exemption from all electrical permit fees for affordable dwellings and their respective accessory occupancies; provided, however, that this exemption shall not apply to penalty fees required under this Chapter.</p> <p><i>[Exemption requested in the interest of minimizing costs for affordable housing units. This exemption equates to approximately \$120 per affordable home. Based on the project schedule averaging 67 affordable homes per year, this is approximately \$8,040/yr for 18 years]</i></p>				

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	HAWAII COUNTY CODE STANDARD	HRS 201H EXEMPTION
	Chapter 17, HCC, Plumbing	
4	Hawaii County Code Sec. 17-28 (a) (Schedule of Fees)	<p>Exemption from the payment of permit fees for affordable dwellings and their respective accessory occupancies, except for fees imposed pursuant to subsection (b), when applicable; provided, however, that no exemption shall be provided for any penalty fees incurred under this Chapter.</p> <p><i>[Exemption requested in the interest of minimizing costs for affordable housing units. This exemption equates to approximately \$100 per affordable home. Based on the project schedule averaging 67 affordable homes per year, this is approximately \$6,700/yr for 18 years]</i></p>
	Chapter 21, HCC, Sewers	
5	Hawaii County Code Sec. 21-22 (Construction Specifications)	<p>Subject to the approval by the Department of Environmental Management, exemption to allow for the use of cast iron or other materials, as recommended by the Project's licensed civil engineer.</p> <p><i>[This exemption is intended to allow for use of other DEM-approved materials such as PVC]</i></p>

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	HAWAII COUNTY CODE STANDARD	HRS 201H EXEMPTION
	Chapter 22, HCC, County Streets	
6	Hawaii County Code Sec. 22-3.8 (Sidewalk use permit; criteria for granting)	<p>Exemption from the requirement to obtain a sidewalk or other use permit for any commercial uses that are supplementary or complementary to any business fronting a sidewalk and for commercial uses related to locally-produced foods and products. All such sidewalk uses shall be required to obtain approval from Forest City and the Keahuolu Community Association prior to engaging in sidewalk uses.</p> <p>All sidewalk uses shall be regulated by Forest City and the Community Association, and shall meet all applicable ADA requirements. Users shall comply with all laws, ordinances and regulations of the Federal, State and County governments relating to the installation, operation and maintenance of their permitted items or uses. Users shall be wholly responsible for the repair and maintenance of all permitted items, including any associated utility improvements.</p> <p>Should the permitted use, activity or improvement interfere or obstruct any County function, facility or other authorized improvements, the sidewalk users shall, at their own expense either:</p> <p>(A) Terminate the use and remove the activity or improvement; or</p> <p>(B) Move the use to a location acceptable to the Director of the DPW.</p> <p>Should the permitted use, activity or improvement impede or obstruct any emergency repairs to a County function, facility or public utility, the permittee authorizes the use of all necessary action to immediately relocate the permitted activity, use or improvement and shall make no claim for any damages that may result from the relocation action.</p> <p>Upon termination of the sidewalk use, the users shall be responsible for the restoration of the sidewalk previously used or occupied to a condition equal to or better than its original condition.</p> <p><i>[This exemption allows for the community association to permit complementary uses on the sidewalks without adversely affecting ADA or other requirements. This encourages a lively main street and allows for outdoor farmer's markets which encourage local food production]</i></p>

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7	Hawaii County Code Sec. 22-4.9 (Standards for driveway approaches)	Exemption to allow for more than 2 driveway approaches for residential uses other than single-family residential uses, pursuant to the recommendations of the Project's licensed engineers. <i>[This exemption is primarily to allow CDP-based alley-loaded Traditional neighborhood designs. In some cluster designs for the project, more than 2 driveway approaches are required to the interior of a block.]</i>

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HAWAII COUNTY CODE STANDARD		HRS 201H EXEMPTION
Chapter 23, HCC, Subdivision		
8	Hawaii County Code Sec. 23-10 (Acceptance of highways; compliance with chapter) The council shall not take over, receive by dedication, do any repair or construction work upon streets or pavements, water lines, street lighting systems, sewer lines, or in any way accept as public highways any street in any subdivision opened or platted in the County after December 21, 1966, except upon full compliance with the provisions of this chapter.	Exemption to allow the Council to accept for dedication all streets and alleys (as described in Exhibit 9 Figure RL-20-16) attached hereto in the Project, provided, however that the Planning Director, in consultation with the Department of Public Works, shall certify that the construction plans are in compliance with the Kona CDP Village Design Guidelines applicable at the date of the approval of the Keahuolu 201H Resolution.
9	Hawaii County Code Sec. 23-11 (Public utility or public rights-of-way subdivisions) The requirements, including lot sizes, and standards of this chapter shall not be applicable to public utility or public rights-of-way subdivisions and their remnant parcels; provided that the director upon conferring with the director of public works and manager of the department of water supply may require necessary improvements to further the public welfare and safety.	Exemption for private utilities as well as public utilities.
10	Hawaii County Code Sec. 23-22 (Compliance with design standards required) Each subdivision and the plat thereof shall conform to the standards set forth in this article.	The design and construction of the subdivision will conform to design standards and specifications as specifically set forth in the Keahuolu 201H Resolution and as may be required by the State Land Use Commission's Decision and Order in Docket A10-788, the Kona Community Development Plan, and construction plans prepared by the Project's licensed engineers. <i>[Exemption requested to assist with design per the Kona CDP. Flexibility is required in the master planning and housing design to achieve this goal. In addition, smaller blocks are preferred to larger block sizes in order to create a more pedestrian friendly residential neighborhood environment in keeping with the goals of the Kona CDP.]</i>
11	Hawaii County Code Sec. 23-23 (Compliance with State and County regulations required) Subdivisions shall conform to the County general plan and shall take into consideration preliminary plans made in anticipation thereof Subdivisions shall conform to the requirements of State law, County department of public works, State department of health, State department of transportation, and County department of water supply requirements and the standards established by this chapter.	Subdivisions in the Project shall conform to the County general plan and relevant State and County requirements, and as amended by the Keahuolu 201H Resolution. <i>[Exemption requested to assist with design per the Kona CDP. Flexibility is required in the master planning and housing design to achieve this goal. In addition, smaller blocks are preferred to larger block sizes in order to create a more pedestrian friendly residential neighborhood environment in keeping with the goals of the Kona CDP.]</i>

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12

Hawaii County Code Sec. 23-26 (Reservation for parks, playgrounds, and public building sites)
The subdivider of a parcel of land capable of supporting two hundred dwelling units shall reserve suitable areas for parks, playgrounds, schools, and other public building sites that will be required for the use of its residents. Five percent to ten percent of the land area, exclusive of streets, shall be reserved for recreational and public use, for a period of two years for acquisition by a public agency. Outstanding natural or cultural features such as scenic spots, water courses, fine groves of trees, heiaus, historical sites and structures shall be preserved as provided by the director.

Forest City shall make available, and the County shall accept for dedication, no less than 20 acres of land for parks, playgrounds, schools, or other public purposes within the Project.
NOTE: Per HCC 23-26, 5% to 10% of the land within the Project, exclusive of streets, equates to 10.7 acres to 21.4 acres.

Public Parks and Recreation Facilities					
	Estimated Const. Costs	Estimated Acres	Land Value - \$/Ac	Estimated Land Costs	Estimated Total Cost
North Park - Community	\$2,541,600	7.06	\$300,000	\$2,118,000	\$4,659,600
South Park - Community	\$2,772,000	7.70	\$300,000	\$2,310,000	\$5,082,000
Neighborhood-sized parks	\$4,777,500	13.65	\$300,000	\$4,095,000	\$8,872,500
		28.41 acres			\$18,614,100
Land as % of Project (exclusive of streets)		13%			

Other Land for Cultural, Recreational and Public Use				
	Estimated Acres	Land Value - \$/Ac	Estimated Land Costs	Estimated Total Cost
Open Space & Pocket Parks	18.39	\$300,000	\$5,517,000	\$5,517,000
Archeological Preserves	9.02	\$300,000	\$2,706,000	\$2,706,000
Elementary School	13.00	\$300,000	\$3,900,000	\$3,900,000
Civic/School Sites	4.26	\$300,000	\$1,278,000	\$1,278,000
Total	44.67			\$13,401,000
Land as % of Project (exclusive of streets)	21%			

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13	<p>Hawaii County Code Sec. 23-29 (Block sizes) (a) Blocks shall not exceed two tiers of lots in width and thirteen hundred feet in length, except for: (1) Blocks adjacent to arterial streets; or (2) When the previous adjacent layout or topographical conditions justify a variation. Long blocks shall be provided adjacent to arterial streets to reduce the number of intersections. The recommended minimum distance between intersections on arterial streets is eighteen hundred feet. Longer blocks shall be used when possible. (b) Blocks shall not be less than four hundred feet in length. (c) The desired length for normal residential blocks is from eight hundred to one thousand feet. When the layout is such that sewers will be installed or casements for future sewer lines are provided along rear lot lines, the block should not exceed eight hundred feet in length.</p>	<p>Block widths may exceed 2 tiers of lots.</p> <p>Block lengths of 200 feet or more shall be permitted, subject to the approval of the Planning Director. The minimum block length of 200 feet is determined by the size of the "Small Lot Alley Loaded" single family residential unit for the project. The lot size is 45' x 90' with a rear alley of 20' so this requires a 200 foot minimum block size.</p> <p>Block lengths for layouts that include sewers or easements for future sewer lines shall be determined by the Project's engineers, in consultation with the Planning Director and the DPW.</p> <p><i>[Exemption requested to assist with the development of affordable housing and design per the Kona CDP and LEED ND. Smaller blocks are preferred to larger block sizes in order to create a more pedestrian friendly residential neighborhood environment in keeping with the goals of the Kona CDP. Flexibility is required in the master planning and housing design to achieve this goal.]</i></p>
14	<p>Hawaii County Code Sec. 23-32 (Lot size, shape, and setback line) The lot size, width, shape, and orientation, and the minimum building setback lines shall be appropriate for the location of the subdivision, the type of development and uses contemplated and in conformance with the provisions of chapter 25, Zoning Code.</p>	<p>Lot sizes, widths, shapes and orientations, and minimum building setback lines shall be as set forth in the Keahuolu 201H Resolution and in compliance with design standards and specifications as may be required by the State Land Use Commission's Decision and Order in Docket A10-788 and the Kona Community Development Plan. <i>See exemptions to Secs. 25-5-74 to 25-5-76.</i></p> <p>Lot sizes, shapes, setbacks will vary from that specified within the County Code to accommodate a mix of product type, increase the efficiency of the land use, and thus yield a more compact, walkable, and pedestrian oriented development. The widths, shape and setback lines for such lots will conform to specific standards approved by the County Council for the Keahuolu 201H Resolution.</p> <p><i>[Exemption requested to assist with the development of affordable housing and design per the Kona CDP. Flexibility is required in the master planning and housing design to achieve this goal. In addition, smaller blocks are preferred to larger block sizes in order to create a more pedestrian friendly residential neighborhood environment in keeping with the goals of the Kona CDP.]</i></p>
15	<p>Hawaii County Code Sec. 23-35 (Lot side lines) The side lines of a lot shall run at right angles to the street upon which the lot faces, or on a curved street they shall be radial to the curve, as far as practicable.</p>	<p>Exemption from requirement that side lot lines run at right angles.</p> <p><i>[In some areas, the side lines of the lots that front the curved roadways are designed to be parallel to each other to create a sense of consistency with the placement of the homes versus the side lines running at right angles to the interior curved roadways.]</i></p>

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16 **Hawaii County Code Sec. 23-41 (Minimum right-of-way and pavement widths)**
(a) Unless otherwise indicated on the County general plan, the width of a street in feet shall not be less than the minimums shown in the following table:

Type of Street	Minimum Right of Way	Minimum Pavement
Parkways	300 feet	24 feet
Primary arterials	120 feet	24 feet
Secondary arterials	80 feet	60 feet (urban) 24 feet (rural) 24 feet (agricultural)
Business & industrial streets	60 feet	36 feet (urban) 24 feet (rural) 24 feet (agricultural)
Collector Streets	60 feet	24 feet (urban) 20 feet (rural) 20 feet (agricultural)
Minor Streets	50 feet	20 feet (urban) 20 feet (rural) 20 feet (agricultural)
Cul-de-sac and dead-end streets	50 feet	20 feet (urban) 20 feet (rural) 20 feet (agricultural)
Radius for turn-around at end of cul-de-sac	45 feet	35 feet (urban) 35 feet (rural) 35 feet (agricultural)
Alleys	20 feet	30 feet (urban) 20 feet (rural) 20 feet (agricultural)

(b) When sidewalks, curbs, and gutters are required, pavements in collector streets in urban areas shall be thirty-six feet wide and pavements in minor and dead-end streets in urban areas shall be thirty-two feet wide.

Minimum rights of way and pavement widths within the Project shall be as determined by the Project's architects and engineers, in consultation with the Department of Public works, but are anticipated to be as follows:

Type of Street	Minimum ROW	Minimum Travel Lane Width
Collector Streets with Median	80 feet	15 foot travelway per direction (not including rolled curb and shoulder)
Collector Streets	60 feet	24 feet, curb to curb
Minor Streets	37 feet	16 feet, curb to curb
I-Way Minor Streets	30 feet	11 foot travelway (not including rolled curb and shoulder)
Cul-de-sac and dead-end streets	20 feet	16 feet, curb to curb
Radius for turn-around at end of cul-de-sac	Per Fire Department regulations	Per Fire Department regulations
Alleys	20 feet	16 feet

The above requirements for "Travel Lane Width" may represent moving lanes for auto and bicycles where they are adjacent and continuously paved; they do not include pavement widths devoted to parking lanes or curb/gutter.

These widths also correspond with pavement available for fire lanes and access; with median separated sections incorporating one way fire access on either side of the median.

The final construction plans for all roads and streets developed per the above requirements shall be subject to the approval of the DPW.

[Exemption requested consistent with goals outlined in LEED ND (NPD P1; NPD P3; NPD 1; NPD 6; NPD 8; NPD 9; NPD 10 and Kona CDP in creating neighborhood-scale walkable streets. Promote walking by providing safe, appealing, and comfortable street environments that support public health by reducing pedestrian injuries and encouraging daily physical activity.]

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17	<p>Hawaii County Code Sec. 23-45 (Intersection angles; corner radius) (a) Streets shall be laid out to intersect at right angles except where topography requires a lesser angle, but the angle shall not be less than sixty degrees unless there is a special intersection design. (b) Intersections which are not at right angles shall have a minimum corner radius of twenty-five feet along the right-of-way lines of the acute angle. All other right-of-way lines at these intersections shall have a corner radius of not less than twenty feet. If unusual topographical conditions exist that will impair sight distances and create a traffic hazard, the director of public works may specify a larger corner radius.</p>	<p>Exemption to allow streets to intersect at angles of less than 90 degrees and minimum property line radius shall be established by a licensed civil engineer in compliance with AASHTO standards, having considered all life safety and ADA compliance issues.</p> <p>The criteria for establishing a minimum sight distance triangle shall be subject to DPW approval. The line of sight triangle shall be within the right-of-way, within the clear area required by existing ordinance (HCC Section 22-2.2) or within a sight distance easement prohibiting sight distance obstructions as established by the adopted criteria.</p>																					
18	<p>Hawaii County Code Sec. 23-50 (Grades and Curves) (a) A grade of a street shall be a reasonable minimum but in no case be less than one-half of one percent and shall not exceed seven percent on major arterials, eight percent on secondary arterials, ten percent on collector streets, or twelve percent on any other street. No grade shall be less than one-half of one percent at the gutter. Vertical and horizontal curves shall be so designed as to give nonpassing distance visibility in conformance with the following minimum requirements:</p> <table border="1" data-bbox="136 885 745 1047"> <thead> <tr> <th>Classification</th> <th>Vertical Curve</th> <th>Horizontal Curve</th> </tr> </thead> <tbody> <tr> <td>Primary arterial</td> <td>500 feet</td> <td>500 feet</td> </tr> <tr> <td>Secondary arterial</td> <td>500 feet</td> <td>500 feet</td> </tr> <tr> <td>Business or industrial street</td> <td>500 feet</td> <td>500 feet</td> </tr> <tr> <td>Collector street</td> <td>300 feet</td> <td>300 feet</td> </tr> <tr> <td>Minor street</td> <td>300 feet</td> <td>300 feet</td> </tr> <tr> <td>Cul-de-sac</td> <td>100 feet</td> <td>200 feet</td> </tr> </tbody> </table> <p>(b) Variations from the required grades or curves may be permitted by the director and the director of public works where advisable to meet unusual conditions and the director of public works may specify additional standards accordingly.</p>	Classification	Vertical Curve	Horizontal Curve	Primary arterial	500 feet	500 feet	Secondary arterial	500 feet	500 feet	Business or industrial street	500 feet	500 feet	Collector street	300 feet	300 feet	Minor street	300 feet	300 feet	Cul-de-sac	100 feet	200 feet	<p>Grade limits shall meet AASHTO minimum guidelines and may allow for grades of 10% on secondary arterials and 12% on collector streets.</p> <p>Exemption that geometric design shall meet AASHTO minimum guidelines for an appropriate design speed as determined by the Project's engineers.</p> <p><i>[Due to the steep topography of the site, flexibility is required in the street grades, particularly in the Mauka section of the property where the slopes are most severe. This exemption request also corresponds to LEED ND (SLL Credit 6) for maximum allowable slope. The purpose of the Project is to be a major provider of affordable housing so flexibility in street design is critical to achieving this goal.]</i></p>
Classification	Vertical Curve	Horizontal Curve																					
Primary arterial	500 feet	500 feet																					
Secondary arterial	500 feet	500 feet																					
Business or industrial street	500 feet	500 feet																					
Collector street	300 feet	300 feet																					
Minor street	300 feet	300 feet																					
Cul-de-sac	100 feet	200 feet																					

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19	<p>Hawaii County Code Sec. 23-52 (Alleys) Alleys shall have a minimum width of twenty feet in districts designated commercial and industrial in chapter 25, Zoning Code, unless adequate permanent provisions for access to off-street parking and loading facilities approved by the director have been provided. At street and alley intersections, ten feet corner radii shall be required.</p>	<p>Exemption to allow alleys to have a minimum right-of-way width of 20 feet, and pavement width of 16 feet.</p> <p><i>[Exemption requested in order to reduce cost for affordable housing, and to have a more "green" project with less pavement.]</i></p> <p>Exemption to allow street and alley intersections to have 8 feet corner radii. Property line radius shall be established by a licensed civil engineer in compliance with AASHTO standards, having considered all life safety and ADA compliance issues.</p> <p>The criteria for establishing a minimum sight distance triangle shall be subject to DPW approval. The line of sight triangle shall be within the right-of-way, within the clear area required by existing ordinance (HCC Section 22-2.2) or within a sight distance easement prohibiting sight distance obstructions as established by the adopted criteria.</p> <p><i>[Exemption requested is consistent with goals outlined in LEED ND (SLL 8; SLL 9; GIB 4; GIB 7; GIB 8; GIB9) and the Kona CDP in creating neighborhood-scale walkable streets. Promote walking by providing safe, appealing, and comfortable street environments that support public health by reducing pedestrian injuries and encouraging daily physical activity]</i></p>
20	<p>Hawaii County Code Sec. 23-53 (Private Streets) No private street or alley shall be approved unless they are improved as specified under article 6, division 2 of this chapter.</p>	<p>Exemption to allow private streets or alleys to be improved pursuant to the Keahuolu 201H Resolution.</p> <p><i>[Exemption requested to assist with design per LEED ND and Kona CDP in creating neighborhood-scale walkable streets. Promote walking by providing safe, appealing, and comfortable street environments that support public health by reducing pedestrian injuries and encouraging daily physical activity.]</i></p>
21	<p>Hawaii County Code Sec. 23-54 (Utilities location within streets and State highways) (a) In general, all utilities shall be located within the street width, and government owned water mains shall be located in the paved areas, except that water mains of a suburban water system may be located as designated in the area between the edge of pavement and the property line when approved by the director of public works and manager. Where practicable, sewer mains shall be located in the paved area between curbs. (b) On State highways, all utilities shall be located in the area between the edge of pavement and the property line. Where practicable, a minimum distance of six feet shall be maintained between the edge of pavement and the location of the utilities. Utilities may be permitted to cross the highway on a line perpendicular to the centerline of the highway. Under certain conditions the utility may be permitted to deviate from the normal line but in no case shall the angle between the utility and a line perpendicular to the centerline exceed forty-five degrees.</p>	<p>Exemption to allow certain utilities to be located outside of any street widths, and within alley streets, subject to the approval of the applicable utility provider.</p>

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22	<p>Hawaii County Code Sec 23-62 (Tentative approval of preliminary plat) (a) Within forty-five days after submission of the preliminary plat, the director shall review the plan and may give tentative approval of the preliminary plat as submitted or as modified or may disapprove the preliminary plat, stating the reasons for disapproval in writing or shall defer action pending further review. Approval of the preliminary plat shall indicate the director's directive to prepare detailed drawings on the plat submitted, provided there is no substantial change in the plan of subdivision as shown on the preliminary plat and there is full compliance with all requirements of this chapter. The action of the director with reference to any attached documents describing any conditions shall be noted on two copies of the preliminary plat. One copy shall be returned to the subdivider and the other retained by the director. At such time the director shall stamp the above two preliminary plats: "Subdivider authorized to prepare detailed drawings on plat as submitted including corrections noted." "Recordation with the Bureau of Conveyances, State of Hawai'i, not authorized until approved for record at a later date." (b) If no action (approval, disapproval, modification, or deferral) is taken by the director within forty-five days after submission of the preliminary plat, or such longer period as may have been agreed upon in writing, the preliminary plat shall be deemed approved. The approval shall be on condition that the subdivider construct roads to the standards required by this chapter, a water system to the standards of the department of water supply, drainage meeting with the approval of the department of public works under section 23-92, that sewage disposal shall conform with section 23-85, if applicable, and the requirements of the department of health, and that the lot sizes and dimensions must be adjusted to conform to the zoning code on the final plat. The subdivider shall comply with the provisions of this chapter in order to receive final subdivision approval. (c) The director shall disapprove a preliminary plat or a subdivision map where the subdivider has failed to comply with the provisions of chapter 25, zoning code. (d) The subdivider shall complete all requirements specified as conditions for approval of the preliminary plat (tentative approval) within three years of said approval. An extension of not more than two years may be granted by the director upon timely written request of the subdivider. At the end of said three year period or its approved extension, unless all said conditions are completed, the approval of the preliminary plat shall expire and shall be of no further force or effect, or shall be subject to the technical review of the applicable agencies for compliance with current Code and rule requirements. This subsection shall be applied to all subdivision applications which have received tentative subdivision approval and which have not completed subdivision improvements, provided the three year period, and extension, if applicable, shall be taken from December 4, 1992 and not from the date of preliminary plat (tentative) approval. (e) The director's deferral of a subdivision for further review under subsection (a) constitutes an acceptance of the contents of the preliminary plat as submitted, and the director's issuance of tentative and final subdivision approval is valid despite the failure of the preliminary plat to include all of the information specified in sections 23-63 to 23-66, provided that there has been actual compliance with the substantive requirements of this chapter and chapter 25, zoning code. The director may require the subdivider to submit supplementary information prior to tentative or final approval and may condition tentative or final approval on the submission of such information and on the performance of conditions attached to the tentative approval.</p>	<p>Exemption from any otherwise applicable time periods for the processing of permits and other applications. The County of Hawaii shall expeditiously process any application for an agency approval or permit for the Project as follows: (a) the agency receiving the application shall notify the applicant within 15 business days of receipt of any deficiencies in said application, and in the absence of such notification the application shall be deemed a proper application, filed as of the date of submittal to the agency; (b) applications for tentative approval, to modify preliminary plat or disapproval of the preliminary plat to be issued no later than 90 days after filing This exemption shall not apply to any approvals that require final action by the Planning Commission or the County Council.</p> <p><i>[Exemption requested in order to set durations for approval processing. Applicant willing to work with PD and DPW on a mutually agreeable processing procedures for the Project. This will encourage the timely development of affordable project and encourage development in transit-oriented core of Kona.]</i></p>

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23	<p>Hawaii County Code Sec. 23-76 (No conveyance of land prior to approval for recordation) Land shall not be offered for sale, lease or rent in any subdivision, nor shall options or agreements for the purchase, sale, leasing or rental of the land be made until approval for recordation of the final plat is granted by the director.</p>	<p>Exemption from requirement that final plat must be approved for recordation prior to land being offered for sale, lease or rent. Project may be "offered for sale" via advertisement through the use of the internet, publications, mailings, public announcements, or publicizing through other agencies and organizations, prior to final plat approval.</p> <p><i>[As an affordable housing project, the income-restricted homes can only be purchased by qualified individuals. This exemption is being requested in order to provide additional time for marketing the income-restricted homes.]</i></p>																								
24	<p>Hawaii County Code Sec. 23-86 (Requirements for dedicable streets) (a) The subdivider shall grade, drain, and surface all streets constructed after December 21, 1966 as shown on his plat, except reserved dedication for future street purposes, so as to provide access for vehicular traffic to each lot of the subdivision. (b) A street shall be constructed in accordance with the specifications in this section and those on file with the department of public works. A street shall be installed under the supervision of the director of public works and to permanent grades approved by him. (c) A street shall have sufficient thickness of pavement, and compacted base course and sub-base material to support axle and wheel loads permitted under section 291-35, Hawai'i Revised Statutes. In no case shall the streets be less substantial than the following minimum dedicable standards of the County: (1) A street serving areas zoned for lots seventy-five hundred square feet to and including one acre, shall have a six-inch minimum select borrow sub-base course, a base course of four inches of compacted crusher run base with filler, and a pavement of two inches of asphaltic concrete or two and one-half inches of asphaltic macadam, applied in three separate applications. Pavement width shall conform to the urban standard as set forth under section 23-41. (2) A street serving areas zoned for lots of over one acre and up to and including three acres, shall have a six-inch minimum select borrow sub-base course, a base course of four inches of compacted crusher run base and a pavement of two inches of asphaltic concrete or two and one-half inches of asphaltic macadam, applied in three separate applications. Pavement width shall conform to the rural standard as set forth under section 23-41. (d) A street meeting the minimum requirements of this section shall be dedicable.</p>	<p>All streets within the Project shall conform to the street sections shown in the Plans & Figures attached as Exhibit A to the 201H Resolution, and in compliance with design standards and specifications as may be required by the State Land Use Commission's Decision & Order in Docket No. A10-788, and shall be accepted by the County for dedication.</p> <p>Maintenance of all streets so dedicated to the County shall be pursuant to the terms of a maintenance agreement between the County and subdivider, to be executed prior to Final Subdivision Approval for the first increment of residential lots (not to include any bulk lot subdivisions).</p> <p>Vehicular access to individual lots shall not be from any major collector or arterial roadways.</p> <p><i>[Exemption requested to assist with design per LEED ND and Kona CDP in creating neighborhood-scale walkable streets. Promote walking by providing safe, appealing, and comfortable street environments that support public health by reducing pedestrian injuries and encouraging daily physical activity.]</i></p>																								
25	<p>Hawaii County Code Sec. 23-88 (Nondedicable street; private dead-end street) (a) A private dead-end street may be established upon approval of the director. The street shall provide access to six lots or less conforming to the minimum area requirements set forth in this chapter and shall be restricted only to residential lots and those agricultural lots zoned for less than three acres. The following shall be the minimum pavement width and right-of-way:</p> <table border="1" data-bbox="191 1138 802 1247"> <thead> <tr> <th>Road Access</th> <th>Pavement</th> <th>Right of Way</th> </tr> </thead> <tbody> <tr> <td>1 lot</td> <td>8'</td> <td>12'</td> </tr> <tr> <td>2 lots</td> <td>12'</td> <td>16'</td> </tr> <tr> <td>3 lots</td> <td>14'</td> <td>18'</td> </tr> <tr> <td>4 to 6 lots</td> <td>16'</td> <td>20'</td> </tr> </tbody> </table> <p>(b) A private street shall be constructed in conformance with standards on file at the department of public works. (c) A private street meeting only the minimum requirements of this section shall not be dedicable</p>	Road Access	Pavement	Right of Way	1 lot	8'	12'	2 lots	12'	16'	3 lots	14'	18'	4 to 6 lots	16'	20'	<p>Private dead end streets shall be permitted, and may provide access to up to 25 lots. The following shall be the minimum pavement widths and right-of-way:</p> <table border="1" data-bbox="1073 1138 1703 1203"> <thead> <tr> <th>Road Access</th> <th>Pavement</th> <th>Right-of-Way</th> </tr> </thead> <tbody> <tr> <td>1 - 5 lots</td> <td>8 feet</td> <td>12 feet</td> </tr> <tr> <td>6 - 25 lots</td> <td>16 feet</td> <td>20 feet</td> </tr> </tbody> </table> <p>Private streets meeting the requirements above shall be accepted by the County for dedication. <i>[This exemption is requested in order to allow Connectivity to future developments per the Kona CDP and LEED ND (NPD 6)]</i></p>	Road Access	Pavement	Right-of-Way	1 - 5 lots	8 feet	12 feet	6 - 25 lots	16 feet	20 feet
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26	<p>Hawaii County Code 23-89 (Sidewalks) For the safety of pedestrians and of children at play, sidewalks on both sides of the street may be required. The director shall have the authority to recommend and the council may, when in its judgment a necessity exists for such improvements, require the construction of sidewalks which shall be constructed in accordance with specifications of the County department of public works.</p>	<p>Sidewalks on both sides of the streets shall be provided on those streets as shown in Section 4 of Exhibit A to the 201H Resolution.</p> <p><i>[Exemption requested is consistent with goals outlined in LEED ND (SLL 3; NPD P1; NPD P3; NPD 1; NPD 6; NPD 9; NPD 10) and the Kona CDP in creating neighborhood-scale walkable streets. Promote walking by providing safe, appealing, and comfortable street environments that support public health by reducing pedestrian injuries and encouraging daily physical activity]</i></p>
27	<p>Hawaii County Code Sec. 23-93 (Street lights) Street lights shall be constructed within the subdivision. The street lights shall conform to the standard specifications on file with the department of public works. The construction of street lights shall be made a part of the contract for subdivision improvement and installed coincident with other required improvements.</p>	<p>Project street lights may be pursuant to Forest City's designs, in compliance with AASHTO, and Forest City shall provide DPW with adequate replacement street lights.</p> <p><i>[Exemption requested to allow option to use LEED ND encouraged "Green Infrastructure", specifically solar street lights, to achieve over a 15% annual energy reduction (GIB Credit 13)]</i></p>
28	<p>Hawaii County Code Sec. 23-94 (Street name and traffic signs) Street name signs showing the names of intersecting streets shall be erected by the subdivider at each street intersection. The type and location of street name and traffic signs which shall be created by the subdivider shall be subject to the approval of the director of public works and shall conform to the standard specifications on file at the department of public works.</p>	<p>The type, location and specifications of street lights, street names and traffic signs shall be at the discretion of the Project developers, in compliance with AASHTO, and in consultation with the Planning Director and the DPW. Any replacement street and traffic signage that is not DPW-approved shall be provided to the County by Project developer.</p> <p><i>[Exemption requested to allow for customized signage for project to assist in navigation and wayfinding]</i></p>
29	<p>Hawaii County Code Sec. 23-95 (Right-of-way improvement) The subdivider shall be required to improve the entire street right-of-way. The improvements shall conform to the standard specifications on file with the department of public works.</p>	<p>Waiving the requirements of the sections which state that dedicable streets be designed in accordance with "standard specifications on file with the department of public works."</p> <p>Dedicable streets and right-of-way improvements within the Project shall conform to the street sections shown in the Plans & Figures attached as Exhibit A to the 201H Resolution.</p> <p>The final construction plans for all dedicable streets and right-of-way improvements developed per the above requirements shall be subject to the approval of the DPW.</p>

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30	<p>Hawaii County Code Sec. 25-2-44 (Conditions on change of zone) (a) Within any ordinance for a change of zone, the council may impose conditions on the applicant's use of the property subject to the change of zone provided that the council finds that the conditions are: (1) Necessary to prevent circumstances which may be adverse to the public health, safety and welfare; or (2) Reasonably conceived to fulfill needs directly emanating from the land use proposed with respect to: (A) Protection of the public from the potentially deleterious effects of the proposed use, or (B) Fulfillment of the need for public service demands created by the proposed use. (b) Changes or alterations of conditions of any change of zone ordinance shall be processed in the same manner as a zone change, unless the council authorizes the changes or alterations to be made by the director. A request for any change or alteration of conditions shall be submitted in writing to the director, in lieu of the application required for an applicant-initiated change of zone. The request shall be accompanied by a filing fee of \$250. (c) Failure to fulfill any conditions of the zone change within the specified time limitations, or any extensions thereto, may be grounds for the enactment of an ordinance making further zone changes or for rezoning the affected property back to its original zoning designation or a more appropriate zoning designation, upon initiation by either the director or the council in accordance with section 25-2-43.</p>																																																																		
	<p>Exemption for any fair share contribution requirement normally imposed in connection with the enactment of a rezoning and/or any impact fees imposed pursuant to HRS 46-142. The developer shall comply with all applicable governmental conditions of approval for the Project. However, the Project will contribute, subject to County approval, the following estimated fees:</p> <table border="1"> <thead> <tr> <th colspan="5">Estimated fees to be paid per market homes in the Project</th> </tr> <tr> <th></th> <th>Per MF</th> <th>Per SF</th> <th>Total of 18 years</th> <th>Average per year</th> </tr> </thead> <tbody> <tr> <td>Police</td> <td>\$120</td> <td>\$280</td> <td>\$240,120</td> <td>\$13,340</td> </tr> <tr> <td>Fire</td> <td>\$371</td> <td>\$554</td> <td>\$546,021</td> <td>\$30,333</td> </tr> <tr> <td>Solid Waste</td> <td>\$165</td> <td>\$242</td> <td>\$240,075</td> <td>\$13,338</td> </tr> <tr> <td>Total</td> <td>\$656</td> <td>\$1,076</td> <td>\$1,026,216</td> <td>\$57,012</td> </tr> </tbody> </table> <p><i>NOTE: Project plans to provide roads and parks to in excess of standard Fair Share requirements. County parks will be designed in consultation with County Parks and Recreation with construction plans approved by Parks & Recreation. See tables below.</i></p> <table border="1"> <thead> <tr> <th colspan="6">Public Parks and Recreation Facilities</th> </tr> <tr> <th></th> <th>Estimated Const. Costs</th> <th>Estimated Acres</th> <th>Land Value - \$/Ac</th> <th>Estimated Land Costs</th> <th>Estimated Total Cost</th> </tr> </thead> <tbody> <tr> <td>North Park - Community</td> <td>\$2,541,600</td> <td>7.06</td> <td>\$300,000</td> <td>\$2,118,000</td> <td>\$4,659,600</td> </tr> <tr> <td>South Park - Community</td> <td>\$2,772,000</td> <td>7.70</td> <td>\$300,000</td> <td>\$2,310,000</td> <td>\$5,082,000</td> </tr> <tr> <td>Neighborhood-sized parks</td> <td>\$4,777,500</td> <td>13.65</td> <td>\$300,000</td> <td>\$4,095,000</td> <td>\$8,872,500</td> </tr> <tr> <td></td> <td></td> <td>28.41 acres</td> <td></td> <td></td> <td>\$18,614,100</td> </tr> </tbody> </table>	Estimated fees to be paid per market homes in the Project						Per MF	Per SF	Total of 18 years	Average per year	Police	\$120	\$280	\$240,120	\$13,340	Fire	\$371	\$554	\$546,021	\$30,333	Solid Waste	\$165	\$242	\$240,075	\$13,338	Total	\$656	\$1,076	\$1,026,216	\$57,012	Public Parks and Recreation Facilities							Estimated Const. Costs	Estimated Acres	Land Value - \$/Ac	Estimated Land Costs	Estimated Total Cost	North Park - Community	\$2,541,600	7.06	\$300,000	\$2,118,000	\$4,659,600	South Park - Community	\$2,772,000	7.70	\$300,000	\$2,310,000	\$5,082,000	Neighborhood-sized parks	\$4,777,500	13.65	\$300,000	\$4,095,000	\$8,872,500			28.41 acres			\$18,614,100
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Other Land for Cultural, Recreational and Public Use				
	Estimated Acres	Land Value - \$/Ac	Estimated Land Costs	Estimated Total Cost
Open Space & Pocket Parks	18.39	\$300,000	\$5,517,000	\$5,517,000
Archeological Preserves	9.02	\$300,000	\$2,706,000	\$2,706,000
Elementary School	13.00	\$300,000	\$3,900,000	\$3,900,000
Civic/School Sites	4.26	\$300,000	\$1,278,000	\$1,278,000
Total	44.67			\$13,401,000

Estimated Key Public Road Improvements							
	Est Construction Cost	LF	ROW	Est Acres	Land - \$/Ac	Est. Land Cost	Est. Total Costs
Ane K Hwy	N/A	N/A	N/A	1.02	\$300k/ac	\$305,400	\$305,400
Manawalea Ext	\$5,675,000	2,700	80	4.96	\$300k/ac	\$1,487,603	\$7,162,603
Palani & Queen K Int.	\$1,220,000				\$300k/ac	N/A	\$1,220,000
Makala & Ane K Int	\$525,000				\$300k/ac	N/A	\$525,000
Ane K and Kealakhe Pkwy Int	\$800,000				\$300k/ac	N/A	\$800,000
Keanalehu Dr. Ext	\$1,891,667	890	80	1.63	\$300k/ac	\$490,358	\$2,382,025
School St Ext	\$2,740,000	4,535	66	6.87	\$300k/ac	\$2,061,364	\$4,801,364
Main St	\$2,215,400	2,915	94	6.29	\$300k/ac	\$1,887,121	\$4,102,521
Total		11,040					\$21,298,913
Other - Project intersections on Palani & Ane K Hwy	\$4,200,000						\$4,200,000

NOTE: based on TIAR submitted to DOT in 2010.

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Police	\$120	\$280	\$385,360																																																													
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Solid Waste	\$165	\$242	\$435,347																																																													
Road & Traffic	\$3,260	\$5,200	\$8,878,140																																																													
Project Total			\$20,860,240																																																													
31	Hawaii County Code Sec. 25-2-46 (Concurrency requirements)	<p data-bbox="1066 966 1990 1063">Exemptions from any current or future standards or requirements under the Kona Community Development Plan (Ordinance No. 08 131) and the Village Design Guidelines attached thereto, and the Village Design Guidelines as adopted in the Planning Department Rules and Regulations, as the same may be amended from time to time, that are not consistent with the preliminary plans and specifications and the Plans & Figures booklet approved as Exhibit A of the Keahuolu 201H Resolution.</p> <p data-bbox="1066 1084 1990 1128"><i>[This exemption allows design and development to proceed based on the preliminary plans and specifications and the Plans & Figures booklet approved as Exhibit A of the Keahuolu 201H Resolution]</i></p> <p data-bbox="1066 1144 1990 1209">TRAFFIC Except as may be alleviated by local mitigation improvements to be constructed by Project, exemption from the requirement for acceptable traffic LOS prior to occupancy of Project</p> <p data-bbox="1066 1226 1990 1269">Consistent with the exemption for affordable housing projects provided under Section 25-2-46(h)(1), the Project shall be exempt from the requirement to perform or otherwise satisfy Arca Mitigation requirements.</p>																																																														

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		<p>WATER Rezoning may occur as long as Forest City provides assurance satisfactory to the Department of Water Supply and the Planning Director that a water source of sufficient quality and quantity has been established. Such satisfactory assurance can be met by the actual drilling and testing of a well site of the water source or by the submittal of a hydrological study certifying that a water source of sufficient quality and quantity can be established at the designated locations. The actual development of the water source and its water transmission and distribution system shall be constructed or bonded for completion in conjunction with the subdivision approval process. Occupancy of the residential structures shall be delayed until the approved water source is developed and its transmission and distribution system for such source to the Project has been constructed. Residential building permits may be issued for model home complexes at any time, and such model homes need not be serviced by the approved water source prior to occupancy.</p> <p>PARKS Exemption from parks concurrency requirements for occupancy of the Project. Parks will be provided as shown on plans and with design and construction plans approved by Parks and Recreation.</p>
32	<p>Hawaii County Code Sec. 25-2-61 (Applicability; use permit required) (a) The following uses shall be permitted within designated County zoning districts only if a use permit is obtained for the use from the commission: (1) Bed and breakfast establishments in RS districts. (2) Crematoriums in all districts. (3) Churches, temples and synagogues, including meeting facilities for churches, temples, synagogues and other such institutions, in RS, RD, RM, RA, FA and A districts; provided that a minimum building site area often thousand square feet is required within the RS, RD, RM, and RA districts. (4) Day care centers in RS, RD, RM, RA, FA and A districts, provided that a minimum building site area often thousand square feet shall be required within the RS, RD, RM, and RA districts. (5) Golf courses and related golf course uses including golf driving ranges, golf maintenance buildings, and golf club houses in the RS, RD, RM, RCX, PA, FA, A, V, CG, CV, and O districts. (6) Group living facilities that exceed the criteria in subsection 25-1-5(b), paragraph (b) of the definition of "group living facility" in the RS, RD, RM, RCX, RA, FA, A, CN, CG, CV, and V districts. (7) Hospitals, sanitariums, old age, convalescent, nursing and rest homes, and other similar uses devoted to the care or treatment of the aged, the sick, or the infirm in the RS, RD, RM, RCX, RA, FA, A, and V districts, provided that a minimum building site area often thousand square feet shall be required within the RS, RD, RM, RCX and RA districts. (8) Major outdoor amusement and recreation facilities in RS, RD, RM, RCX, RA, A, CN, CG, CV, MCX, ML, MG and O districts. (9) Mortuaries in RS, RD, RM, RCX, RA, FA and A districts. (10) Schools in RS, RD, RM, RA, PA and A districts, provided that a minimum building site area often thousand square feet shall be required within the RS, RD, RM, and RA districts. (11) Telecommunication antennas and towers in RS, RD, RM, RCX, RA, FA, A, and IA districts. (12) Yacht harbors and boating facilities in the RS, RD, RM, RCX, RA, V, CG, CV, MCX, ML, MG and O districts.</p>	<p>Exemption from requirement to obtain a Use Permit for those uses allowable with a Use Permit subject only to the approval of the Planning Director.</p> <p><i>[Exemption requested so that Project can be designed consistent with the Kona CDP and 201H Resolution, as approved by the County Council. All uses will be consistent with the Land Use Commission's Decision & Order in Docket A10-788.]</i></p>

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	<p>(13) Wind energy facilities in the O district; provided that the property is within the state land use agricultural district.</p> <p>(14) Other unusual and reasonable uses which are not specifically permitted in any zoning district with the approval of the director and the concurrence of the council by resolution.</p> <p>(b) Any use which received an approval as a conditionally permitted use prior to September 25, 1984, or which received prior approval through the use permit process, is considered a legal use of the affected parcel and may be expanded or enlarged without obtaining another use permit, provided such expansion, enlargement or addition is in full compliance with this chapter and the applicable district regulations.</p> <p>(c) A use permit shall not be required for any use described in subsection (a) above, if a special permit is obtained for that use, pursuant to section 205-6, Hawai'i Revised Statutes.</p>	
33	<p>Hawaii County Code Sec. 25-3-5 (Application of district regulations)</p> <p>(a) The provisions of this chapter for each district shall apply uniformly to each class or kind of structure or land within the district, except as provided in this chapter.</p> <p>(b) Any building, structure, or land used or occupied after May 24, 1967, and any building or structure erected, constructed, reconstructed, moved or structurally altered after May 24, 1967, shall comply with all of the regulations specified in this chapter for the district in which such structure, land or premises is located.</p> <p>(c) Any building or other structure erected or altered after May 24, 1967 shall not:</p> <ol style="list-style-type: none"> (1) Exceed the height; (2) Accommodate or house a greater number of families; (3) Occupy a greater percentage of lot area, if provided by the zoning district; (4) Have narrower or smaller rear yards, front yards, side yards, or other open spaces than herein permitted; or (5) In any other manner be contrary to the provisions of this chapter. <p>(d) No portion of a yard, other open space, off-street parking, or loading space required about or in connection with any building for the purpose of complying with this chapter, shall be included as part of a yard, open space, off-street parking, or loading space similarly required for any other building.</p> <p>(e) Any yard or building site existing as of September 11, 1966, shall not be reduced in dimension or area below the minimum requirements set forth in this chapter. Any yard or building site created after May 24, 1967, shall meet at least the minimum requirements established by this chapter. Provided, however, that if the minimum building site in any zoning district was increased by an amendment to this chapter adopted on December 7, 1996, any parcel of land with minimum building site areas established by a zoning ordinance adopted predating December 7, 1996, may be developed utilizing yards, building site average width and minimum building site areas in accordance with the pre-existing ordinance.</p> <p>(f) If any ordinance adopted prior to December 7, 1996, amended the zoning district for any building site and provided for a future effective date for the amendment, the ordinance shall be considered to predate this chapter and the building site may be developed in accordance with the ordinance and the conditions contained in the ordinance, notwithstanding the fact that provisions of this chapter adopted on December 7, 1996, conflict with the provisions of the ordinance.</p>	<p>The Project shall be exempt from the requirements set forth under Section 25-3-5, pursuant to the applicable standards as approved in the Keahuolu 201H Resolution; provided however, that all uses will be consistent with the Land Use Commission's Decision & Order in Docket A10-788, and provided further, that the Definitions contained in Zoning Code Section 25-1-5, and Subdivision Code Section 23-3 shall apply to the Project.</p> <p><i>[Exemption is to allow Project, as designed per CDP, to be built with exemptions from the currently applicable A-5a zoning.]</i></p>

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<p>34 Hawaii County Code Sec. 25-4-2 (Conditions for construction of buildings designed for human occupancy) (a) On any building site, no building designed or intended for human occupancy shall be constructed and no permit therefor shall be issued unless: (1) The building site is served by a County water system or a privately owned and operated water system, or other private, individual means of providing water to the building site is demonstrated; and (2) A wastewater treatment system for the proposed building has been approved by the State department of health. (b) On any building site in any subdivision approved by the director under chapter 23 of this code, no building designed or intended for human occupancy shall be constructed and no permit issued therefor until either: (1) The streets, drainage improvements, water supply system, if any, and sewage disposal system, if any, have been constructed, inspected and approved by the appropriate County agencies; or (2) Final subdivision approval has been secured by the subdivider in accordance with chapter 23, by posting a surety bond or other security guaranteeing the construction of all of the subdivision improvements as shown on approved construction drawings and specifications, provided that final occupancy of any dwelling unit shall not be granted until the subdivision improvements for the particular increment in which such dwelling unit is situated have been constructed, inspected and approved by the appropriate County agencies.</p>	<p>Construction of the Project water, streets, drainage improvements, and sewage disposal system will be constructed concurrent with the building construction. Therefore, no occupancy permits or final inspections of single-family dwellings shall be issued prior to such systems having been inspected and approved by the appropriate County agencies. Subject to the approval of the Planning Director, Final subdivision may be issued without posting of a bond or other security guaranteeing completion of the subdivision improvements.</p>
<p>35 Hawaii County Code Sec. 25-4-8 (Temporary real estate offices and model homes) (a) Temporary real estate offices for new developments shall be permitted in all districts except for the A, IA and O districts, and model homes for new developments shall be permitted in all districts except for the A, IA, MCX, ML, MG and O districts, provided that final subdivision approval of the development has been granted by the director and plan approval for any temporary real estate office and/or model home is secured from the director prior to the establishment of such use. (b) A temporary real estate office and model home shall also be subject to the following conditions: (1) The development in which the temporary real estate office and/or model home is proposed to be situated must consist of six or more lots and/or units. (2) The temporary real estate office and/or model home shall not be used for a period longer than twenty-four months from the date of plan approval by the director; provided that extensions may be granted by the director. (3) If the temporary real estate office is established in a structure not otherwise permitted in the particular zoning district, the structure shall be removed co-terminus with the expiration of the temporary real estate office use. (4) The temporary real estate office and/or model home shall be used exclusively for marketing of lots and/or units located within the development in which it is to be located. In multi-phased developments, a temporary real estate office or model home may be allowed for each development phase for a period not to exceed twenty-four months. Time extensions may be granted by the director. (5) Parking for the temporary real estate office use shall be based on a minimum of one parking stall for each employee and a minimum of one parking stall for each four hundred square feet of gross floor area. The parking requirement may be satisfied off-site, provided that approval is secured from the director. (6) The temporary real estate office and/or model home shall comply with the minimum setback and height requirements of the particular zoning district.</p>	<p>Real estate offices and model homes associated with the Project shall be permitted within the Project, without limitations on the locations or periods of time that such uses are maintained.</p>

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36	<p>Hawaii County Code Sec. 25-4-31 (Minimum building site area; minimum average width) (a) Unless otherwise specified in this chapter, each main building must be located on a building site having not less than the established zoning district minimum building site area. (b) Any building site which has less area or width than that required by the established zoning district, may be used as a legal building site; provided that the owner of the building site owns no adjoining property at the same time. (c) A building site shall be deemed to conform to the requirements for building site average width if any portion of the building site considered separately has the minimum building site area with the minimum average width.</p>	<p>Exemption from all minimum building site area and minimum average width requirements. Minimum building site area and minimum average width requirements shall be determined by the Project's architect, in consultation with the Planning Director, and will be in compliance with design standards and specifications as may be required by the State Land Use Commission's Decision and Order in Docket A10-788 and the 201H Resolution, as approved by the County Council.</p> <p><i>[Exemption requested to allow for flexibility in the master planning and housing design to further the development of compact mixed-use community. Smaller lot sizes also provide for the opportunity to create more density around the Project's transit stops and mixed use commercial areas. Exemption is consistent with goals outlined in LEED ND (SLL 3; NPD P2; NPD 2; GIB 4) and the Kona CDP]</i></p>
37	<p>Hawaii County Code Sec. 25-4-32 (Reduction of building site below minimum area) (a) A building site may not be reduced below the established zoning district minimum building site area, and an existing building site, which is below the minimum building site area, may not be further reduced in area, except as provided under section 25-3-5. (b) Any legal building site reduced in area or average width by not more than twenty percent, by reason of the establishment of future width lines or plan lines for future streets or by the acquisition by a public agency for public purposes, shall be deemed to be a legal building site as to the remainder of the building site.</p>	<p>Exemption to allow for a minimum building site area of 3,000 SF per double family residential dwelling and a minimum building site area of 1,800 SF for a single family residential dwelling.</p> <p><i>[Exemption requested to allow for flexibility in the master planning and housing design to further the development of compact mixed-use community. Smaller lot sizes also provide for the opportunity to create more density around the Project's transit stops and mixed use commercial areas. This is in compliance with LEED ND (SLL 3; NPD P2; NPD 2; GIB 4) and the Kona CDP]</i></p>
38	<p>Hawaii County Code Sec. 25-4-40 (General requirements for yards and open space) (a) On every building site, yards of the minimum width or depth as specified for the established zoning district shall be maintained open and unobstructed from the ground up, except as specified in sections 25-4-40 through 25-4-47. (b) No required yard or open space may fulfill the requirement for more than one building, building site, or use. (c) A building site shall have a front yard wherever it has a street frontage, except where the option of either a front or rear yard is allowed in CV and CG districts. (d) In CV and CG districts, where the building site is bounded by two or more streets, a minimum of one front yard shall be required. Its location shall be determined by taking into account the relationship and impact of the development to the adjoining streets. (e) Unless otherwise specified, yards, open spaces, and distances shall be measured horizontally.</p>	<p>Yard and open space requirements shall be determined by the Project's architect, in consultation with the Planning Director, and in compliance with design standards and specifications as may be required by the State Land Use Commission's Decision and Order in Docket A10-788 and the 201H Resolution, as approved by the County Council.</p> <p><i>[Exemption requested to allow for flexibility in the master planning and housing design to further the development of compact mixed-use community. Smaller lot sizes also provide for the opportunity to create more density around the Project's transit stops and mixed use commercial areas. Exemption is consistent with goals outlined in LEED ND (SLL 3; NPD P2; NPD 2; NPD 10; GIB 4) and the Kona CDP]</i></p>
39	<p>Hawaii County Code Sec. 25-4-42 (Corner building sites) (a) On any corner building site, the interior lines shall be side lot lines and all rear yard regulations shall be inapplicable. (b) On any corner building site in all zoning districts except in the CN district, within the area of a triangle formed by the street lines of such building site (ignoring any corner radius), and a line drawn between points on such street lines twenty-five feet from the intersection thereof, no fence, wall, hedge, or building shall be higher than three feet nor shall there be any obstruction to vision other than a post, column, or tree trunk clear of branches or foliage, between the height of three feet and eight feet above the level of the street or the level of</p>	<p>For all corner building sites within the Project, there shall be 1 front and 1 side yard facing the intersecting streets and interior lot lines shall be considered side yards.</p> <p>For all corner building sites within the Project, for the purpose of traffic safety, a setback shall be established by a licensed civil engineer in compliance with AASHTO standards, having considered all life safety and ADA compliance issues.</p>

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	the point of intersection if the streets are sloping.	<p>The criteria for establishing a minimum sight distance triangle shall be subject to DPW approval. The line of sight triangle shall be within the right-of-way, within the clear area required by existing ordinance (HCC Section 22-2.2) or within a sight distance easement prohibiting sight distance obstructions as established by the adopted criteria.</p> <p><i>[Where safety and access concerns can be mitigated, this exemption requests to allow small setbacks to encourage walkability, community connection, an urban streetwall, as well as slower speeds and more careful turning maneuvers by motorists. Small setbacks and slow speeds are consistent with goals outlined in LEED ND (NPD P1; NPD 1; NPD 14)]</i></p>
40	<p>Hawaii County Code Sec. 25-4-43 (Fences and accessory structures) (a) A perimeter boundary fence, wall or similar feature, six feet or less in height shall not be considered a structure and shall be permitted without any front, side or rear yard requirements. In addition, a fence which is constructed of strand material, such as barbed wire, hog wire, or chain link, which allows "see-through" visibility is permitted to a height of eight feet without any front, side, or rear yard requirements. (b) No fence, wall, architectural feature, or other obstruction shall be placed or be without gates or openings so as to prohibit complete access around any main building at all times. (c) Any accessory structure, including any fence, or wall over six feet in height, architectural feature or water tank, which is not connected to a building, may not extend into any required front, side or rear yard, but may be located next to any building without any open space requirement.</p>	<p>Exemption to allow structures and architectural features to be constructed in compliance with Kona CDP Table 5: Private Frontages.</p> <p>Except where such features would conflict with building code requirements, fence and accessory structure requirements shall be determined by the Project's architect, in consultation with the Planning Director and in compliance with design standards and specifications as may be required by the State Land Use Commission's Decision and Order in Docket A10-788 and the 201H Resolution, as approved by the County Council.</p>
41	<p>Hawaii County Code Sec. 25-4-44 (Permitted projections into yards and open spaces) (a) Except as may otherwise be restricted, roof overhangs, eaves, sunshades, sills, frames, beam ends, cornices, canopies, porches, balconies, terraces, fire escapes, stairs, ramps, above-grade pools and other similar features may extend four feet into any required yard or open space that is less than ten feet, five feet when required yard or space is from ten up to fifteen feet, and six feet when required yard is over fifteen feet; provided that: (1) No cornice, canopy, cave, porch, balcony, terrace, fire escape, stair, ramp or other similar feature shall be enclosed above or below the extension except that there may be individual posts or beams for support and open or grill-type railings no higher than four feet. (2) No chimney may extend more than two feet into any yard. (3) No above-grade pool may extend into any required front, side or rear yard if the pool is over six feet in height. (b) The extensions permitted in this section apply separately to each building.</p>	<p>Exemption to allow for overhangs and other projections to extend any length into yards and up to the right-of-way. Structures and architectural features to be constructed in compliance with Kona CDP Table 5: Private Frontages.</p> <p>Exemption to subsection (a) as follows:</p> <p>(a) Except where such features would conflict with building code requirements, overhangs and other projections are allowed to extend into yards per standards set by the Project's architect .</p> <p><i>[This provision is intended to allow features such as roof overhangs, eaves, sunshades, sills, frames, beam ends, cornices, canopies, porches, balconies, terraces, fire escapes, stairs, ramps, above-grade pools and other similar features to extend into setbacks per the building typologies studies for Kamakana Villages. For the listed features (and similar) the current designs call for encroachment into the setback up to 70% of the total setback distance in residential districts, and 100% of the total setback distance in commercial and mixed use districts.]</i></p> <p>Additionally, in commercial and mixed-use districts, projections and overhangs above the first story may extend into rights-of-way per standards set by the project's architect.</p> <p>No exemptions are requested from subsection (a)(1) and (b).</p>

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42	<p>Hawaii County Code Sec. 25-4-47 (Minimum distance between main buildings on same building site) Unless otherwise specified, the minimum distance between main buildings on the same building site shall be fifteen feet, measured between the walls of the two buildings.</p>	<p>The minimum distance between main buildings on the same building site shall be 6 feet, measured between the walls of the two buildings, which distance shall be set by the Project's architect in consultation with the DPW and the Fire Department.</p>
43	<p>Hawaii County Code Sec. 25-4-51 (Required number of parking spaces) (a) The number of parking spaces for each use shall be as follows: (1) Agricultural tourism: one for each three hundred square feet of gross floor area used principally for the agricultural tourism activity, but not fewer than three spaces, plus bus parking if buses are allowed. (2) Bed and breakfast establishments: one for each guest bedroom, in addition to one for the dwelling unit. (3) Bowling alleys: four for each alley. (4) Commercial uses, including retail and office uses in RCX, CN, CG, CV, MCX, V, RA, FA, A and IA districts: one for each three hundred square feet of gross floor area. (5) Day care centers: one for each ten care recipients of design capacity or one for every two hundred square feet of gross floor area, whichever is greater. (6) Dwellings, multiple-family: one and one quarter for each unit. (7) Dwellings, single-family and double-family or duplex: two for each dwelling unit. (8) Funeral homes and mortuaries: one for each seventy-five square feet of gross floor area. (9) Golf courses: four for every hole. (10) Hospitals: one for each bed. (11) Hotels and lodges: (A) For hotel guest units without a kitchen, one for every three units; (B) For hotel guest units with a kitchen, one and one quarter for each unit. (12) Industrial uses in ML, MG, MCX, RA, FA, A and IA districts: one for each four hundred square feet of gross floor area. (13) Laundromats, cleaners (coin operated): one for every four machines. (14) Major outdoor amusement and recreation facilities: one for each two hundred square feet of gross floor area within enclosed buildings, plus one for every three persons that the outdoor facilities are designed to accommodate when used to the maximum capacity. (15) Meeting facilities, including churches: one for each seventy-five square feet of gross floor area. (16) Nursing homes, convalescent homes, rest homes and homes for the elderly: one for every two beds. (17) Parks: as determined by the director. (18) Recreation facilities, outdoor or indoor, other than herein specified: one for each two hundred square feet of gross floor area, plus three per court (racquetball, tennis or similar activities). (19) Rooming and lodging houses, religious, fraternal or social orders having sleeping accommodations: one for each two beds. (20) Schools (elementary and intermediate): one for each twenty students of design capacity, plus one for each four hundred square feet of office floor space. (21) Schools (high, language, vocational, business, technical and trade, college): one for each ten students of design capacity, plus one for each four hundred square feet of office floor space. (22) Sports arenas, auditoriums, theaters, assembly halls: one for every four seats. (23) Swimming pools (community): one for each forty square feet of pool area. (24) Warehouse and bulk storage establishments where there is no trade or retail traffic: one for each one</p>	<p>The number of parking spaces within the Project shall be in compliance with the Kona CDP Table 9 and at no time shall be less than 50% of the spaces otherwise required under Section 25-4-51. The required parking spaces may be allowed on-street, provided, however, that the Planning Director, in consultation with the DPW, shall approve the specific locations of all on-street parking spaces. Off-street tandem parking spaces shall count toward the required number of parking spaces only where both stalls are dedicated to the same household. Shared parking spaces between building sites shall be allowed, subject to the approval of the Planning Director.</p> <p><i>[This exemption is intended to design parking to increase the pedestrian orientation of projects and minimize the adverse environmental effects of parking facilities. Reduce public health risks by encouraging daily physical activity associated with walking and bicycling. LEED ND NPD Credit 5: Reduced Parking Footprint. Parking will be provided as the market demands, these exemptions only set the minimum dimensions]</i></p>

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	<p>thousand square feet of gross floor area.</p> <p>(b) No additional parking is required for any change of use in a building as long as the previous use of the building had the required number of parking stalls for that use; provided, that additional parking may be required for a change of use in any building where the building is converted from residential to commercial use or from warehouse and manufacturing use to retail or commercial use.</p> <p>(c) Where uses and activities do not occur simultaneously, parking space requirements may be shared, provided that:</p> <p>(1) The utilization of the combined parking is shown to the satisfaction of the director to be noncompeting as to time of use;</p> <p>(2) The number of parking spaces is based on the largest parking requirement of those respective facilities;</p> <p>(3) The parking areas are not more than one thousand feet from any of the buildings housing the activities; and</p> <p>(4) The parking areas are encumbered for that use for the life of the facilities being served.</p>											
44	<p>Hawaii County Code Sec. 25-4-53 (Minimum dimensions of parking spaces)</p> <p>(a) Standard-sized automobile parking spaces shall be at least eighteen feet in length and eight feet six inches in width, with curbside parallel spaces at least twenty-two feet in length.</p> <p>(b) Compact spaces shall be at least sixteen feet in length and seven feet six inches in width, with curbside parallel spaces at least eighteen feet in length.</p> <p>(c) Minimum aisle widths for parking bays shall be provided in accordance with the following:</p> <table border="0"> <thead> <tr> <th><u>Angle of Parking to Curb</u></th> <th><u>Minimum Width</u></th> </tr> </thead> <tbody> <tr> <td>to 00° (parallel)</td> <td>12'</td> </tr> <tr> <td>to 45°</td> <td>14'</td> </tr> <tr> <td>to 60°</td> <td>18'</td> </tr> <tr> <td>to 90° (perpendicular)</td> <td>24'</td> </tr> </tbody> </table> <p>(d) Parking spaces may have a three-foot unpaved car overhang area.</p>	<u>Angle of Parking to Curb</u>	<u>Minimum Width</u>	to 00° (parallel)	12'	to 45°	14'	to 60°	18'	to 90° (perpendicular)	24'	<p>Exemption to allow standard-sized automobile parking spaces to be at least 18 feet in length and 7 feet in width, and parallel spaces to be at least 19 feet in length.</p> <p>Exemption to allow compact car spaces to be at least 16 feet in length and 7 feet wide.</p> <p>Exemption to allow for a minimum aisle width of 22 ft for parking spaces that have a 90° (perpendicular) angle to curb.</p> <p><i>[This exemption is intended to design parking to increase the pedestrian orientation of projects and minimize the adverse environmental effects of parking facilities. Reduce public health risks by encouraging daily physical activity associated with walking and bicycling. Exemption is consistent with goals outlined in LEED ND (NPD 5). Parking will be provided as the market demands, these exemptions only set the minimum dimensions]</i></p>
<u>Angle of Parking to Curb</u>	<u>Minimum Width</u>											
to 00° (parallel)	12'											
to 45°	14'											
to 60°	18'											
to 90° (perpendicular)	24'											

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Hawaii County Code Sec. 25-4-56 (Off-street loading requirements)

Off-street loading requirements for all buildings having a gross floor area of at least five thousand square feet, except for single-family and double-family/duplex residential units, which shall have no off-street loading requirements, shall be as follows:

Use or Use Category	Floor Area in Square Feet	Loading Space Requirements
Commercial and industrial uses, including retail and wholesale operations, eating and drinking establishments, business services, personal services, repair, manufacturing and self storage facilities, but excluding offices	5,000 - 20,000	1
	10,001 - 20,000	2
	20,001 - 40,000	3
	30,001 - 40,000	4
	40,001 - 60,000	5
	Each additional 50,000 or major fraction thereof	1
Hotels, hospital or similar institutions, and places of public assembly	5,000 - 10,000	1
	10,001 - 50,000	2
	50,001 - 100,000	3
	Each additional 100,000 or major fraction thereof	1
Offices or office buildings	20,000 - 50,000	1
	50,001 - 100,000 or major fraction thereof	2
	Each additional 100,000 or fraction thereof	1
Multiple-family dwellings	20 - 150 units	1
	151 - 300 units	2
	Each additional 200 units or major fraction thereof	1

Off-street loading requirements for all buildings having a gross floor area of at least five thousand square feet, except for single-family and double-family/duplex residential units, which shall have no off-street loading requirements, shall be as follows:

Use or Use Category	Floor Area in Square Feet	Loading Space Requirements
Commercial and industrial uses, including retail and wholesale operations, eating and drinking establishments, business services, personal services, repair, manufacturing and self storage facilities, but excluding offices	5,000 - 20,000	1
	20,001 - 40,000	3
	30,001 - 40,000	4
	40,001 - 60,000	4
	Each additional 20,000 or fraction thereof	1
Hotels, hospital or similar institutions, and places of public assembly	5,000 - 50,000	1
	50,001 - 100,000	2
	Each additional 50,000 or fraction thereof	1
Offices or office buildings	20,000 - 100,000	1
	Each additional 50,000 or fraction thereof	1
Multiple-family dwellings	0 - 65 units	0
	66 - 300 units	1
	Each additional 300 units or fraction thereof	1

On-street loading spaces shall be permitted to satisfy the requirements herein, subject to the approval of the Planning Director of the width of the road right-of-way and the location of all on-street loading spaces.

On-street loading stalls will be entitled to any qualified loading use that meets signage rules.

[This exemption is intended to design parking to increase the pedestrian orientation of projects and minimize the adverse environmental effects of parking facilities. Reduce public health risks by encouraging daily physical activity associated with walking and bicycling. Exemption is consistent with goals outlined in LEED ND (NPD 5). Parking will be provided as the market demands, these exemptions only set the minimum. Loading stalls need to be located in street rights of way. Developer will coordinate signage and management with County.]

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46	<p>Hawaii County Code Sec. 25-4-58 (Dimension of loading spaces) (a) When only one loading space is required and the total gross floor area is not more than five thousand square feet, the horizontal dimensions of the loading space shall be ten feet wide and twenty-two feet long, and the vertical clearance shall be at least fourteen feet. (b) When only one loading space is required and the total gross floor area is more than five thousand square feet, the horizontal dimensions of the loading space shall be twelve feet wide and fifty feet long, and the vertical clearance shall be at least fourteen feet. (c) When more than one loading space is required or the total gross floor area is more than five thousand square feet, the minimum horizontal dimension of at least half of the required loading spaces shall be twelve feet wide and fifty feet long, and the vertical clearance shall be at least fourteen feet. The balance of the required loading spaces may have horizontal dimensions often feet wide and twenty-two feet long. (d) The required apron space, or area provided for maneuvering trucks into or out of loading position, shall be forty-six feet if the loading space width is ten feet, forty-three feet if the loading space width is twelve feet, and thirty-nine feet if the loading space width is fourteen feet.</p>	Dimensions of loading spaces shall be as designed by the Project's architect and approved by the Planning Director.
47	<p>Hawaii County Code Sec. 25-4-59 (Location and improvement of loading spaces) (a) All required loading spaces shall be located on the building site to which they are appurtenant. No loading spaces shall be permitted within any street or alley. (b) Each required loading space shall be identified as such and shall be reserved for loading purposes. (c) No loading space shall occupy required off-street parking space or restrict access. (d) Access to any loading space shall not be directly from or to a street but must be reached from an on-site access driveway of proper design and width to allow for passage of trucks and necessary turning movements. (e) All loading spaces and apron spaces or maneuvering areas shall be paved.</p>	The locations and improvements for any loading spaces may be located on a separate building site and shall be pursuant to the plans provided by the Project architect and approved by the Planning Director.
48	<p>Hawaii County Code Sec. 25-4-59.3 (Landscaping and screening for parking lots and loading spaces) (a) To provide shade in open parking lots and minimize visibility of paved surfaces, parking lots with more than twelve parking stalls shall provide one canopy form free with a minimum of two-inch caliper for every twelve parking stalls or major fraction thereof and having a planting area or tree well no less than thirty square feet in area. If wheel stops are provided, continuous planting areas with low groundcover centered at the corner of parking stalls may be located within the three-foot overhang space of parking stalls. Hedges and other landscape elements, including planter boxes over six inches in height, are not permitted within the overhang space of the parking stalls. Trees shall be sited so as to evenly distribute shade throughout the parking lot. (b) Parking lots of five or more spaces shall be screened from adjoining lots in RS, RD, RM, RCX or RA districts by walls, continuous screening hedges, or earth berms a minimum of forty-two inches high on the abutting property line. (c) All loading spaces shall be screened from adjoining lots in RS, RD, RM, RCX or RA districts by a wall six feet in height. (d) Xeriscape and native Hawaiian plant species shall be encouraged. (e) All landscaping shall be maintained by the property owner.</p>	Landscaping and screening for parking lots and loading spaces shall be pursuant to the plans provided by the Project architect and approved by the Planning Director.

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<p>49 Hawaii County Code Sec. 25-5-72 (Permitted Uses) (a) The following uses shall be permitted in the A district: (1) Agricultural parks. (2) Agricultural products processing, major and minor. (3) Agricultural tourism as permitted under section 25-4-15. (4) Animal hospitals. (5) Aquaculture. (6) Botanical gardens, nurseries and greenhouses, seed farms, plant experimental stations, arboretums, floriculture, and similar uses dealing with the growing of plants. (7) Campgrounds, parks, playgrounds, tennis courts, swimming pools, and other similar open area recreational facilities, where none of the recreational features are entirely enclosed in a building. (8) Cemeteries and mausoleums, as permitted under chapter 6, article 1 of this Code. (9) Crop production. (10) Dwelling, single-family, as permitted under chapter 205, Hawai'i Revised Statutes and as permitted under section 25-5-77(b). (11) Farm dwellings, as permitted under section 25-5-77(b) and (c). (12) Fertilizer yards utilizing only manure and soil, for commercial use. (13) Forestry. (14) Game and fish propagation. (15) Group living facilities. (16) Kennels. (17) Livestock production, provided that piggeries, apiaries, and pen feeding of livestock shall only be located on sites approved by the State department of health and the director, and must be located no closer than one thousand feet away from any major public street or from any other zoning district. (18) Public uses and structures which are necessary for agricultural practices. (19) Retention, restoration, rehabilitation, or improvement of building or sites of historic or scenic interest. (20) Riding academics, and rental or boarding stables. (21) Roadside stands for the sale of agricultural products grown on the premises. (22) Utility substations, as permitted under section 25-4-11 (23) Vehicle and equipment storage areas that are directly accessory to aquaculture, crop production, game and fish propagation, livestock grazing and livestock production. (24) Veterinary establishments. (25) Wind energy facilities. (b) The following uses may be permitted in the A district, provided that a use permit is issued for each use: (1) Golf courses and related golf course uses, including golf driving ranges, golf maintenance buildings and golf club houses. (2) Telecommunication antennas and towers. (c) The following uses may be permitted in the A district, provided that a special permit is obtained for such use if the building site is located within the State land use agricultural district: (1) Adult day care homes. (2) Airfields, heliports, and private landing strips. (3) Bed and breakfast establishments, as permitted under section 25-4-7. (4) Community buildings, as permitted under section 25-4-11.</p>	<p>Exemption requested to allow Project, as designed per Kona CDP, and approved in the 201H Resolution, to be built in the Agricultural A-5a district. The uses allowed in the Project shall be all permitted uses listed in the RS, RD, RM, RCX, CN, CG and CV zoned districts, to include without limitation, all buildings and uses accessory thereto, all uses that would otherwise require approval of a Use Permit, wind and solar energy facilities, self-storage facilities, private or public wastewater treatment facilities, and related infrastructure facilities. Additional permitted uses and development standards applicable within the Project may be approved by the Planning Director upon issuance of the applicable Variance, Cluster Plan Development and/or Planned Unit Development Permit.</p>
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	<p>(5) Excavation or removal of natural building material or minerals, for commercial use. (6) Family child care homes. (7) Guest ranches. (8) Home occupations, as permitted under section 25-4-13. (9) Lodges. (10) Meeting facilities. (11) Model homes, as permitted under section 25-4-8. (12) Public dumps. (13) Public uses and structures, other than those necessary for agricultural practices, as provided under section 25-4-13. (14) Temporary real estate offices, as permitted under section 25-4-8. (15) Trailer parks with density of three thousand five hundred square feet of land area per trailer, provided that plan approval is secured prior to commencing such use. (16) Uses, other than those specifically listed in this section, which meet the standards for a special permit under chapter 205, Hawai'i Revised Statutes. (d) The following uses may be permitted in the A district, provided that a use permit is issued for each use if the building site is outside of the State land use agricultural district or a special permit is issued for each use if the building site is within the State land use agricultural district: (1) Crematoriums. (2) Churches, temples and synagogues. (3) Day care centers. (4) Hospitals, sanitariums, old age, convalescent, nursing and rest homes. (5) Major outdoor amusement and recreation facilities. (6) Mortuaries. (7) Schools. (e) Buildings and uses accessory to the uses permitted in this section shall also be permitted in the A district. (f) No building site shall be established after December 1, 1996 which shall in any way restrict or limit aquaculture, horticulture, production of crops, keeping of livestock, game and fish propagation, or the processing, sale or other commercial use of the products of such uses.</p>	
50	<p>Hawaii County Code Sec. 25-5-73 (Height Limit) The height limit in the A district shall be thirty-five feet for any residential structure, including any single-family dwelling, or farm dwelling, and forty-five feet for all other structures. The director may, however, permit by plan approval, any nonresidential agricultural structures to be constructed to a height of one hundred feet, if the director determines that the additional height above the forty-five foot height limit is necessary.</p>	<p>Exemption requested to allow Project, as designed per Kona CDP, and approved in the 201H Resolution, to be built in the Agricultural A-5a district. The height limits within the Project shall be as follows:</p> <p>a. Single-family residential development: 45 feet b. Duplex or double-family residential development: 45 feet c. Multiple-family residential development: 60 feet d. Mixed-use, school, office, retail and commercial development (not more than five stories): 60 feet e. Height limitations for all other structures shall be as approved by the Planning Director; provided however, that no structure shall exceed 60 feet in height.</p> <p><i>[Exemption requested to allow additional density consistent with goals outlined in LEED ND (SLL 5; NPD P1; NPD P2; NPD 2; NPD 3) and the Kona CDP.]</i></p>

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51	<p>Hawaii County Code Sec. 25-5-74 (Minimum Building Site Area) The minimum building site area in the A district shall be five acres.</p>	<p>The minimum building sites within the Project shall be as follows:</p> <ul style="list-style-type: none"> a. Single-family dwelling units: 1,800 square feet (excluding the area of any flag portion of a lot); b. Duplex or double-family dwelling units: 3,000 square feet; c. Multiple-family dwelling units: 1,800 square feet; and d. Mixed-use, school, office, retail and commercial: 1,000 square feet. <p>In addition, Project will be in compliance with design standards and specifications as may be required by the State Land Use Commission's Decision and Order in Docket A10-788 and the 201H Resolution, as approved by the County Council.</p> <p><i>[Exemption requested is consistent with goals outlined in LEED ND (SLL 3; NPD P2; NPD 2; GIB 4)]</i></p>
52	<p>Hawaii County Code Sec. 25-5-75 (Minimum Building Site Average Width) Each building site in the A district shall have a minimum average width of two hundred feet for the first five acres of required area plus twenty feet for each additional acre of required area. Provided that no building site shall be required to have an average width greater than one thousand feet.</p>	<p>The minimum building sites average width within the Project shall be as follows:</p> <ul style="list-style-type: none"> a. Single-family residential development: 30 feet b. Duplex or double-family dwelling unit: 30 feet c. Multiple-family residential development: 30 feet d. Mixed-use, school, office, retail and commercial development: 30 feet <p>In addition, Project will be in compliance with design standards and specifications as may be required by the State Land Use Commission's Decision and Order in Docket A10-788 and the 201H Resolution, as approved by the County Council.</p> <p><i>[Exemption requested is consistent with goals outlined in LEED ND (SLL 3; NPD P2; NPD 2; GIB 4)]</i></p>
53	<p>Hawaii County Code Sec. 25-5-76 (Minimum Yards) (a) Except as otherwise provided in this section, the minimum yards in the A district shall be thirty feet for front and rear yards, and twenty feet for side yards. (b) For accessory uses such as shade cloth structures used in controlling the amount of sunlight in the raising of plants and flowers, rear, side and front yards in the A district shall be at least ten feet, except where the A district shares common boundaries with urban zones and main government roads. (c) For accessory uses such as plastic roofed and shade cloth wooden or metal framed structures used in controlling the amount of sunlight, rainfall, wind and other elements of nature in the raising of fruits, vegetables and similar agricultural products, rear, side and front yards shall be at least ten feet except where: (1) Exterior walls of any type other than shade cloth are added to the wooden or metal framed structure; (2) The specific use allowed is abandoned; and (3) The A district shares common boundaries with urban zones and main government roads</p>	<p>The minimum yards within the Project shall be as follows:</p> <p>Single-family residential development:</p> <ul style="list-style-type: none"> front yards: 10 feet rear yards: 5 feet side yards: 0 feet <p>Duplex or double-family residential development:</p> <ul style="list-style-type: none"> front yards: 10 feet rear yards: 5 feet side yards: 0 feet <p>Multiple-family residential development:</p> <ul style="list-style-type: none"> front yards: 10 feet rear yards: 5 feet

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		<p>side yards: 0 feet</p> <p>Mixed-use, school, office, retail and commercial development: front yards: 5 feet rear yards: 5 feet side yards: 0 feet, except when the adjoining building site is used for residential purposes, in which case the side yard shall be 5 feet</p> <p>Minimum yards shall be in compliance with design standards and specifications as may be required by the State Land Use Commission's Decision and Order in Docket A10-788 and the 201H Resolution, as approved by the County Council.</p>
54	<p>Hawaii County Code Sec. 25-5-77 (Other Regulations) (a) If any legal building site in the A district has an area of less than five acres, then the yard, minimum building site average width and height requirements for the building site shall be the same as the yard and height requirements in the FA district. (b) One single-family dwelling or one farm dwelling shall be permitted on any building site in the A district. A farm dwelling is a single-family dwelling that is located on or used in connection with a farm or if the agricultural activity provides income to the family occupying the dwelling. (c) Additional farm dwellings may be permitted in the A district only upon the following conditions: (b) A farm dwelling agreement for each additional farm dwelling, on a form prepared by the director, shall be executed between the owner of the building site, any lessee having a lease on the building site with a term exceeding one year from the date of the farm dwelling agreement, and the County. The agreement shall require the dwelling to be used for farm-related purposes. (2) The applicant shall submit an agricultural development and use program, farm plan or other evidence of the applicant's continual agricultural productivity or farming operation within the County to the director. Such plan shall also show how the farm dwelling will be utilized for farm-related purposes. (d) An ohana dwelling may be located on any building site in the A district, as permitted under article 6, division 3 of this chapter. (e) Exceptions to the regulations for the A district regarding heights, building site areas, building site average widths and yards, may be approved by the director within a planned unit development.</p>	<p>Exemption requested to allow the Project, as designed per the Kona CDP, to be built with exemptions from the current Agricultural A-5a zoning and in compliance with design standards and specifications as may be required by the State Land Use Commission's Decision and Order in Docket A10-788 and the 201H Resolution, as approved by the County Council.</p>
55	<p>Hawaii County Code Chapters 23 and 25</p>	<p>All design standards for roads, lots, permitted uses and other criteria not specifically listed herein shall be subject to the approval of the Planning Director, in consultation with the DPW.</p>
	<p>Planning Department Rule 17 (Landscaping Requirements)</p>	
56	<p>Planning Dept Rule 17-6</p>	<p>A minimum of 5% of any building site used for residential purposes shall have landscaping; open space shall include interior courtyards, paved walkways and other landscaping areas not visible from the perimeter of the lot.</p>

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		<p>All landscaping requirements shall be pursuant to the plans prepared by the Project architect in consultation with the Planning Director.</p> <p><i>[This exemption being requested in order to allow for the compact design in accordance with the Kona CDP.]</i></p>
	HAWAII COUNTY CODE STANDARD	HRS 201H EXEMPTION

Keahuolu Lands of Kailua-Kona

**FINAL
ENVIRONMENTAL IMPACT STATEMENT**

This document is prepared pursuant to Chapter 343, Hawaii Revised Statutes, for submission to the State Land Use Commission

Petitioner:

Liliuokalani Trust
161 South King Street, 18th Floor
Honolulu, Hawaii 96813

Prepared by:

Belt Collins & Associates
Honolulu, Hawaii
October 1990

SUBMITTED BY:

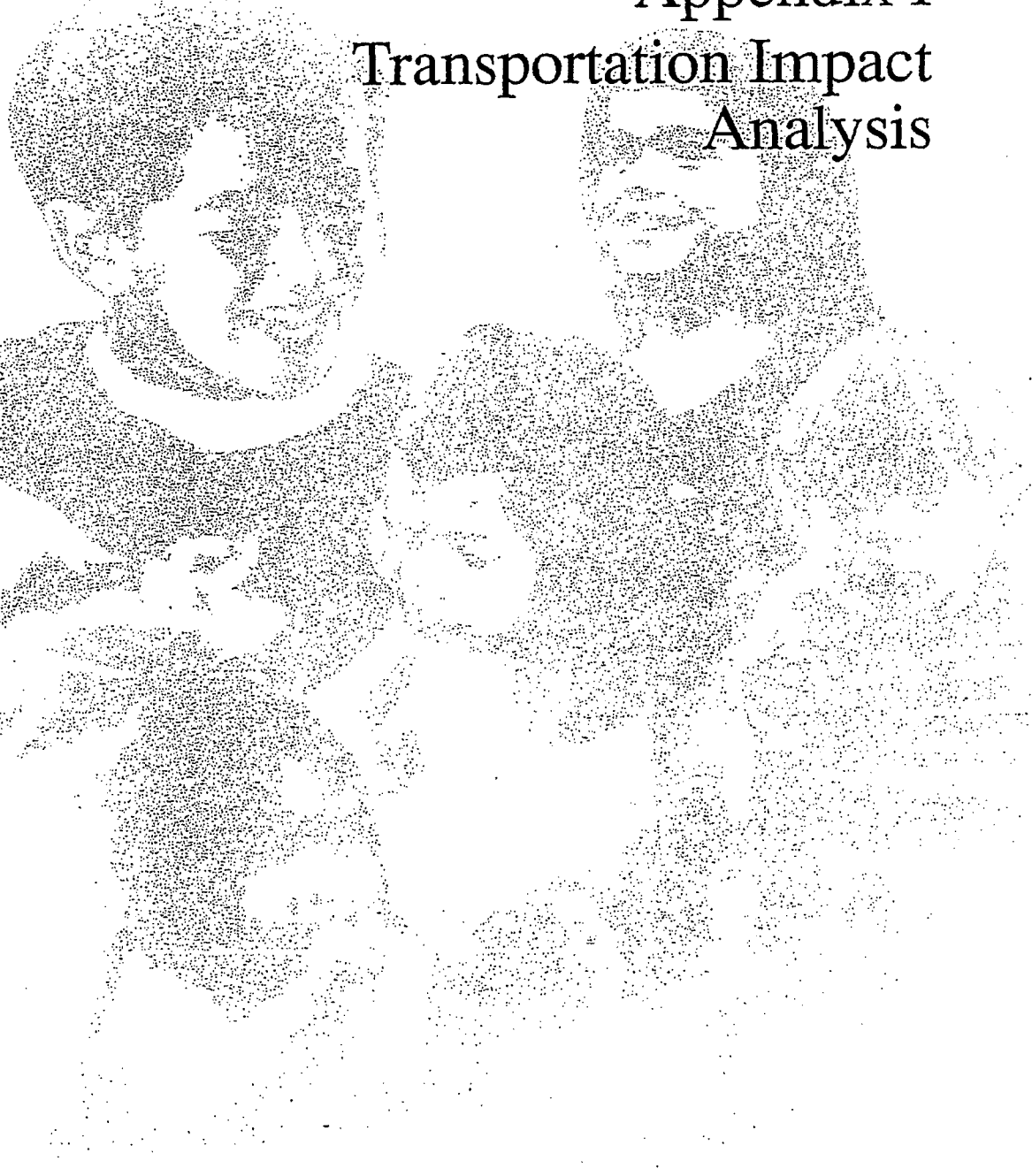


Philip Ching, Trustee
Liliuokalani Trust

OCTOBER 23, 1990

Date

Appendix I
Transportation Impact
Analysis



TRANSPORTATION ANALYSIS

KEAHUOLU LANDS DEVELOPMENT NORTH KONA DISTRICT, HAWAII



Prepared for
BELT COLLINS & ASSOCIATES

By
Wilbur Smith Associates

August 1990

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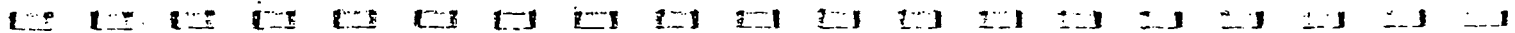
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SUMMARY

The proposed Keahuolu Lands development is located on an 1,135 acre portion of the Queen Liliuokalani Trust property in the North Kona district of Hawaii County, extending generally north from Palani Road and east from the Old Kona Airport Park. The site lies primarily in the State Land Use Agriculture District, and is zoned "Unplanned" under County Zoning. This report addresses impacts of development which would result from a change in designation of a portion of the Keahuolu Lands area.

The site area has been identified in the Hawaii County General Plan as "Alternate Urban Expansion," and is intended to provide a focal point for the West Hawaii area, which is already in the midst of rapid development. As such, the site is planned to contain a regional shopping center, a civic and cultural center, business and financial center, affordable housing, and other supportive land uses. The magnitude of the project, together with other rapid growth in the area (including proposed development of the adjacent Kealahou Lands) will add significant amounts of traffic to the area's roadways.

This study is designed to address various issues related to development of the Petition Area within the context of West Hawaii Growth, including an assessment of the magnitude of future traffic, identification of a circulation and access plan for the development, and identification of strategies for mitigating project impacts.

Existing Conditions

The petition area is largely vacant, unimproved land, except for the Queen Liliuokalani Children's Center and the Kona Industrial Subdivision on the makai portion of the site and the Queen Liliuokalani Village residential development at the mauka edge of the site. Downtown Kailua is located approximately one-fourth mile from the site. Existing roadways serving the site include Queen Kaahumanu Highway, the major roadway serving the area for travel to the north and south, as well as through traffic; Palani Road, a mauka-makai connector between downtown Kailua and the Hawaii Belt Road; and Mamalahoa Highway, an inland north-south route. Kealahou Parkway, Kaiwi Street and Kuakini Road also provide connections to the Honokohau Boat Harbor, Kona Industrial Park and residential areas south of Downtown Kailua, respectively.

Traffic volumes in excess of 20,000 vehicles daily are found on Kuakini Road and Ahi Streets south of Palani road in Kailua; adjacent to the petition area, daily traffic volumes run as high as 15,500 on Queen Kaahumanu Highway north of Palani Road, and 13,500 on Palani Road mauka of Queen Kaahumanu Highway.

Only two key intersections in the vicinity of the site are signalized (the intersections of Palani Road with Queen Kaahumanu Highway and with Kuakini Highway); all others are currently stop sign controlled. Existing levels of service at key intersections have been measured as low as "F" at the intersection of Queen Kaahumanu Highway and Kaiwi Street during the PM peak hour. Elsewhere, existing levels of services range from "B" to "D" during morning and afternoon peak periods. (The level of service concept is described in detail in this report).

Forecast of Future Conditions

A proprietary sub-regional traffic model (ASSIGN) was used to model future traffic for a number of future scenarios, using the traditional three-step process of trip generation based on standard trip generation factors; trip distribution based on a gravitational model; and traffic assignment to assumed roadway networks based on shortest paths. Non-project traffic generation for future conditions was based on Hawaii County projections of employment and residential development for North Kona in the year 2010, and on latest plans for the adjacent Kealahou development.

Year 2010 Conditions Without the Project

Year 2010 conditions without the project were forecast for a roadway network which assumed upgrading of Queen Kaahumanu Highway to a controlled access highway with an interchange at Kealahou Parkway, an overcrossing at Kaiwi Street, and frontage roads along both sides. Other assumed improvements included a Kealahou Parkway mauka extension to Mamalahoa Highway and a new Ahi Highway paralleling Ahi Drive from Kuakini Highway south of downtown Kailua to the Keahou area.

Projections of future traffic growth included approximately 58,500 new daily trips from the Kealahou Lands development, (4,200 during the PM peak hour) and approximately 500,000 new trips from other new North Kona development (50,000 during the PM peak hour).

When this traffic was distributed to the assumed roadway network, traffic along Queen Kaahumanu Highway was projected to reach 3,000 vehicles per hour in each direction during the PM peak period. The intersections of Palani Road at Queen Kaahumanu Highway and Palani Road at Kuakini Highway were projected to operate at Level of Service "F". Analyses indicated that for the Queen Kaahumanu Highway/Palani Road intersection to continue to operate as an at-grade intersection, six to seven approach lanes (including turn lanes) would be required at each approach to the intersection to achieve acceptable levels of service.

Keahuolu Project Impacts

After establishing Year 2010 conditions without the project, the traffic model was run with the Keahuolu Lands Project and related roadway improvements. The project was assumed to consist of a 500,000 square foot regional shopping center, four office developments on sites ranging from 10 to 17 acres in size, 360 residential dwelling units, 30 acres of civic/cultural facilities and a 150 bed hospital by the horizon year.

This development was estimated to generate approximately 39,000 daily trips, with 3,800 occurring during the PM peak hour. Trips generated by the Keahuolu Lands project were estimated to amount to 4.8 percent of all North Kona Traffic in the Year 2010, or 7.0 percent of all new traffic.

Key roadway improvements assumed in the model for this scenario included a new mauka-makai roadway (referred to as Liliuokalani Boulevard) extending from Palani Road to Queen Kaahumanu Highway in the vicinity of the Kaiwi Street; a southward extension of

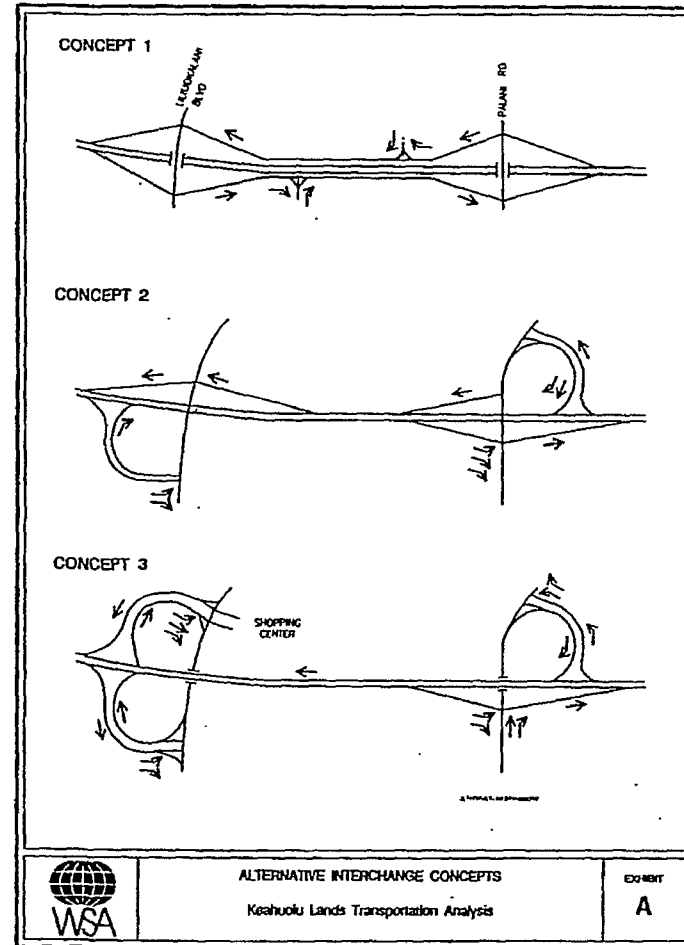
Kaalakehe Parkway to Kuakini Highway at Kahui Street, and a new mid-level roadway mauka of Queen Kaahumanu highway, passing through the project.

Development of the Petition Area is projected to increase PM peak hour traffic by 3,500-3,800 trips in each direction south of Palani Road for the Queen Kaahumanu-Kuakini-Alii corridor as a whole, and by approximately 2,800 to 3,000 in each direction north of the site in the Queen Kaahumanu-Mid-Level Road corridor. Localized impacts would include a reduction of traffic on Palani Road and on Queen Kaahumanu Highway near the site, compared with the without-project scenario, due to the redistribution of traffic by the new Mid-Level Roadway and Likoakalani Boulevard.

Alternative Queen Kaahumanu Highway Improvement Concepts

Because of the burden placed on the intersection of Queen Kaahumanu Highway and Palani Road under future conditions (both with and without the Project), an alternative network concept was modeled which included interchanges on Queen Kaahumanu Highway at both Palani Road and the new Likoakalani Boulevard. The proximity of these two interchanges to each other required careful attention to operational issues, and once traffic was projected for this alternative, three different design concepts were investigated for the two interchanges, as shown in Exhibit A. These three concepts, described in detail in the report, were subjected to operational and volume/capacity analyses first using minimum geometric configurations, then with mitigation measures in the form of additional lanes of travel. Findings of this analysis can be summarized as follows:

- o Concept 1 was found to be relatively inexpensive in principle, but volume-capacity analyses indicated that exceptionally long or wide (multi-lane) storage sections would be required, increasing structural costs. This concept also would create the most indirect travel paths for drivers.
- o Concept 2 would provide uninterrupted flow for more movements, and less intersection impacts at ramp junctions with surface streets. The proximity of the northbound Palani Road on-ramp to the northbound Likoakalani Boulevard off-ramp would provide marginally acceptable levels of service for weaving traffic in the year 2010, but leave little capacity for traffic increases in the years beyond.
- o Concept 3 would be the most expensive of the three due to land and structure costs, but would provide the best levels of traffic service overall, considering both ramp intersection traffic and weaving traffic, and provide the most reserve capacity for traffic growth beyond the Year 2010.



**TRANSPORTATION ANALYSIS
KEAHUOLU LANDS DEVELOPMENT
NORTH KONA DISTRICT, HAWAII**

**Prepared for
Beit Collins & Associates**

**Prepared by
Wilbur Smith Associates**

August, 1990

I. INTRODUCTION

This report presents an analysis of the travel demands and transportation system needs which could occur with the proposed development of the Queen Liliuokalani Trust property in the Keahuolu ahupua'a in the North Kona District of Hawaii County. The subject development area is an 1,135 acre portion of the Keahuolu ahupua'a bounded approximately by Palani Road and the Kona Industrial Subdivision on the south; Queen Liliuokalani Village to the east, the Kealahou ahupua'a to the north and the Old Kona Airport Park to the west. The major portion of the development is currently in the State Land Use Agriculture District and is zoned "Unplanned" under County Zoning. However, portions of the property have already been approved for urban development. This report addresses impacts related to a change in land use designation for the balance of the project area, subsequently referred to as the "petition area". Figure 1 depicts the location of the Keahuolu Lands.

The West Hawaii area where the petition area site is located is in the midst of rapid development including resort, commercial, housing and supporting industrial types of development. The petition area itself has been identified in the Hawaii County General Plan as Alternate Urban Expansion, with portions of the site designated as High Density Urban, Low Density Urban and Conservation and Industrial.

The proposed development is intended to provide a focal point for the rapidly growing West Hawaii area, and is planned to include a regional shopping center, a civic and cultural center, business and financial centers, affordable housing and, ultimately, supportive uses such as neighborhood commercial developments and a health care center. The magnitude of the project, along with other rapid growth in the area (including potential development of the neighboring Kealahou ahupua'a) will add significant amounts of traffic to the area's already heavily utilized roadways, necessitating major improvements to regional transportation linkages. Figure 2 depicts the proposed conceptual land use plan for the Keahuolu Lands project area.

Scope of Study

This Transportation Analysis is designed to address several issues surrounding development of the Keahuolu Lands within the context of West Hawaii growth:

- o Assessment of magnitude of traffic increases in the area resulting from the proposed project as well as other development;
- o Identification of a circulation plan for the development which will provide the necessary traffic-carrying capacity and minimize disruption to surrounding communities;
- o Evaluation and planning for access to the Queen Kaahumanu Highway;
- o Evaluation and planning for a proposed mid-level road which would provide an alternative to Queen Kaahumanu Highway; and
- o Identification of other measures or strategies for mitigation of traffic impacts on access routes to the project.

Relationship to Island-Wide Planning

As noted above, rapid growth is already occurring in West Hawaii and a number of ongoing studies are being prepared regarding the traffic impacts and transportation plans for this area, including the major studies discussed below.

County-Wide Transportation Plan - This joint study by the State of Hawaii and Hawaii County, currently in progress, includes the development of a regional model (TRANPLAN) for the entire island. Using zonal forecasts of growth in residential units and jobs, the study is oriented toward providing an overview of the island's transportation needs. Growth forecasts for zones in the North Kona and adjacent districts were utilized in projecting future non-project traffic in the present study.

Keahole to Kailua Development Plan - This study by Hawaii County recognized that the area from Keahole to Kailua is a prime candidate for urbanization to meet the needs of West Hawaii. It is intended to provide overall guidelines for development of the area, and to define

infrastructure needs such as a Queen Kaahumanu Highway bypass roadway. It also provided a context for highway improvement assumptions in this study.

Kealahou Community Plan - A study by the State of Hawaii Housing Finance and Development Corporation is developing a land use plan for a major residential-oriented community, the Kealahou Lands development immediately north of the Keahuolu development. This development is currently at the planning stage, although impact studies have yet to be prepared. Because of its magnitude and proximity to the Keahuolu lands, detailed estimates of trip generation of this development were prepared in this study.

The Keahuolu Lands Transportation Analysis is designed to be part of a coordinated planning effort. As such, it incorporates all data available from other recent impact studies, such as those described above. For the Kealahou Lands project, for example, trip generation and distribution were projected at a level of detail similar to the Keahuolu Lands project.

The traffic estimation effort represented in this report is also intended to be integrated with the island-wide TRANPLAN travel forecasting model now under development. However, as of this writing, neither outputs or network input data (except zonal employment and population forecasts) for this model have been provided to Wilbur Smith Associates. Therefore, in order to provide analyses in a timely manner for the Land Use Boundary Amendment application, a proprietary small-area model (ASSIGN) has been used to evaluate traffic impacts in the immediate vicinity of the project site. This quick-response microcomputer model uses a conventional node and centroid approach to network construction which will facilitate later incorporation of the analysis network into the TRANPLAN model.

II. EXISTING CONDITIONS

The Keahuolu area is largely undeveloped at present. Roadway access to the area is via the Queen Kaahumanu Highway and Palani Road. Current land uses and roadways within or adjacent to the development area are described in the following sections.

Existing Land Uses

The Keahuolu Lands area proposed for development is located immediately north of Palani Road, extending approximately one and one-third miles northward along Queen Kaahumanu Highway. Mauka of Queen Kaahumanu Highway, the area extends approximately 1.5 miles at its widest, while makai of Queen Kaahumanu Highway it extends approximately two-thirds of a mile to the vicinity of the Old Kona Airport State Park.

The petition area, for the most part, consists of vacant, unimproved land with sparse vegetation. Exceptions to this are the Queen Liliuokalani Children's Center facility and the Kona Industrial Subdivision on the portion of the site makai of Queen Kaahumanu Highway, and the Queen Liliuokalani Village residential development at the extreme mauka end of the site.

Significant existing land uses in the immediate vicinity of the Keahuolu Lands include downtown Kailua, currently the commercial and tourism focus for West Hawaii, approximately one-fourth mile from the southernmost boundary of the site; the Honokohau Boat Harbor makai of Queen Kaahumanu Highway north of the petition area; and the Kealahou and Queen Liliuokalani residential developments immediately north of the mauka portion of the site. More remote, but significant from the standpoint of traffic generation, is the Keahole Airport, approximately five miles north of the Keahuolu Lands.

Existing Roadway Network

Queen Kaahumanu Highway is the major roadway serving the petition area. This roadway is a State Highway, connecting the Kailua area with Keahole Airport, South Kohala resorts areas, Kawaihae, and various coastal properties along North Kona. North of downtown Kailua, Queen Kaahumanu Highway is a limited access highway designed for 70 miles per hour speeds. The existing right-of-way varies from 80 feet in the vicinity of the Keahuolu ahupua'a to 300 feet. The facility currently provides one travel lane in each direction and paved shoulders on both sides.

Queen Kaahumanu Highway extends south of Palani Road to connect with Kuakini Highway. The road continues south as the Hawaii Belt Road and is the primary regional north-south route serving Captain Cook and South Kona communities, as well as traffic destined for Puna and South Hilo Districts.

Palani Road, which abuts the petition area on the south, provides the only mauka-makai connection to the Hawaii Belt Road in the vicinity of the site. Palani Road is a two-lane facility extending from downtown Kailua four miles in generally northward direction mauka of Queen Kaahumanu Highway to a point where it merges with Mamalahoa Highway (also known as the Hawaii Belt Road). Palani Road provides a linkage from Kailua and other North Kona coastal areas and the Waimea-Hilo area as well as for tourists circling the island. Makai of downtown Kailua, Palani Road channels traffic directly into Alii Drive, which serves coastal destinations south of downtown Kailua.

Mamalahoa Highway, in addition to providing through traffic service between Palani Road and the north, provides an alternative link to the south, bypassing Kailua and rejoining the Hawaii Belt Road at Honalo, approximately ten miles to the south of Kailua. Mamalahoa Highway provides one travel lane in each direction.

Kahwi Street, a mauka-makai connector makai of Queen Kaahumanu Highway approximately 2200 feet north of Palani Road, provides a link between Queen Kaahumanu Highway and Kuakini Road. The two-lane street primarily serves Kona Industrial Park traffic.

Kuakini Road, which becomes Kuakini Highway south of downtown Kailua, provides an important north-south route through the Kailua Area. South of Palani Road, Kuakini Highway provides access to developing residential areas and connects with the Hawaii Belt Road.

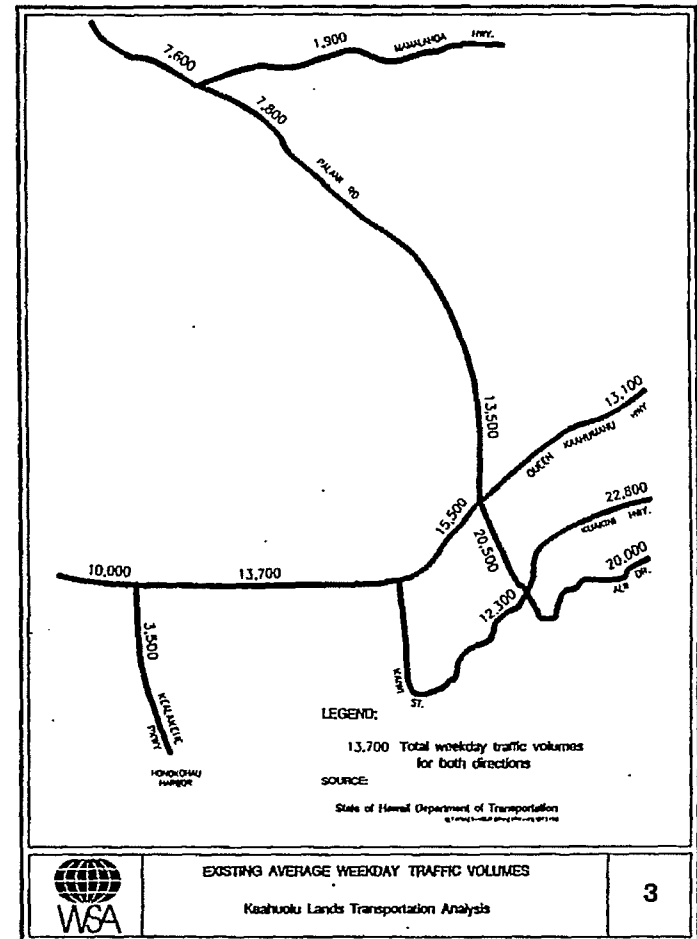
Kealahou Parkway, located north of the Keahuolu area, is a second mauka-makai connector road on the makai of Queen Kaahumanu Highway. The road serves the Honokohau Boat Harbor.

Existing Traffic Volumes

Figures 3, 4 and 5 depict the existing roadway network and weekday, morning (AM) peak and afternoon (PM) hour traffic volumes, respectively, based on counts by the Hawaii Department of Transportation and by Wilbur Smith Associates. These figures depict the current orientation of traffic in the study area toward Kailua, with volumes decreasing as the distance from Kailua increases. The highest 24-hour volumes in the vicinity are found on Kuakini Highway and Ali Drive south of Palani Road, with more than 20,000 vehicles using each of these streets daily. Another 13,000 daily vehicles traverse Queen Kaahumanu Highway south of Palani Road. Altogether, traffic volumes south of the Keahuolu Lands area are five to six times larger than north of the site.

As shown in Figure 4, AM peak hour traffic volumes are considerably lower than PM peak hour volumes. For this reason, analyses of traffic impacts in this report focus on the PM peak hour period.

The PM peak hour traffic volumes depicted in Figure 5 also are heavily oriented toward the south, in terms of total volumes. However, directional splits indicate a relatively balanced traffic pattern, with approximately 55 percent southbound and 45 percent northbound on the most heavily traveled north-south streets in the vicinity of Kailua, compared with a 60 percent/40 percent directional split generally considered "typical" of commute hour traffic.



Along Palani Road mauka of Queen Kaahumanu Highway, traffic volumes during the PM peak hour are heavier in the mauka direction (i.e. headed away from Kaliua), consistent with the residential nature of areas served by Palani Road mauka of Queen Kaahumanu Highway.

Existing Traffic Conditions

Of the key intersections analyzed in this report, two (Queen Kaahumanu Highway at Palani Road, and Palani Road at Kuakini Highway) are controlled by traffic signals, while the others are stop sign controlled.

Volume/capacity and level of service analyses for PM peak hour traffic conditions using standard (1985 Highway Capacity Manual) methods were drawn from previous studies or calculated for this study. Figure 8 depicts the Level of Service concept for intersections. The intersection of Queen Kaahumanu Highway and Palani Road has been determined to be currently operating at Level of Service "D", indicating substantial delays to traffic. Side street traffic at the stop sign controlled Queen Kaahumanu/Kealahou Parkway intersection is also subject to Level of Service "D" conditions, while Kahui Road traffic at Queen Kaahumanu Highway was determined to operate at Level of Service "F" (unacceptably long delays) under present conditions in a previous study by Parsons Brinckerhoff for the Eho Street shopping center. The Palani Road/Kuakini Highway intersection is estimated to operate at Level of Service "F". Table 1 summarizes traffic controls and existing levels of service at key intersections in the study area.

Existing traffic volumes depicted in Figures 3 through 5 represent traffic counts taken during various times of the year, and cannot be considered to represent average conditions, because of seasonal variations. Although no comprehensive data is available on seasonal variation, information on tourist visitation to Kona provided by the Hawaii Visitors' Bureau indicates that visitation in a peak month may be nearly 20 percent higher than an "average" month, while low season visitation may be nearly 20 percent lower than in an "average" month.

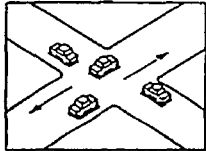
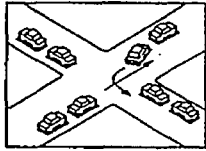
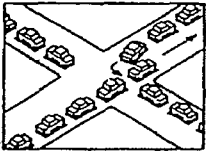
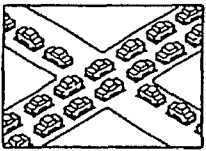
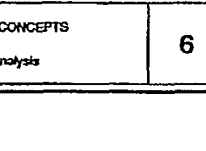


<p>LEVEL OF SERVICE "A" - V/C = 0 TO 0.60 Describes operations with very low delay, i.e., less than 5 seconds per vehicle. This occurs when signal progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all.</p>		
<p>LEVEL OF SERVICE "B" - V/C = 0.61 TO 0.70 Describes operations with delays in the range of 5 to 15 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS "A", causing higher levels of average delay.</p>		
<p>LEVEL OF SERVICE "C" - V/C = 0.71 TO 0.80 Describes operation with delay in the range of 15 to 25 seconds per vehicle. Occasionally vehicles may wait more than one red signal phase. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.</p>		
<p>LEVEL OF SERVICE "D" - V/C = 0.81 TO 0.90 Describes operations with delay in the range of 25 to 40 seconds per vehicle. At LOS "D", the influence of congestion becomes more noticeable. Many vehicles stop, and the proportion of vehicles not stopping declines. Noticeable numbers of vehicles fail to clear signal during the first green phase.</p>		
<p>LEVEL OF SERVICE "E" - V/C = 0.91 TO 1.00 Describes operations with delay in the range of 40 to 60 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Vehicles frequently fail to clear the signal during the first green phase.</p>		
<p>LEVEL OF SERVICE "F" - V/C GREATER THAN 1.00 Describes operations with delay in excess of 60 seconds per vehicle. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection.</p>		
<p>SOURCE: Highway Capacity Manual, 1985.</p>		
	<p>INTERSECTION LEVEL OF SERVICE CONCEPTS Keahuolu Lands Transportation Analysis</p>	<p>6</p>

Table 1
EXISTING TRAFFIC CONTROLS AND LEVELS OF SERVICE
Keahuolu Lands Transportation Analysis

LOCATION	TRAFFIC CONTROL	AM PEAK		PM PEAK	
		VOLUME/ CAPACITY RATIO	LEVEL OF SERVICE	VOLUME/ CAPACITY RATIO	LEVEL OF SERVICE
Queen Kaahumanu Highway/ Keakeake Parkway	Stop Sign	N/A	D	N/A	D
Queen Kaahumanu Highway/ Palani Road	Signal	0.67	B	0.80	C
Queen Kaahumanu Highway/ Kaliwi Street	Stop Sign	No Data	-	N/A	F
Palani Road/ Kualiki Highway	Signal	0.52	A	0.88	D

2-5

Note: V/C Ratio not relevant for Stop Sign Controlled Intersection

Source: Wilbur Smith Associates, May 1990

III. FORECAST METHODOLOGY AND ASSESSMENT OF FUTURE CONDITIONS WITHOUT KEAHUOLU DEVELOPMENT

This chapter presents a description of the methodology and assumptions used in establishing future conditions in the Keahuolu Lands study area. A horizon year of 2010 was assumed for this purpose, consistent with other planning efforts underway in Hawaii County. Analyses presented in this chapter focus on future conditions without the Keahuolu development; projected impacts of the project are presented in Chapter IV.

Analysis Methodology

Projection of Year 2010 traffic in the vicinity of the proposed Keahuolu Lands project was accomplished using a traditional three-step modeling approach:

- 1) Trip generation of future land uses was projected based on historic trip generation studies for respective uses;
- 2) Trip distribution of future traffic was estimated based on a gravitational model;
- 3) Projected traffic was assigned to logical paths for assumed future roadway networks, based on time and distance considerations.

Because the Island-wide TRANPLAN traffic model being developed for Hawaii is not yet completed and was not furnished to Wilbur Smith Associates, a proprietary sub-regional model (ASSIGN) was used to forecast impacts of future traffic. Methodologies and assumptions are described in more detail in the following sections.

Land Use and Trip Generation – The proposed Keahuolu Lands Development is one of several projects currently being planned or proposed in the immediate vicinity, and is in the midst of a region for which significant overall growth is anticipated by the year 2010. Trip generation

was projected separately for the Keahuoku Lands project, the adjacent Kealahou Lands project and other nearby development. Growth in traffic generation in other areas of North Kona was projected based on Year 2010 development assumptions provided by Hawaii County.

For each of the proposed land uses in the various planned developments in the area, suitable trip generation rates were selected based on historical studies of traffic generation. These rates were derived from several standard sources, including *Trip Generation*, by the Institute of Transportation Engineers; *Traffic Generators*, prepared by the San Diego Association of Governments; and *Trip Generation Research*, published by the California Department of Transportation. (Historical Hawaii traffic counts were also used in establishing trip generation rates for resort hotels in other areas of North Kona.)

Table 2 presents the trip generation rates for the various land uses. Trip generation of individual components of the Keahuoku, Kealahou and other nearby developments are discussed later in this chapter and presented in an appendix to this report.

Other North Kona Traffic Growth - Projections of residential and employment data for Year 2010, as well as a base year (1997) were provided for each of 50 Kona planning zones by Hawaii County. These data were used to develop estimates of total existing traffic generation within North Kona and total Year 2010 traffic generation external to the Keahuoku and Kealahou projects. (The County's Year 2010 projections do not envisage development of the petition area.) After converting employment figures to equivalent square footages, trip generation rates were applied to residential and employment land uses forecast by the County. For the modeling effort described later in this report, projected future traffic generation by zone was subsequently aggregated by external corridor for all zones not falling within the study area.

Trip Distribution - An important part of the traffic modeling effort is determination of trip distribution. Because no origin-destination survey data was available for the West Hawaii area, trip distribution was established by developing a gravity model based on existing trips and calibrating the output of an assignment network to field counts. Trip generation projected for existing land uses was aggregated into corridors, and a conventional gravity model was implemented using an electronic spreadsheet. Predicted corridor-to-corridor travel was assigned

Table 2
TRIP GENERATION RATES
Keahuoku Lands Transportation Analysis

LAND USE	UNIT	DAILY	VEHICLE TRIPS PER UNIT				19:25:00	
			AM:IN	AM:OUT	PM:IN	PM:OUT		
Regional Shopping Center	1000 sq. ft.	39.81	0.64	0.28	0.92	1.57	1.77	3.34
Neighborhood Commercial	1000 sq. ft.	58.93	0.92	0.40	1.32	2.11	2.38	4.48
Home Improvement Retail	acres	545.77	8.08	3.46	11.54	24.35	27.45	51.80
Banking	acres	1000.00	25.00	12.00	40.00	48.00	32.00	80.00
Office	acres	195.57	23.67	2.08	25.73	3.60	20.39	23.99
Light Industrial	acres	51.80	6.42	1.31	7.73	1.63	5.80	7.43
Hospital	beds	11.75	0.77	0.20	1.07	0.46	0.76	1.22
SF Residential	dwelling units	10.06	0.20	0.35	0.75	0.63	0.37	1.00
MF Residential	dwelling units	6.10	0.10	0.43	0.53	0.48	0.21	0.67
Business Hotel	rooms	7.27	0.34	0.24	0.58	0.37	0.25	0.62
Civic/Cultural	1000 sq. ft.	25.00	2.00	0.25	2.25	0.69	1.97	2.68
Church/Day Care Center	1000 sq. ft.	67.00	8.03	5.34	11.37	5.90	6.40	12.30
Elementary School	acres	60.00	9.36	6.24	15.60	0.90	2.10	3.00
High School	acres	50.00	8.00	2.00	10.00	2.10	4.80	7.00
Rec Center	acres	300.00	7.20	4.80	12.00	14.20	10.60	27.00
Golf Course	acres	6.32	0.22	0.05	0.27	0.03	0.36	0.39
Park	acres	5.00	0.10	0.10	0.20	0.20	0.20	0.40

to a simple network, and successive adjustments were made to attraction factors between groups of zones until model outputs closely imitated existing traffic counts on a "cut line" basis. These attraction factors were then used as the basis for predicting the distribution of future traffic.

Traffic Assignment – For the purpose of assigning future traffic, a node-and-centroid network was developed with centroids representing discrete components of developments in the immediate area, and for approach corridors for other North Kona Traffic. A depiction of the 23-zone network utilized is presented in the appendix to this report.

Once a zone and centroid system was established, other key model inputs were developed. Future projected trip productions and attractions were submitted to gravity modeling to determine zone-to-zone travel, and paths were developed for candidate highway network alternatives, including multiple paths in many cases. (The ASSIGN model permits any number of alternative paths between zones with predetermined weights to be applied). Inbound and outbound PM peak traffic was provided for each traffic zone.

Once the above model inputs were developed, the ASSIGN model distributed traffic among zones, and assigned and aggregated projected travel by link and turning movement.

Year 2010 Conditions without the Keahuolu Lands Project

This section presents an analysis of year 2010 conditions without the Keahuolu lands project based on the traffic modeling process described above.

The basic future network modeled included assumptions of several improvements to the areawide highway network, independent of those planned to serve the project itself. These improvements were identified from on-going planning studies including the draft *Keahole to Kailua Development Plan* and are described below.

Queen Kaahumanu Highway Improvements – Queen Kaahumanu Highway was assumed to have received with the following improvements:

- o Upgrading to a full control of access status;
- o An interchange at Kealahou Parkway;
- o Frontage roads along both sides; and
- o An overcrossing at Kahi Street.

Other Highway Improvements – In addition to the Queen Kaahumanu Highway Improvements, a number of other improvements were assumed for the "No Project" alternative, including:

- o Extension of Kealahou Parkway from Queen Kaahumanu Highway to Mamalahou Highway at a point north of the existing Palani Road/Mamalahou Highway intersection; and
- o A new Alii Highway paralleling Alii Drive from the Keahuolu area to connect with Kuakini Highway south of downtown Kailua.

A midlevel roadway passing through the application area was not assumed for this scenario, nor was a Kealahou Parkway extension to Kuakini Drive. It should also be noted that no particular assumptions were made regarding roadway cross-sections in the modeling effort. The model was run as an unconstrained model, which ignores the possible impact of traffic congestion in selection of paths by drivers.

Year 2010 Vehicle Trip Generation – The proposed Kealahou development, immediately north of the Keahuolu site, is currently envisaged as providing approximately 4,500 new dwelling units by the year 2010, as well as 23 acres of community and neighborhood commercial land uses, 30 acres of new civic and cultural facilities, a high school, a golf course and other supporting uses. This development is projected to generate approximately 58,500 new daily vehicle trips, 4,200 during the afternoon peak hour. The portion of the Keahuolu Lands development already approved for development would add approximately 5,200 daily trips, 700 during the PM peak. Other new North Kona growth, based on Hawaii County land use projections would account for the major portion of increases in vehicle trip generation, adding approximately 500,000 new daily trips, or over 50,000 during the PM peak. Details of trip

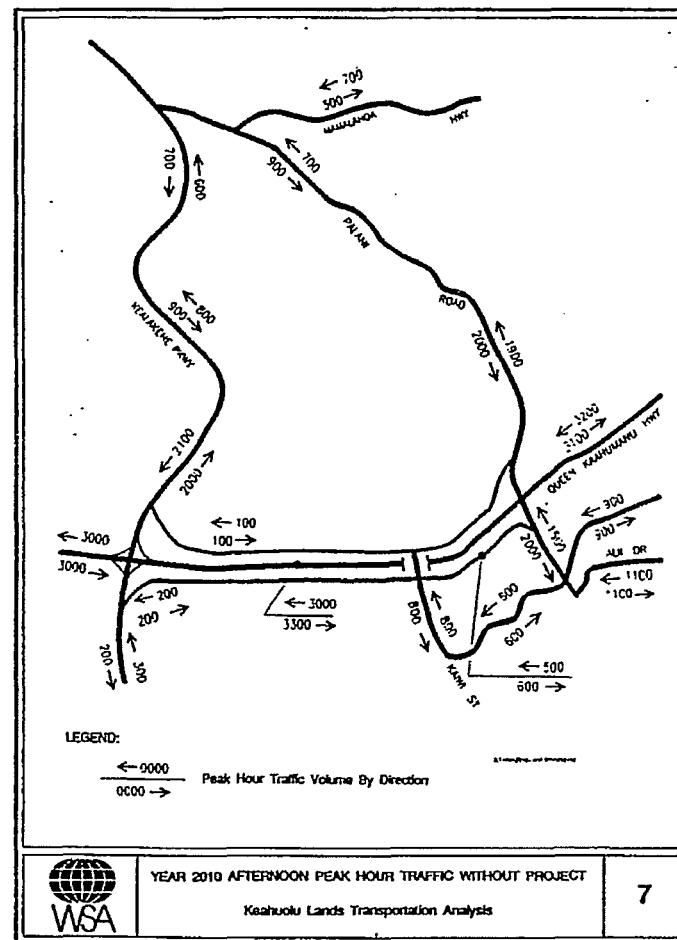
generation by the various land uses in the Year 2010, including the petition area, can be found in Chapter IV and in Appendix B to this report.

Year 2010 Traffic Volumes – Figure 7 presents a representative depiction of directional PM peak hour traffic for Year 2010 without the Keahuolu Lands project. Overall PM peak hour traffic is projected to grow by approximately 2,800 to 3,200 trips in each direction south of the site in the Queen Kaahumanu-Kuakini-ʻAlii corridor; and by approximately 2,600 to 2,800 in each direction north of Palani Road. Peak volumes for a single roadway are projected at approximately 3,000 in each direction along Queen Kaahumanu Highway.

It should be noted, however, that the magnitude of the volumes on Kealahou Parkway and Palani Road is influenced by network coding assumptions for major residential developments within the Kealahou project located between these two roadways. Actual circulation and access plans for these developments could lead to less traffic on Palani Road and more on Kealahou Parkway, or vice versa.

Traffic Impacts – Volume/capacity calculations were performed for two key intersections for year 2010 conditions without the Keahuolu Lands project, Palani Road at Queen Kaahumanu Highway, and Palani Road at Kuakini Highway. Queen Kaahumanu Highway was assumed to have a four-lane cross-section. Palani Road and Kuakini Highway were assumed to have the same geometrics as currently exist. Table 3 below summarizes the results of this analysis.

Table 3 Volume/Capacity Ratios and Levels of Service Year 2010 Without Keahuolu Lands Project		
Intersection	V/C	LOS
Palani Rd. at Queen Kaahumanu Highway	2.39	F
Palani Road at Kuakini Highway	1.81	F
Wilbur Smith Associates; August 1990.		

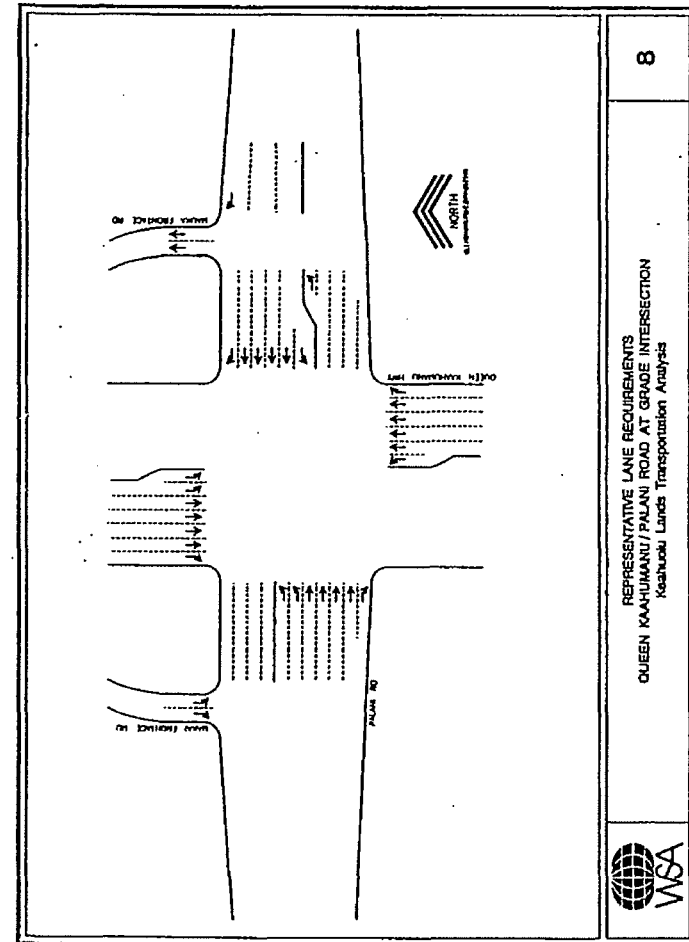


Future Roadway Requirements — As noted above, modeling efforts did not assume a freeway interchange at Queen Kaahumanu Highway and Palani Road. Volume/capacity analyses under Year 2010 conditions were undertaken of an at-grade intersection at this location with an array of different through and turning lane assumptions. This analysis indicated that six or seven approach lanes, including turn lanes, would be required at each of the intersection approaches to accommodate the forecast volumes.

Figure 8 depicts representative geometric requirements of the extent which would be necessary to maintain at-grade operation of the Queen Kaahumanu Highway/Palani Road intersection. In order to maintain minimally acceptable (Level of Service "E") operating levels, both Queen Kaahumanu Highway and Palani Road would require four approach lanes for through traffic, as well as separate left-turn and right-turn legs for each direction of approach. Dual left turn lanes would be required for southbound Queen Kaahumanu Highway traffic and makai-bound Palani Road traffic. In addition to the indicated lane requirements, the close spacing of the three signalized intersections (including the frontage road intersections with Palani Road) would pose operational problems.

If an interchange is provided, a minimum of two through lanes in each direction would be required for Queen Kaahumanu Highway. Actual lane requirements for Palani Road in this vicinity would depend on the ramp configuration of such an interchange.

Palani Road mauka of Queen Kaahumanu Highway would require a six-lane cross-section as would Kealahou Parkway immediately mauka of Queen Kaahumanu Highway.



IV. KEAHUOLU PROJECT IMPACTS

The proposed Keahuolu Lands Development is designed to be a commercial focal point for west Hawaii. Full development of the petition area will likely extend 30 years or more. Those key components of the project which are planned to be in place by the year 2010 are:

- o A regional shopping center with a gross floor area of 500,000 sq. ft.;
- o Four office developments on sites ranging from 10 to 17 acres;
- o 360 residential dwelling units;
- o A 150 bed hospital; and
- o 30 acres of Civic and cultural facilities.

Two neighborhood parks and a historic park are also planned for the project.

Ultimate development of the petition area also may include a business hotel, a new light industrial park and expansion of the existing business park makai of Queen Kaahumanu Highway. These components, however, are expected to occur beyond the year 2010 horizon year used for this transportation analysis. Figure 2 of this report depicts the location of the various land uses of the Keahuolu Lands development.

Trip Generation of Proposed Project

The petition area is projected to generate approximately 39,000 daily trips by the year 2010, of which 3,800 are projected to occur during the PM peak hour, as summarized in Table 4. Approximately 50 percent of the trip generation will result from the regional shopping center, with another 25 percent from office uses. The portion of Keahuolu Lands already approved for development by the year 2010 will also generate 5,200 trips daily, or 750 during the PM peak hour.

Table 4
KEAHUOLU LANDS PROJECT TRIP GENERATION
Keahuolu Lands Transportation Analysis

ZONE LAND USE	ADT	AM		PM	
		IN	OUT	IN	OUT
Makai Portion of Petition Area					
1 Regional Shopping Center	500,000 sq. ft.	322	138	784	885
Historic Park	20 acres	2	2	4	4
2 Office Park					
Banking	11.7 acres	278	24	42	238
Office	3.9 acres	3900	109	187	124
Park	10 acres	1855	20	35	203
Hospital (35 acres)	50 acres	1	1	2	2
Office	150 beds	1762	44	89	113
	16.7 acres	3266	34	60	340
3 Civic/Cultural					
Office	30 acres	260	32	116	256
	13.4 acres	2820	317	46	273
SUBTOTAL		39086	368	1346	2438
Mauka Portion of Petition Area					
4 Residential	65 acres	165	259	235	164
Park	5 acres	25	0	1	1
SUBTOTAL		4216	259	236	165
Previously Approved Portion					
5 Industrial/ Subdivision Expansion	100 acres	5180	841	131	773
SUBTOTAL		5180	841	163	579
TOTAL		48522	2639	1745	3172

Under ultimate buildout conditions, the petition area is estimated to generate a total of 105,000 daily trips, or 10,500 during the PM peak traffic period, in addition to the 5,000 daily trips which will be generated by the currently approved portion of the project.

Table 5 presents a comparison of traffic generation for 1987 and 2010 for the entire North Kona area, separated by component. (Details of the trip generation by various land uses are presented in the appendix to this report.) As can be seen in Table 5, total traffic generation for North Kona is projected to more than triple, from 276,000 daily trips in 1987 to 894,000 daily trips in 2010. The Kealahou and Keahuolu Lands petition area projects are estimated to account for approximately 9.5 and 7.0 percent of the traffic growth respectively, or 8.5 and 4.8 percent, respectively of all year 2010 traffic.

Detailed trip generation of individual land uses for the Year 2010 scenario and for the buildout scenario is also presented in the Appendices B and C of this report, respectively.

Roadway System Assumed in Analysis

The basic future network used in this analysis included assumptions of several improvements to the areawide highway network, independent of those designed to serve the project itself, in addition to those described for future conditions without the Project, as described in Chapter III. Assumed additional improvements included:

- o A new mauka-makai roadway (herein referred to as Likuokalani Boulevard) extending from Palani Road to the Queen Kaahumanu Highway mauka frontage road in the vicinity of the Kahwi Street overcrossing;
- o Extension of Kealahou Parkway southward from the Honokohau Boat Harbor to connect with Kulaiki Highway at Kahwi Street; and
- o A new mid-level north-south roadway located mauka of Queen Kaahumanu Highway passing through the project area.

No particular assumptions were built into the model regarding an interchange at Queen Kaahumanu Highway and Palani Road. Requirements for an at-grade intersection for future condition without the Project were described in Chapter III; for future traffic including traffic

Table 5
COMPONENTS OF YEAR 2010 NORTH KONA TRAFFIC GENERATION
Keahuolu Lands Transportation Analysis

	ESTIMATED DAILY TRAFFIC GENERATION	PERCENT OF YEAR 2010 TRAFFIC	PERCENT OF NEW TRAFFIC
1. Existing (1987) Land Uses	276,000	30.8%	N/A
2. Future Without Petition Area			
Keahuolu Lands Development	5,200	0.6%	0.8%
Kealahou Lands Development	59,600	6.5%	9.5%
Other New North Kona Development	511,000	57.2%	82.7%
SUBTOTAL	574,700	64.3%	93.0%
3. Keahuolu Lands Petition Area	43,300	4.8%	7.0%
TOTAL	894,000	100.0%	100.0%

generated by the Keahuolu Lands project, various interchange configurations were tested once traffic turning movements were initially assigned. As was the case for the "No Project" alternative, frontage roads and a Keahi Street overcrossing were assumed in the network.

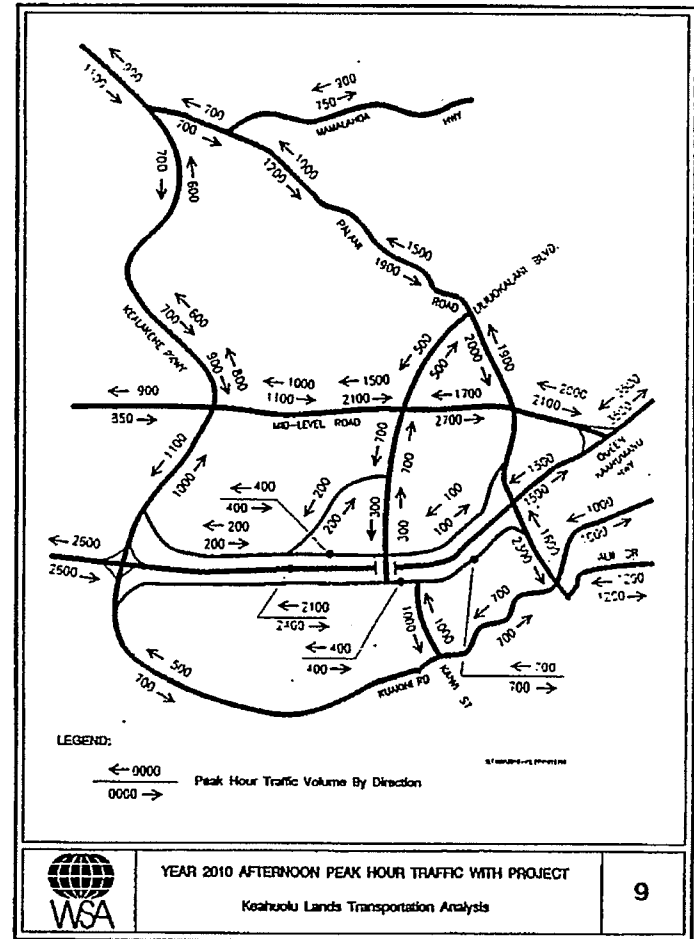
As noted for the no-project alternative, no particular assumptions were made regarding roadway cross-sections in the travel forecasting effort. Therefore, the forecast traffic volumes are unconstrained by roadway capacities.

Year 2010 Traffic Conditions With Keahuolu Lands Project

Figure 9 presents a summary of PM peak hour traffic volumes by travel direction for year 2010 with the Keahuolu project. Overall, PM peak hour traffic is projected to grow by approximately 3,500-3,800 trips in each direction south of the Palani Road in the Queen Kaahumanu-Kuakini-AR corridor, and by approximately 2,800 to 3,000 in each direction north of the site in the Queen Kaahumanu-Mid-Level Road corridor. Highest volumes for a single roadway are projected at approximately 3,500 in each direction on the Queen Kaahumanu Highway Extension south of the point where Queen Kaahumanu Highway and the Mid-Level Road merge. This is based on the future Ahi Drive-Kuakini Highway connector intersecting Queen Kaahumanu Highway further south than this juncture. Peak loads for the Mid-Level Road are projected just north of Palani Road, with approximately 2,700 vehicles using this segment in the southbound direction during the PM peak hour. A Kealahoe Parkway-Kuakini Highway connector is projected to carry 500-700 vehicles per direction in Year 2010 with the project.

Roadway network improvements assumed in conjunction with the project will also have the effect of significantly reducing traffic on some roadway segments, compared with the scenario modeled for future traffic without the project. Most notably, Kealahoe Parkway mauka of Queen Kaahumanu Highway would carry approximately 1,000 fewer vehicles in each direction, and Queen Kaahumanu Highway itself would experience a reduction of similar magnitude between Kealahoe Parkway and Palani Road.

Major intersection impacts of the project itself will also be felt at the Palani Road/Queen Kaahumanu interchange, where the project is projected to contribute approximately 800 new afternoon peak hour trips, in addition to the traffic projected by other new North Kona development described in the previous chapter.



V. ALTERNATIVE IMPROVEMENT CONCEPTS
FOR QUEEN KAAHUMANU HIGHWAY

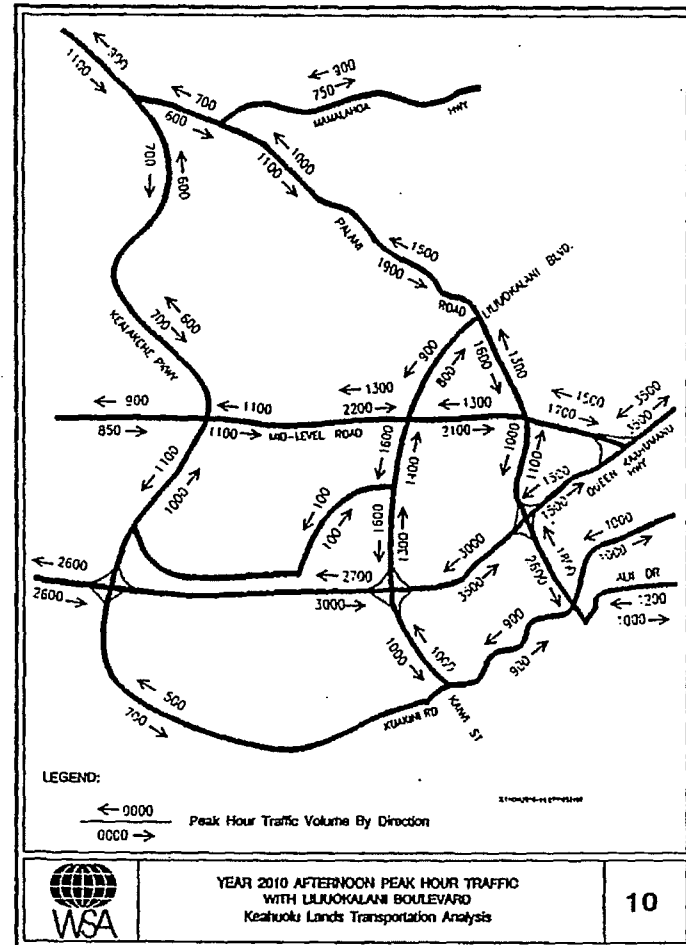
Because of capacity and operational problems which the Queen Kaahumanu Highway/Palani Road intersection would face if maintained as an at-grade intersection, an alternative network concept was developed which featured freeway interchanges at both Queen Kaahumanu Highway and the new Liliuokalani Boulevard serving the project area. This alternative also assumed no frontage roads along Queen Kaahumanu Highway in the vicinity of the project site. Because of the proximity of these two roadways to each other (approximately 3,800 feet), a variety of configurations for the weaving section between the two interchanges were also investigated.

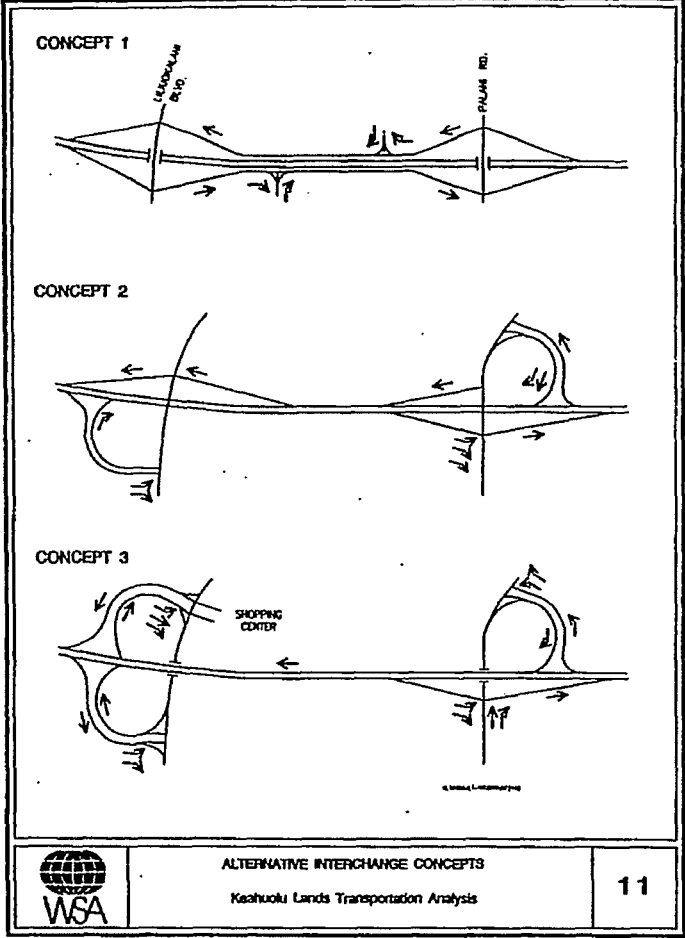
Year 2010 Traffic with Liliuokalani Boulevard Interchange

Figure 10 presents PM peak hour directional traffic projected for the alternative network with an interchange located to serve the project area. Addition of the Queen Liliuokalani Boulevard interchange would reduce traffic on the Mid-Level Road and Palani Road, and increase volumes on Queen Kaahumanu Highway in the vicinity of the site. The section of Palani Road between the Mid-Level Road and Queen Kaahumanu Highway, in particular, would have approximately 1,200 fewer vehicles in the PM peak hour. Volumes on Queen Kaahumanu Highway north of Kealakehe Parkway and south of the Queen Kaahumanu Highway-Mid-Level Road juncture are not projected to be change significantly with the addition of the Liliuokalani Boulevard interchange.

Alternative Interchange Concepts

Because of the proximity of the proposed Liliuokalani Boulevard to Palani Road, a number of interchange concepts were investigated to minimize potential weaving problems. Three representative concepts are depicted in Figure 11 and discussed in the following sections.





Concept 1 – Split Diamond Concept – This concept utilizes half-diamond interchanges at Palani Road and Liūokalani Boulevard, connected by a pair of frontage roads, making the two interchanges in effect a single long interchange. This concept is relatively inexpensive in principle, and the one-way frontage road streets would provide high capacity. However, large volumes of left-turning vehicles from bridge sections to on-ramps could require exceptionally long or wide (multi-lane) storage sections, to provide the necessary storage capacity for left-turning vehicles, which could contribute to the cost of overall right-of-way and/or structural improvements. This concept would require northbound drivers traveling to Liūokalani Boulevard and southbound drivers desiring to use Palani Road to exit Queen Kaahumanu Highway well in advance of those cross streets, and travel via the frontage road.

Concept 2 – Single Loop Ramps with Mauka-Side Diamond Ramps – Concept 2 would provide loop ramps for the heavy left-turn movements, and by providing uninterrupted flow for these movements would impact traffic operations on Palani Road and Liūokalani Boulevard less than Concept 1. It would also be less costly than Concept 3, described in the next section. Analyses of weaving movements, however, show that the proximity of the northbound Palani Road on-ramp to the northbound Liūokalani Boulevard off-ramp would result in marginally acceptable levels of service for weaving traffic in the year 2010, but leave little capacity for traffic increases beyond that time.

Concept 3 – Half Cloverleaf with no Mauka Diamond Ramps – This concept, requiring three loop ramps, would be the most expensive of the three options due to greater land costs and structure requirements. By eliminating the diamond ramps, however, weaving traffic in the section would operate at an acceptable level of service under year 2010 conditions, with capacity for traffic increases beyond that time period.

Traffic Levels of Service

Table 6 depicts volume/capacity ratios and traffic levels of service at key intersections for the Year 2010 afternoon peak traffic hour. These analyses assume a basic six-lane cross section for the new Midlevel and Liliuokalani Roadways, and a basic four-lane cross section for Palani Boulevard. In this analysis, all freeway off-ramps were assumed to be limited to three lanes including flared turn lanes at approaches to city streets.

As can be seen from Table 6, three Queen Kaahumanu ramp intersections would operate at unacceptable levels of service under Interchange Concept 1, and one intersection (Queen Kaahumanu Southbound Ramps at Palani Road) would reach Level of Service "F" under all three concepts. Assuming no improvements to the existing geometrics at the intersection of Palani Road and Kuakini Highway, this intersection would operate at level of service "F" during the PM peak hour in the year 2010.

Table 7 shows a level of service analysis for the same intersections with mitigation measures. These mitigation measures represent improvements which can be implemented while maintaining the basic cross-sections described above for surface streets, and limiting on-ramps to two lanes. Analyses indicated that for Concepts 2 and 3, addition of a single lane for the single heaviest critical turning movement would be sufficient to affect a LOS "D" or better at all intersections, and that under Concept 1 V/C ratios could be brought to 1.00 or lower within the constraints mentioned above. Under Concept 1, any further significant mitigation would require either bridge widening to accommodate additional lanes at both locations, or four lanes of travel in each direction on the frontage roads.

Weaving Analysis

The various interchange concepts and variations investigated were subjected to weaving section analysis using Highway Capacity Manual software (HCS). The Highway Capacity Manual definitions of levels of service for weaving sections is presented in the appendix to this report. Results for Concepts 2 and 3 are depicted in Table 8 for AM and PM peak hour conditions. It should be noted that AM volumes assumed in the analysis are conservatively high estimates

Table 6
YEAR 2010 LEVELS OF SERVICE WITH KEAHUOLU LANDS PROJECT
Afternoon Peak Hour
Keahuolu Lands Transportation Analysis

LOCATION	VOLUME/ CAPACITY RATIO	LEVEL OF SERVICE
Queen Kaahumanu Highway NB Ramps/ Palani Boulevard		
With Concept 1	1.32	F
With Concept 2	0.81	D
With Concept 3	0.81	D
Queen Kaahumanu Highway SB Ramps/ Palani Boulevard		
With Concept 1	1.14	F
With Concept 2	1.00	F
With Concept 3	1.00	F
Queen Kaahumanu Highway NB Ramps/ Liliuokalani Blvd.		
With Concept 1	1.00	F
With Concept 2	0.86	D
With Concept 3	0.86	D
Queen Kaahumanu Highway SB Ramps/ Liliuokalani Blvd.		
With Concept 1	1.57	F
With Concept 2	0.67	B
With Concept 3	0.67	B
Liliuokalani Boulevard/ Mid-Level Road		
	0.89	D
Mid-Level Road/ Palani Road		
	0.89	D
Palani Road/ Kuakini Highway		
	1.91	F

Source: Wilbur Smith Associates, May 1989

Table 7
 YEAR 2010 LEVELS OF SERVICE WITH KEAHOLOU LANDS PROJECT
 WITH MITIGATED GEOMETRY
 Afternoon Peak Hour
 Keahuolu Lands Transportation Analysis

LOCATION	VOLUME/ CAPACITY RATIO	LEVEL OF SERVICE
Queen Kaahumanu Highway NB Ramps/ Palani Boulevard		
With Concept 1	1.00	F
With Concept 2	0.54	A
With Concept 3	0.54	A
Queen Kaahumanu Highway SB Ramps/ Palani Boulevard		
With Concept 1	0.84	D
With Concept 2	0.81	D
With Concept 3	0.81	D
Queen Kaahumanu Highway NB Ramps/ Liloukalanani Blvd.		
With Concept 1	0.88	D
With Concept 2	0.88	D
With Concept 3	0.88	D
Queen Kaahumanu Highway SB Ramps/ Liloukalanani Blvd.		
With Concept 1	0.99	E
With Concept 2	0.61	B
With Concept 3	0.61	B
Liloukalanani Boulevard/ Mid-Level Road	0.89	D
Mid-Level Road/ Palani Road	0.89	D
Palani Road/ Kuakini Highway	1.91	F

Source: Wilbur Smith Associates, May 1989

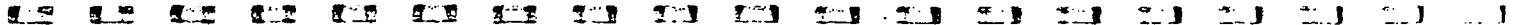
Table 8
 SUMMARY OF WEAVING ANALYSIS -- Year 2010 with Project
 Keahuolu Lands Transportation Analysis

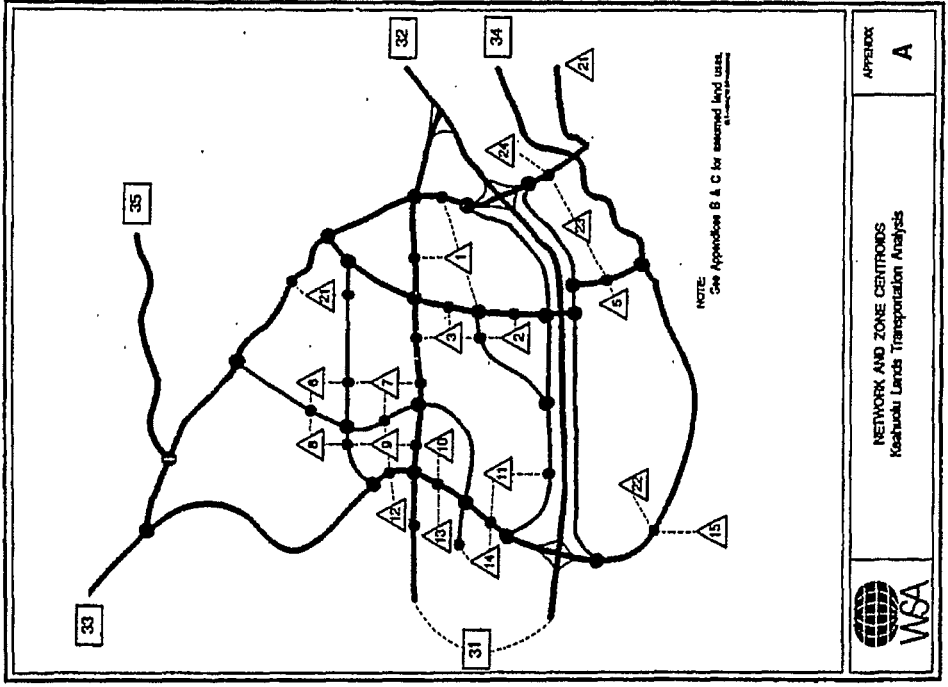
CONCEPT	SECTION	LOS FOR NON-WEAVING VEHICLES		WEAVING SECTION LENGTH		NUMBER OF WEAVING VEHICLES	
		AM	PM	700'	700'	1850	1350
2	Palani NB On-Ramp to 2nd NB On-Ramp	E	E	700'	700'	2550	1100
		AM	PM	1200'	1200'	1800	2700
3	Palani 2nd NB On-Ramp to Liloukalanani Blvd. Off-Ramp	E	D	2300'	2300'	3000	1800
		AM	PM	3200'	3200'	1800	2700
3	Liloukalanani SB On-Ramp to Palani SB Off-Ramp	E	C	3200'	3200'	1800	2700
		AM	PM	3200'	3200'	1800	2700
3	Palani NB On-Ramp to Liloukalanani Blvd Off-Ramp	E	C	3200'	3200'	1800	2700
		AM	PM	3200'	3200'	1800	2700
3	Liloukalanani SB On-Ramp to Palani SB Off-Ramp	E	C	2300'	2300'	1800	2700
		AM	PM	2300'	2300'	1800	2700

Note: Weaving analysis not appropriate for Concept 1
 LOS = level of service (Highway Capacity Manual Definition)
 as described in Appendix D
 Source: Wilbur Smith Associates, May 1989

based on reversing the direction of PM peak hour flows projected by the model. As shown, Concept 2, with the two closely-spaced on-ramps, is estimated to provide Level of Service "E" conditions for both weaving and non-weaving vehicles on the freeway during both AM and PM peak periods in the northbound direction between the first and second on-ramps. Other sections are projected to operate at LOS "D" or better during all both time periods under both concepts.

APPENDICES





Appendix B
YEAR 2010 TRIP GENERATION SUMMARY
Koshuoku Lands Transportation Analysis

ZONE LAND USE
1. Koshuoku

	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	TOTAL
1 Regional Shopping Center	500	1900	322	138	140	784	633	1570			
Historic Park	20	100	2	2	4	4	4	8			
2 Office Park	11.7	2288	276	21	201	42	218	289			
Banking Office	3.9	3000	109	44	154	187	124	313			
Office Park	10	1973	234	20	207	33	203	239			
Hospital (33 acres)	10	50	1	1	2	2	2	4			
Office	150	1782	113	4	110	49	113	133			
16.7	3266	379	34	129	60	310	408				
3 Civic/Outlets (10 acres)	130	3250	240	32	272	115	256	371			
Office	13.4	2428	317	27	344	68	273	321			
4 Residential (45 acres)	360	3421	72	197	270	226	133	359			
Park	5	25	0	0	0	0	0	0			
Elementary School	10	600	15	42	156	9	21	30			
5 Industrial Subdivision Expansion	100	5180	641	131	773	183	379	743			
SUBTOTAL			3334	932	4477	1934	3809	5772			

NOTE:
See Appendix B & C for assumed land uses.

Appendix 6 (Continued)
 YEAR 2010 TRIP GENERATION SUMMARY
 Honolulu Land Transportation Analysis

ZONE LAND USE

ZONE	LAND USE	ADT	AM IN	AM OUT	AM TOT	PM IN	PM OUT	PM TOTAL
11	Residential	4	30	0	0	1	1	2
6	Neighborhood Park	243	164	22	184	109	51	160
	MF Residential	382	362	77	209	240	161	382
	SF Residential	648	607	133	341	415	244	640
7	UMI Park Preserve	5	23	0	0	1	1	2
	MF Residential	340	2194	34	154	190	144	241
	SF Residential	450	4327	91	244	337	283	450
8	Archaeological Preserve	18	90	1	1	3	3	7
	SF Residential	254	2533	31	139	190	140	254
9	MF Residential	180	1098	17	78	93	62	120
	SF Residential	243	2424	49	133	182	133	243
	Rec Center	3	900	21	16	34	48	32
	Neighborhood Park	4	30	0	0	1	1	2
	High School	30	1500	240	40	300	43	167
	Church/Day Care Center (3 acres)	6	402	34	32	48	35	38
10	Neighborhood Commercial (3 acres)	33	1341	21	9	20	44	54
	Church/Day Care Center (3 acres)	13	871	78	49	127	74	83
	MF Residential	105	1128	17	40	94	44	39
	SF Residential	318	3199	64	176	238	200	318
11	Civic Center	144	1331	33	8	44	5	59
	Civic (30 acres)	130	1264	249	32	292	115	254
	SF Residential	403	4094	81	230	322	253	403
	Landfill Park	13	72	1	1	3	3	6
	MF Residential	209	1640	25	118	142	122	37
12	MF Residential	40	346	3	24	31	27	12
	SF Residential	81	814	16	44	60	51	29
13	SF Residential	154	1549	31	85	117	96	57
	MF Residential	91	535	8	39	48	41	19
14	Community Commercial (20 acres)	220	9773	142	40	203	324	364
	SF Residential	101	1014	20	53	73	43	37
	MF Residential	47	408	6	29	35	30	16
SUBTOTAL		3204	1542	2540	4177	3298	2473	3787

APPENDIX C
 MILLROAD TRIP GENERATION SUMMARY
 Honolulu Land

LAND USE

LAND USE	ADT	AM IN	AM OUT	AM TOT	PM IN	PM OUT	PM TOTAL
Regional Shopping Center	500	1963	322	138	460	764	823
Hospital (33 acres)	150	1782	115	44	160	69	113
Office	30	5407	710	41	771	107	411
Historic Park	20	180	2	2	4	4	6
Neighborhood Commercial (12 acres)	125	1154	80	34	115	0	184
Home Improvement	14	780	113	48	141	340	263
Light Industrial	14	725	87	18	108	22	81
Business Retail	201	1441	44	47	116	74	47
Office	18	3200	426	37	443	64	347
Office	24	4493	548	49	417	84	409
Neighborhood Commercial	10	4125	44	27	92	0	147
Office Park	21	4104	477	43	540	75	428
Swimming	7	7000	196	84	280	336	224
Park	10	56	1	1	2	2	2
Civic/Cultural (10 acres)	130	3200	260	32	292	115	264
Neighborhood Commercial (3 acres)	35	2248	33	19	50	0	81
Residential (150 acres)	750	7543	151	410	542	472	277
Residential (137 acres)	1122	11267	227	616	813	706	415
Church/Day Care Center (4 acres)	8	534	48	42	90	47	51
Residential (43 acres)	270	2714	54	117	202	170	99
Elementary School	10	600	93	42	154	9	21
Park	5	25	0	0	1	1	1
Neighborhood Commercial (3 acres)	33	1341	21	9	30	0	48
Business Park Exp.	148	4702	1077	220	1296	274	973
Industrial Subdivision Expansion	100	5100	641	131	773	163	579
SUBTOTAL		10750	5654	2315	8164	4380	6828

TABLE 4-4. LEVEL-OF-SERVICE CRITERIA FOR WEAVING SECTIONS

LEVEL OF SERVICE	MIN. AVG. WEAVING SPEED, S_w (MPH)	MIN. AVG. NON-WEAVING SPEED, S_n (MPH)
A	35	40
B	30	35
C	45	48
D	40	42
E	$\leq 35/30^*$	$\leq 35/30^*$
F	$\leq 35/30^*$	$\leq 35/30^*$

*The 35-mpg boundary for LOS E/F is used when measuring in congested areas using the equations of Table 4-1. The 30-mpg boundary is used for comparison in field-measured spots.

LEVEL-OF-SERVICE CRITERIA

Levels of service in weaving areas are directly related to the average running speeds of weaving and nonweaving vehicles. A level of service is separately assigned to weaving and nonweaving vehicles to reflect cases in which significant differences in the speed of component flow exist, as well as those in which balanced operations occur. The criteria are given in Table 4-4.

Unlike basic freeway sections, in which speed is insensitive to flow rates up to approximately 1,600 pephpl, speed in weaving areas is sensitive to flow rates throughout the range of stable flows. This is due to the additional turbulence caused by weaving vehicles and their lane-changing maneuvers.

In general, speed of weaving vehicles is expected to be somewhat lower than that of nonweaving vehicles even when balanced or uncongested operations occur. This difference tends to get smaller as speeds get lower. This is reflected in the criteria defined in Table 4-4.

Level-of-service F is defined as any speed below 35 mph for either weaving or nonweaving vehicles when computed speeds are used. This is a result of the speed precision equations used in this chapter. The equations tend to somewhat overpredict

low speeds, and predictions of lower than 30 mph are difficult to obtain, even when the average flow rate per lane is in excess of 1,800 pephpl. The use of 35 mph as the boundary for level-of-service F adjusts for this characteristic of the equations, and results in the more accurate identification of cases in which breakdowns will occur. When LOS criteria are to be compared to measured speeds, a 30-mpg value is used.

The speed criteria for any given level of service are generally several mph lower than similar criteria for a basic freeway section with a 70-mpg design speed. This allows for reasonable consistency with the levels of service defined in Chapter 3. It is possible, however, that a given weaving section will operate at a better LOS than a basic freeway section with equal flows and the same number of lanes because of the lower speed criteria for weaving sections. This is an unusual result, and is consistent with the LOS definitions established in Chapter 3 and herein.

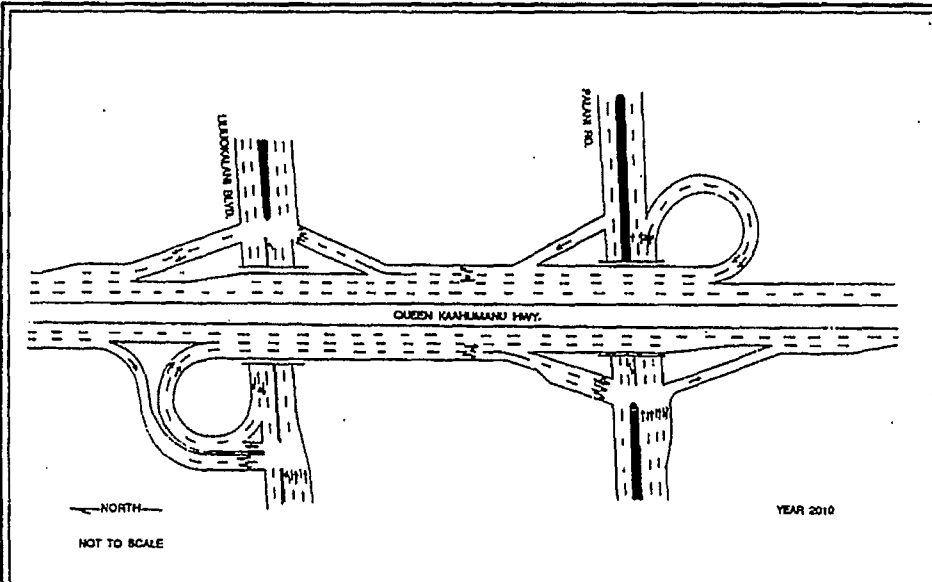
SOURCE: Highway Capacity Manual, 1985



LEVEL OF SERVICE DEFINITION FOR WEAVING SECTIONS
Keahuolu Landis Transportation Analysis

APPENDIX

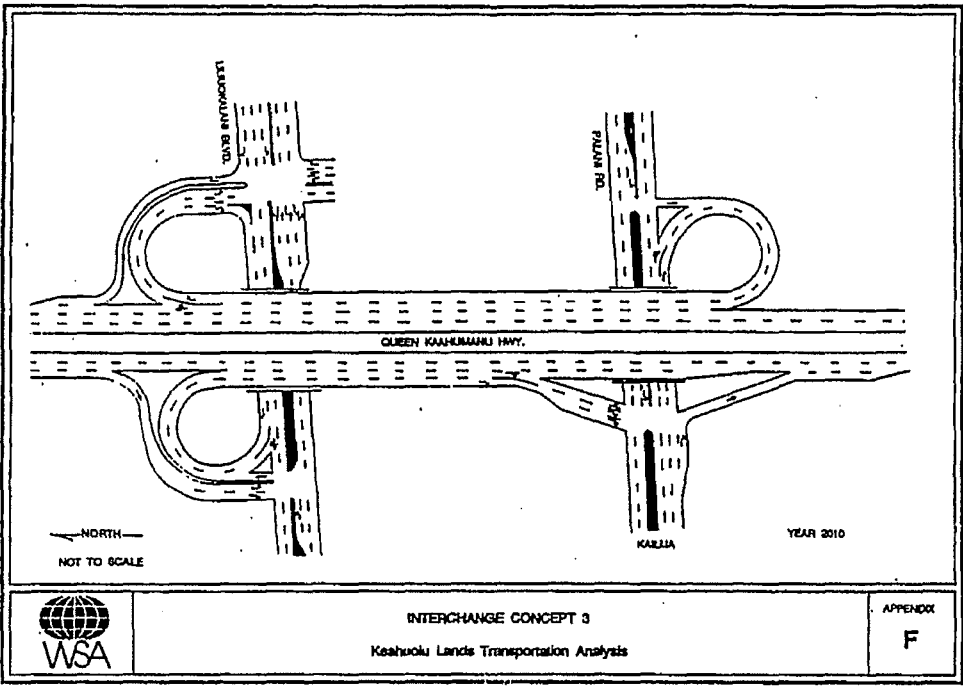
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INTERCHANGE CONCEPT 2
Keahuolu Landis Transportation Analysis

APPENDIX

E



INTERCHANGE CONCEPT 3
Keehuoku Lands Transportation Analysis

APPENDIX
F