

# **REPORT ON URBAN LANDS IN THE STATE OF HAWAII**

## **PART I: SUPPLY OF URBAN LANDS BY ISLAND AND GEOGRAPHIC PLANNING DISTRICT**

# CONTENTS

Statewide Overview Table	Provides current (as of January 2006) acreage figures in each of the four State Land Use District classifications – Conservation, Agricultural, Rural, and Urban – for each of the major islands.
Table 1: Total Land Acreage in Each State Land Use District by Island and Geographic Planning District	Provides a breakdown of land use classifications for each of the four counties and their geographic planning districts.
Table 2: Total Land Acreage in State Urban District by Improved Value, Island and Geographic Planning District	Classifies State Urban District lands by improved value, by island and geographic planning district. Improved value based on individual county tax assessments (2004). The purpose is to identify urban lands with no improvements or “vacant.”
Table 3: Total Developable <sup>9</sup> Urban Land in State Urban District, by Island and Geographic Planning District	Refers to lands that are within the State Urban District that are vacant <u>and</u> are five (5) acres or more in size <u>and</u> represent slopes of less than 20%. Slope derived from 10-meter DEM (Digital Elevation Models) from U.S. Geological Survey.
Table 4: Total Acreage of Vacant Land (2004) in State Urban District by County Zoning, Island and Geographic Planning District	Classifies unimproved (“vacant”) urban lands according to their county zoning, by island and geographic planning district. Digital zoning data was only available for the islands of O`ahu and Hawai`i. the purpose is to identify vacant urban lands (2004), zoned for urban-type development, as well as those zoned for agriculture, conservation, or other uses (primarily military lands).
Table 5: Comparison of Developable Urban Land 1991 and 2006, by Island and Geographic Planning District	<p>Provides data exclusively for lands that are “developable,” classified as State Urban District and zoned for urban use on O`ahu and Hawai`i by geographic planning district.</p> <p>Contrasts figures from 1991 Wilson Okamoto study and current research by the State Office of Planning</p>

# INTRODUCTION

In 1991, the State Office of Planning published as part of the State Land Use District Boundary Review, an urban lands requirement study.<sup>11</sup>

The purpose of the Urban Lands Requirement Study was two-fold:

- identify the existing vacant and developable lands currently in the State Urban District, and
- project the additional urban acreage needed to accommodate projected future growth.

The 1991 study defined “vacant” lands as lands classified within the State Urban District on which there were no existing structures. “Developable” lands were defined as vacant lands that did not have physical limitations precluding their development. Developable lands were vacant lands:

- with slopes less than 20 percent
- free of environmental constraints such as wetlands or waterways
- didn’t contain golf courses, parks, or roadways, and
- were greater than 5 acres in size.

The 1991 study did not examine whether the “developable” lands in the State Urban District were also zoned for development by the counties. Therefore, lands zoned by the counties for agriculture or open space were included in “developable” land acreage calculations as long as they were in the State Urban District and did not contain any structures.

The State Office of Planning is updating the Urban Lands Requirements Study for 2006. The study will be produced in two separate reports. First, this Report on Urban Lands in the State of Hawai‘i, provides data on vacant and developable lands statewide, by island, and geographic planning districts. The following data tables provide similar data to the 1991 study, but expand upon the definition of “developable” lands. This 2006 report considers the City and County of Honolulu and County of Hawai‘i’s zoning of lands in the State Urban District. In addition, the report excludes military-owned lands in the State Urban District (City and County of Honolulu) from the “developable” category. The report provides a side-by-side comparison of the 1991 identification of existing developable land; the 2006 identification of developable land using the 1991 definition; and the 2006 figures as refined by this study.

The second report will project developable land requirements to accommodate long-term growth statewide, by island, and geographic planning district. However, because growth may be accommodated in different manners, the second report will not focus exclusively on urban lands. Instead, the report will examine additional growth needs over time, inventory of existing entitled land and urban growth boundaries, begin exploring the opportunity of various growth scenarios and the long-term land use impacts resulting from alternative scenarios.

The State Office of Planning is publishing and broadly disseminating this important data to encourage and inform discussion on land use policies and permitting decisions.

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**STATEWIDE OVERVIEW TABLE: Total Land Acreage in each State Land Use District by Island <sup>1</sup>**

	Total Land Area (acres)	Conservation	Agricultural	Rural	Urban
STATE	4,112,790 <sup>2</sup>	1,973,609	1,928,034	10,779	<b>200,397</b>
KAUA`I	353,900	198,769	139,193	1,253	<b>14,715</b>
O`AHU	386,188	156,613	128,636	0	<b>100,939</b>
MOLOKA`I	165,800	49,768	111,627	1,866	<b>2,539</b>
LANA`I	90,500	38,197	46,639	2,407	<b>3,257</b>
MAUI	465,800	194,836	242,925	4,047	<b>23,992</b>
HAWAII	2,573,400	1,304,327	1,213,315	1,206	<b>54,955</b>



**TABLE 1: Total Land Acreage in each State Land Use District <sup>1</sup> by Island  
and Geographic Planning District**

	Total Land Area (acres)	Conservation	Agricultural	Rural	Urban
<b>KAUA`I</b>	<b>353,900</b>				<b>14,715</b>
North Shore		61,957	16,564	227	<b>2,196</b>
Kapaa-Wailua		23,058	18,546	577	<b>2,264</b>
Lihu`e		20,103	30,322	6	<b>4,704</b>
Koloa-Po`ipu		6,560	16,259	425	<b>3,390</b>
Waimea-Kekaha		69,229	45,594	74	<b>1,031</b>
Hanapepe-Eleele		13,499	17,213	58	<b>1,155</b>
<b>O`AHU</b>	<b>386,188</b>				<b>100,939</b>
Primary Urban Center		31,790	624	0	<b>34,657</b>
`Ewa		1,255	11,891	0	<b>20,577</b>
Central O`ahu		25,647	30,351	0	<b>14,920</b>
Ko`olaupoko		21,345	5,715	0	<b>16,356</b>
Ko`olaupoko		20,486	14,141	0	<b>2,630</b>
North Shore		30,164	44,931	0	<b>1,689</b>
Wai`anae		18,441	15,719	0	<b>4,977</b>
East Honolulu		8,761	0	0	<b>6,010</b>
<b>MOLOKA`I</b>	<b>165,800</b>				<b>2,539</b>
		51,877	110,891	1,799	<b>2,273</b>
<b>LANA`I</b>	<b>90,500</b>				<b>3,257</b>
		40,561	44,724	2,059	<b>2,946</b>
<b>MAUI</b>	<b>465,800</b>				<b>23,992</b>
Wailuku-Kahului		25,226	25,084	244	<b>8,023</b>
Kihei-Makena		12,412	36,122	578	<b>5,411</b>
Lahaina		31,373	24,381	271	<b>5,257</b>
Makawao-Pukalani		41,509	82,574	2,320	<b>1,965</b>
Paia-Ha`iku		19,700	29,935	244	<b>751</b>
Hana		73,798	38,474	496	<b>232</b>
<b>HAWAII</b>	<b>2,573,400</b>				<b>54,955</b>
Puna		139,245	175,670	146	<b>6,332</b>
South Hilo		168,393	72,208	0	<b>12,471</b>
North Hilo		120,307	53,761	65	<b>589</b>
Hamakua		236,020	163,122	13	<b>1,053</b>
North Kohala		13,022	64,810	16	<b>2,386</b>
South Kohala		15,354	150,665	100	<b>10,502</b>
North Kona		188,322	158,948	491	<b>18,297</b>
South Kona		35,043	110,898	31	<b>842</b>
Ka`u		423,218	238,340	0	<b>1,807</b>

**TABLE 2: Total Land Acreage in State Urban District <sup>1</sup> by Improved Value (2004) <sup>3</sup>, Island and District**

	Total Urban Land Area (acres)	Improved Value Range (\$) by Number of Acres				
		> \$100K	\$25K-\$100K	<\$25K	\$0 <sup>5</sup>	NULL <sup>6</sup>
<b>STATE</b>	<b>200,397</b>					
<b>KAUA`I</b>	<b>14,715</b>				<b>4,757</b>	
North Shore	2,158	1,180	190	77	<b>711</b>	
Kapaa-Wailua	2,238	975	318	62	<b>883</b>	
Lihu`e	4,687	2,920	340	183	<b>1,244</b>	
Koloa-Po`ipu	3,373	1,857	249	163	<b>1,104</b>	
Waimea-Kekaha	1,014	378	164	57	<b>415</b>	
Hanapepe-Eleele	1,152	423	117	212	<b>400</b>	
<b>O`AHU</b>	<b>100,939</b>				<b>30,932</b>	<b>1,673</b>
Primary Urban Center	34,657	21,499	2,633	333	<b>4,994</b>	516
`Ewa	20,577	4,611	1,434	582	<b>12,862</b>	478
Central O`ahu	14,920	7,222	839	157	<b>4,877</b>	303
Ko`olaupoko	16,356	9,322	2,120	345	<b>2,959</b>	132
Ko`olauloa	2,630	1,023	221	163	<b>972</b>	62
North Shore	1,689	701	189	41	<b>508</b>	14
Wai`anae	4,977	1,477	904	266	<b>1,922</b>	15
East Honolulu	6,010	2,763	524	95	<b>1,838</b>	153
<b>MOLOKA`I</b>	<b>2,539</b>					
		439	293	174	<b>1,327</b>	
<b>LANA`I</b>	<b>3,257</b>					
		2,356	73	163	<b>352</b>	
<b>MAUI</b>	<b>23,992</b>				<b>7,803</b>	
Wailuku-Kahului	7,989	4,071	1,102	464	<b>2,352</b>	
Kihei-Makena	5,384	2,271	383	192	<b>2,538</b>	
Lahaina	5,127	2,149	279	612	<b>2,087</b>	
Makawao-Pukalani	1,965	798	447	83	<b>637</b>	
Paia-Ha`iku	730	285	161	129	<b>155</b>	
Hana	232	159	28	11	<b>34</b>	
<b>HAWAII <sup>4</sup></b>	<b>54,955</b>				<b>29,515</b>	
Puna	6,329	631	1,073	321	<b>4,306</b>	
South Hilo	12,814	4,162	3,215	579	<b>4,502</b>	
North Hilo	608	133	111	25	<b>318</b>	
Hamakua	1,041	230	256	98	<b>470</b>	
North Kohala	2,434	277	467	79	<b>1,561</b>	
South Kohala	10,608	2,803	609	310	<b>6,741</b>	
North Kona	17,787	5,271	926	1,439	<b>10,630</b>	
South Kona	845	346	172	119	<b>204</b>	
Ka`u	1,801	456	348	219	<b>783</b>	

**TABLE 3: Total Developable<sup>9</sup> Urban Land in State Urban District, by Island  
and Geographic Planning District**

Island and Planning District	Total Vacant Urban Land Area (acres) Improved value = 0	Total Vacant Urban Lands based only on parcels 5 acres or more	Total Developable <sup>9</sup> Urban Lands (acres) with slopes <20%
<b>KAUA`I</b>	<b>4,757</b>	<b>2,742</b>	<b>2,457</b>
North Shore	711	410	<b>349</b>
Kapaa-Wailua	883	407	<b>357</b>
Lihu`e	1,244	815	<b>775</b>
Koloa-Po`ipu	1,104	616	<b>547</b>
Waimea-Kekaha	415	251	<b>194</b>
Hanapepe-Eleele	400	244	<b>235</b>
<b>O`AHU</b>	<b>30,932</b>	<b>23,776</b>	<b>19,378</b>
Primary Urban Center	4,994	2,840	<b>1,780</b>
`Ewa	12,862	11,802	<b>11,072</b>
Central O`ahu	4,877	3,804	<b>3,073</b>
Ko`olaupoko	2,959	1,771	<b>1,070</b>
Ko`olauloa	972	694	<b>665</b>
North Shore	508	294	<b>260</b>
Wai`anae	1,922	1,334	<b>1,010</b>
East Honolulu	1,838	1,236	<b>448</b>
<b>MOLOKA`I</b>	<b>1,327</b>	<b>908</b>	<b>822</b>
<b>LANA`I</b>	<b>352</b>	<b>249</b>	<b>132</b>
<b>MAUI</b>	<b>7,803</b>	<b>5,619</b>	<b>5,197</b>
Wailuku-Kahului	2,352	1,546	<b>1,419</b>
Kihei-Makena	2,538	1,986	<b>1,916</b>
Lahaina	2,087	1,646	<b>1,514</b>
Makawao-Pukalani	637	402	<b>320</b>
Paia-Ha`iku	155	29	<b>23</b>
Hana	34	11	<b>5</b>
<b>HAWAII<sup>4</sup></b>	<b>29,515</b>	<b>21,673</b>	<b>20,214</b>
Puna	4,306	1,713	<b>1,650</b>
South Hilo	4,502	2,667	<b>2,420</b>
North Hilo	318	184	<b>75</b>
Hamakua	470	275	<b>194</b>
North Kohala	1,561	1,345	<b>1,140</b>
South Kohala	6,741	5,799	<b>5,555</b>
North Kona	10,630	9,150	<b>8,670</b>
South Kona	204	42	<b>24</b>
Ka`u	783	500	<b>485</b>

**TABLE 4: Total Acreage of Vacant Land <sup>5</sup> in State Urban District, by County Zoning <sup>7</sup>,  
Island, and Geographic Planning District**

	Total Develo pable <sup>9</sup> (acres)	County Zoning							Total Urban Zoned <sup>10</sup> and Developa ble
		Residential	Commercial or Industrial	Agriculture	Mixed Use	Resort	Conservation	Other	
KAUA`I	2,457								
North Shore	349								
Kapaa-Wailua	357								
Lihu`e	775								
Koloa-Po`ipu	547								
Waimea- Kekaha	194								
Hanapepe- Eleele	235								
O`AHU	19,378	3,590	1,280	3,734	345	312	3,399	6,718	5,526
Primary Urban Center	1,780	279	280	26	31	0	126	1,038	590
`Ewa	11,072	1,506	689	2,150	314	101	865	5,447	2,610
Central O`ahu	3,073	1,109	311	677	0	0	766	210	1,419
Ko`olaupoko	1,070	187	0	214	0	0	647	23	187
Ko`olauloa	665	37	0	82	0	167	378	0	204
North Shore	260	13	0	194	0	0	53	0	13
Wai`anae	1,010	362	0	391	0	44	213	0	405
East Honolulu	448	98	0	0	0	0	351	0	98
MOLOKA`I	822								
LANA`I	132								
MAUI	5,197								
Wailuku- Kahului	1,419								
Kihei-Makena	1,916								
Lahaina	1,514								
Makawao- Pukalani	320								
Paia-Ha`iku	23								
Hana	5								
HAWAII	20,214	5,753	2,416	4,342	0	239	0	7,462	8,409
Puna	1,650	393	347	542	0	0	0	368	741
South Hilo	2,420	745	674	324	0	17	0	660	1,436
North Hilo	75	14	0	61	0	0	0	0	14
Hamakua	194	55	0	109	0	8	0	22	63
North Kohala	1,140	642	19	149	0	11	0	319	672
South Kohala	5,555	2,754	302	1,232	0	58	0	1,209	3,114
North Kona	8,670	897	1,067	1,809	0	145	0	4,751	2,109
South Kona	24	19	0	0	0	0	0	5	19
Ka`u	485	234	7	116	0	0	0	128	241

**TABLE 5: Comparison of Developable Urban Land 1991<sup>11</sup> and 2006<sup>11</sup>, by Island and Geographic Planning District**

Island and Planning District	<b>1991</b> Developable Urban Land Area (acres)	<b>2006</b> Developable Urban Land Area (acres) as defined in 1991 study	<b>2006</b> Developable Urban Land <sup>10</sup> Area (acres) refined for only urban zoning categories
<b>KAUA`I</b>	<b>2,303</b>	<b>2,457</b>	
North Shore	339	349	
Kapaa-Wailua	389	357	
Lihu`e	605	775	
Koloa-Po`ipu	639	547	
Waimea-Kekaha	331	194	
Hanapepe-Eleele	*combined with Waimea-Kekaha	235	
<b>O`AHU</b>	<b>10,881</b>	<b>19,378</b>	<b>5,526</b>
Primary Urban Center	680	1,780	<b>590</b>
`Ewa	3,070	11,072	<b>2,610</b>
Central O`ahu	2,151	3,073	<b>1,419</b>
Ko`olaupoko	1,347	1,070	<b>187</b>
Ko`olauloa	594	665	<b>204</b>
North Shore	270	260	<b>13</b>
Wai`anae	1,518	1,010	<b>405</b>
East Honolulu	1,250	448	<b>98</b>
<b>MOLOKA`I</b>	<b>824</b>	<b>822</b>	
<b>LANA`I</b>	<b>1,473</b>	<b>132</b>	
<b>MAUI</b>	<b>6,427</b>	<b>5,197</b>	
Wailuku-Kahului	1,798	1,419	
Kihei-Makena	1,241	1,916	
Lahaina	322	1,514	
Makawao-Pukalani	551	320	
Paia-Ha`iku	174	23	
Hana	44	5	
<b>HAWAII<sup>4</sup></b>	<b>22,745</b>	<b>20,214</b>	<b>8,409</b>
Puna	4,108	1,650	<b>741</b>
South Hilo	3,592	2,420	<b>1,436</b>
North Hilo	64	75	<b>14</b>
Hamakua	233	194	<b>63</b>
North Kohala	278	1,140	<b>672</b>
South Kohala	6,023	5,555	<b>3,114</b>
North Kona	7,485	8,670	<b>2,109</b>
South Kona	293	24	<b>19</b>
Ka`u	669	485	<b>241</b>

# ENDNOTES

- 1/ Based on State of Hawai'i, Data Book 2004, Table 6.04 Estimated Acreage of Land Use Districts, by Islands: December 31, 2004; and, current data from State Land Use Commission (LUC) completed boundary amendment dockets from January 2005 to January 2006. District totals were derived in Table 1 by utilizing the State Geographic Information System (GIS) from digital map layers of State Land Use District boundaries (2004) and county Community or Development Plan areas and therefore may not be consistent with Data Book sum due to differences in coastline boundaries and years represented by the digital data.
- 2/ The State total number includes areas from Kaho'olawe, Lana'i, Moloka'i, Ni'ihau, Kaula and Lehua, and the Northwest Hawaiian Islands.
- 3/ Improved value based on individual county assessment tables for value of buildings or structures on a parcel. This table is connected to the digital Tax Map Key (TMK) parcel maps for each county. The acreage figures have been derived using the State GIS and the digital map layers of State Land Use District Boundaries, county Community Plan or Development Plan areas, county TMK parcel boundaries, and the county tax assessment tables (2004).
- 4/ Hawai'i County General Plan (2000); County of Hawai'i Planning Department and from State of Hawai'i, Office of Planning GIS Data (as of May 2000).
- 5/ This category represents "vacant" lands within the State Urban District. County property assessments indicate that these parcels have an assessed value for building improvements of \$0. These vacant lands could be characterized as "potentially developable" as they are within the State Urban District and are unimproved. Some parcels represent roadways, streets, or remnants. In addition these figures also include lands that are zoned for non-urban uses (agriculture, preservation, and other – military, open, and public precinct), such of which may be identified within a county-designated urban growth boundary for future urban use.

Identifying those vacant lands with urban entitlements (county urban zoning or within a county-designated urban growth boundary) as "developable" would require further studies to assess environmental constraints (i.e. slope, soils), eliminating remnant areas (i.e. boundaries extending into stream beds, remnant parcels), market conditions, and individual landowner financial capability and intent. Further study would also be necessary to determine which vacant, developable lands are currently in "pre-development" stages, such as areas in the Ewa District on O'ahu.

Although the focus here is on urban lands one needs to acknowledge that residential uses are found in all State Land Use Districts. Traditionally, residential uses have been considered appropriate in both the State Urban and Rural Districts. However, the State Agricultural district does contain non-farming residential uses on each island as does the Conservation District to a lesser extent.

- 6/ Null values represent parcels for which no property assessment values have been determined. In some cases this is due to a lag between a parcel being subdivided and a property assessment being done; in other cases these parcels represent roads, streets, or remnants. On O'ahu, 1,236 parcels totaling 1,673 acres had no property assessment values assigned; no other islands contained null values.
- \*/ Three parcels in South Hilo of mixed use (RCX-10) totaling less than one-half acre and one parcel in North Kona of mixed use (RCX-2) totaling less than one-half acre.
- 7/ Only O'ahu and Hawai'i digital zoning layers are available. The following provides the specific zoning categories from Hawai'i and O'ahu that correspond to the zoning classes listed below.
- 8/ While vacant military lands may be developed for housing or other purposes in the future that may add density in certain districts; such lands, however, are not available for development to address local housing needs and are not counted in this category. Such lands are included in the Other category.
- 9/ Refers to lands that are within the State Urban District that are vacant and are five (5) acres or more in size and represent slopes of less than 20%. Slope derived from 10-meter DEM (Digital Elevation Models) from U.S. Geological Survey.
- 10/ Refers to lands that are within the State Urban District that are vacant and are five (5) acres or more in size and represent slopes of less than 20% and are also zoned at the county level for an urban use. See the county zoning categories listed at end for the City and County of Honolulu and Hawai'i County.
- 11/ Data from State Land Use District Boundary Review: Urban Land Requirements Study (October 1991), prepared by Wilson Okamoto & Associates, Inc. for the Office of State Planning. Represents all lands within the State Urban District that are vacant, more than 5 acres, and less than 20% slope but without regard to its county zoning classification (includes lands in agricultural, rural, open, conservation, and preservation).

## **O`ahu**

Residential: Apartment (A-1 or A-2); Apartment Precinct; Country; Residential (R-3.5, -5, -7.5, -10, -20)

Commercial/Industrial: Neighborhood Business (B-1); Community Business (B-2); Industrial (I-1, I-2, I-3, IMX-1)

Agriculture: Restricted (Ag-1); General (Ag-2)

Mixed Use: Low/Medium/High Density (AMX-1, AMX-2, AMX-3); Aloha Tower Project Area; Apartment Mixed Use Subprecinct; Community (BMX-3); Central (BMX-4); Kakaako Comm Devel District

Resort: Resort Commercial Precinct; Resort Mixed Use Precinct

Preservation: Restricted (P-1); General (P-2)

Other: Military and Federal (F-1); Public Precinct

## **Hawai`i**

Residential: Family Ag District (FA-1a, -2a, -3a); Residential and Agricultural District (RA-.5a, -1a, -2a); Double Family (RD-3.75); Multi-Family (RM-.75, -1, -1.25, -1.5, -2, -2.5, -3, -3.5, -4, -4.5, -5, -5.5, -6, -7, -8, -10, -14.5, -15, -20); Single Family (RS-5a, RS-7.5, -10, -15, -20)

Commercial/Industrial: Downtown Hilo Commercial (CDH); General Commercial (CG-7.5, -10, -20); Neighborhood Commercial (CN-7.5, -10, -20, -40); Village Commercial (CV-7.5, -10, -15, -20, -1a); Industrial-Commercial Mixed (MCX-1a, -10, -20); General Industrial (MG-1a, -3a, -5a, -20); Limited Industrial (ML-1a, -3a, -10, -20)

Agriculture: Agricultural District (A-1a, -2a, -3a, -5a, -7a, -8a, -10a, -20a, -35a, -40a, -80a, -200a, -255a, -500a, -600a, -900a, -8000a)

Mixed Use: Residential-Commercial Mixed Use (RCX-2, RCX-10)

Resort: Resort-Hotel District (V-.75, -1, -1.0, -1.25, -1.5, -1.75, -2a, -2, -2.0, -2.25, -4, -6.0, -7, -25)

Preservation: National Park (NP); Forest Reserve (FR); Conservation (CON)

Other: (flood); (pond); (river); (road); OPEN (O); Project District (PD)

# **URBAN LANDS IN THE STATE OF HAWAII**

## **Part II**

### **DEMAND FOR URBAN LANDS**

**Office of Planning  
State of Hawaii**

**AUGUST 2007**



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## **I. Methodology for Projecting the Demand for Urban Land in Hawaii**

The major urban land uses in Hawaii consist of residential, commercial, industrial, resort and public uses. Future demands for urban land were determined in ten-year increments through population and employment projections and through estimated urban land area requirements for residential, commercial, industrial, and public uses. Resort demand was not included in this study. 1/

These demands were then compared with the available supply of developable urban lands in each county and planning district to estimate the demand for additional urban lands to accommodate population and economic growth for years 2010, 2020 and 2030.

The counties' projections for population, employment and housing units were used if they were available. Otherwise, the projections are closely based on the methodology used in the 1991 Wilson Okamoto & Associates (WO) study. 2/

### **1. Residential Demand**

The demand for residential land was projected based on housing demand which is estimated using projected population growth and number of households by counties' planning districts.

As in the 1991 WO study, land area requirements generated by residential demand were estimated based on density factors for single-family and multi-family units. 3/

The extent and timing of density increases are difficult to forecast, but it is expected that single family lot sizes will continue to become smaller, and that residential densities will continue to increase in the future as more intensive use is made of available urban lands. The analysis does not take into account the redevelopment of existing urban areas at higher densities.

**City & County of Honolulu** - Population projections and distribution between the development plan areas, projected number of households, and housing units are from the Department of General Planning, Socioeconomic Projections. 4/.

Additional units, the projected units demanded in each centennial year minus housing units in 2000, are divided into single and multifamily units using the 2000 Census percentages of single family units for each planning districts.

Additional units of single and multifamily units were divided by their respective densities (units per acre), from the Department of General Planning to determine acres needed.

**County of Kauai** – There are no detailed population projections for the County of Kauai by the Planning Department other than a total population projection for year 2020. The 2010, 2020, and 2030 populations were projected by the Office of Planning (OP) based on 0.9 percent (average of 0.6 percent for low and 1.2 percent for high) projected average annual population growth rate from the Kauai County General Plan, 2000. Population projections were distributed to planning districts based on 2000 Census distributions and assuming the same distribution between the planning districts in future years as in 2000.

Household size by planning districts from 2000 Census was used, and assumed fixed through 2030, to project number of households.

Additional units needed in 2010, 2020 and 2030 were divided into single and multi family units by using the 2000 Census percentages and assumed fixed through 2030. Additional units of single and multifamily units were divided by their respective densities (units per acre) based on residential acreage in 1981, Kauai Housing Master Plan Study, and single and multi-family unit counts in 1980 Census of Housing to determine acres needed. 5/.

**County of Maui** - Population projections and number of households were obtained from the Maui County Draft General Plan 2030. 6/

The 2004 existing housing units are from the Maui County Existing Land Use Database, 2004. 7/

Percent of single and multifamily and their respective density factors are from the Maui County General Plan 2030. These figures are assumed fixed by the Plan through 2030.

**County of Hawaii** - For the County of Hawaii, population projections and distribution for 2010 and 2020 were obtained from the Hawaii County General Plan. 8/

The 2030 population was projected by OP based on the population growth rate between 2000 and 2010 and assuming the same distribution between the planning districts as in 2020.

Number of households was projected by using the 2000 average household size by the census tracts and allocating them to planning districts. These projections are also based on the 2000 Census planning districts proportion of population in households. Both are assumed fixed through 2030. Extra housing units were included to satisfy a five percent desired vacancy rate. 9/

The 2000 housing units are from the Census. Additional units in 2010, 2020, and 2030 were separated into single and multi family units using the 2000 Census percentage for each planning district. The County projections were then distributed in the respective county planning areas according to the 1991 Wilson Okamoto & Associates (WO) study.

## **2. Commercial Demand**

Commercial demand was estimated based on employment or commercial floor area projections.

Employment projections for the City and County of Honolulu are from the County's General Planning, Socioeconomic Projections. Commercial employment includes Services, Retail, Finance, Insurance, and Real Estate jobs. Commercial square feet increase is based on one employee per 250 square feet of commercial space. This ratio was used to translate the employment projections into floor area requirements. Floor Area Ratios (the ratio of building floor area to land area) were then used to convert building floor area into land area requirements. A Floor Area Ratio of 2.0 was assumed by the Department of General Planning for the Primary Urban Center and 0.5 for outlying areas in its Development Plan Land Use Analysis. 10/

For the County of Kauai, commercial floor area projections are based on employment projections from the Kauai Long-Range Land Transportation Plan, 1997, Department of Labor and Industrial Relations (DLIR) and DBEDT 2030 SERIES. They include Information, portion of Trade, Services, Finance, Insurance, Real Estate, and 20 percent of Self-employed jobs. Acres needed are based on 58 new commercial jobs per acre from the Maui County Land Use Forecast, 2006 (see below). It is assumed similar practices exist in the industry on Kauai as on Maui.

Commercial employment projections for County of Maui are from the County General Plan 2030. They include portions of Trade, Banking, Finance, Other Services and 20 percent of self-employed jobs. Acres needed are based on 58 new commercial jobs per acre from the Maui County Land Use Forecast, 2006.

For the County of Hawaii, a similar analysis was undertaken from the employment projections. Employment projections are from the Hawaii County General Plan February 2005, DBEDT 2030 SERIES, and DLIR. It includes Information, portion of Trade, Services, Finance, Insurance, and Real Estate jobs. Commercial square feet increase is based on one employee per 250 square feet of commercial space.

Acres needed are based on floor area ratios of 0.5 for S. Hilo, S. Kohala and N. Kona, and 0.3 for other areas.

### **3. Industrial Demand**

Industrial demand was similarly based on employment projections, with land area calculated using floor area per industrial employee. Projected employment growth in each Development Plan area was multiplied by these factors to derive the additional acres needed. As indicated in the WO study, industrial activities tend to bear a stronger relationship to land rather than to floor area.

For Oahu, industrial employees per acre factors were obtained from the County Department of Planning and Permitting, Land Use Forecast for Oahu

For Neighbor Island counties, industrial employees per acre factors are based on 24 new industrial jobs per acre from Maui County Land Use Forecast.

### **4. Public Area Demand**

The final category for urban land demands involve public uses, which can entail a wide range of land uses such as schools, parks, government buildings, hospitals, police and fire stations, and facilities for water and wastewater systems. Of these facilities, schools and parks are among the most land intensive uses for which adequate land should be reserved. The anticipated land requirements for future schools and parks are projected for each of the planning areas in each county.

For schools, land area requirements were derived first by estimating the projected student enrollment in each of the planning areas. Ratios of student enrollment to total households were taken from 2000 Census data for each county, and then applied to the projected household increase (see residential unit demand tables). Facility planning standards used by the State Department of Education were then applied to the projected student enrollments. In determining the establishment of new schools, these standards currently call for 550 students per elementary school, 600 per middle school and 1,000 per high

school. Land requirements are 12 acres for elementary, 18 acres for middle, and 50 acres for high schools.

For parks, the area requirements were based on anticipated population increases in each planning area. The City and County of Honolulu Department of Parks and Recreation standard of 2 acres of park space for each 1,000 population was applied to the projected population increases in each county. 11/

## **5. Urban Area Requirements**

This section presents the urban area requirements to accommodate residential, commercial, and industrial uses, projected for the planning areas in each county using the above described methodology.

**Footnotes:**

1. Resort demand was not projected because several of the counties were in the process of updating their resort area designations which may have affected the distribution of projected visitor units.
2. Wilson Okamoto & Associates, Urban Land Requirement Study, 1991.
3. These densities need to be re-estimated and updated to reflect current practices in building industry. The Office of Planning contacted the Planning Departments of counties for up date of this information, but no new information was provided by any of the Planning Departments. This information could easily be incorporated into the tables when available to update and produce a new set of projections.
4. City and County of Honolulu, Department of Planning and Permitting; Socioeconomic Projections, February 2007.
5. See footnote 3.
6. County of Maui, Planning Department; Draft Socio-Economic Forecast, June 2006.
7. County of Maui, Planning Department; Existing Land Use Database, 2004.
8. County of Hawaii, General Plan, February 2005.
9. Federal Housing Administration and based on Census 2000.
10. See footnote 3.
11. Based on 2 acres per 1,000 populations, Planner's Estimating Guide, Arthur Nelson, 2004.



<p><b>TABLE 1-1</b></p> <p><b>POPULATION PROJECTIONS</b></p> <p><b>2010-2030</b></p> <p><b>CITY &amp; COUNTY OF HONOLULU</b></p>								
	<b>2000 POP.</b>	<b>PERCENT</b>	<b>2010 POP.</b>	<b>PERCENT</b>	<b>2020 POP.</b>	<b>PERCENT</b>	<b>2030 POP.</b>	<b>PERCENT</b>
<b>PRIMARY URBAN CENTER</b>	<b>419,333</b>	<b>48</b>	<b>441,766</b>	<b>46</b>	<b>463,950</b>	<b>45</b>	<b>487,764</b>	<b>44</b>
<b>EWA</b>	<b>68,696</b>	<b>8</b>	<b>97,221</b>	<b>10</b>	<b>137,862</b>	<b>13</b>	<b>177,590</b>	<b>16</b>
<b>CENTRAL OAHU</b>	<b>148,208</b>	<b>17</b>	<b>163,283</b>	<b>17</b>	<b>180,060</b>	<b>17</b>	<b>196,080</b>	<b>18</b>
<b>EAST HONOLULU</b>	<b>46,735</b>	<b>5</b>	<b>52,324</b>	<b>5</b>	<b>52,734</b>	<b>5</b>	<b>51,389</b>	<b>5</b>
<b>KOOLAUPOKO</b>	<b>117,999</b>	<b>13</b>	<b>120,019</b>	<b>13</b>	<b>119,092</b>	<b>11</b>	<b>116,192</b>	<b>10</b>
<b>KOOLAULOA</b>	<b>14,546</b>	<b>2</b>	<b>15,038</b>	<b>2</b>	<b>15,849</b>	<b>2</b>	<b>16,557</b>	<b>1</b>
<b>NORTH SHORE</b>	<b>18,380</b>	<b>2</b>	<b>19,033</b>	<b>2</b>	<b>20,081</b>	<b>2</b>	<b>20,798</b>	<b>2</b>
<b>WAIANAE</b>	<b>42,259</b>	<b>5</b>	<b>43,989</b>	<b>5</b>	<b>47,632</b>	<b>5</b>	<b>50,943</b>	<b>5</b>
<b>TOTAL</b>	<b>876,156</b>	<b>100</b>	<b>952,673</b>	<b>100</b>	<b>1,037,260</b>	<b>100</b>	<b>1,117,313</b>	<b>100</b>

Source: City and County of Honolulu, Department of General Planning, Socioeconomic Projections, February 2007.

**TABLE 1-2**  
**RESIDENTIAL UNIT DEMAND**  
**2010-2030**  
**CITY & COUNTY OF HONOLULU**

	2000 POP. 1/	HOUSE- HOLDS 2/	TOTAL UNITS 2/	2010 POP. 1/	HOUSE- HOLDS 2/	TOTAL DEMAND (UNITS) 2/	2020 POP. 1/	HOUSE- HOLDS 2/	TOTAL DEMAND (UNITS) 2/	2030 POP. 1/	HOUSE- HOLDS 2/	TOTAL DEMAND (UNITS) 2/
PRIMARY URBAN CTR	419,333	152,989	171,773	441,766	167,726	184,276	463,950	181,914	199,626	487,764	196,828	215,761
EWA	68,696	18,924	20,797	97,221	28,246	29,963	137,862	41,081	43,794	177,590	54,103	57,938
CENTRAL OAHU	148,208	42,796	45,878	163,283	49,299	51,560	180,060	56,057	58,746	196,080	62,726	65,855
EAST HONOLULU	46,735	16,188	17,099	52,324	18,508	19,460	52,734	19,194	20,192	51,389	19,194	20,192
KOOLAUPOKO	117,999	35,442	36,964	120,019	36,807	38,241	119,092	37,580	39,045	116,192	37,580	39,045
KOOLAULOA	14,546	3,682	4,473	15,038	3,799	4,708	15,849	4,134	5,121	16,557	4,442	5,503
NORTH SHORE	18,380	5,893	6,648	19,033	6,514	7,001	20,081	7,074	7,611	20,798	7,243	8,099
WAIANAE	42,259	10,535	12,356	43,989	11,255	13,076	47,632	12,557	14,587	50,943	13,809	16,022
<b>TOTAL</b>	<b>#REF!</b>	<b>286,449</b>	<b>315,988</b>	<b>#REF!</b>	<b>322,154</b>	<b>348,285</b>	<b>#REF!</b>	<b>359,591</b>	<b>388,722</b>	<b>#REF!</b>	<b>395,925</b>	<b>428,415</b>

1/ Table 1-1.

2/ City and County of Honolulu, Department of General Planning, Socioeconomic Projections, February 2007.

<p><b>TABLE 1-3a</b></p> <p><b>RESIDENTIAL AREA REQUIREMENTS</b></p> <p><b>2010</b></p> <p><b>CITY &amp; COUNTY OF HONOLULU</b></p>									
	2000 UNITS 1/	2010 DEMAND (UNITS) 2/	ADDITIONAL UNITS NEEDED	PERCENT SINGLE FAMILY 3/	SF- DENSITY UNITS/AC 4/	MF- DENSITY UNITS/AC 4/	SF- ACRES NEEDED 5/	MF- ACRES NEEDED 5/	TOTAL ACRES NEEDED
PRIMARY URBAN CTR	171,773	184,276	12,503	38.3%	6.3	52.1	760	0	760
EWA	20,797	29,963	9,166	78.4%	7.9	12.8	910	155	1,064
CENTRAL OAHU	45,878	51,560	5,682	65.1%	7.7	13.7	480	145	625
EAST HONOLULU	17,099	19,460	2,361	81.9%	5.4	12.8	358	33	391
KOOLAUPOKO	36,964	38,241	1,277	79.7%	5.7	7.1	179	37	215
KOOLAULOA	4,473	4,708	235	78.9%	6.9	12.8	27	4	31
NORTH SHORE	6,648	7,001	353	88.4%	7.4	12.8	42	204	246
WAIANAE	12,356	13,076	720	69.9%	1.8	12.8	280	17	297
<b>TOTAL</b>	<b>315,988</b>	<b>348,285</b>	<b>32,297</b>				<b>3,035</b>	<b>594</b>	<b>3,630</b>

1/ City and County of Honolulu, Department of General Planning, Socioeconomic Projections, February 2007.

2/ Table 1-2.

3/ 1989 data, from Department of General Planning, Development Plan Status Report, 1990.

4/ From Department of General Planning, Residential Development Implications of the Development Plans, 1985, Table 4.

Medium density apartment factor used for the PUC, with low density apartment factors used elsewhere.

5/ Increases in units divided by density factor.

<p><b>TABLE 1-3b</b></p> <p><b>RESIDENTIAL AREA REQUIREMENTS</b></p> <p><b>2020</b></p> <p><b>CITY &amp; COUNTY OF HONOLULU</b></p>									
	2000 UNITS 1/	2020 DEMAND (UNITS) 2/	ADDITIONAL UNITS NEEDED	PERCENT SINGLE FAMILY 3/	SF- DENSITY UNITS/AC 4/	MF- DENSITY UNITS/AC 4/	SF- ACRES NEEDED 5/	MF- ACRES NEEDED 5/	TOTAL ACRES NEEDED
PRIMARY URBAN CTR	171,773	199,626	27,853	38.3%	6.3	52.1	1,693	330	2,023
EWA	20,797	43,794	22,997	78.4%	7.9	12.8	2,282	388	2,670
CENTRAL OAHU	45,878	58,746	12,868	65.1%	7.7	13.7	1,088	328	1,416
EAST HONOLULU	17,099	20,192	3,093	81.9%	5.4	12.8	469	44	513
KOOLAUPOKO	36,964	39,045	2,081	79.7%	5.7	7.1	291	59	350
KOOLAULOA	4,473	5,121	648	78.9%	6.9	12.8	74	11	85
NORTH SHORE	6,648	7,611	963	88.4%	7.4	12.8	115	9	124
WAIANAE	12,356	14,587	2,231	69.9%	1.8	12.8	866	52	919
<b>TOTAL</b>	<b>315,988</b>	<b>388,722</b>	<b>72,734</b>				<b>6,879</b>	<b>1,221</b>	<b>8,100</b>

1/ City and County of Honolulu, Department of General Planning, Socioeconomic Projections, February 2007.

2/ Table 1-2.

3/ 1989 data, from Department of General Planning, Development Plan Status Report, 1990.

4/ From Department of General Planning, Residential Development Implications of the Development Plans, 1985, Table 4.

Medium density apartment factor used for the PUC, with low density apartment factors used elsewhere.

5/ Increases in units divided by density factor.

<p><b>TABLE 1-3c</b></p> <p><b>RESIDENTIAL AREA REQUIREMENTS</b></p> <p><b>2030</b></p> <p><b>CITY &amp; COUNTY OF HONOLULU</b></p>									
	2000 UNITS 1/	2030 DEMAND (UNITS) 2/	ADDITIONAL UNITS NEEDED	PERCENT SINGLE FAMILY 3/	SF- DENSITY UNITS/AC 4/	MF- DENSITY UNITS/AC 4/	SF- ACRES NEEDED 5/	MF- ACRES NEEDED 5/	TOTAL ACRES NEEDED
PRIMARY URBAN CTR	171,773	215,761	43,988	38.3%	6.3	52.1	2,674	521	3,195
EWA	20,797	57,938	37,141	78.4%	7.9	12.8	3,686	627	4,313
CENTRAL OAHU	45,878	65,855	19,977	65.1%	7.7	13.7	1,689	509	2,198
EAST HONOLULU	17,099	20,192	3,093	81.9%	5.4	12.8	469	44	513
KOOLAUPOKO	36,964	39,045	2,081	79.7%	5.7	7.1	291	59	350
KOOLAULOA	4,473	5,503	1,030	78.9%	6.9	12.8	118	17	135
NORTH SHORE	6,648	8,099	1,451	88.4%	7.4	12.8	173	13	186
WAIANAE	12,356	16,022	3,666	69.9%	1.8	12.8	1,424	86	1,510
<b>TOTAL</b>	<b>315,988</b>	<b>428,415</b>	<b>112,427</b>				<b>10,524</b>	<b>1,876</b>	<b>12,400</b>

1/ City and County of Honolulu, Department of General Planning, Socioeconomic Projections, February 2007.

2/ Table 1-2.

3/ 1989 data, from Department of General Planning, Development Plan Status Report, 1990.

4/ From Department of General Planning, Residential Development Implications of the Development Plans, 1985, Table 4.

Medium density apartment factor used for the PUC, with low density apartment factors used elsewhere.

5/ Increases in units divided by density factor.

<p><b>TABLE 1-4</b></p> <p><b>RESIDENTIAL AREA REQUIREMENTS</b></p> <p><b>2010-2030 SUMMARY</b></p> <p><b>CITY &amp; COUNTY OF HONOLULU</b></p>							
	2000 UNITS	2010 UNITS DEMAND	2010 ACRES NEEDED	2020 UNITS DEMAND	2020 ACRES NEEDED	2030 UNITS DEMAND	2030 ACRES NEEDED
PRIMARY URBAN CENTER	171,773	184,276	760	199,626	2,023	215,761	3,195
EWA	20,797	29,963	1064	43,794	2,670	57,938	4,313
CENTRAL OAHU	45,878	51,560	625	58,746	1,416	65,855	2,198
EAST HONOLULU	17,099	19,460	391	20,192	513	20,192	513
KOOLAUPOKO	36,964	38,241	215	39,045	350	39,045	350
KOOLAULOA	4,473	4,708	31	5,121	85	5,503	135
NORTH SHORE	6,648	7,001	246	7,611	124	8,099	186
WAIANAE	12,356	13,076	297	14,587	919	16,022	1,510
<b>TOTAL</b>	<b>315,988</b>	<b>348,285</b>	<b>3,630</b>	<b>388,722</b>	<b>8,100</b>	<b>428,415</b>	<b>12,400</b>

**TABLE 1-5**  
**COMMERCIAL AREA REQUIREMENTS**  
**2010 - 2030**  
**CITY & COUNTY OF HONOLULU**

	2000 COMMERCL EMPLOYMT 1/	2010 EMPLOYMT INCREASE 1, 4/	SQ. FT INCREASE 2/	ACRES NEEDED 3/	2020 EMPLOYMT INCREASE 1, 4/	SQ. FT INCREASE 2/	ACRES NEEDED 3/	2030 EMPLOYMT INCREASE 1, 4/	SQ. FT INCREASE 2/	ACRES NEEDED 3/
PRIMARY URBAN CTR	235,478	17,219	4,304,750	49	30,441	7,610,250	87	44,882	11,220,500	129
EWA	9,337	11,423	2,855,750	131	25,992	6,498,000	298	39,081	9,770,250	449
CENTRAL OAHU	23,733	8,833	2,208,250	101	14,142	3,535,500	162	20,539	5,134,750	236
EAST HONOLULU	5,167	0	0	0	0	0	0	0	0	0
KOOLAUPOKO	22,274	299	74,750	3	509	127,250	6	734	183,500	8
KOOLAULOA	4,477	75	18,750	1	327	81,750	4	578	144,500	7
NORTH SHORE	2,748	0	0	0	0	0	0	0	0	0
WAIANAE	5,138	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>308,352</b>	<b>37,849</b>	<b>9,462,250</b>	<b>286</b>	<b>71,411</b>	<b>17,852,750</b>	<b>558</b>	<b>105,814</b>	<b>26,453,500</b>	<b>828</b>

1/ City and County of Honolulu, Department of General Planning, Socioeconomic Projections, February 2007.

Includes Services, Retail, Finance, Insurance, and Real-Estate jobs.

2/ Commercial square feet increase based on one employee per 250 square feet of commercial space.

3/ Based on floor area ratios of 2.0 for PUC, 0.5 for outlying areas.

4/ Cumulative employment increase and acreage needs through 2030.

<p><b>TABLE 1-6</b></p> <p><b>INDUSTRIAL AREA REQUIREMENTS</b></p> <p><b>2010 - 2030</b></p> <p><b>CITY &amp; COUNTY OF HONOLULU</b></p>							
	2000 INDUSTRIAL EMPLOYMT 1/	2010 EMPLOYMT INCREASE 1, 3/	ACRES NEEDED 2/	2020 EMPLOYMT INCREASE 1, 3/	ACRES NEEDED 2/	2030 EMPLOYMT INCREASE 1,3/	ACRES NEEDED 2/
PRIMARY URBAN CTR	70,833	1,830	22	5,269	63	8,289	99
EWA	6,704	5,243	149	7,030	200	9,259	263
CENTRAL OAHU	8,398	0	0	417	7	1,555	26
EAST HONOLULU	1,480	0	0	0	0	0	0
KOOLAUPOKO	4,054	0	0	0	0	0	0
KOOLAULOA	534	339	7	70	1	177	4
NORTH SHORE	1,017	0	0	0	0	0	0
WAIANAE	1,244	0	0	0	0	0	0
<b>TOTAL</b>	<b>94,264</b>	<b>7,412</b>	<b>178</b>	<b>12,786</b>	<b>271</b>	<b>19,280</b>	<b>392</b>

1/ City and County of Honolulu, Department of General Planning, Socioeconomic Projections, February 2007.

Includes Transportation, Communication, Utilities, and Construction jobs.

2/ Industrial square feet increase based on square feet of industrial space per employee, Department of Planning, Land Use Forecast, August 2004.

3/ Cumulative employment increase and acreage needs through 2030.



**TABLE 1-7**  
**PUBLIC AREA NEEDS**  
**SCHOOL SPACE REQUIREMENTS**  
**2010 - 2030**  
**CITY & COUNTY OF HONOLULU**

	2000 HOUSEHOLDS 1/	2010 HOUSEHOLD INCREASE 1/	STUDENT INCREASE		ACRES NEEDED 3/	2020 HOUSEHOLD INCREASE 1/	STUDENT INCREASE		ACRES NEEDED 3/	2030 HOUSEHOLD INCREASE 1/	STUDENT INCREASE		ACRES NEEDED 3/
			K-8 2/	HS 2/			K-8 2/	HS 2/			K-8 2/	HS 2/	
PRIMARY URBAN CTR	152,989	14,737	5,528	2,475	250	28,925	10,850	4,857	535	43,839	16,445	7,362	785
EWA	18,924	9,322	3,497	1,565	190	22,157	8,311	3,721	410	35,179	13,196	5,908	645
CENTRAL OAHU	42,796	6,503	2,439	1,092	110	13,261	4,974	2,227	235	19,930	7,476	3,347	345
EAST HONOLULU	16,188	2,320	870	390	30	3,006	1,128	505	30	3,006	1,128	505	30
KOOLAUPOKO	35,442	1,365	512	229	15	2,138	802	359	15	2,138	802	359	15
KOOLAULOA	3,682	117	44	20	0	452	170	76	0	760	285	128	0
NORTH SHORE	5,893	621	233	104	15	1,181	443	198	15	1,350	506	227	15
WAIANAE	10,535	720	270	121	15	2,022	758	340	15	3,274	1,228	550	30
<b>TOTAL</b>	<b>286,449</b>	<b>35,705</b>	<b>13,394</b>	<b>5,996</b>	<b>625</b>	<b>73,142</b>	<b>27,437</b>	<b>12,283</b>	<b>1,255</b>	<b>109,476</b>	<b>41,066</b>	<b>18,385</b>	<b>1,865</b>

1/ From Table 1-2.

2/ Kindergarten to eighth grade, and high school. Based on County ratios of student enrollment to total households (Wilson Okamoto & Associates, 1991).

3/ For Ewa and Central Oahu only. Other areas assumed to be accommodated by existing schools.

Based on Dept. of Education facility planning standards of 550 students per elementary school, 600 per middle School and 1000 per high school.

Acreage is 12 acres for elementary, 18 acres for middle, and 50 acres for high school. Cumulative household increase, projected enrollment, and acreage totals through 2030.

<p><b>TABLE 1-8</b></p> <p><b>PUBLIC AREA NEEDS</b></p> <p><b>PARKS SPACE REQUIREMENTS</b></p> <p><b>2010-2030</b></p> <p><b>CITY &amp; COUNTY OF HONOLULU</b></p>							
	2000 POPULATION 1/	2010 POPULATION INCREASE 1/	ACRES NEEDED 2/	2020 POPULATION INCREASE 1/	ACRES NEEDED 2/	2030 POPULATION INCREASE 1/	ACRES NEEDED 2/
PRIMARY URBAN CENTER	419,333	22,433	45	44,617	89	68,431	137
EWA	68,696	28,525	57	69,166	138	108,894	218
CENTRAL OAHU	148,208	15,075	30	31,852	64	47,872	96
EAST HONOLULU	46,735	5,589	11	5,999	12	4,654	9
KOOLAUPOKO	117,999	2,020	4	1,093	2	0	0
KOOLAULOA	14,546	492	1	1,303	3	2,011	4
NORTH SHORE	18,380	653	1	1,701	3	2,418	5
WAIANAE	42,259	1,730	3	5,373	11	8,684	17
<b>TOTAL</b>	<b>876,156</b>	<b>76,517</b>	<b>153</b>	<b>161,104</b>	<b>322</b>	<b>242,964</b>	<b>486</b>

1/ Table 1-1.

2/ Based on 2 acres per 1,000 population, Planner's Estimating Guide, Arthur Nelson, 2004.  
Cumulative totals from 2000.

<b>TABLE 1-9</b> <b>URBAN LAND REQUIREMENTS</b> <b>2000-2020</b> <b>CITY &amp; COUNTY OF HONOLULU</b>			
	2010	2020	2030
PRIMARY URBAN CENTER	1,126	2,798	4,345
EWA	1,591	3,717	5,887
CENTRAL OAHU	867	1,884	2,901
EAST HONOLULU	433	555	552
KOOLAUPOKO	238	374	374
KOOLAULOA	39	93	149
NORTH SHORE	263	142	206
WAIANAE	315	945	1,557
<b>TOTAL</b>	<b>4,872</b>	<b>10,506</b>	<b>15,971</b>

Source: Tables 1-4 to 1-8.

Note: Does not include resort requirements.

<p><b>TABLE 1-10</b></p> <p><b>SUMMARY TABLE</b></p> <p><b>COMPARISON OF SUPPLY AND REQUIREMENTS OF URBAN LAND 2030</b></p> <p><b>CITY &amp; COUNTY OF HONOLULU</b></p>			
	Developable Urban Lands 1/	Urban Land Requirements 2030 2/	Surplus/(Deficit)
PRIMARY URBAN CENTER	1,780	4,345	(2,565)
EWA	11,072	5,887	5,185
CENTRAL OAHU	3,073	2,901	172
EAST HONOLULU	1,070	552	518
KOOLAUPOKO	665	374	291
KOOLAULOA	260	149	111
NORTH SHORE	1,010	206	804
WAIANAE	448	1,557	(1,109)
<b>TOTAL</b>	<b>19,378</b>	<b>15,971</b>	<b>3,407</b>

1. Report on Urban Land in the State of Hawaii, Part I; Supply of Urban Lands, Office of Planning, May 2006.  
Lands in the State Urban District that are urban and five (5) acres or more in size and represent slopes of less than 20 percent.
2. Table 1-9

<p><b>TABLE 2-1</b></p> <p><b>POPULATION PROJECTIONS</b></p> <p><b>2010-2030</b></p> <p><b>COUNTY OF KAUAI</b></p>								
	<b>2000 POP. 1/</b>	<b>PERCENT 1/</b>	<b>2010 POP. 2/</b>	<b>PERCENT 1/</b>	<b>2020 POP. 2/</b>	<b>PERCENT 1/</b>	<b>2030 POP. 2/</b>	<b>PERCENT 1/</b>
<b>NORTH SHORE</b>	<b>6,348</b>	<b>10.9</b>	<b>6,943</b>	<b>10.9</b>	<b>7,594</b>	<b>10.9</b>	<b>8,306</b>	<b>10.9</b>
<b>KAPAA-WAILUA</b>	<b>18,525</b>	<b>31.7</b>	<b>20,261</b>	<b>31.7</b>	<b>22,161</b>	<b>31.7</b>	<b>24,238</b>	<b>31.7</b>
<b>LIHUE</b>	<b>12,022</b>	<b>20.6</b>	<b>13,149</b>	<b>20.6</b>	<b>14,381</b>	<b>20.6</b>	<b>15,729</b>	<b>20.6</b>
<b>KOLOA-POIPU</b>	<b>12,845</b>	<b>22.0</b>	<b>14,049</b>	<b>22.0</b>	<b>15,366</b>	<b>22.0</b>	<b>16,806</b>	<b>22.0</b>
<b>WAIMEA</b>	<b>8,723</b>	<b>14.9</b>	<b>9,541</b>	<b>14.9</b>	<b>10,435</b>	<b>14.9</b>	<b>11,413</b>	<b>14.9</b>
<b>TOTAL</b>	<b>58,463</b>	<b>100</b>	<b>63,943</b>	<b>100</b>	<b>69,937</b>	<b>100</b>	<b>76,492</b>	<b>100</b>

1/ 2000 Census. Assumed the same population distribution between the planning districts as in 2000.

2/ Based on 0.9 percent (average of 0.6 percent for low and 1.2 percent for high) projected average annual population growth rate from the Kauai County General Plan, 2000.

**TABLE 2-2**  
**RESIDENTIAL UNIT DEMAND**  
**2000-2030**  
**COUNTY OF KAUAI**

	2000 POP. 1/	HOUSE- HOLDS 2/	HOUSE- HOLDS SIZE 2/	TOTAL DEMAND 3/	2010 POP. 1/	HOUSE- HOLDS 4/	TOTAL DEMAND 3/	2020 POP. 1/	HOUSE- HOLDS 4/	TOTAL DEMAND 3/	2030 POP. 1/	HOUSE- HOLDS 4/	TOTAL DEMAND 3/
NORTH SHORE	6,348	2,436	2.59	2,558	6,943	2,655	2,788	7,594	2,904	3,049	8,306	3,176	3,335
KAPAA-WAILUA	18,525	6,284	2.92	6,598	20,261	6,870	7,213	22,161	7,514	7,889	24,238	8,218	8,629
LIHUE	12,022	3,978	2.95	4,177	13,149	4,402	4,622	14,381	4,814	5,055	15,729	5,265	5,529
KOLOA-POIPU	12,845	4,573	2.80	4,802	14,049	4,968	5,216	15,366	5,434	5,705	16,806	5,943	6,240
WAIMEA	8,723	2,912	2.97	3,058	9,541	3,174	3,332	10,435	3,471	3,645	11,413	3,796	3,986
<b>TOTAL</b>	<b>#REF!</b>	<b>20,183</b>		<b>21,192</b>	<b>#REF!</b>	<b>22,068</b>	<b>23,171</b>	<b>#REF!</b>	<b>24,136</b>	<b>25,343</b>	<b>#REF!</b>	<b>26,399</b>	<b>27,719</b>

1/ Table 2-1.

2/ 2000 Census.

3/ Include units to satisfy 5 percent desired vacancy rate. Federal Housing Administration.

4/ Based on 2000 Census proportion of population in households( 98.9 percent, fixed through year 2030) and average size of households (also fixed through 2030).

<p><b>TABLE 2-3a</b></p> <p><b>RESIDENTIAL AREA REQUIREMENTS</b></p> <p><b>2010</b></p> <p><b>COUNTY OF KAUAI</b></p>									
	2000 UNITS 1/	2010 DEMAND (UNITS) 2/	ADDITIONAL UNITS NEEDED	PERCENT SINGLE FAMILY 3/	SF- DENSITY UNITS/AC 4/	MF- DENSITY UNITS/AC 4/	SF- ACRES NEEDED 5/	MF- ACRES NEEDED 5/	TOTAL ACRES NEEDED
<b>NORTH SHORE</b>	3,796	2,788	0	68%	5.2	10.0	0	0	0
<b>KAPAA-WAILUA</b>	7,419	7,213	0	76%	5.3	15.9	0	0	0
<b>LIHUE</b>	4,501	4,622	121	61%	3.5	23.5	21	2	23
<b>KOLOA-POIPU</b>	6,341	5,216	0	65%	4.3	10.0	0	0	0
<b>WAIMEA</b>	3,274	3,332	58	86%	5.5	16.8	9	0	10
<b>TOTAL</b>	<b>25,331</b>	<b>23,171</b>	<b>179</b>				<b>30</b>	<b>3</b>	<b>33</b>

1/ Census 2000.

2/ Table 2-2.

3/ Census 2000. Assumed fixed through 2030.

4/ Densities based on residential acreage in 1981, Kauai Housing Master Plan Study, and single and multi-family unit counts in 1980 Census of Housing.

5/ Additional units needed divided by density factor.

<p><b>TABLE 2-3b</b></p> <p><b>RESIDENTIAL AREA REQUIREMENTS</b></p> <p><b>2020</b></p> <p><b>COUNTY OF KAUAI</b></p>									
	2000 UNITS 1/	2020 DEMAND (UNITS) 2/	ADDITIONAL UNITS NEEDED	PERCENT SINGLE FAMILY 3/	SF- DENSITY UNITS/AC 4/	MF- DENSITY UNITS/AC 4/	SF- ACRES NEEDED 5/	MF- ACRES NEEDED 5/	TOTAL ACRES NEEDED
<b>NORTH SHORE</b>	3,796	3,049	0	68%	5.2	10.0	0	0	0
<b>KAPAA-WAILUA</b>	7,419	7,889	470	76%	5.3	15.9	67	7	74
<b>LIHUE</b>	4,501	5,055	554	61%	3.5	23.5	96	9	105
<b>KOLOA-POIPU</b>	6,341	5,705	0	65%	4.3	10.0	0	0	0
<b>WAIMEA</b>	3,274	3,645	371	86%	5.5	16.8	58	3	61
<b>TOTAL</b>	<b>25,331</b>	<b>25,343</b>	<b>1,395</b>				<b>221</b>	<b>20</b>	<b>241</b>

1/ Census 2000.

2/ Table 2-2.

3/ Census 2000. Assumed fixed through 2030.

4/ Densities based on residential acreage in 1981, Kauai Housing Master Plan Study, and single and multi-family unit counts in 1980 Census of Housing.

5/ Additional units needed divided by density factor.



<p><b>TABLE 2-3c</b></p> <p><b>RESIDENTIAL AREA REQUIREMENTS</b></p> <p><b>2030</b></p> <p><b>COUNTY OF KAUAI</b></p>									
	2000 UNITS 1/	2030 DEMAND (UNITS) 2/	ADDITIONAL UNITS NEEDED	PERCENT SINGLE FAMILY 3/	SF- DENSITY UNITS/AC 4/	MF- DENSITY UNITS/AC 4/	SF- ACRES NEEDED 5/	MF- ACRES NEEDED 5/	TOTAL ACRES NEEDED
<b>NORTH SHORE</b>	3,796	3,335	0	68%	5.2	10.0	0	0	0
<b>KAPAA-WAILUA</b>	7,419	8,629	1,210	76%	5.3	15.9	172	19	191
<b>LIHUE</b>	4,501	5,529	1,028	61%	3.5	23.5	178	17	195
<b>KOLOA-POIPU</b>	6,341	6,240	0	65%	4.3	10.0	0	0	0
<b>WAIMEA</b>	3,274	3,986	712	86%	5.5	16.8	111	6	117
<b>TOTAL</b>	<b>25,331</b>	<b>27,719</b>	<b>2,950</b>				<b>462</b>	<b>42</b>	<b>504</b>

1/ Census 2000.

2/ Table 2-2.

3/ Census 2000. Assumed fixed through 2030.

4/ Densities based on residential acreage in 1981, Kauai Housing Master Plan Study, and single and multi-family unit counts in 1980 Census of Housing.

5/ Additional units needed divided by density factor.

<p><b>TABLE 2-4</b></p> <p><b>RESIDENTIAL AREA REQUIREMENTS</b></p> <p><b>2010-2030 SUMMARY</b></p> <p><b>COUNTY OF KAUAI</b></p>							
	<b>2000 UNITS</b>	<b>2010 UNITS DEMAND</b>	<b>2010 ACRES NEEDED</b>	<b>2020 UNITS DEMAND</b>	<b>2020 ACRES NEEDED</b>	<b>2030 UNITS DEMAND</b>	<b>2030 ACRES NEEDED</b>
<b>NORTH SHORE</b>	3,796	2,788	0	3,049	19	3,335	0
<b>KAPAA-WAILUA</b>	7,419	7,213	0	7,889	74	8,629	191
<b>LIHUE</b>	4,501	4,622	23	5,055	105	5,529	195
<b>KOLOA-POIPU</b>	6,341	5,216	0	5,705	0	6,240	0
<b>WAIMEA</b>	3,274	3,332	10	3,645	61	3,986	117
<b>TOTAL</b>	<b>25,331</b>	<b>23,171</b>	<b>33</b>	<b>25,343</b>	<b>260</b>	<b>27,719</b>	<b>504</b>

**TABLE 2-5**  
**COMMERCIAL AREA REQUIREMENTS**  
**2010 - 2030**  
**COUNTY OF KAUAI**

	2000 COMMERCL EMPLOYMT 1/	2010 EMPLOYMT 1/	2010 EMPLOYMT INCREASE	ACRES NEEDED 2/	2020 EMPLOYMT 1/	2020 EMPLOYMT INCREASE	ACRES NEEDED 2/	2030 EMPLOYMT 1/	2030 EMPLOYMT INCREASE	ACRES NEEDED 2/
NORTH SHORE	1,240	1,445	205	4	1,789	548	9	2,023	783	14
KAPAA-WAILUA	3,054	3,559	505	9	3,474	421	7	3,930	876	15
LIHUE	7,317	8,526	1,210	21	9,210	1,893	33	10,419	3,102	53
KOLOA-POIPU	2,263	2,637	374	6	4,235	1,972	34	4,791	2,527	44
WAIMEA	1,628	1,897	269	5	1,850	223	4	2,093	465	8
<b>TOTAL</b>	<b>15,502</b>	<b>18,065</b>	<b>2,563</b>	<b>44</b>	<b>20,559</b>	<b>5,057</b>	<b>87</b>	<b>23,256</b>	<b>7,754</b>	<b>134</b>

1/ Kauai Long-Range Land Transportation Plan 1997, DLIR, DBEDT 2030 SERIES. Includes Information, 92 percent of Trade, Services, Finance, Insurance, Real Estate, and 20 percent of self-employed jobs.

2/ Based on 58 new commercial jobs per acre, Maui County Land Use Forecast, 2006. Assuming similar practices in the industry for Kauai. Cumulative employment increase and acreage needs.

**TABLE 2-6**  
**INDUSTRIAL AREA REQUIREMENTS**  
**2010 - 2030**  
**COUNTY OF KAUAI**

	2000 INDUSTRIAL EMPLOYMT 1/	2010 INDUSTRIAL EMPLOYMT 1/	2010 EMPLOYMT INCREASE 1/	2010 ACRES NEEDED 2/	2020 INDUSTRIAL EMPLOYMT 1/	2020 EMPLOYMT INCREASE 1/	2020 ACRES NEEDED 2/	2030 INDUSTRIAL EMPLOYMT 1/	2030 EMPLOYMT INCREASE 1/	2030 ACRES NEEDED 2/
<b>NORTH SHORE</b>	136	173	37	2	188	52	2	206	33	1
<b>KAPAA-WAILUA</b>	174	221	47	2	241	67	3	263	42	2
<b>LIHUE</b>	2,556	3,250	693	29	3,545	988	41	3,870	620	26
<b>KOLOA-POIPU</b>	227	289	62	3	315	88	4	344	55	2
<b>WAIMEA</b>	148	188	40	2	205	57	2	224	36	1
<b>TOTAL</b>	<b>3,241</b>	<b>4,120</b>	<b>879</b>	<b>37</b>	<b>4,494</b>	<b>1,253</b>	<b>52</b>	<b>4,906</b>	<b>786</b>	<b>33</b>

1/ Kauai Long-Range Land Transportation Plan 1997, DLIR, DBEDT 2030 SERIES.

Includes Transportation, Construction, Manufacturing, Utilities, 8 percent of Trade, and 10 percent of self-employed jobs.

2/ Based on 24 new industrial jobs per acre, Maui County Land Use Forecast, 2006. Assuming similar practices in the industry for Kauai.  
Cumulative employment increase and acreage needs.

**TABLE 2-7**  
**PUBLIC AREA NEEDS**  
**SCHOOL SPACE REQUIREMENTS**  
**2010 - 2030**  
**COUNTY OF KAUAI**

	2000 HOUSEHOLDS 1/	2010 HOUSEHOLD INCREASE 1/	STUDENT INCREASE		ACRES NEEDED 3/	2020 HOUSEHOLD INCREASE 1/	STUDENT INCREASE		ACRES NEEDED 3/	2030 HOUSEHOLD INCREASE 1/	STUDENT INCREASE		ACRES NEEDED 3/
			K-8 2/	HS 2/			K-8 2/	HS 2/			K-8 2/	HS 2/	
NORTH SHORE	2,436	219	89	44	2	468	191	94	5	740	302	148	8
KAPAA-WAILUA	6,284	586	239	117	6	1,230	501	246	13	1,934	789	387	21
LIHUE	3,978	424	173	85	5	836	341	167	9	1,287	525	258	14
KOLOA-POIPU	4,573	395	161	79	4	861	351	172	9	1,370	559	274	15
WAIMEA	2,912	262	107	52	3	559	228	112	6	884	361	177	9
<b>TOTAL</b>	<b>20,183</b>	<b>1,885</b>	<b>769</b>	<b>377</b>	<b>20</b>	<b>3,953</b>	<b>1,612</b>	<b>792</b>	<b>42</b>	<b>6,216</b>	<b>2,535</b>	<b>1,244</b>	<b>66</b>

1/ From Table 2-2.

2/ Kindergarten to eighth grade, and high school. Based on Census 2000 ratios of student enrollment to total households.

3/ Based on Dept. of Education facility planning standards of 550 students per elementary school, 600 per middle School and 1000 per high school.

Acreage is 12 acres for elementary, 18 acres for middle, and 50 acres for high school. Cumulative household increase, projected enrollment, and acreage totals through 2030.

<p><b>TABLE 2-8</b></p> <p><b>PUBLIC AREA NEEDS</b></p> <p><b>PARKS SPACE REQUIREMENTS</b></p> <p><b>2010-2030</b></p> <p><b>COUNTY OF KAUAI</b></p>							
	2000 POPULATION 1/	2010 POPULATION INCREASE 1/	ACRES NEEDED 2/	2020 POPULATION INCREASE 1/	ACRES NEEDED 2/	2030 POPULATION INCREASE 1/	ACRES NEEDED 2/
<b>NORTH SHORE</b>	<b>6,348</b>	<b>595</b>	<b>1</b>	<b>1,246</b>	<b>2</b>	<b>1,958</b>	<b>4</b>
<b>KAPAA-WAILUA</b>	<b>18,525</b>	<b>1,736</b>	<b>3</b>	<b>3,636</b>	<b>7</b>	<b>5,713</b>	<b>11</b>
<b>LIHUE</b>	<b>12,022</b>	<b>1,127</b>	<b>2</b>	<b>2,359</b>	<b>5</b>	<b>3,707</b>	<b>7</b>
<b>KOLOA-POIPU</b>	<b>12,845</b>	<b>1,204</b>	<b>2</b>	<b>2,521</b>	<b>5</b>	<b>3,961</b>	<b>8</b>
<b>WAIMEA</b>	<b>8,723</b>	<b>818</b>	<b>2</b>	<b>1,712</b>	<b>3</b>	<b>2,690</b>	<b>5</b>
<b>TOTAL</b>	<b>#REF!</b>	<b>5,480</b>	<b>11</b>	<b>11,474</b>	<b>23</b>	<b>18,029</b>	<b>36</b>

1/ Table 2-1.

2/ Based on 2 acres per 1,000 population, Planner's Estimating Guide, Arthur Nelson, 2004.  
Cumulative totals from 2000.

<b>TABLE 2-9</b> <b>URBAN LAND REQUIREMENTS</b> <b>2010-2030</b> <b>COUNTY OF KAUAI</b>			
	2010	2020	2030
<b>NORTH SHORE</b>	9	38	27
<b>KAPAA-WAILUA</b>	20	105	240
<b>LIHUE</b>	79	193	296
<b>KOLOA-POIPU</b>	16	52	68
<b>WAIMEA</b>	20	77	141
<b>TOTAL</b>	144	464	772

Source: Tables 2-4 to 2-8.

Note: Does not include resort requirements.

<p><b>TABLE 2-10</b></p> <p><b>SUMMARY TABLE</b></p> <p><b>COMPARISON OF SUPPLY AND REQUIREMENTS OF URBAN LAND 2030</b></p> <p><b>COUNTY OF KAUAI</b></p>			
	Developable Urban Lands 1/	Urban Land Requirements 2030 2/	Surplus/(Deficit)
<b>NORTH SHORE</b>	<b>349</b>	<b>27</b>	<b>322</b>
<b>KAPAA-WAILUA</b>	<b>357</b>	<b>240</b>	<b>117</b>
<b>LIHUE</b>	<b>775</b>	<b>296</b>	<b>479</b>
<b>KOLOA-POIPU</b>	<b>547</b>	<b>68</b>	<b>479</b>
<b>WAIMEA</b>	<b>429</b>	<b>141</b>	<b>288</b>
<b>TOTAL</b>	<b>2,457</b>	<b>772</b>	<b>1,685</b>

1. Report on Urban Land in the State of Hawaii, Part I; Supply of Urban Lands, Office of Planning, May 2006.

Lands in the State Urban District that are urban and five (5) acres or more in size and represent slopes of less than 20 percent.

2. Table 5-5.



<p><b>TABLE 3-1</b></p> <p><b>POPULATION PROJECTIONS</b></p> <p><b>2010-2030</b></p> <p><b>COUNTY OF MAUI</b></p>								
	<b>2000</b>		<b>2010</b>		<b>2020</b>		<b>2030</b>	
	<b>POP.</b>	<b>PERCENT</b>	<b>POP.</b>	<b>PERCENT</b>	<b>POP.</b>	<b>PERCENT</b>	<b>POP.</b>	<b>PERCENT</b>
<b>WAILUKU-KAHULUI</b>	<b>41,503</b>	<b>32.4</b>	<b>51,312</b>	<b>33.9</b>	<b>60,877</b>	<b>34.9</b>	<b>71,223</b>	<b>35.7</b>
<b>KIHEI-MAKENA</b>	<b>22,870</b>	<b>17.8</b>	<b>28,114</b>	<b>18.6</b>	<b>33,227</b>	<b>19.0</b>	<b>38,757</b>	<b>19.4</b>
<b>LAHAINA</b>	<b>17,967</b>	<b>14.0</b>	<b>21,577</b>	<b>14.3</b>	<b>25,096</b>	<b>14.4</b>	<b>28,903</b>	<b>14.5</b>
<b>HANA</b>	<b>1,867</b>	<b>1.5</b>	<b>2,118</b>	<b>1.4</b>	<b>2,362</b>	<b>1.4</b>	<b>2,626</b>	<b>1.3</b>
<b>MAKAWAO-KULA</b>	<b>21,571</b>	<b>16.8</b>	<b>24,644</b>	<b>16.3</b>	<b>27,640</b>	<b>15.8</b>	<b>30,880</b>	<b>15.5</b>
<b>PAIA-HAIKU</b>	<b>11,866</b>	<b>9.3</b>	<b>12,525</b>	<b>8.3</b>	<b>13,168</b>	<b>7.5</b>	<b>13,863</b>	<b>6.9</b>
<b>MOLOKAI</b>	<b>7,404</b>	<b>5.8</b>	<b>7,276</b>	<b>4.8</b>	<b>7,772</b>	<b>4.5</b>	<b>8,395</b>	<b>4.2</b>
<b>LANAI</b>	<b>3,193</b>	<b>2.5</b>	<b>3,735</b>	<b>2.5</b>	<b>4,308</b>	<b>2.5</b>	<b>4,901</b>	<b>2.5</b>
<b>TOTAL</b>	<b>128,241</b>	<b>100</b>	<b>151,301</b>	<b>100</b>	<b>174,450</b>	<b>100</b>	<b>199,548</b>	<b>100</b>

Source: Draft Maui County General Plan 2030, County of Maui, June 2006.

<p><b>TABLE 3-2</b></p> <p><b>RESIDENTIAL UNIT DEMAND</b></p> <p><b>2000-2030</b></p> <p><b>COUNTY OF MAUI</b></p>												
	2000 POP. 1/	HOUSE- HOLDS 2/	TOTAL DEMAND 2/	2010 POP. 1/	HOUSE- HOLDS 2/	TOTAL DEMAND 2/	2020 POP. 1/	HOUSE- HOLDS 2/	TOTAL DEMAND 2/	2030 POP. 1/	HOUSE- HOLDS 2/	TOTAL DEMAND 2/
WAILUKU-KAHULUI	41,503	12,852	13,528	51,312	17,229	18,901	60,877	21,383	23,774	71,223	25,855	28,720
KIHEI-MAKENA	22,870	8,946	9,417	28,114	11,286	13,251	33,227	13,506	16,828	38,757	15,897	20,454
LAHAINA	17,967	6,031	6,348	21,577	7,642	9,089	25,096	9,170	11,921	28,903	10,816	15,053
HANA	1,867	596	627	2,118	708	890	2,362	814	1,075	2,626	928	1,198
MAKAWAO-KULA	21,571	7,594	7,994	24,644	8,965	9,750	27,640	10,266	11,399	30,880	11,667	13,122
PAIA-HAIKU	11,866	4,022	4,234	12,525	4,316	4,908	13,168	4,596	5,420	13,863	4,896	5,806
MOLOKAI	7,404	2,420	2,547	7,276	2,475	2,605	7,772	2,722	2,865	8,395	3,006	3,164
LANAI	3,193	1,161	1,222	3,735	1,415	1,489	4,308	1,680	1,768	4,901	1,955	2,058
<b>TOTAL</b>	<b>#REF!</b>	<b>43,622</b>	<b>45,918</b>	<b>#REF!</b>	<b>54,036</b>	<b>60,884</b>	<b>#REF!</b>	<b>64,137</b>	<b>75,051</b>	<b>199,548</b>	<b>75,020</b>	<b>89,575</b>

1/ Table 3-1.

2/ Draft Maui County General Plan 2030, County of Maui, June 2006.

<p><b>TABLE 3-3a</b></p> <p><b>RESIDENTIAL AREA REQUIREMENTS</b></p> <p><b>2010</b></p> <p><b>COUNTY OF MAUI</b></p>									
	2004 UNITS 1/	2010 DEMAND (UNITS) 2/	ADDITIONAL UNITS NEEDED	PERCENT SINGLE FAMILY 3/	SF- DENSITY (UNITS/AC) 3/	MF- DENSITY (UNITS/AC) 3/	SF- ACRES NEEDED 4/	MF- ACRES NEEDED 4/	TOTAL ACRES NEEDED
WAILUKU-KAHULUI	12,170	18,901	6,731	88%	4.0	20.0	1,481	40	1,521
KIHEI-MAKENA	10,719	13,251	2,532	56%	4.0	20.0	354	56	410
LAHAINA	7,204	9,089	1,885	54%	4.0	20.0	254	43	298
HANA	817	890	73	96%	4.0	7.0	18	0	18
MAKAWAO-KULA	8,747	9,750	1,003	98%	4.0	7.0	246	3	249
PAIA-HAIKU	4,375	4,908	533	97%	4.0	7.0	129	2	132
MOLOKAI	3,013	2,605	0	72%	4.0	7.0	0	0	0
LANAI	1,384	1,489	105	77%	4.0	7.0	20	3	24
<b>TOTAL</b>	<b>48,429</b>	<b>60,884</b>	<b>12,862</b>				<b>2,503</b>	<b>148</b>	<b>2,651</b>

1/ Maui County, Existing Land Use Database, 2004.

2/ Table 3-2.

3/ Draft Maui County General Plan 2030, Land Use Forecast.

4/ Increases in units divided by density factor.

<p><b>TABLE 3-3b</b></p> <p><b>RESIDENTIAL AREA REQUIREMENTS</b></p> <p><b>2020</b></p> <p><b>COUNTY OF MAUI</b></p>									
	2004 UNITS 1/	2020 DEMAND (UNITS) 2/	ADDITIONAL UNITS NEEDED	PERCENT SINGLE FAMILY 3/	SF- DENSITY (UNITS/AC) 3/	MF- DENSITY (UNITS/AC) 3/	SF- ACRES NEEDED 4/	MF- ACRES NEEDED 4/	TOTAL ACRES NEEDED
WAILUKU-KAHULUI	12,170	23,774	11,604	88%	4.0	20.0	2,553	70	2,623
KIHEI-MAKENA	10,719	16,828	6,109	56%	4.0	20.0	855	134	990
LAHAINA	7,204	11,921	4,717	54%	4.0	20.0	637	108	745
HANA	817	1,075	258	96%	4.0	7.0	62	1	63
MAKAWAO-KULA	8,747	11,399	2,652	98%	4.0	7.0	650	8	657
PAIA-HAIKU	4,375	5,420	1,045	97%	4.0	7.0	253	4	258
MOLOKAI	3,013	2,865	0	72%	4.0	7.0	0	0	0
LANAI	1,384	1,768	384	77%	4.0	7.0	74	13	87
<b>TOTAL</b>	<b>48,429</b>	<b>75,051</b>	<b>26,769</b>				<b>5,084</b>	<b>339</b>	<b>5,423</b>

1/ Maui County, Existing Land Use Database, 2004.

2/ Table 3-2.

3/ Draft Maui County General Plan 2030, Land Use Forecast.

4/ Increases in units divided by density factor.

<p><b>TABLE 3-3c</b></p> <p><b>RESIDENTIAL AREA REQUIREMENTS</b></p> <p><b>2030</b></p> <p><b>COUNTY OF MAUI</b></p>									
	2004 UNITS 1/	2030 DEMAND (UNITS) 2/	ADDITIONAL UNITS NEEDED	PERCENT SINGLE FAMILY 3/	SF- DENSITY (UNITS/AC) 3/	MF- DENSITY (UNITS/AC) 3/	SF- ACRES NEEDED 4/	MF- ACRES NEEDED 4/	TOTAL ACRES NEEDED
WAILUKU-KAHULUI	12,170	28,720	16,550	88%	4.0	20.0	3,641	99	3,740
KIHEI-MAKENA	10,719	20,454	9,735	56%	4.0	20.0	1,363	214	1,577
LAHAINA	7,204	15,053	7,849	54%	4.0	20.0	1,060	181	1,240
HANA	817	1,198	381	96%	4.0	7.0	91	2	94
MAKAWAO-KULA	8,747	13,122	4,375	98%	4.0	7.0	1,072	13	1,084
PAIA-HAIKU	4,375	5,806	1,431	97%	4.0	7.0	347	6	353
MOLOKAI	3,013	3,164	151	72%	4.0	7.0	27	6	33
LANAI	1,384	2,058	674	77%	4.0	7.0	130	22	152
<b>TOTAL</b>	<b>48,429</b>	<b>89,575</b>	<b>41,146</b>				<b>7,731</b>	<b>543</b>	<b>8,274</b>

1/ Maui County, Existing Land Use Database, 2004.

2/ Table 3-2.

3/ Draft Maui County General Plan 2030, Land Use Forecast.

4/ Increases in units divided by density factor.

<p><b>TABLE 3-4</b></p> <p><b>RESIDENTIAL AREA REQUIREMENTS</b></p> <p><b>2010-2030 SUMMARY</b></p> <p><b>COUNTY OF MAUI</b></p>							
	2004 UNITS	2010 UNITS DEMAND	2010 ACRES NEEDED	2020 UNITS DEMAND	2020 ACRES NEEDED	2030 UNITS DEMAND	2030 ACRES NEEDED
WAILUKU-KAHULUI	12,170	18,901	1,521	23,774	2,623	28,720	3,740
KIHEI-MAKENA	10,719	13,251	410	16,828	990	20,454	1,577
LAHAINA	7,204	9,089	298	11,921	745	15,053	1,240
HANA	817	890	18	1,075	63	1,198	94
MAKAWAO-KULA	8,747	9,750	249	11,399	657	13,122	1,084
PAIA-HAIKU	4,375	4,908	132	5,420	258	5,806	353
MOLOKAI	3,013	2,605	0	2,865	0	3,164	33
LANAI	1,384	1,489	24	1,768	87	2,058	152
<b>TOTAL</b>	<b>48,429</b>	<b>60,884</b>	<b>2,651</b>	<b>75,051</b>	<b>5,423</b>	<b>89,575</b>	<b>8,274</b>

**TABLE 3-5**  
**COMMERCIAL AREA REQUIREMENTS**  
**2010 - 2030**  
**COUNTY OF MAUI**

	2000 COMMERCL EMPLOYMT 1/	2010 EMPLOYMT 1/	2010 EMPLOYMT INCREASE	ACRES NEEDED 2/	2020 EMPLOYMT 1/	2020 EMPLOYMT INCREASE	ACRES NEEDED 2/	2030 EMPLOYMT 1/	2030 EMPLOYMT INCREASE	ACRES NEEDED 2/
WAILUKU-KAHULUI	15,314	17,724	2,410	42	19,543	4,228	73	21,382	6,068	105
KIHEI-MAKENA	5,320	7,741	2,421	42	10,125	4,805	83	13,096	7,776	134
LAHAINA	8,681	9,547	866	15	10,241	1,560	27	10,931	2,250	39
HANA	245	279	34	1	308	63	1	337	92	2
MAKAWAO-KULA	1,940	2,785	845	15	3,348	1,408	24	3,820	1,880	32
PAIA-HAIKU	931	1,044	113	2	1,130	199	3	1,215	284	5
MOLOKAI	1,190	1,172	0	0	1,292	102	2	1,440	250	4
LANAI	527	617	90	11	720	193	3	824	297	5
<b>TOTAL</b>	<b>34,148</b>	<b>40,909</b>	<b>6,778</b>	<b>126</b>	<b>46,706</b>	<b>12,557</b>	<b>217</b>	<b>53,045</b>	<b>18,897</b>	<b>326</b>

1/ Maui County General Plan 2030.

Includes 90 percent of Trade, Banking, Finance, Other Services and 20 percent of self-employed jobs.

2/ Based on 58 new commercial jobs per acre, Maui County Land Use Forecast. Cumulative employment increase and acreage needs.

**TABLE 3-6**  
**INDUSTRIAL AREA REQUIREMENTS**  
**2010 - 2030**  
**COUNTY OF MAUI**

	2000 INDUSTRIAL EMPLOYMT 1/	2010 EMPLOYMT 1/	2010 EMPLOYMT INCREASE 1/	2010 ACRES NEEDED 2/	2020 EMPLOYMT 1/	2020 EMPLOYMT INCREASE 1/	2020 ACRES NEEDED 2/	2030 EMPLOYMT 1/	2030 EMPLOYMT INCREASE 1/	2030 ACRES NEEDED 2/
WAILUKU-KAHULUI	6,262	5,522	(740)	0	5,768	(495)	0	6,062	(200)	0
KIHEI-MAKENA	1,111	1,253	143	6	1,675	564	24	2,175	1,064	44
LAHAINA	1,754	1,635	(119)	0	1,793	39	2	1,934	179	7
HANA	43	44	1	0	46	3	0	53	10	0
MAKAWAO-KULA	291	394	102	4	491	200	8	575	284	12
PAIA-HAIKU	441	345	(96)	0	352	(90)	0	367	(74)	0
MOLOKAI	215	254	39	2	300	85	4	350	135	6
LANAI	136	161	26	1	191	55	2	222	86	4
<b>TOTAL</b>	<b>10,254</b>	<b>9,609</b>	<b>(644)</b>	<b>13</b>	<b>10,616</b>	<b>363</b>	<b>39</b>	<b>11,737</b>	<b>1,484</b>	<b>73</b>

1/ Draft Maui County General Plan 2030.

Includes Transportation & Utilities, 20 percent of Construction, Manufacturing, 10 percent of Trade, and 10 percent of self-employment.

2/ Based on 24 new industrial jobs per acre, Maui County Land Use Forecast. Cumulative employment increase and acreage needs.



**TABLE 3-7**  
**PUBLIC AREA NEEDS**  
**SCHOOL SPACE REQUIREMENTS**  
**2010 - 2030**  
**COUNTY OF MAUI**

	2000 HOUSEHOLDS 1/	2010 HOUSEHOLD INCREASE 1/	STUDENT INCREASE		ACRES NEEDED 3/	2020 HOUSEHOLD INCREASE 1/	STUDENT INCREASE		ACRES NEEDED 3/	2030 HOUSEHOLD INCREASE 1/	STUDENT INCREASE		ACRES NEEDED 3/
			K-8 2/	HS 2/			K-8 2/	HS 2/			K-8 2/	HS 2/	
WAILUKU-KAHULUI	12,852	4,377	2,762	1,615	122	8,531	5,384	3,147	240	13,003	8,207	4,796	414
KIHEI-MAKENA	8,946	2,340	1,477	863	89	4,560	2,878	1,682	125	6,951	4,387	2,564	214
LAHAINA	6,031	1,611	1,017	594	27	3,139	1,981	1,158	102	4,785	3,020	1,765	179
HANA	596	112	71	41	2	218	138	80	0	332	210	122	0
MAKAWAO-KULA	7,594	1,371	865	506	23	2,672	1,686	986	44	4,073	2,571	1,502	117
PAIA-HAIKU	4,022	0	0	0	0	0	0	0	0	0	0	0	0
MOLOKAI	2,420	55	35	20	0	302	191	111	0	586	370	216	15
LANAI	1,161	254	160	94	0	519	328	191	0	794	501	293	15
<b>TOTAL</b>	<b>43,622</b>	<b>10,120</b>	<b>6,387</b>	<b>3,733</b>	<b>262</b>	<b>19,941</b>	<b>12,585</b>	<b>7,356</b>	<b>511</b>	<b>30,524</b>	<b>19,264</b>	<b>11,260</b>	<b>954</b>

1/ From Table 3-2.

2/ Kindergarten to eighth grade, and high school. Based on County ratios of student enrollment to total households, Community Plan for Maui County, June 2006.

3/ Based on Dept. of Education facility planning standards of 550 students per elementary school, 600 per middle school and 1000 per high school.

Acreage is 12 acres for elementary, 18 acres for middle, and 50 acres for high school. Cumulative household increase, projected enrollment, and acreage totals through 2030.

<p><b>TABLE 3-8</b></p> <p><b>PUBLIC AREA NEEDS</b></p> <p><b>PARKS SPACE REQUIREMENTS</b></p> <p><b>1990-2020</b></p> <p><b>COUNTY OF MAUI</b></p>							
	2000 POPULATION 1/	2010 POPULATION INCREASE 1/	ACRES NEEDED 2/	2020 POPULATION INCREASE 1/	ACRES NEEDED 2/	2030 POPULATION INCREASE 1/	ACRES NEEDED 2/
WAILUKU-KAHULUI	41,503	9,809	20	19,374	39	29,720	59
KIHEI-MAKENA	19,843	5,244	10	10,357	21	15,887	32
LAHAINA	17,967	3,610	7	7,129	14	10,936	22
HANA	1,855	251	1	495	1	759	2
MAKAWAO-KULA	15,342	3,073	6	6,069	12	9,309	19
PAIA-HAIKU	21,134	659	1	1,302	3	1,997	4
MOLOKAI	7,257	(128)	0	368	1	991	2
LANAI	3,193	542	1	1,115	2	1,708	3
<b>TOTAL</b>	<b>#REF!</b>	<b>23,060</b>	<b>46</b>	<b>46,209</b>	<b>92</b>	<b>71,307</b>	<b>143</b>

1/ Table 3-1.

2/ Based on 2 acres per 1,000 population, Planner's Estimating Guide, Arthur Nelson, 2004.  
Cumulative totals from 2000.

<b>TABLE 3-9</b> <b>URBAN LAND REQUIREMENTS</b> <b>2010-2030</b> <b>COUNTY OF MAUI</b>			
	2010	2020	2030
WAILUKU-KAHULUI	1,704	2,975	4,318
KIHEI-MAKENA	557	1,242	2,002
LAHAINA	347	890	1,487
HANA	21	66	97
MAKAWAO-KULA	296	746	1,264
PAIA-HAIKU	135	264	362
MOLOKAI	1	6	60
LANAI	37	94	179
<b>TOTAL</b>	<b>3,098</b>	<b>6,282</b>	<b>9,770</b>

Source: Tables 3-4 to 3-8.

Note: Does not include resort requirements.

<p><b>TABLE 3-10</b></p> <p><b>SUMMARY TABLE</b></p> <p><b>COMPARISON OF SUPPLY AND REQUIREMENTS OF URBAN LAND 2030</b></p> <p><b>COUNTY OF MAUI</b></p>			
	Developable Urban Lands 1/	Urban Land Requirements 2030 2/	Surplus/(Deficit)
WAILUKU-KAHULUI	1,419	4,318	(2,899)
KIHEI-MAKENA	1,916	2,002	(86)
LAHAINA	1,514	1,487	27
HANA	5	97	(92)
MAKAWAO-KULA	320	1,264	(944)
PAIA-HAIKU	23	362	(339)
MOLOKAI	822	60	762
LANAI	132	179	(47)
<b>TOTAL</b>	<b>6,151</b>	<b>9,770</b>	<b>(3,619)</b>

1. Report on Urban Land in the State of Hawaii, Part I; Supply of Urban Lands, Office of Planning, May 2006.

Lands in the State Urban District that are urban and five (5) acres or more in size and represent slopes of less than 20 percent.

2. Table 3-9.

<p><b>TABLE 4-1</b></p> <p><b>POPULATION PROJECTIONS</b></p> <p><b>2010-2030</b></p> <p><b>COUNTY OF HAWAII</b></p>								
	<b>2000</b>		<b>2010</b>		<b>2020</b>		<b>2030</b>	
	<b>POP.</b>	<b>PERCENT</b>	<b>POP.</b>	<b>PERCENT</b>	<b>POP.</b>	<b>PERCENT</b>	<b>POP.</b>	<b>PERCENT</b>
	<b>1/</b>	<b>1/</b>	<b>2/</b>	<b>2/</b>	<b>2/</b>	<b>2/</b>	<b>3/</b>	<b>4/</b>
<b>PUNA</b>	<b>31,335</b>	<b>21.1</b>	<b>42,591</b>	<b>24.1</b>	<b>58,246</b>	<b>26.8</b>	<b>69,313</b>	<b>26.8</b>
<b>SOUTH HILO</b>	<b>47,386</b>	<b>31.9</b>	<b>47,477</b>	<b>26.8</b>	<b>49,791</b>	<b>22.9</b>	<b>59,251</b>	<b>22.9</b>
<b>NORTH HILO</b>	<b>1,720</b>	<b>1.2</b>	<b>1,720</b>	<b>1.0</b>	<b>1,879</b>	<b>0.9</b>	<b>2,236</b>	<b>0.9</b>
<b>HAMAKUA</b>	<b>6,108</b>	<b>4.1</b>	<b>6,561</b>	<b>3.7</b>	<b>7,328</b>	<b>3.4</b>	<b>8,720</b>	<b>3.4</b>
<b>NORTH KOHALA</b>	<b>6,038</b>	<b>4.1</b>	<b>7,917</b>	<b>4.5</b>	<b>11,273</b>	<b>5.2</b>	<b>13,415</b>	<b>5.2</b>
<b>SOUTH KOHALA</b>	<b>13,131</b>	<b>8.8</b>	<b>18,184</b>	<b>10.3</b>	<b>24,426</b>	<b>11.2</b>	<b>29,067</b>	<b>11.2</b>
<b>NORTH KONA</b>	<b>28,543</b>	<b>19.2</b>	<b>34,024</b>	<b>19.2</b>	<b>42,275</b>	<b>19.4</b>	<b>50,307</b>	<b>19.4</b>
<b>SOUTH KONA</b>	<b>8,589</b>	<b>5.8</b>	<b>11,414</b>	<b>6.5</b>	<b>14,092</b>	<b>6.5</b>	<b>16,769</b>	<b>6.5</b>
<b>KAU</b>	<b>5,827</b>	<b>3.9</b>	<b>7,050</b>	<b>4.0</b>	<b>8,408</b>	<b>3.9</b>	<b>10,006</b>	<b>3.9</b>
<b>TOTAL</b>	<b>#REF!</b>	<b>100</b>	<b>#REF!</b>	<b>100</b>	<b>#REF!</b>	<b>100</b>	<b>#REF!</b>	<b>100</b>

1/ 2000 Census.

2/ Hawaii County General Plan (2005).

3/ Projected by OP based on the population growth rate between 2000 and 2010.

4/ Assumed the same distribution as in 2020.

**TABLE 4-2**  
**RESIDENTIAL UNIT DEMAND**  
**2010-2030**  
**COUNTY OF HAWAII**

	2000 POP. 1/	HOUSE- HOLD SIZE 2/	HOUSE- HOLDS 3/	TOTAL DEMAND 4/	2010 POP. 1/	HOUSE- HOLDS 3/	TOTAL DEMAND 4/	2020 POP. 1/	HOUSE- HOLDS 3/	TOTAL DEMAND 4/	2030 POP. 1/	HOUSE- HOLDS 3/	TOTAL DEMAND 4/
PUNA	31,335	2.87	11,134	11,720	42,591	14,738	15,514	58,246	20,156	21,217	69,313	23,985	25,248
SOUTH HILO	47,386	2.63	16,928	17,819	47,477	17,533	18,456	49,791	18,388	19,356	59,251	21,881	23,033
NORTH HILO	1,720	2.88	597	628	1,720	597	628	1,879	652	687	2,236	776	817
HAMAKUA	6,108	2.97	2,083	2,193	6,561	2,162	2,276	7,328	2,415	2,542	8,720	2,873	3,025
NORTH KOHALA	6,038	2.70	1,751	1,843	7,917	2,525	2,658	11,273	3,595	3,784	13,415	4,278	4,503
SOUTH KOHALA	13,131	2.79	4,648	4,893	18,184	6,482	6,824	24,426	8,708	9,166	29,067	10,362	10,907
NORTH KONA	28,543	2.72	10,522	11,076	34,024	12,464	13,120	42,275	15,486	16,301	50,307	18,429	19,399
SOUTH KONA	8,589	2.81	3,113	3,277	11,414	4,052	4,265	14,092	5,002	5,265	16,769	5,953	6,266
KAU	5,827	2.76	2,209	2,325	7,050	2,549	2,683	8,408	3,040	3,200	10,006	3,618	3,808
<b>TOTAL</b>	<b>#REF!</b>		<b>52,985</b>	<b>55,774</b>	<b>#REF!</b>	<b>63,102</b>	<b>66,423</b>	<b>#REF!</b>	<b>77,442</b>	<b>81,517</b>	<b>#REF!</b>	<b>92,155</b>	<b>97,006</b>

1/ Table 4-1

2/ 2000 Census. Assumed fixed through 2030.

3/ Based on 2000 Census planning districts proportion of population in households, and average persons per households.

4/ Includes units to satisfy 5 percent desired vacancy rate. Federal Housing Administration, Census 2000.

<p><b>TABLE 4-3a</b></p> <p><b>RESIDENTIAL AREA REQUIREMENTS</b></p> <p><b>2010</b></p> <p><b>COUNTY OF HAWAII</b></p>									
	2000 UNITS 1/	2010 DEMAND (UNITS) 2/	ADDITIONAL UNITS NEEDED	PERCENT SINGLE FAMILY 3/	SF- DENSITY (UNITS/AC) 4/	MF- DENSITY (UNITS/AC) 4/	SF- ACRES NEEDED 5/	MF- ACRES NEEDED 5/	TOTAL ACRES NEEDED
PUNA	13,068	15,514	2,446	95%	6.9	13.5	337	9	346
SOUTH HILO	18,545	18,456	0	75%	2.7	13.5	0	0	0
NORTH HILO	661	628	0	95%	2.4	13.5	0	0	0
HAMAKUA	2,327	2,276	0	88%	3.5	13.5	0	0	0
NORTH KOHALA	1,922	2,658	736	93%	3.1	13.5	221	4	224
SOUTH KOHALA	5,794	6,824	1,030	67%	3.2	13.5	216	25	241
NORTH KONA	13,960	13,120	0	57%	7.6	13.5	0	0	0
SOUTH KONA	3,514	4,265	751	85%	7.6	13.5	84	8	92
KAU	2,883	2,683	0	90%	3.2	13.5	0	0	0
<b>TOTAL</b>	<b>62,674</b>	<b>66,423</b>	<b>4,962</b>				<b>857</b>	<b>46</b>	<b>903</b>

1/ 2000 Census.

2/ Table 4-2.

3/ 2000 Census of Population and Housing for Hawaii, March 2003. Assumed fixed through 2030.

4/ Urban Land Requirements Study, Wilson Okamoto & Associates, 1991. Island wide multi-family densities.

5/ Increases in units divided by density factor.

<p><b>TABLE 4-3b</b></p> <p><b>RESIDENTIAL AREA REQUIREMENTS</b></p> <p><b>2020</b></p> <p><b>COUNTY OF HAWAII</b></p>									
	2000 UNITS 1/	2020 DEMAND (UNITS) 2/	ADDITIONAL UNITS NEEDED	PERCENT SINGLE FAMILY 3/	SF- DENSITY (UNITS/AC) 4/	MF- DENSITY (UNITS/AC) 4/	SF- ACRES NEEDED 5/	MF- ACRES NEEDED 5/	TOTAL ACRES NEEDED
PUNA	13,068	21,217	8,149	95%	6.9	13.5	1,122	30	1,152
SOUTH HILO	18,545	19,356	811	75%	2.7	13.5	225	15	240
NORTH HILO	661	687	26	95%	2.4	13.5	10	0	10
HAMAKUA	2,327	2,542	215	88%	3.5	13.5	54	2	56
NORTH KOHALA	1,922	3,784	1,862	93%	3.1	13.5	559	10	568
SOUTH KOHALA	5,794	9,166	3,372	67%	3.2	13.5	706	82	788
NORTH KONA	13,960	16,301	2,341	57%	7.6	13.5	176	75	250
SOUTH KONA	3,514	5,265	1,751	85%	7.6	13.5	196	19	215
KAU	2,883	3,200	317	90%	3.2	13.5	89	2	91
<b>TOTAL</b>	<b>62,674</b>	<b>81,517</b>	<b>18,843</b>				<b>3,136</b>	<b>236</b>	<b>3,372</b>

1/ 2000 Census.

2/ Table 4-2.

3/ 2000 Census of Population and Housing for Hawaii, March 2003. Assumed fixed through 2030.

4/ Urban Land Requirements Study, Wilson Okamoto & Associates, 1991. Islandwide multi-family densities.

5/ Increases in units divided by density factor.



<p><b>TABLE 4-3c</b></p> <p><b>RESIDENTIAL AREA REQUIREMENTS</b></p> <p><b>2030</b></p> <p><b>COUNTY OF HAWAII</b></p>									
	2000 UNITS 1/	2030 DEMAND (UNITS) 2/	ADDITIONAL UNITS NEEDED	PERCENT SINGLE FAMILY 3/	SF- DENSITY (UNITS/AC) 4/	MF- DENSITY (UNITS/AC) 4/	SF- ACRES NEEDED 5/	MF- ACRES NEEDED 5/	TOTAL ACRES NEEDED
PUNA	13,068	25,248	12,180	95%	6.9	13.5	1,677	45	1,722
SOUTH HILO	18,545	23,033	4,488	75%	2.7	13.5	1,247	83	1,330
NORTH HILO	661	817	156	95%	2.4	13.5	62	1	62
HAMAKUA	2,327	3,025	698	88%	3.5	13.5	175	6	182
NORTH KOHALA	1,922	4,503	2,581	93%	3.1	13.5	774	13	788
SOUTH KOHALA	5,794	10,907	5,113	67%	3.2	13.5	1,071	125	1,196
NORTH KONA	13,960	19,399	5,439	57%	7.6	13.5	408	173	581
SOUTH KONA	3,514	6,266	2,752	85%	7.6	13.5	308	31	338
KAU	2,883	3,808	925	90%	3.2	13.5	260	7	267
<b>TOTAL</b>	<b>62,674</b>	<b>97,006</b>	<b>34,332</b>				<b>5,982</b>	<b>484</b>	<b>6,466</b>

1/ 2000 Census.

2/ Table 4-2.

3/ 2000 Census of Population and Housing for Hawaii, March 2003. Assumed fixed through 2030.

4/ Urban Land Requirements Study, Wilson Okamoto & Associates, 1991. Islandwide multi-family densities.

5/ Increases in units divided by density factor.

<p><b>TABLE 4-4</b></p> <p><b>RESIDENTIAL AREA REQUIREMENTS</b></p> <p><b>2010-2030 SUMMARY</b></p> <p><b>COUNTY OF HAWAII</b></p>							
	2000 UNITS	2010 UNITS DEMAND	2010 ACRES NEEDED	2020 UNITS DEMAND	2020 ACRES NEEDED	2030 UNITS DEMAND	2030 ACRES NEEDED
PUNA	13,068	15,514	346	21,217	1,152	25,248	1,722
SOUTH HILO	18,545	18,456	0	19,356	240	23,033	1,330
NORTH HILO	661	628	0	687	10	817	62
HAMAKUA	2,327	2,276	0	2,542	56	3,025	182
NORTH KOHALA	1,922	2,658	224	3,784	568	4,503	788
SOUTH KOHALA	5,794	6,824	241	9,166	788	10,907	1,196
NORTH KONA	13,960	13,120	0	16,301	250	19,399	581
SOUTH KONA	3,514	4,265	92	5,265	215	6,266	338
KAU	2,883	2,683	0	3,200	91	3,808	267
<b>TOTAL</b>	<b>62,674</b>	<b>66,423</b>	<b>903</b>	<b>81,517</b>	<b>3,372</b>	<b>97,006</b>	<b>6,466</b>

**TABLE 4-5**  
**COMMERCIAL AREA REQUIREMENTS**  
**2010 - 2030**  
**COUNTY OF HAWAII**

	2000 COMMERCL EMPLOYMT 1/	2010 EMPLOYMT INCREASE 1/	SQ. FT INCREASE 2/	ACRES NEEDED 3/	2020 EMPLOYMT INCREASE 1, 4/	SQ. FT INCREASE 2/	ACRES NEEDED 3/	2030 EMPLOYMT INCREASE 1, 4/	SQ. FT INCREASE 2/	ACRES NEEDED 3/
PUNA	1,722	603	150,691	12	1,285	321,186	25	1,688	421,995	32
SOUTH HILO	14,591	5,106	1,276,526	59	10,883	2,720,813	125	14,299	3,574,781	164
NORTH HILO	188	66	16,485	1	141	35,136	3	185	46,165	4
HAMAKUA	936	328	81,919	6	698	174,605	13	918	229,407	18
NORTH KOHALA	547	191	47,837	4	408	101,960	8	536	133,962	10
SOUTH KOHALA	3,878	1,357	339,308	16	2,893	723,208	33	3,801	950,197	44
NORTH KONA	8,667	3,033	758,310	35	6,465	1,616,278	74	8,494	2,123,570	98
SOUTH KONA	1,876	657	164,142	13	1,399	349,856	27	1,839	459,663	35
KAU	1,208	423	105,686	8	901	225,261	17	1,184	295,963	23
<b>TOTAL</b>	<b>33,614</b>	<b>11,764</b>	<b>2,940,905</b>	<b>152</b>	<b>25,073</b>	<b>6,268,303</b>	<b>325</b>	<b>32,943</b>	<b>8,235,703</b>	<b>427</b>

1/ Urban Land Requirements Study, Wilson Okamoto & Associates 1991; Hawaii County General Plan February 2005; DBEDT 2030 SERIES;

DLIR. Includes Information, 86 percent of Trade, Services, Finance, Insurance, and real estate jobs.

2/ Commercial square feet increase based on one employee per 250 square feet of commercial space.

3/ Based on floor area ratios of 0.5 for S. Hilo, S. Kohala and N. Kona, and 0.3 for other areas.

4/ Cumulative employment increase and acreage needs.

<p><b>TABLE 4-6</b></p> <p><b>INDUSTRIAL AREA REQUIREMENTS</b></p> <p><b>2010 - 2030</b></p> <p><b>COUNTY OF HAWAII</b></p>							
	2000 INDUSTRIAL EMPLOYMT 1/	2010 INDUSTRIAL EMPLOYMT 1/	ACRES NEEDED 2/	2020 INDUSTRIAL EMPLOYMT 1/	ACRES NEEDED 2, 3/	2030 INDUSTRIAL EMPLOYMT 1/	ACRES NEEDED 2, 3/
PUNA	1,926	2,617	29	3,158	51	3,410	62
SOUTH HILO	2,692	3,658	40	4,414	72	4,767	86
NORTH HILO	21	29	0	35	1	38	1
HAMAKUA	646	878	10	1,060	17	1,144	21
NORTH KOHALA	163	221	2	267	4	288	5
SOUTH KOHALA	1,034	1,405	15	1,695	28	1,831	33
NORTH KONA	2,531	3,439	38	4,150	67	4,482	81
SOUTH KONA	1,045	1,420	16	1,713	28	1,850	34
KAU	473	643	7	776	13	838	15
<b>TOTAL</b>	<b>10,531</b>	<b>14,310</b>	<b>157</b>	<b>17,268</b>	<b>281</b>	<b>18,647</b>	<b>338</b>

1/ Urban Land Requirements Study, Wilson Okamoto & Associates 1991; Hawaii County General Plan February 2005; DBEDT 2030 SERIES; DLIR. Includes Transportation, Construction, Manufacturing, Utilities, and 14 percent of Trade employment.

2/ Based on 24 new industrial jobs per acre, Maui County Land Use Forecast, 2006. Assuming similar practices in the industry for Kauai.

3/ Cumulative employment increase and acreage needs.

**TABLE 4-7**  
**PUBLIC AREA NEEDS**  
**SCHOOL SPACE REQUIREMENTS**  
**2010 - 2030**  
**COUNTY OF HAWAII**

	2000 HOUSEHOLDS 1/	2010 HOUSEHOLD INCREASE 1/	STUDENT INCREASE		ACRES NEEDED 3/	2020 HOUSEHOLD INCREASE 1/	STUDENT INCREASE		ACRES NEEDED 3/	2030 HOUSEHOLD INCREASE 1/	STUDENT INCREASE		ACRES NEEDED 3/
			K-8 2/	HS 2/			K-8 2/	HS 2/			K-8 2/	HS 2/	
PUNA	11,134	3,604	1,405	686	15	9,022	4,151	1,982	108	12,851	5,914	2,823	154
SOUTH HILO	16,928	605	236	115	0	1,460	453	217	12	4,953	453	217	12
NORTH HILO	597	0	0	0	0	0	0	0	0	179	84	36	2
HAMAKUA	2,083	79	31	15	0	332	153	73	4	790	364	174	9
NORTH KOHALA	1,751	774	302	147	0	1,844	847	406	22	2,527	1,160	556	30
SOUTH KOHALA	4,648	1,834	715	349	30	4,060	1,865	892	49	5,714	2,626	1,256	68
NORTH KONA	10,522	1,942	757	370	54	4,964	2,283	1,091	159	7,907	3,637	1,738	236
SOUTH KONA	3,113	939	366	179	0	1,889	866	419	33	2,840	1,302	630	45
KAU	2,209	340	133	65	0	831	381	182	10	1,409	647	308	19
<b>TOTAL</b>	<b>52,985</b>	<b>10,117</b>	<b>3,945</b>	<b>1,926</b>	<b>99</b>	<b>24,401</b>	<b>11,001</b>	<b>5,262</b>	<b>397</b>	<b>39,170</b>	<b>16,186</b>	<b>7,738</b>	<b>576</b>

1/ From Table 4-2.

2/ Kindergarten to eighth grade, and high school. Based County ratios of student enrollment to total households from 2000 Census.

3/ Based on Dept. of Education facility planning standards of 550 students per elementary school, 600 per middle School and 1000 per high school.

Acreage is 12 acres for elementary, 18 acres for middle, and 50 acres for high school. Cumulative household increase, projected enrollment, and acreage totals through 2030.

<p><b>TABLE 4-8</b></p> <p><b>PUBLIC AREA NEEDS</b></p> <p><b>PARKS SPACE REQUIREMENTS</b></p> <p><b>2010-2030</b></p> <p><b>COUNTY OF HAWAII</b></p>							
	2000 POPULATION 1/	2010 POPULATION INCREASE 1/	ACRES NEEDED 2/	2020 POPULATION INCREASE 1/	ACRES NEEDED 2/	2030 POPULATION INCREASE 1/	ACRES NEEDED 2/
PUNA	31,335	11,256	23	26,911	54	37,978	76
SOUTH HILO	47,386	91	0	2,405	6	11,865	6
NORTH HILO	1,720	0	0	0	0	0	0
HAMAKUA	6,108	453	1	1,220	2	2,612	5
NORTH KOHALA	6,038	1,879	4	5,235	10	7,377	15
SOUTH KOHALA	13,131	5,053	10	11,295	23	15,936	32
NORTH KONA	28,543	5,481	11	13,732	27	21,764	44
SOUTH KONA	8,589	2,825	6	5,503	11	8,180	16
KAU	5,827	1,223	2	2,581	5	4,179	8
<b>TOTAL</b>	<b>#REF!</b>	<b>28,261</b>	<b>57</b>	<b>68,882</b>	<b>139</b>	<b>109,891</b>	<b>202</b>

1/ Table 4-1

2/ Based on 2 acres per 1,000 population, Planner's Estimating Guide, Arthur Nelson, 2004.  
Cumulative totals from 2000.

<b>TABLE 4-9</b> <b>URBAN LAND REQUIREMENTS</b> <b>2010-2030</b> <b>COUNTY OF HAWAII</b>			
	2010	2020	2030
<b>PUNA</b>	<b>424</b>	<b>1,390</b>	<b>2,046</b>
<b>SOUTH HILO</b>	<b>99</b>	<b>454</b>	<b>1,598</b>
<b>NORTH HILO</b>	<b>2</b>	<b>13</b>	<b>69</b>
<b>HAMAKUA</b>	<b>17</b>	<b>93</b>	<b>235</b>
<b>NORTH KOHALA</b>	<b>234</b>	<b>613</b>	<b>848</b>
<b>SOUTH KOHALA</b>	<b>312</b>	<b>920</b>	<b>1,373</b>
<b>NORTH KONA</b>	<b>138</b>	<b>578</b>	<b>1,039</b>
<b>SOUTH KONA</b>	<b>126</b>	<b>314</b>	<b>468</b>
<b>KAU</b>	<b>18</b>	<b>136</b>	<b>332</b>
<b>TOTAL</b>	<b>1,369</b>	<b>4,513</b>	<b>8,008</b>

Source: Tables 4-4 to 4-8.

Note: Does not include resort requirements.

This table assumes that residential area requirements (Tables 4-3a to 4-3c) need to be met by reclassifying land to the State Urban District. However, particularly in the case of Puna, there are numerous existing lots in the State Agricultural Districts on which houses could potentially be built.

<p><b>TABLE 4-10</b></p> <p><b>SUMMARY TABLE</b></p> <p><b>COMPARISON OF SUPPLY AND REQUIREMENTS OF URBAN LAND 2030</b></p> <p><b>COUNTY OF HAWAII</b></p>			
	Developable Urban Lands 1/	Urban Land Requirements 2030 2/	Surplus/(Deficit)
PUNA	1,650	2,046	(396)
SOUTH HILO	2,420	1,598	822
NORTH HILO	75	69	6
HAMAKUA	194	235	(41)
NORTH KOHALA	1,140	848	292
SOUTH KOHALA	5,555	1,373	4,182
NORTH KONA	8,670	1,039	7,631
SOUTH KONA	24	468	(444)
KAU	485	332	153
<b>TOTAL</b>	<b>20,213</b>	<b>8,008</b>	<b>12,205</b>

1. Report on Urban Land in the State of Hawaii, Part I; Supply of Urban Lands, Office of Planning, May 2006.

Lands in the State Urban District that are urban and five (5) acres or more in size and represent slopes of less than 20 percent.

2. Table 4-9.



<p><b>TABLE 5</b></p> <p><b>STATEWIDE SUMMARY TABLE</b></p> <p><b>COMPARISON OF SUPPLY AND REQUIREMENTS OF URBAN LAND 2030</b></p>			
	<b>Developable Urban Lands 1/</b>	<b>Urban Land Requirements 2030 2/</b>	<b>Surplus/(Deficit)</b>
<b>CITY &amp; COUNTY OF HONOLULU</b>	<b>19,378</b>	<b>15,971</b>	<b>3,407</b>
<b>COUNTY OF KAUAI</b>	<b>2,457</b>	<b>772</b>	<b>1,685</b>
<b>COUNTY OF MAUI</b>	<b>6,151</b>	<b>9,770</b>	<b>(3,619)</b>
<b>COUNTY OF HAWAII</b>	<b>20,213</b>	<b>8,432</b>	<b>11,781</b>
<b>TOTAL</b>	<b>48,199</b>	<b>34,945</b>	<b>13,254</b>

1. Report on Urban Land in the State of Hawaii, Part I; Supply of Urban Lands, Office of Planning, May 2006.  
Lands in the State Urban District that are urban and five (5) acres or more in size and represent slopes of less than 20 percent.
2. Tables 1-10, 2-10, 3-10, and 4-10.

## Bibliography

City and County of Honolulu, Department of Planning and Permitting; Socioeconomic Projections, February 2007.

State of Hawaii Department of Business, Economic Development & Tourism, 2005 Data Book.

State of Hawaii Department of Business, Economic Development & Tourism, Population and Economic Projections for the State of Hawaii to 2030 - DBEDT 2030 Series.

State of Hawaii Department of Labor & Industrial Relations, Job Count by Industry, 2005.

County of Kauai Planning Department, The Kauai General Plan, November 2000.

County of Maui Planning Department; Draft Socio-Economic Forecast, June 2006.

County of Maui Planning Department; Existing Land Use Database, 2004.

County of Maui Planning Department, Draft General Plan, June 2006.

County of Hawaii Planning Department, County of Hawaii General Plan, February 2005.





Nelson, Arthur Planner's Estimating Guide, Projecting Land-Use and Facility Needs, the American Planning Association, 2004.

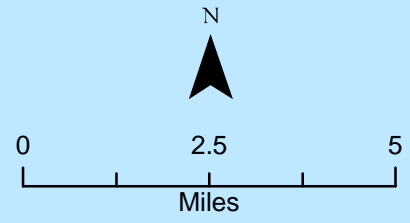
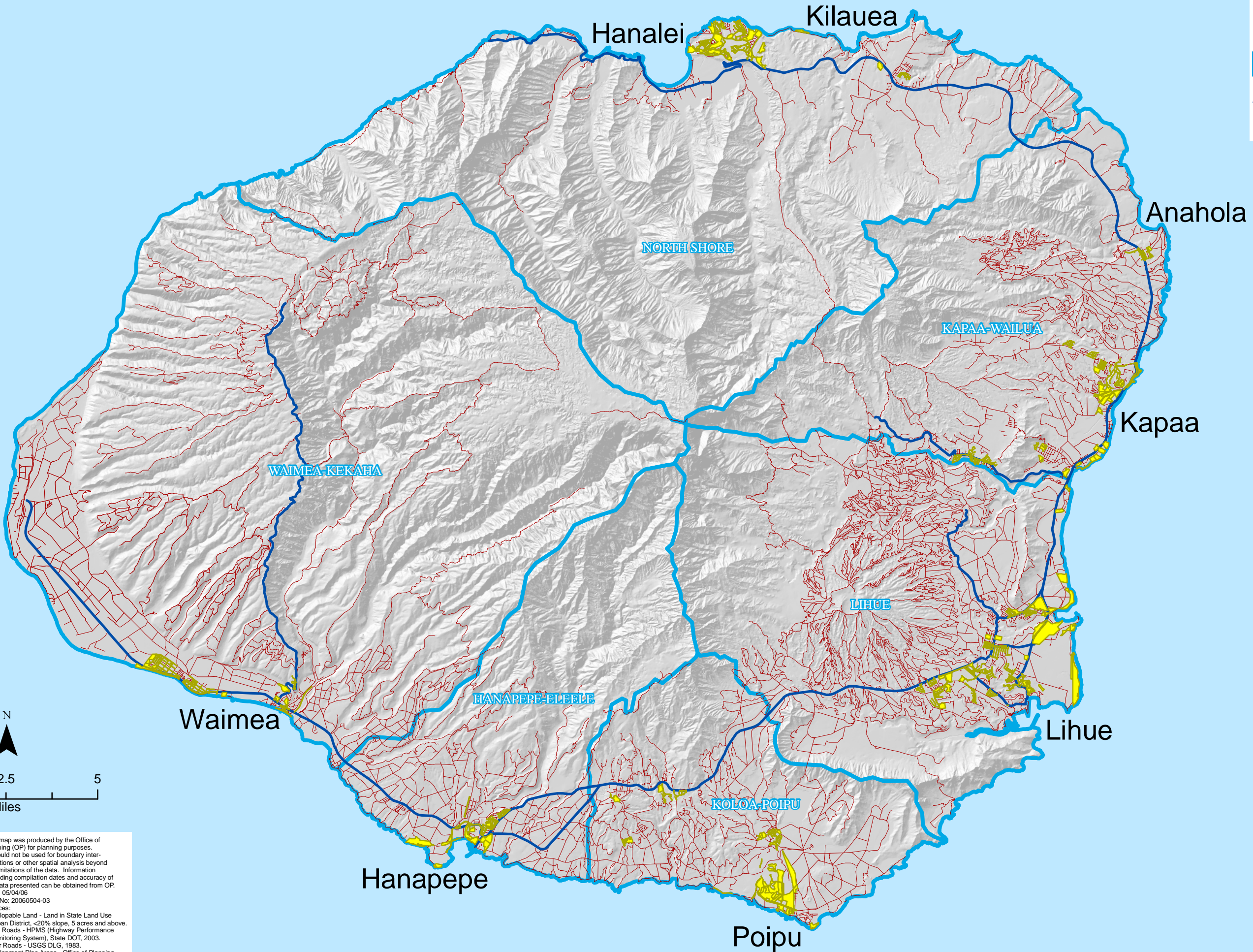
U.S. Census Bureau, Census 2000.


Wilson Okamoto & Associates, State Land Use District Boundary Review Urban Land Requirement Study, 1991.



# Island of Kauai

-  Developable Land
-  Development Plan Area
-  State Roads
-  Minor Roads





**HAWAII**  
**STATEWIDE**  
**GIS**  
**PROGRAM**

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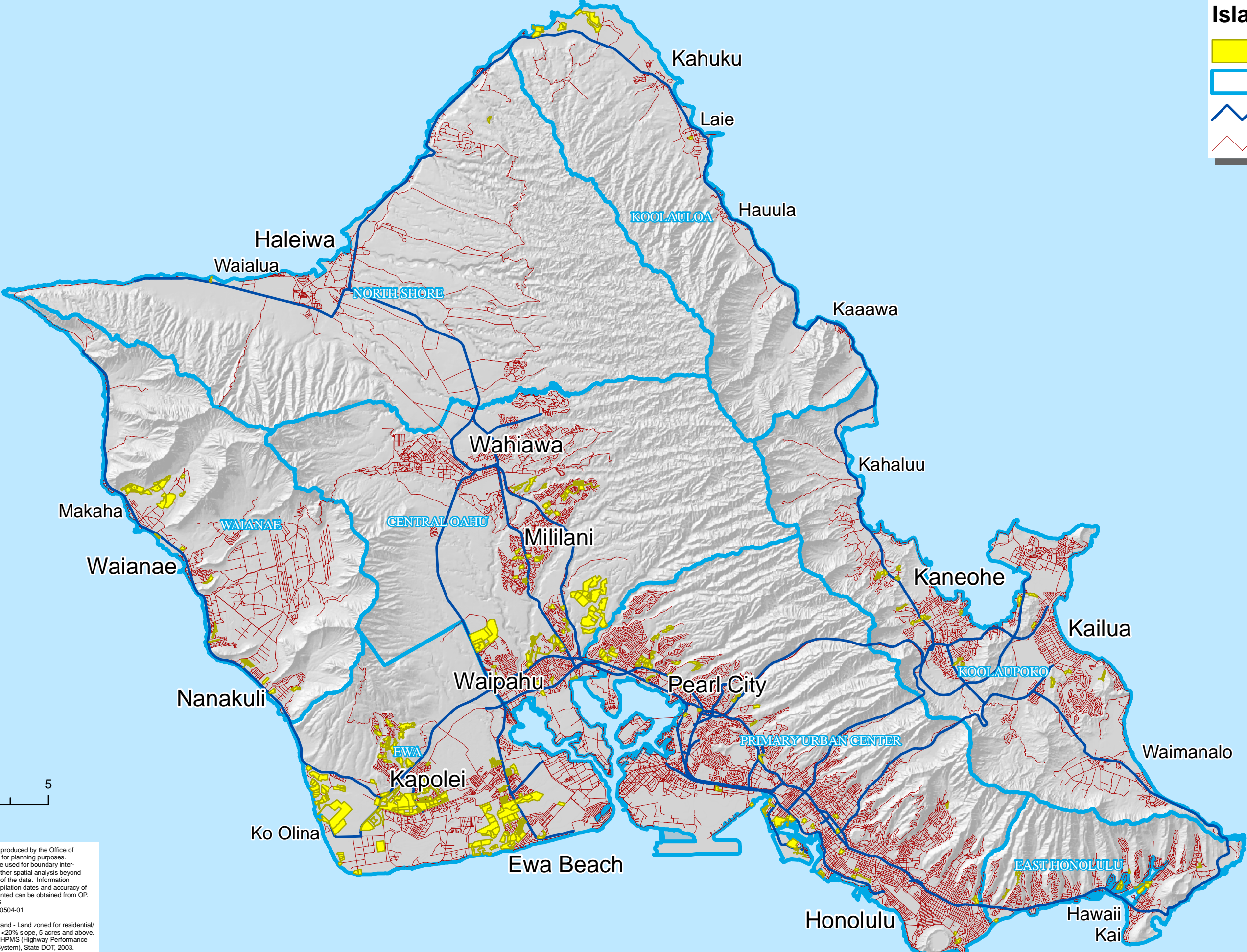
Date: 05/04/06  
Map No: 20060504-03

Sources:  
Developable Land - Land in State Land Use Urban District, <20% slope, 5 acres and above.  
State Roads - HPMS (Highway Performance Monitoring System), State DOT, 2003.  
Minor Roads - USGS DLG, 1983.  
Development Plan Areas - Office of Planning.



Island of Oahu

- Developable Land
- Development Plan Area
- State Roads
- Minor Roads



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Map No: 20060504-01  
Sources:  
Developable Land - Land zoned for residential/commercial, <20% slope, 5 acres and above.  
State Roads - HPMS (Highway Performance Monitoring System), State DOT, 2003.  
Minor Roads - C&C of Honolulu, 2005.  
Development Plan Areas - Office of Planning.



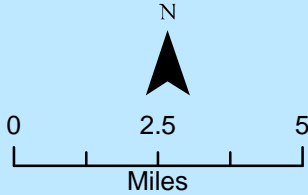
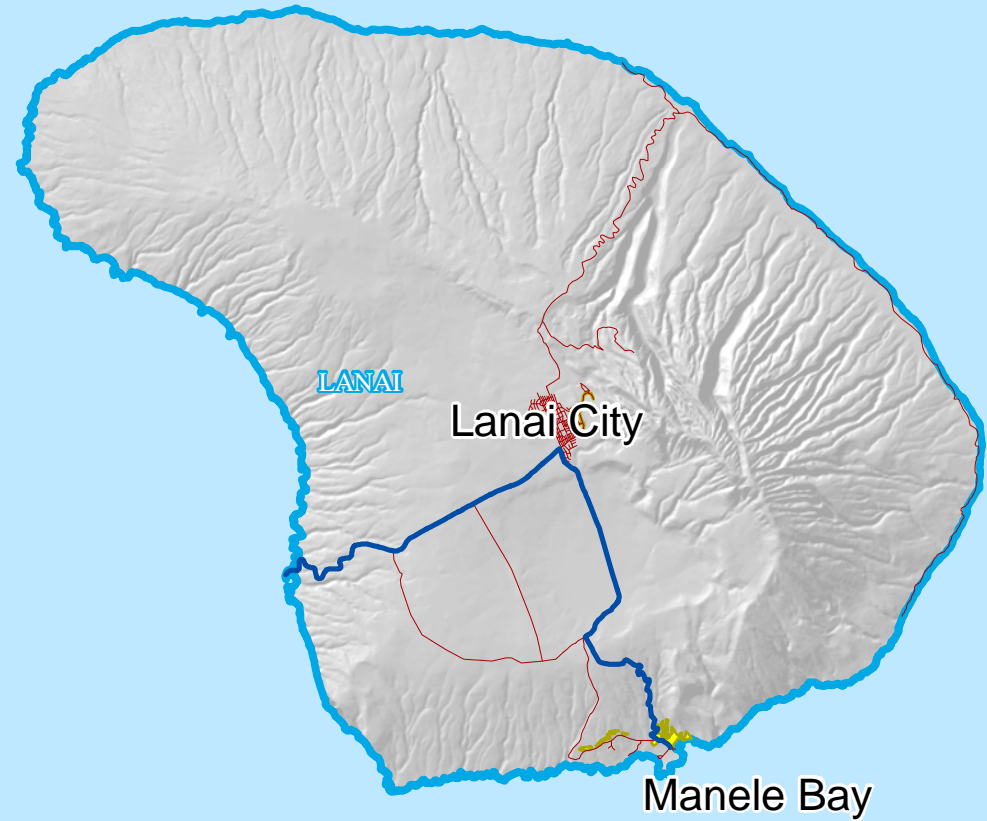
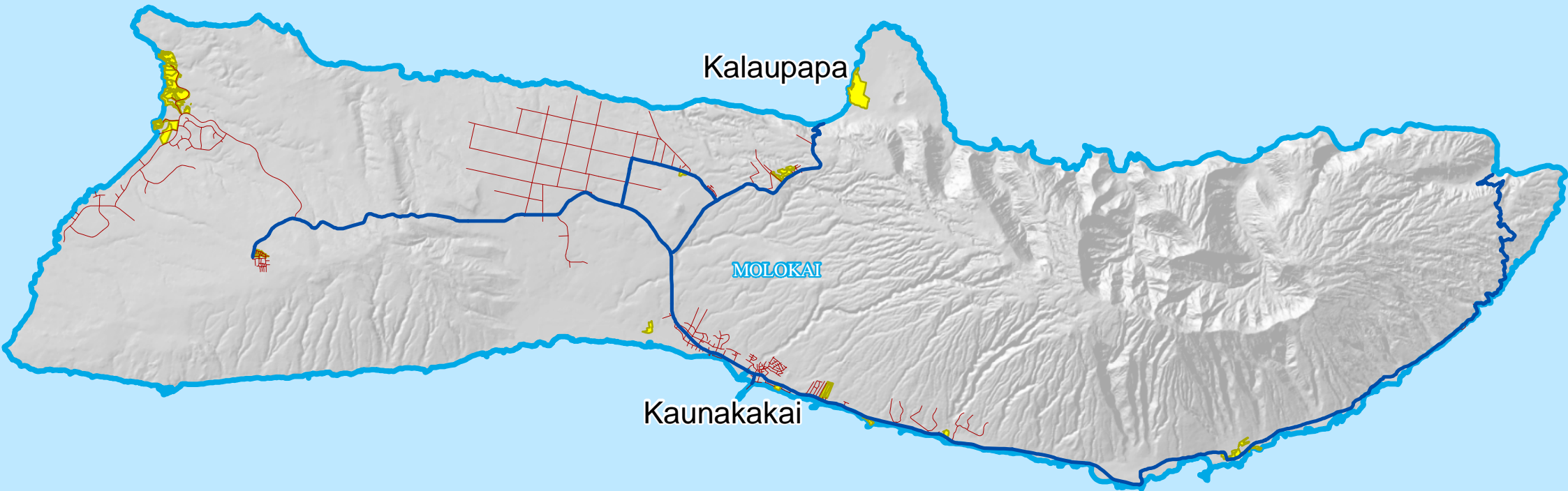
# Islands of Molokai and Lanai

Developable Land

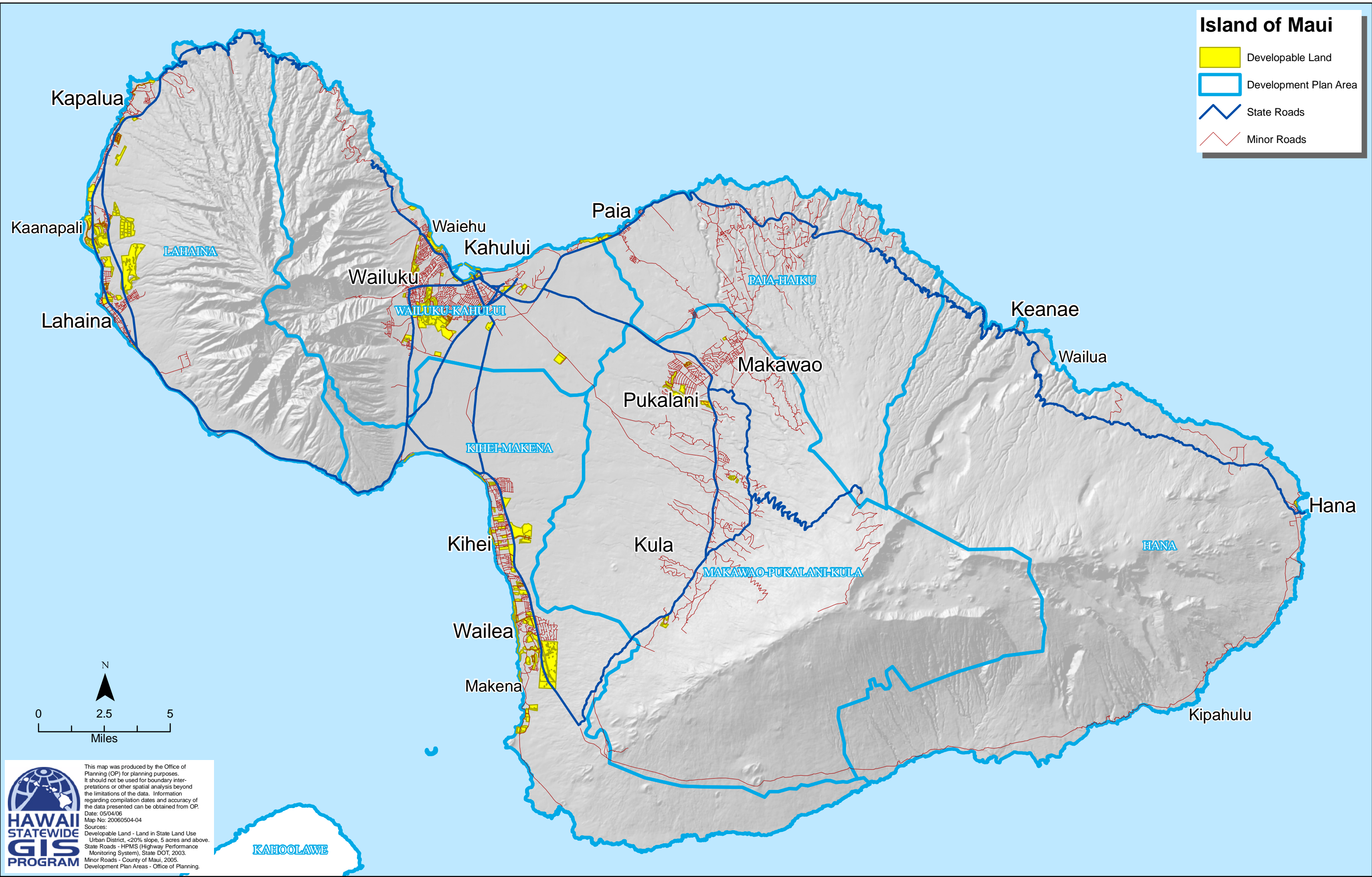
Development Plan Area

State Roads

Minor Roads

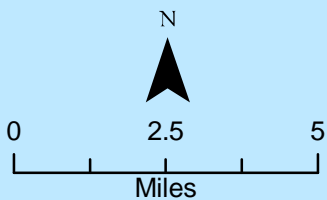






# Island of Maui

- Developable Land
- Development Plan Area
- State Roads
- Minor Roads







This map was produced by the Office of Planning (OP) for planning purposes. It should not be used for boundary interpretations or other spatial analysis beyond the limitations of the data. Information regarding compilation dates and accuracy of the data presented can be obtained from OP.  
Date: 05/04/06  
Map No: 20060504-04  
Sources:  
Developable Land - Land in State Land Use Urban District, <20% slope, 5 acres and above.  
State Roads - HPMS (Highway Performance Monitoring System), State DOT, 2003.  
Minor Roads - County of Maui, 2005.  
Development Plan Areas - Office of Planning.

KAHOOLAWE



# Island of Hawaii

-  Developable Land
-  Development Plan Area
-  State Roads
-  Minor Roads

