

Kaua'i General Plan Update Technical Study

Land Use Buildout Analysis

Submitted to:

**County of Kaua'i
Planning Department**

Prepared by



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Executive Summary

The purpose of this technical study is to support the General Plan Update by compiling an inventory of existing land use, assessing whether the existing zoning capacity can accommodate the projected growth, and analyzing alternative growth scenarios based on existing trends and directed growth assumptions. The data gathered for this study have been provided to the Planning Department as GIS layers and spreadsheets that can be updated. Appendix A lists the data layers, documents the metadata including the data source and attributes, and provides methodology to replicate the analyses. This study used CommunityViz, an ArcGIS extension, to estimate the buildout capacity of existing zoning, identify areas where growth should and should not go (suitability analysis), and simulate alternative growth patterns for the 2035 projected population based on alternative policy assumptions.

Geographical Units

The analysis focuses on Planning Districts. However, Appendix B explains how the data provided can also be disaggregated by Transportation Analysis Zones (TAZ).

The zoning code states that “For the purposes of this Chapter, the County of Kaua’i shall include the districts of Waimea, Kōloa, Līhu‘e, and Kawaihau and Hanalei as described in Section 4-1(4), H.R.S.” (Kaua’i County Code §8-1.4(a)). These are the judicial districts of Kaua’i. The boundaries of the Planning Districts are the same as the judicial districts, except for the Kōloa and Waimea districts. Section 1.2.2 of the report includes a table and map comparing the judicial and Planning District boundaries and the names used to refer to the respective districts.

Land Use Inventory

The types of data and findings from the inventory of existing land use are summarized below.

Land Use Designations

The State Land Use Districts, General Plan, and zoning were disaggregated and tabulated by Planning District. The findings answer the following questions (see Section 2):

- ***To what extent is the island planned for urbanization (i.e., what is the respective percentage of land in the Urban, Agriculture, Rural, and Conservation Districts)?*** Answer: Only 4% is in the Urban District; 55% of the land is in the Conservation District (see Figure 3).
- ***Which Planning District has the most Urban designation?*** Answer: Although Līhu‘e has the most acreage in the Urban District (see Figure 4), South Kaua’i has the highest percentage in the Urban District (see Figure 5).
- ***Is the General Plan consistent with the State Land Use designations?*** Answer: The General Plan designates approximately 5% in urban-related designations (i.e., Residential Communities, Resort, Urban Center) (see Figure 8), which is nearly comparable to the 4% State Land Use Urban designation but implies that there is about 1% of land that the County favors urbanizing that is not currently in the State Land Use Urban District. The General Plan designates 72% of land in the Open District,

significantly more than the percentage in the State Land Use Conservation District (55%). The difference is the respective agricultural designations where the State Land Use designates 41% in Agriculture (Figure 3), while the General Plan is more selective and designates 22% (see Figure 8).

- ***In what Planning Districts does the General Plan envision concentrating future growth in Urban Centers?*** Answer: The Urban Center designation is only in Līhu‘e, East Kaua‘i, and Hanapēpē-‘Ele‘ele, with 77% in Līhu‘e (see Figure 7 and Figure 9). The General Plan also identifies less dense town centers in each Planning District.
- ***How does the zoning compare with the State Land Use and General Plan designations?*** Answer: Table 2 compares the State Land Use, General Plan, and related zoning designations by Planning Districts.

Existing Land Uses

Irrespective of zoning, what is the actual use of the land? For example, there are single-family residences in the Open, Agriculture, Commercial, and Resort zoning districts besides the Residential zoning districts. ***Is there a cost-effective method to inventory and update the actual land uses?*** Answer: There is currently no cost-effective way, but there could be. The suggested means to collect and continually update this data is to closely coordinate with the information needs of the Planning Department and Real Property Tax appraisers. Table 3 correlates the tax class/rates to the PITT Code. In the past, the PITT Code was based on the “highest and best use,” which usually is the same as zoning. The current method is to base the tax on the property’s actual use (see section 3). With the emerging trend to mixed use zoning, there will be less correspondence between zoning and the property tax classes.

As the Real Property Tax Division (“RPT”) transitions its appraisal methods from zoning to actual use, the current PITT Code is not a reliable indicator of actual use. Workarounds were developed for the inventory in this report, but future updates could use the PITT Code together with other tax appraisal data currently being refined by RPT. The inventory findings and suggestions are as follows:

- Residential
 - Findings. The major obstacle was identifying multi-family units since it seemed that the PITT Code 200 may have been used to identify Transient Vacation Rentals. The workaround was to identify dwelling units using census data as reported by the SMS Study without distinguishing single-family from multi-family. The data enabled tabulating dwelling units by Planning Districts, but could not drill down to the parcel level. In 2035, East Kaua‘i would have the greatest number of dwelling units followed by Līhu‘e and South Kaua‘i, but Līhu‘e would experience the highest growth rate (3.5% average annual growth rate compared to 0.6% for East Kaua‘i) (see Table 5).
 - Future Inventory Suggestions. Using RPT’s refined methodology, all residential class property based on actual use will receive a PITT 100 or 800 (a property exclusively used as the homeowner’s primary residence will qualify for the Homestead Class (PITT 800)). Living units will be counted for each parcel. The definition of “living units” is consistent with the zoning code’s “dwelling unit” based on the definition of kitchen. Property tax appraisers could use Planning Department’s Additional Dwelling Unit (ADU) permit database to crosscheck. A

distinction among single-family, duplex, and multi-family dwelling units would be possible using RPT's "occupancy" code (e.g., occupancy code= SF, MF, 2-family, guest house no kitchen). Currently, there is no reliable inventory on multi-family units, so a unit count for these types of units would fill a data gap. RPT will develop a separate GIS layer for condominiums that could be overlaid on the parcel layer to determine whether the parcel has been condominiumized.

- Hotel and Resort.
 - Findings. The Visitor Plant Inventory provides a comprehensive list of visitor units; however, the Hawai'i Tourism Authority could not share the TMK data for the listed properties. The current PITT Code for hotels and other resort uses seemed to be based on zoning. The County's register of TVR's is still a work in process. Using the PITT Code, local knowledge, and Google Earth, the GIS inventory in this report attempted to locate the major visitor facilities (e.g., hotels, condo hotels, timeshares but not bed & breakfasts or TVRs). If the PITT Code is the basis for determining the Tax Rate Class, then it is possible that the County may be under-appraising certain properties if the PITT Code is based on zoning (see Table 11). According to the Visitor Plant Inventory, South Kaua'i has the most visitor units followed by East Kaua'i, North Shore, and Līhu'e (see Table 12). The acreage of the Visitor Destination Areas is most extensive in South Kaua'i, followed by North Shore and Līhu'e. Hanapēpē-'Ele'ele is the only Planning District that does not have a Visitor Destination Area (see Figure 15 and Table 12). Not all General Plan Resort designations fall within Visitor Destination Areas; not all Visitor Destination Areas are within the General Plan Resort (see Figure 21 to Figure 26).
 - Future Inventory Suggestions. Based on RPT's refined appraisal methodology, the future inventory would be able to identify hotels/resorts (PITT 700) and dwellings used as transient accommodations (i.e., vacation rentals or bed & breakfasts) (PITT 200). Hotels are permitted in the Resort or Commercial General zoning districts. Regardless of zoning, the resort use would be assigned PITT Code 700 corresponding to the Hotel & Resort Tax Rate Class. Collecting data on the number of units or rooms would enable crosschecking the Visitor Plant Inventory. Between the Planning Department's TVR registers and RPT's appraisal data, the resort inventory should be able to locate and distinguish at the parcel level the following:
 - All properties on the Visitor Plant Inventory and number of units, updated with each new year, cross-checked with PITT code
 - All transient vacation rentals
 - Nonconforming transient vacation rentals (outside the VDA)
 - Potential illegal TVR units
 - Timeshare units (identified by RPT's neighborhood code)
 - Proposed resort projects with status of approval, type of project consistent with the Visitor Plant Inventory classification, number of units, and anticipated date of occupancy, as updated with permit data from the Planning Department.
- Commercial and Industrial.
 - Findings. The PITT Code 300 was relied upon to identify commercial properties, and PITT Code 400 for industrial properties. To determine floor area, the

inventory used the building footprint data from the County (derived from Pictometry aerial photos) and assumed all commercial and industrial buildings as one story. Based on this methodology, Līhu‘e has 49% of the commercial floor area, followed by East Kaua‘i and South Kaua‘i (see Table 15). For industrial, Līhu‘e has 81% of the floor area, followed by the Port Allen area of Hanapēpē-‘Ele‘ele and East Kaua‘i (see Table 17). When projecting the commercial and industrial floor area required to meet the needs of the 2035 population, the SMS jobs projection did not include a finer breakdown into job types such as retail, office, resort, agriculture-related, and industrial that would have enabled a floor area per employee projection. As a workaround, a ratio of the existing population to commercial and industrial floor area was developed for each Planning District and assumption made that this ratio adequately serves the existing population and could be extrapolated to determine the 2035 commercial needs based on the projected 2035 population. Assuming those are valid assumptions, the commercial ratio for East Kaua‘i seemed significantly low—less than Waimea-Kekaha and Hanapēpē-‘Ele‘ele (see Table 16). With the second highest visitor unit count, the commercial potential for East Kaua‘i would be enhanced by visitor customers. Economic policies developed by the General Plan update and/or community plans would be the means to assess the adequacy and appropriate locations for industrial zoned lands.

- Future Inventory Suggestions. RPT will collect gross floor area for commercial and industrial buildings. There is an excellent but outdated (1995) commercial inventory that can be used as a starting point. When updating the population and economic projections, consider a finer breakdown of the jobs projection by job types.
- Agriculture.
 - Findings. To control residential intrusion onto agricultural lands, the State Land Use Law (HRS chapter 205) requires dwellings to be “farm dwellings” where the occupant must derive income from agricultural activity. Any lot created prior to 1976 is exempt from the farm dwelling requirement. The pre-Statehood government created homestead lots that fall under this exemption. These lots are located primarily in East Kaua‘i and South Kaua‘i. In these districts, a significant proportion of the residential population reside on these homestead lots. Since agricultural policies are not entirely applicable to these homestead lots, it may be appropriate for the General Plan update to consider a rural or other designation to distinguish these lots from bona fide agricultural lots. Besides identifying the homestead lots (see Figure 30 and Figure 31), the inventory also identified parcels that have been condominiumized (see Figure 32 and Figure 33), dedicated for real property tax purposes (see Figure 32 and Figure 33), or designated as Important Agricultural Lands (IAL) (see Figure 32 and Figure 33).
 - Future Inventory Suggestions. When mapping the dedicated parcels, clearly define the acreage dedicated that excludes the “homesite” and “unusable” areas as required by the Real Property Division rules. That information must be in the records and just needs to be included in any future update of this inventory. For parcels with condominium units, RPT will develop a GIS condominium layer which the Planning Department can use to monitor zoning density requirements.
- Public Facilities.

- Findings. Based on a list of State and County public facilities provided by the County, a GIS layer was prepared to identify and locate the facilities. The inventory classified the public facilities into the following categories: Community (e.g., library, neighborhood center), Energy (e.g., power plant), Medical (e.g., hospital), Public Safety (e.g., corrections, fire, police), Recreation (e.g., parks), Schools (public and private), Transportation (e.g., airport, harbor), and Waste Disposal (e.g., landfill, wastewater treatment plant). The inventory could be used by the General Plan update and/or community plans to assess level of service adequacy.
- Future Inventory Suggestions. The inventory is complete and would just need to be updated as new facilities are built or old facilities discontinued. This inventory could also be used as the basis for a capital improvements inventory and/or maintenance schedule (asset management).

Buildout Scenarios

This study addressed the following questions related to future buildout potential and alternatives:

- **What has been the past growth trend?**
 - *Answer: Based on building permit data over 15 years (1995-2009), most new residential activity occurred in the North Shore, East Kaua'i, and South Kaua'i. The activity seemed to sprawl into the Agriculture and Open districts (combined 39%) and lower density residential districts of R-4 and R-2 (combined 29%). Only 17% occurred in the R-6 medium density zoning district, and less than 1% in multi-family zoning districts (e.g., R-15, R-20). Over the 15-year period, a total of approximately 3500 new homes were built on the island resulting in an average of 230 homes per year (see section 4.3.2).*
- **What could be the future growth pattern if we allow this trend to continue?**
 - *Answer: If future growth occurs in the vicinity of existing development and on the most affordable lands (lowest assessed values), a potential scenario is that 25% of the 2035 dwelling units would be in the Agriculture zoning district, 8% in the Open district, and the balance of 67% in the Residential districts (see Figure 40).*
- **If future growth were to be directed to the Residential zoning districts, is there sufficient capacity to accommodate the projected 2035 population?**
 - *Answer: Theoretically, if all existing and projected residential dwellings were located entirely on Residential-zoned parcels, the supply of existing Residential-zoned parcels falls slightly short to accommodate the 2035 projected population (see section 4.1.2)—the 2035 occupied units projection is approximately 30,000 and the Residential zoning capacity is approximately 27,000. Recognizing that the actual residential buildout is not confined to the Residential zoned parcels and includes Agricultural and Open zoned parcels, can the vacant Residential-zoned parcels accommodate the added population from 2010 to 2035? Answer: Yes, with possible shortages in Lihu'e and East Kaua'i (see Table 19). Both districts have General Plan Urban Center designations where higher density mixed use zoning could remedy the shortage—on the high side these mixed use urban and town centers could add 12,000 units or 40% of the projected dwelling units (see section 5.3.1). In short, even if the buildout analysis indicate a*

potential deficiency of Residential-zoned lands to accommodate the 20-year projected population, the Urban and Town Centers could readily compensate with mixed-use higher densities. Moreover, the buildout analysis is a conservative analysis that does not factor market conditions, infrastructure constraints, environmental constraints, and many other factors that influence actual buildout. Therefore, the point of this analysis is that the capacity of Residential-zoned lands is at that margin that bears monitoring, but this analysis should not be used as the sole justification for rezoning.

- **What could be the growth pattern if future growth were directed to infill into higher-density mixed-use urban and town centers?**
 - *Answer: The new or redeveloped urban and town centers could absorb a significant proportion of the 2035 population (see Table 23). This increased supply could keep market prices reasonable to infill within existing Residential zoned areas or agricultural homestead lots. Hopefully that would produce less market pressure to develop non-homestead agricultural and Open zoned lands.*
- **Is there a need for additional Resort zoning to accommodate the projected 2035 visitor units?**
 - *Answer: Based on the SMS and Visitor Plant Inventory data and projections, the answer is no. The proposed projects on Resort-zoned land result in excess capacity (see Table 24). The North Shore may have a slight deficiency, however the North Shore has an extensive VDA that allows the supply of transient vacation rentals to ebb and flow in response to market fluctuations. Nevertheless, there may be other reasons on a case by case basis to rezone to Resort, such as aging of the resort infrastructure, vagaries in the occupancy rate, unpredictable global economy, or shifts in visitor accommodation preferences.*

Summary by Planning District

The following highlights the findings of the study by Planning District.

North Shore

- 40% of the General Plan Resort is in this Planning District (see Figure 9);
- Portions of General Plan Resort are outside the VDA within the State Land Use Agricultural District (see Figure 22);
- Based on building permit data, this district and East Kaua‘i had the most residential construction activity over the last 15 years (see Figure 37);
- This is the only district where the proposed visitor units together with the existing inventory may be deficient to meet the 2035 projected visitor; however, this district has one of the most extensive VDA where potential capacity of transient vacation rentals can remedy any deficiency (see Table 24);
- Under a Status Quo scenario, this district would receive a significant proportion of future growth in the Agricultural and Open zoning districts; conversely, this district would receive significant less future growth under a Directed Growth scenario favoring Urban and Town Centers (see Figure 43).

East Kaua‘i

- The extent of commercial-zoned land seems notably deficient for a resort-influenced area (see Table 16);
- Besides South Kauaʻi, this district is one of two Planning Districts with extensive agricultural homestead lots (see Figure 31 and Figure 34); however, this district also has a General Plan Urban Center for future mixed use zoning beyond the existing Residential zoning, as well as infill potential within the agricultural homestead lots;
- Based on building permit data, this district and North Shore had the most residential construction activity over the last 15 years (see Figure 37).

Līhuʻe

- Nearly a third of the island’s State Land Use Urban District is in the Līhuʻe Planning District (see Figure 4);
- Līhuʻe has 49% of the commercial floor area (see Table 15) and 81% of the industrial floor area (see Table 17);
- Based on population projections to 2035, Līhuʻe would experience the highest growth rate (see Table 5);
- Nearly 80% of the General Plan Urban Center is in the Līhuʻe Planning District (see Figure 9);
- As the major Urban Center, this district would receive a significant proportion of future growth under a Directed Growth scenario (see Figure 43).

South Kauaʻi

- South Kauaʻi Planning District boundaries differ from Kōloa judicial district (see Table 1 and Figure 1);
- This district has the largest VDA in terms of acreage and most visitor units at approximately 3,000 units according to the Visitor Plant Inventory (see Table 12);
- Besides East Kauaʻi, this district is one of two Planning Districts with extensive agricultural homestead lots (see Figure 30).

Hanapēpē-ʻEleʻele

- Hanapēpē-ʻEleʻele Planning District boundaries differ from Waimea judicial district (see Table 1 and Figure 1);
- This is the only Planning District that does not have a VDA.

Waimea-Kekaha

- Waimea-Kekaha Planning District is entirely within but consists of a portion of the Waimea judicial district (see Table 1 and Figure 1);
- A third of the island’s State Land Use Agricultural and Conservation District lands are within this Planning District (see Figure 4), as well as a third of the General Plan Open District (see Figure 9);
- Portions of General Plan Resort are outside the VDA within the State Land Use Agricultural District (see Figure 26).

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1 Introduction

This technical study on land use buildout is one of four technical reports providing a factual foundation to support the General Plan update. The other three studies are related to (1) socio-economic projections, (2) infrastructure needs and (3) climate change and coastal hazards.

1.1 Purpose and Objectives

The purpose of the land use buildout study is to assess whether the supply of existing urban-planned lands is sufficient to accommodate the population and economic growth projected for Kaua'i County to the year 2035. The land uses analyzed include resort, agriculture, single-family residential, multi-family residential, commercial and industrial. The demand forecast is based on the Kaua'i County Socio-Economic Forecast Report (hereafter referred to as the "SMS Study")¹ - one of the technical studies supporting the General Plan Update. A secondary purpose is to develop a GIS land use database that would be useful for the General Plan Update, including an inventory of existing land uses and a protocol to update the inventory.

1.2 Geographical Units

The land use information is analyzed by various geographical units defined below.

1.2.1 Parcels

1.2.1.1 Definition

The parcel is the geographical unit recognized and assessed by the County Real Property Tax Office. It is identified by a unique tax map key number. Although a parcel can be further divided into condominium units, this study does not disaggregate the data to the condominium level. The County GIS parcel layer does not include condominium units. The Real Property Tax Division plans to develop a condominium GIS layer in the near future.

1.2.1.2 Source

The County Real Property Tax Division updates the parcel layer periodically, ideally at least annually. The update consists of incorporating the latest approved subdivisions and ownership changes. This study uses the 2012 parcel layer. GIS procedures are provided with this study to enable the County to update the buildout analysis with updated parcel layers (see methodology in Appendix A).

1.2.2 Planning Districts

1.2.2.1 Definition

The planning district is nearly equivalent to the judicial district. The boundaries of the judicial district are established pursuant to Hawai'i Revised Statutes §4-1(4) as referenced in the zoning code §8-1.4(a). The boundaries of the planning and judicial districts are the same except for the

¹ (SMS Research & Marketing Services, Inc., February 2014)

Kōloa and Waimea districts. The Waimea judicial district has been split into two planning districts—Waimea-Kekaha and Hanapēpē-‘Ele‘ele. The Hanapēpē-‘Ele‘ele Planning District includes a portion of the Kōloa judicial district. Table 1 below and Figure 1 compare the planning and judicial districts. In terms of geographical size, the largest planning district is Waimea-Kekaha, followed by North Shore, Līhu‘e, Kapa‘a-Wailua, South Kaua‘i, and Hanapēpē-‘Ele‘ele.

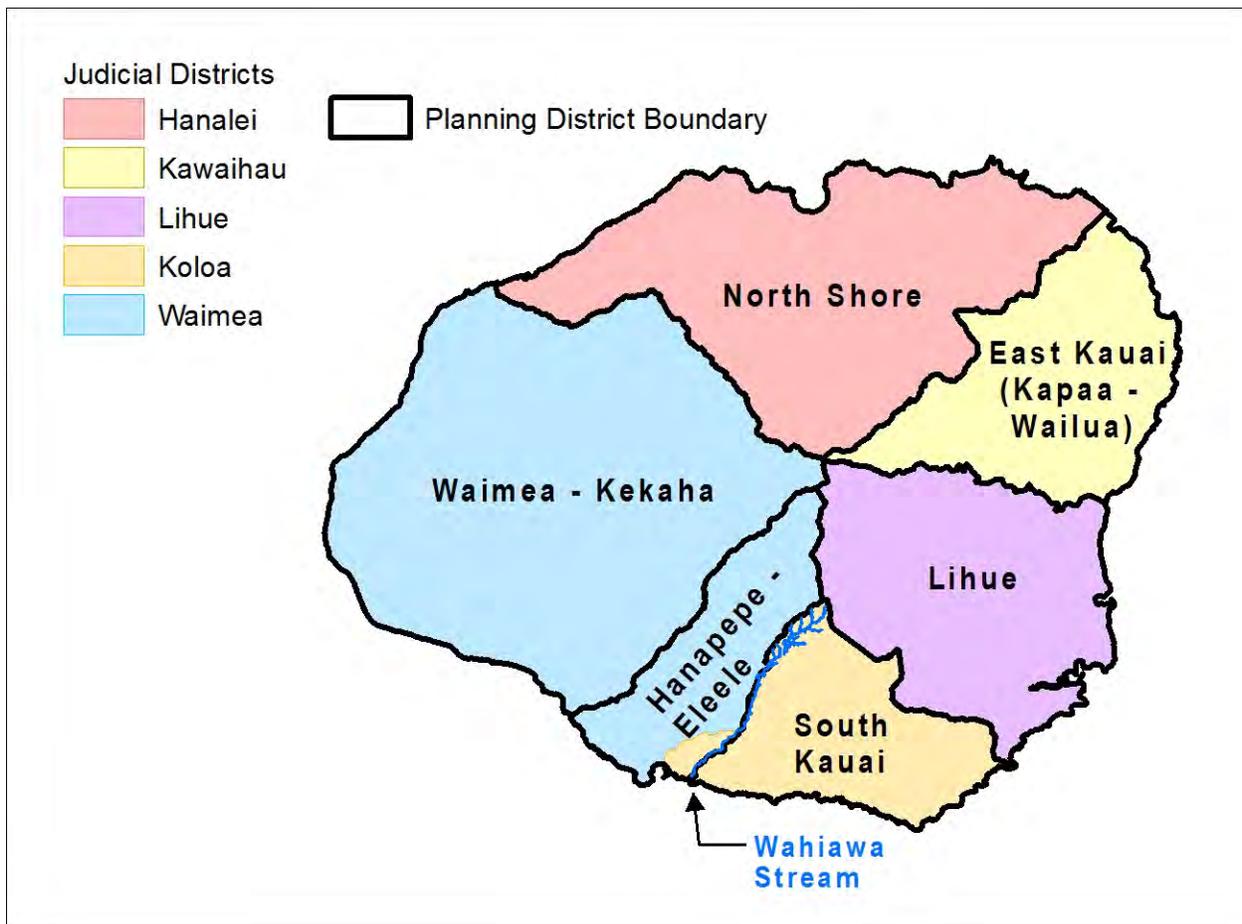
TABLE 1. COMPARISON OF JUDICIAL VS. PLANNING DISTRICTS

Judicial District Name	Planning District Name	Boundary Comparison
Hanalei	North Shore	Same boundaries
Kawaihau	East Kaua‘i (or Kapa‘a-Wailua or Kawaihau-Kapa‘a)	Same boundaries
Līhu‘e	Līhu‘e	Same boundaries
Kōloa	South Kaua‘i (formerly Kōloa-Po‘ipū—Kalāheo)	South Kaua‘i Planning District western boundary follows Wahiawa Stream, and does not include the portion of Kōloa judicial district that includes ‘Ele‘ele.
Waimea	Hanapēpē-‘Ele‘ele	The Hanapēpē-‘Ele‘ele Planning District includes a portion of the Kōloa judicial district up to Wahiawa Stream.
	Waimea-Kekaha	The eastern boundary of the Waimea-Kekaha Planning District is defined by ridgeline defined by TMK 1-7-001:001 and Mahinauli Stream (Maku Gulch)

1.2.2.2 Source

The Planning Department provided a map and GIS file for the planning districts that will be used for the General Plan Update and ongoing Development Plan updates (e.g., Līhu‘e Community Plan, South Kaua‘i Community Plan). The County Charter empowers the Planning Director to prepare the General Plan and development plans (County Charter §14.05.A.), and thereby determine the planning district boundaries to implement the General Plan.

FIGURE 1. COMPARISON OF JUDICIAL VS. PLANNING DISTRICTS



GIS: See Appendix A: Map Package- Geographical

1.2.3 Traffic Analysis Zones (TAZ)

1.2.3.1 Definition

The Traffic Analysis Zone (TAZ) is the geographic unit most commonly used in transportation planning and analysis. Each TAZ defines an area containing similar kinds of land use and commuter travel. It is used by transportation planners to forecast changes in commuting patterns, trip volumes, and modes of travel, and to develop plans to meet the changing demands for transportation facilities and capacities.²

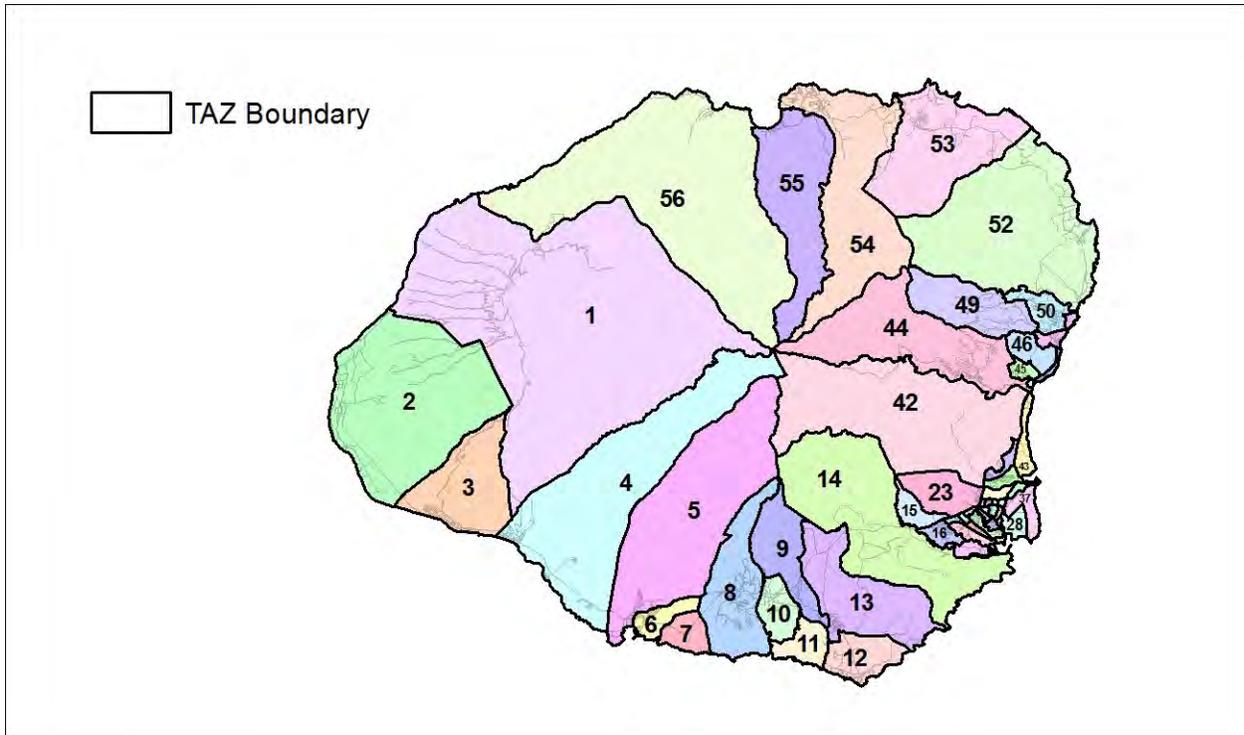
1.2.3.2 Source

The Planning Department provided a State of Hawai'i Department of Transportation GIS file for the TAZ boundaries that will be used for the General Plan Update and ongoing Development

² TAZ definition from the U.S. Census Bureau.

Plan updates.³ The TAZ boundaries usually change with each census, as the census block geography changes.

FIGURE 2. TRAFFIC ANALYSIS ZONES (TAZ)



GIS Source: See Appendix A: Map Package- Geographical

1.2.4 County

Kaua'i County consists of the islands of Kaua'i, Ni'ihau, Lehua, and Ka'ula (County Charter §1.02). However, for purposes of this study, "County" refers to the island of Kaua'i.

³ US Census Bureau provides TAZ boundaries, but the Census version is different from the County's version that is used for this analysis.

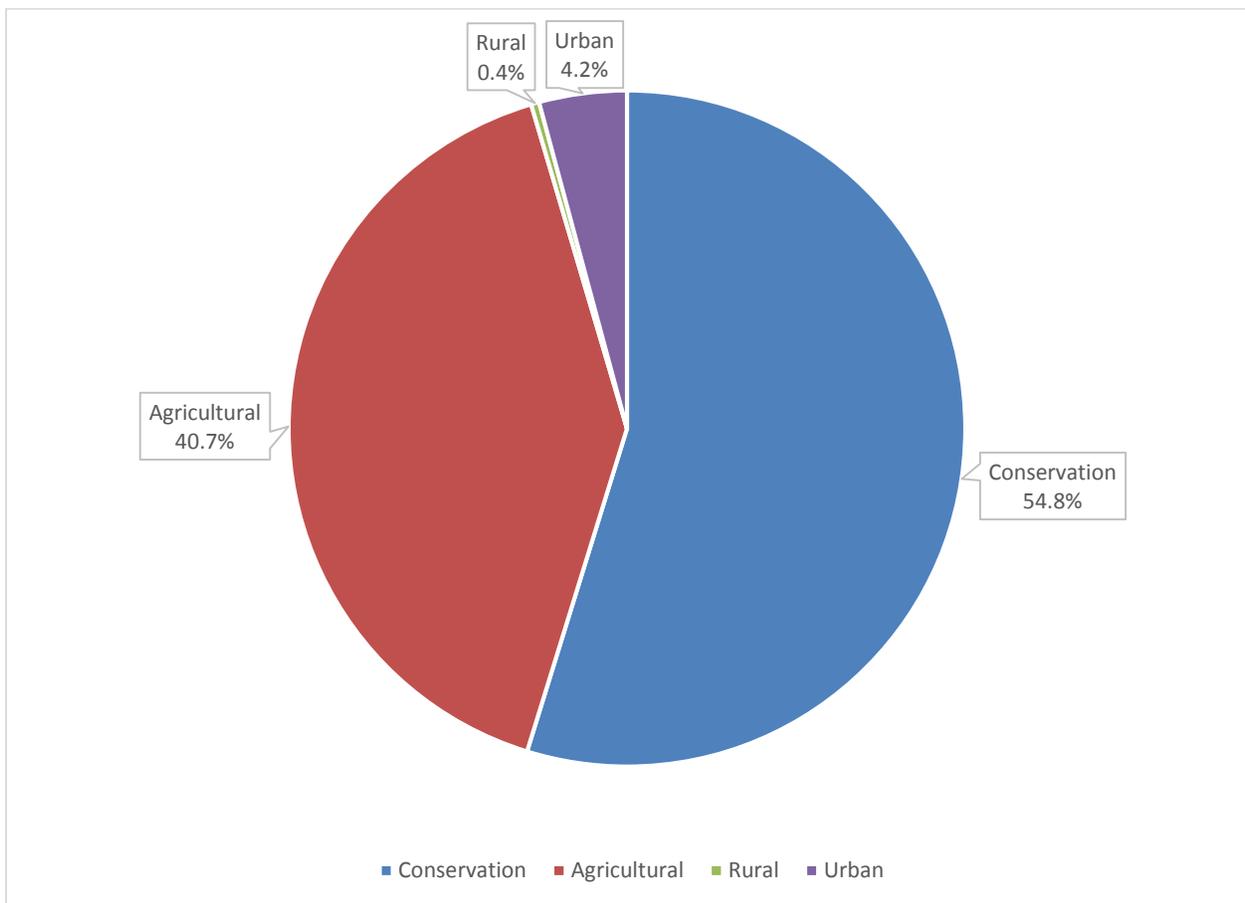
2 Land Use Designations by Planning Districts

This section describes the existing pattern of land use based on the land use designations for the State Land Use Districts, General Plan, and zoning.

2.1 State Land Use District

The State Land Uses Districts consist of Conservation, Agricultural, Rural, and Urban. The Conservation District comprises over 50% of the island, followed by nearly 40% in the Agricultural District (see Figure 3). The Urban District comprises only 4% of the island, and the Rural District is negligible.

FIGURE 3. PERCENTAGE OF LAND IN STATE LAND USE DISTRICTS



Data Source: See Appendix A: Excel File- ExistLandUseInventory_1

From a Countywide perspective, the proportionate breakdown of the State Land Use Districts by Planning District is as follows (see Figure 4 and Figure 5):

- Conservation District. Nearly two-thirds of the Conservation District in the County are in Waimea-Kekaha (36%) and North Shore (32%). The remaining one-third is spread in

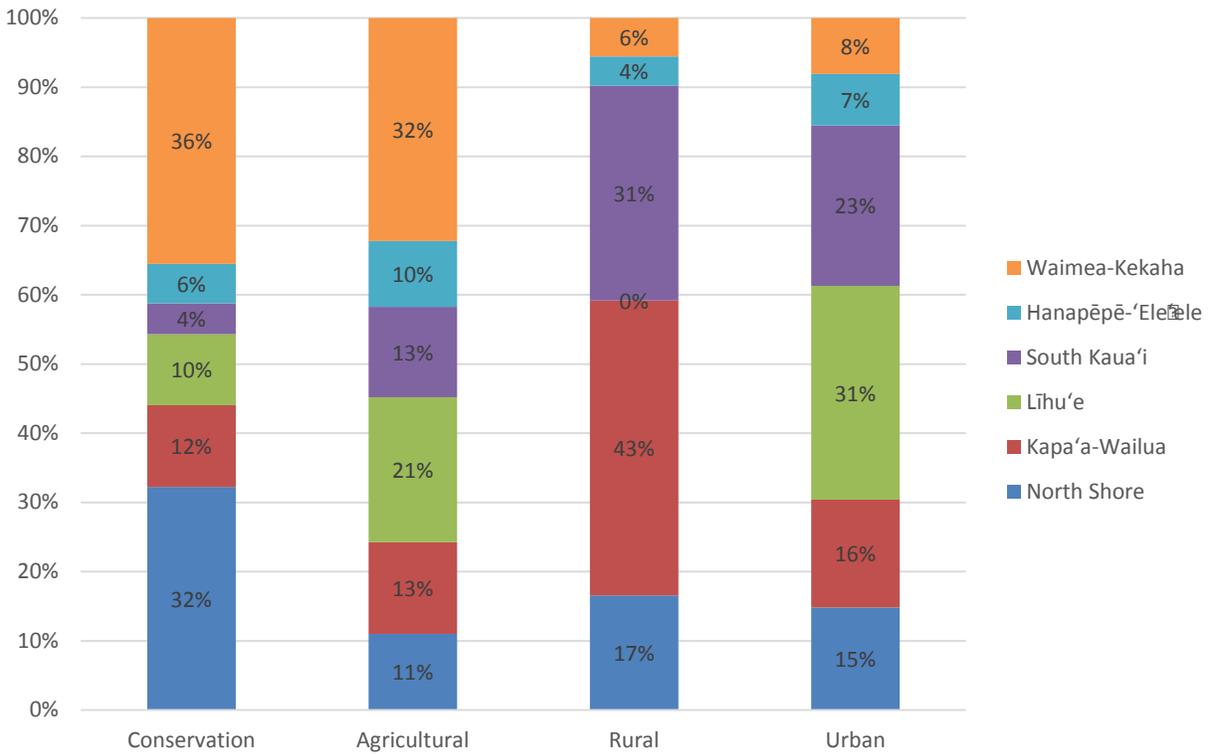
descending rank among the districts of Kapa'a-Wailua (12%), Līhu'e (10%), Hanapēpē-'Ele'ele (6%), and South Kaua'i (4%).

- Agricultural District. Nearly one-third of the Agricultural District in the County is in Waimea-Kekaha (32%). The remaining two-thirds are spread fairly equally in descending rank among the districts of Līhu'e (21%), Kapa'a-Wailua (13%), South Kaua'i (13%), and Hanapēpē-'Ele'ele (10%).
- Rural District. Nearly 70% of the Rural District in the County is in Kapa'a-Wailua (43%) and South Kaua'i (31%). The remaining 30% are spread in descending rank among the districts of North Shore (17%), Waimea-Kekaha (6%), and Hanapēpē-'Ele'ele (4%). Līhu'e does not have any Rural Districts.
- Urban District. Nearly 50% of the Urban District in the County are in Līhu'e (31%) and South Kaua'i (23%). The remaining 50% are spread in descending rank among the districts of Kapa'a-Wailua (16%), North Shore (15%), Waimea-Kekaha (8%), and Hanapēpē-'Ele'ele (7%).

In terms of the Planning Districts, the breakdown of the State Land Use Districts within each Planning District is as follows (see Figure 4):

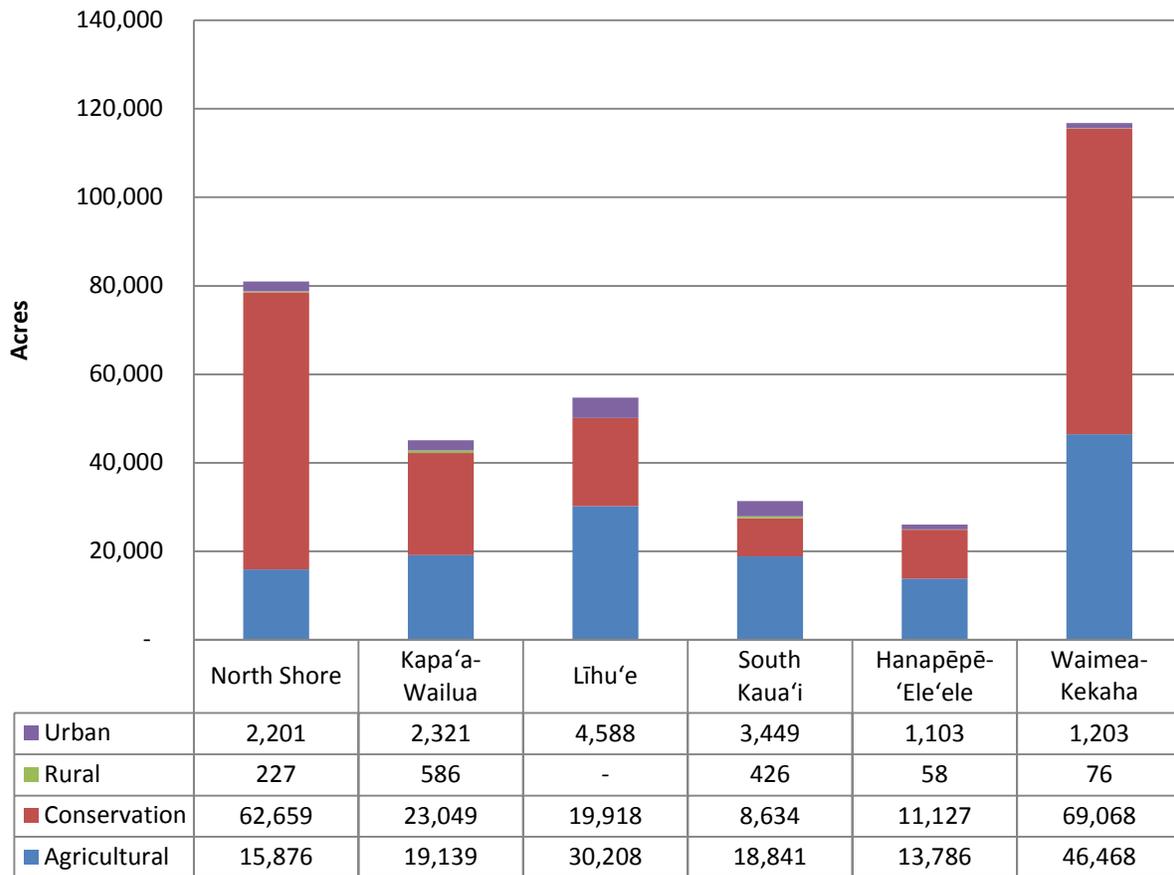
- North Shore. Conservation predominates (77%), followed by Agricultural (20%) and Urban (3%), with negligible acreage in the Rural District.
- Kapa'a-Wailua. Conservation comprises half the district (51%), followed by Agricultural (42%) and Urban (5%), with negligible acreage in the Rural District.
- Līhu'e. Agricultural comprises half the district (55%), followed by Conservation (28%) and Urban (8%), with no acreage in the Rural District.
- South Kaua'i. Agricultural predominates (60%), followed by Conservation (42%) and Urban (11%), with negligible acreage in the Rural District.
- Hanapēpē-'Ele'ele. Agricultural comprises half the district (53%), followed by Conservation (43%) and Urban (4%), with no acreage in the Rural District.
- Waimea-Kekaha. Conservation predominates (59%), followed by Agricultural (40%) and Urban (1%), with negligible acreage in the Rural District.

FIGURE 4. PROPORTIONATE BREAKDOWN OF THE STATE LAND USE DISTRICTS BY PLANNING DISTRICT



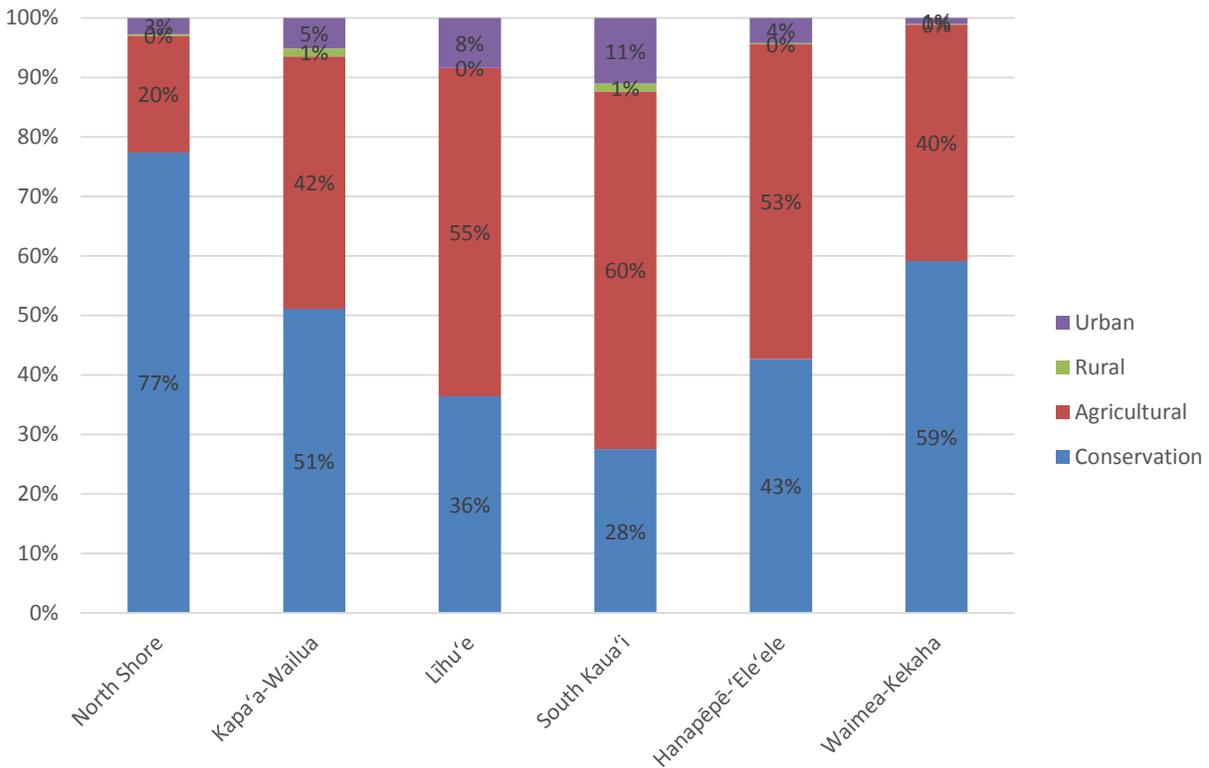
Data Source: See Appendix A: Excel File- ExistLandUseInventory_1

FIGURE 5. STATE LAND USE DISTRICTS BY PLANNING DISTRICT--ACREAGES



Data Source: See Appendix A: Excel File- ExistLandUseInventory_1

FIGURE 6. STATE LAND USE DISTRICTS BY PLANNING DISTRICT-- PERCENTAGE

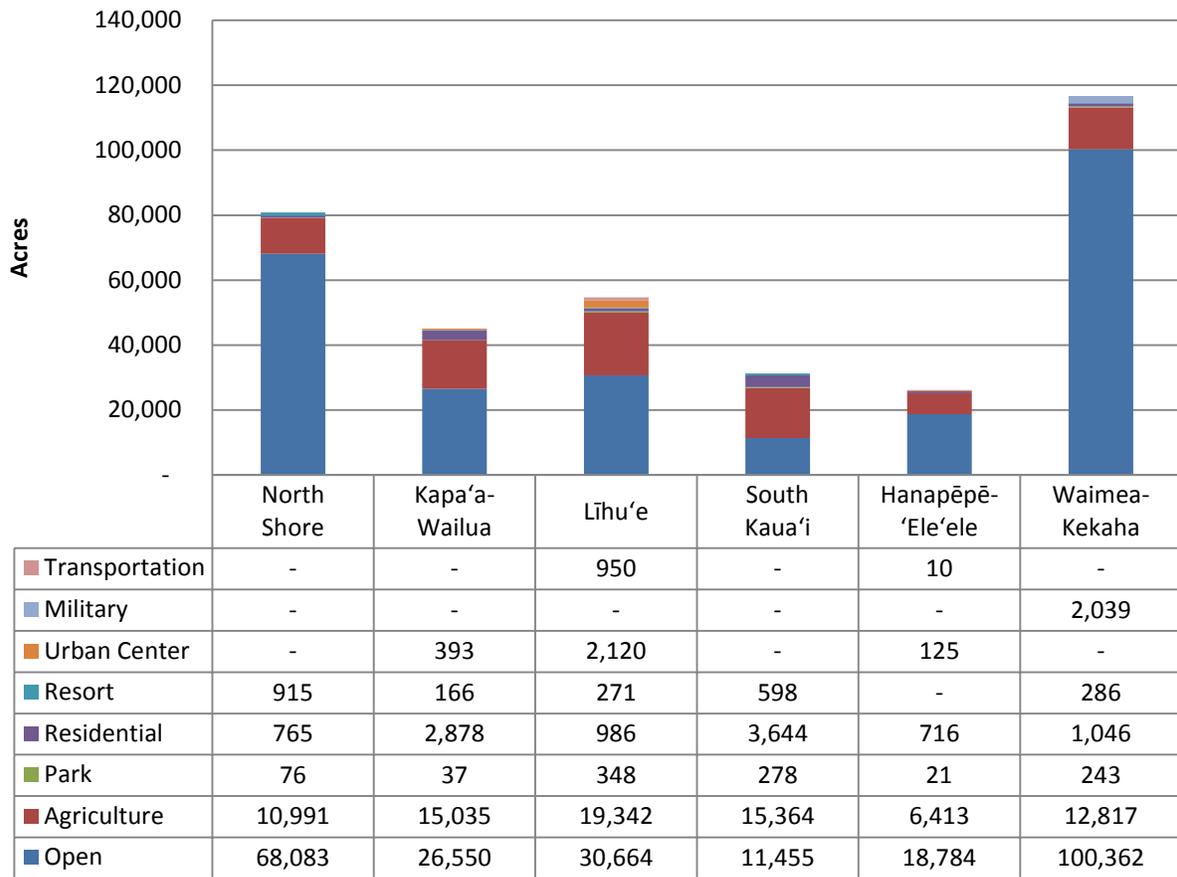


Data Source: See Appendix A: Excel File- ExistLandUseInventory_1

2.2 County General Plan

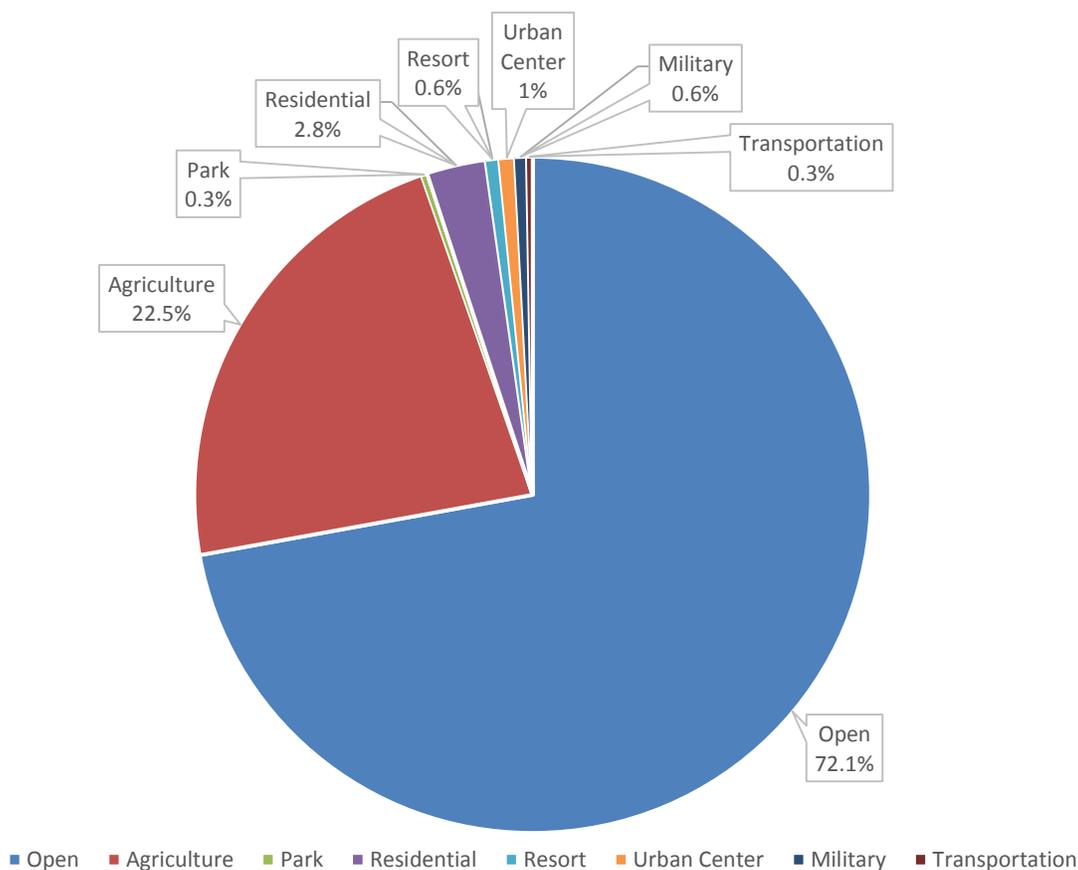
The County General Plan designations consist of Open, Agriculture, Park, Residential, Resort, Urban Center, and special designations for Transportation and Military. Based on the acreage breakdown shown in Figure 7, the Open District comprises over 70% of the island, followed by nearly 20% in the Agricultural District (see Figure 8). The proportion of the other designations in descending rank are Residential (3%), Urban Center (1%), Resort (1%), Military (1%), Park (<1%), and Transportation (<1%). The General Plan also includes a Town Center designation that overlays targeted Residential designations.

FIGURE 7. PROPORTION AND ACREAGE OF COUNTY GENERAL PLAN DESIGNATIONS



Data Source: See Appendix A: Excel File- ExistLandUseInventory_1

FIGURE 8. PROPORTIONATE BREAKDOWN OF THE GENERAL PLAN DESIGNATIONS



Data Source: See Appendix A: Excel File- ExistLandUseInventory_1

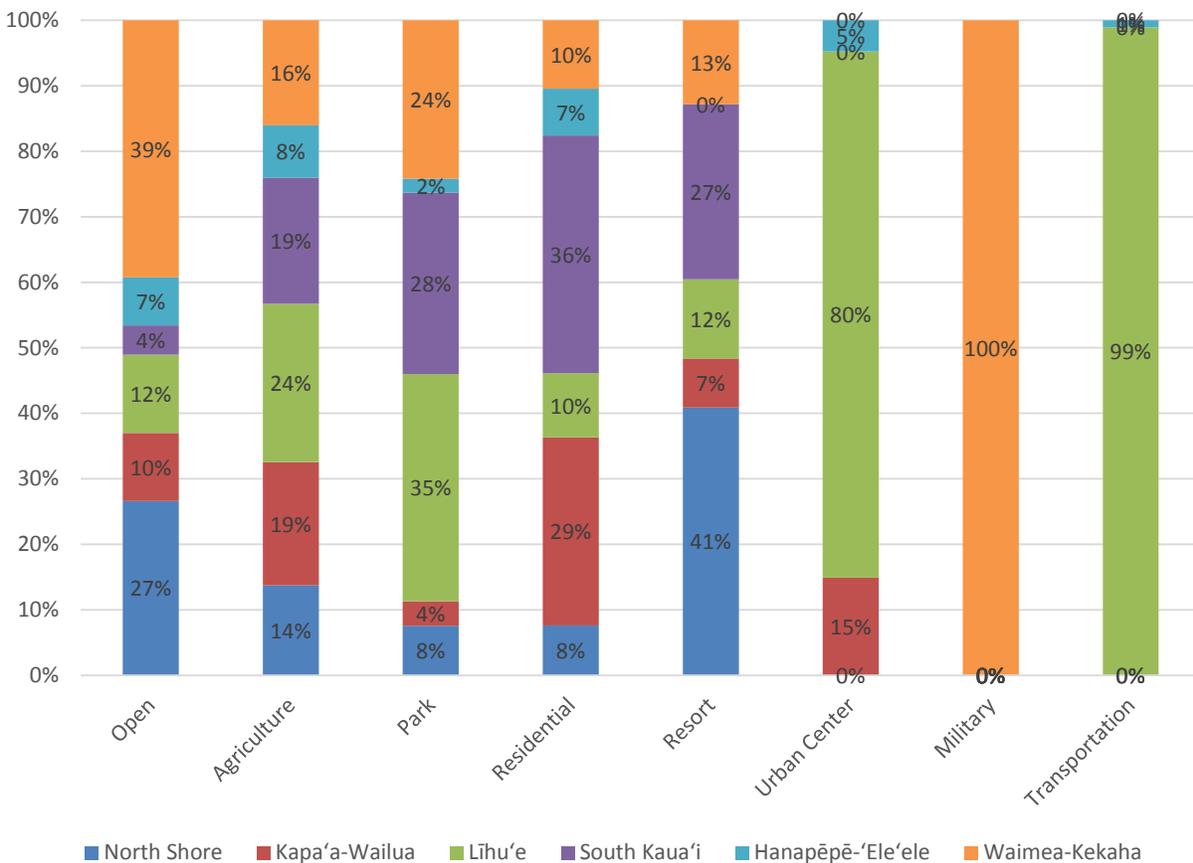
The proportionate breakdown of the General Plan designations by Planning District is as follows (see Figure 9):

- **Open.** The Open designation includes the State Conservation District and other open areas such as golf courses. Nearly 70% of the Open designation in the County is in Waimea-Kekaha (39%) and North Shore (27%). The remaining 30% is spread in descending rank among the districts of Līhu‘e (12%), Kapa‘a-Wailua (10%), Hanapēpē-‘Ele‘ele (7%), and South Kaua‘i (4%).
- **Agriculture.** The General Plan Agriculture (~80,000 acres) is less than the State Land Use Agricultural District acreage (~144,000 acres). The General Plan Agricultural acreage is evenly spread out among all districts, Līhu‘e (24%), Kapa‘a-Wailua (19%), South Kaua‘i (19%), Waimea-Kekaha (16%), Hanapēpē-‘Ele‘ele (8%).
- **Park.** Nearly 85% of the Park acreage are in three districts: Līhu‘e (35%), South Kaua‘i (28%), and Waimea-Kekaha (24%).
- **Residential.** Nearly 65% of the Residential acreage are in South Kaua‘i (36%) and Kapa‘a-Wailua (29%). The remaining 35% is spread in descending rank among the

districts of Līhu‘e (10%), Waimea-Kekaha (10%), North Shore (8%), and Hanapēpē-‘Ele‘ele (7%).

- **Urban Center.** The Urban Center acreage (approximately 2,600 acres) is concentrated in Līhu‘e (80%). Other areas intended to develop into higher density urban areas are Kapa‘a-Wailua (15%) and the Port Allen area of Hanapēpē-‘Ele‘ele (5%). The General Plan also has a Town Center designation, but this is an overlay and not a distinct land use designation.
- **Resort.** The major resort areas with more than 65% of the Resort acreage on the island are in the North Shore (41%) and South Kaua‘i (27%). The remaining 35% is spread in descending rank among the districts of Waimea-Kekaha (13%), Līhu‘e (12%), and Kapa‘a-Wailua (7%). Hanapēpē-‘Ele‘ele does not have any Resort designations.
- **Transportation.** The airport and harbors designated under Transportation are located in Līhu‘e and Waimea-Kekaha. No other district has a Transportation designation.
- **Military.** The Military designation is entirely for the Barking Sands installation in Waimea-Kekaha.

FIGURE 9. PROPORTIONATE BREAKDOWN OF GENERAL PLAN DESIGNATIONS BY PLANNING DISTRICT

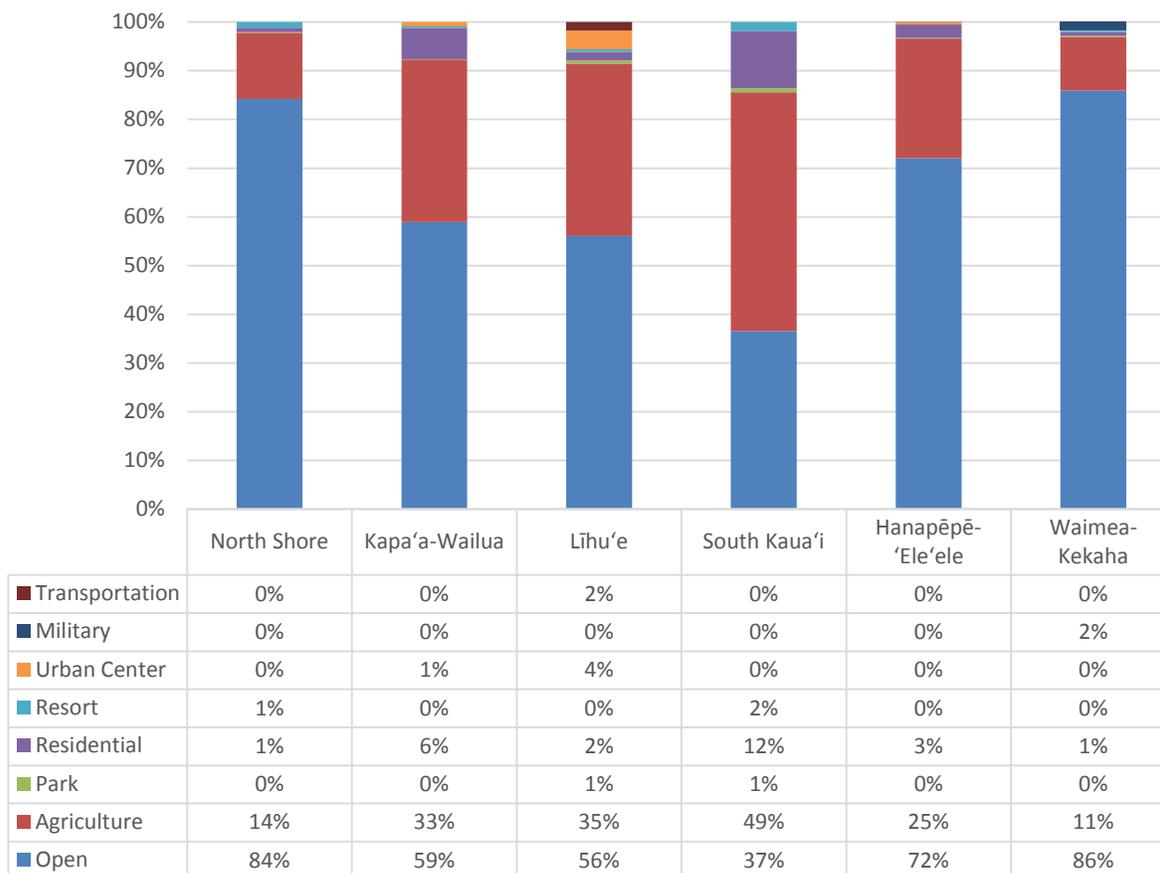


Data Source: See Appendix A: Excel File- ExistLandUseInventory_1

The proportionate breakdown of the General Plan designations within each Planning District is as follows (see Figure 10):

- North Shore. Open predominates (84%), followed by Agriculture (14%), Residential (1%), and Resort (1%), with negligible acreage in Park and no acreage in Urban Center, Military, and Transportation.
- Kapa'a-Wailua. Open comprises half the district (59%), followed by Agriculture (33%), Residential (6%), and Urban Center (1%), with negligible acreage in Resort and Park and no acreage in Military and Transportation.
- Līhu'e. Open comprises half the district (56%), followed by Agriculture (35%), Urban Center (4%), Residential (2%), Transportation (2%), with negligible acreage in Resort and no acreage in Rural and Military.
- South Kaua'i. Agriculture comprises half the district (49%), followed by Open (37%), Residential (12%), and Resort (2%), with negligible acreage in Park and no acreage in Transportation and Military.
- Hanapēpē-'Ele'ele. Open predominates (72%), followed by Agriculture (25%) and Residential (3%), with negligible acreage in Urban Center, Park, and Transportation and no acreage in Resort and Military.
- Waimea-Kekaha. Open predominates (86%), followed by Agriculture (11%), Military (2%), and Residential (1%), with negligible acreage in Resort and Park, and no acreage in Urban Center and Transportation.

FIGURE 10. PROPORTIONATE BREAKDOWN OF PLANNING DISTRICTS BY GENERAL PLAN DESIGNATION



Data Source: See Appendix A: Excel File- ExistLandUseInventory_1

2.3 County Zoning

The County zoning designations combine land use type and density. The land use types include Conservation, Open (O), Agriculture (A), Residential (R-1, R-2, R-4, R-6, R-10, R-20), Commercial (C-G, C-N), Industrial (I-G, I-L), Resort (RR-10, RR-20). The zoning designations also include Planned Development (PD) and Special Treatment District (ST) overlays.

Table 2 compares the State Land Use Districts, General Plan, and zoning. The State Land Use acres are colored blue, General Plan pink, and zoning green. The results shown on the table is based on a GIS analysis that overlays the State Land Use Districts, General Plan, and zoning. There could be errors in any of those layers or in the overlay alignment, so the area calculations are approximations.

TABLE 2. COMPARISON OF STATE LAND USE DISTRICTS (LIGHT BLUE), GENERAL PLAN (PINK), AND ZONING (GREEN)

		Planning Districts (acres)					
		North Shore	Kapa'a-Wailua	Līhu'e	South Kaua'i	Hanapēpē-'Ele'ele	Waimea-Kekaha
Conservation	Conservation	62,659	23,049	19,918	8,634	11,127	69,068
	Open	68,083	26,550	30,664	11,455	18,784	100,362
	Park	76	37	348	278	21	243
	<i>Total (GP)</i>	8,159	26,587	31,012	11,733	18,806	100,606
	CON	62,457	23,014	19,586	8,620	11,104	68,525
	O						
	O/P-D						
	O/ST-C						
	O/ST-O						
	O/ST-P						
	O/ST-P/ST-C						
	O/ST-R						
	O/ST-R/ST-C						
	ST-C						
ST-R							
<i>Total (Zoning)</i>	62,457	23,014	19,586	8,620	11,104	68,526	
Ag	Agricultural	15,876	19,139	30,208	18,841	13,786	46,468
	Agriculture	10,991	15,035	19,342	15,364	6,413	12,817
	A	10,032	10,853	13,283	12,702	8,765	14,337
Rural	Rural	227	586	-	426	58	76
	R-1	68	46	-	38	-	8
	R-1/ST-P	-	144	130	-	19	52
	R-2	14	494	41	387	52	75
	R-2/P-D	19	-	-	-	-	-
	<i>Total (Zoning)</i>	100	684	171	426	71	135
Urban	Urban	2,201	2,321	4,588	3,449	1,103	1,203
	Residential	765	2,878	986	3,644	716	1,046
	Urban Center	-	393	2,120	-	125	-
	Resort	915	166	271	598	-	286
	<i>Total (GP)</i>	1,680	3,437	3,377	4,242	841	1,332
	R-4	454	596	453	1,262	41	243
	R-4/ST-P	8	23	13	44	21	-

	Planning Districts (acres)					
	North Shore	Kapa'a-Wailua	Līhu'e	South Kaua'i	Hanapēpē-'Ele'ele	Waimea-Kekaha
R-6	164	444	391	335	203	125
R-6/P-D	-	-	-	19	-	13
R-6/ST-P	-	-	7	3	-	7
R-8	-	-	168	-	-	2
R-10	107	27	55	230	45	29
R-10/P-D	3	-	-	-	-	-
R-10/ST-P	-	5	-	-	-	1
R-15	62	-	-	-	-	-
R-20	9	45	235	129	3	-
C-G	17	43	395	39	38	23
C-G/P-D	3	-	-	-	-	-
C-G/ST-P	6	1	20	3	-	-
C-N	5	7	25	48	7	8
C-N/P-D	14	-	-	-	-	-
C-N/ST-P	-	-	-	8	-	-
I-G	-	1	126	-	53	17
I-G/ST-P	-	-	980	-	-	-
I-L	15	39	145	-	4	-
I-L/ST-P	-	-	-	28	-	-
P-D	-	-	-	-	-	24
P-D-C	-	-	-	12	-	-
P-D/ST-C	-	-	-	-	-	2
RR	3	-	-	-	-	-
RR-1	-	-	-	-	-	119
RR-1/ST-C	-	-	-	-	-	15
RR-4	-	-	-	-	-	43
RR-10	53	-	12	77	-	-
RR-20	36	112	109	46	-	-
SPA-A	-	26	-	-	-	-
Total (Zoning)	960	1,370	3,135	2,281	414	671

Data Source: See Appendix A: Excel File- ExistLandUseInventory_1

3 Existing Land Use Inventory

The existing land use inventory provides a snapshot baseline to develop trends and forecasts. The baseline year of available data is 2012, the year of the latest GIS parcel data at the time of this study. The GIS parcel layer includes a “PITT” field, an entry provided by the Real Property Tax Office. This existing land use inventory relies upon the PITT code, which should be the Real Property Tax appraiser’s determination of the property’s actual use, which in turn should be the basis for the property’s assigned tax rate class.

Within the County’s tax appraisal system, the use of the PITT code seems to be undergoing a transition. In the past, the County assigned tax rate classes “based on the property’s highest and best use, which is usually the same as the zoning.”⁴ This method would imply that the PITT would be based on zoning rather than actual use, and therefore not useful for an existing land use inventory. However, a more current brochure released by the division confirms that the tax rate classes are “based on the property’s actual use, which may or may not be the same as the zoning. Rates based on zoning will still apply on vacant or partially improved properties.”⁵ Where there is a mixed of uses, the higher tax rate class is assigned.

The reliance on zoning may have worked under traditional single-use zoning categories. However, with the emerging trend towards mixed-use zoning, there will be less direct correspondence between the property tax classes and zoning designations. The transition to appraise based on actual use may also increase tax revenues. For example, a hotel is a permitted use in either the Resort or Commercial-General zoning district. Based on *zoning*, a hotel in the commercial district would be classified as Commercial (PITT 300) at a tax rate of \$8.00 per \$1,000 net assessed value; whereas, a hotel in the Resort district would be classified as Hotel and Resort (PITT 700) at a tax rate of \$9.00 per \$1,000 net assessed value. Based on *actual use*, both properties would be classified as PITT 700. Table 3 below correlates the PITT codes to the property tax rate classes.

Coordination between the Real Property Tax and Planning Department data could be mutually beneficial to cross-check appraised values, to optimize tax revenues, and to update an existing land use inventory. This coordination could evolve as follows:

- Residential Units. A special field captures whether the property owner has filed for a homeowner’s exemption. The Homestead class (PITT 800) is reserved for parcels exclusively used as the owner’s primary residence (i.e., on a mixed-use parcel, an owner could receive a homeowner’s exemption but not the Homestead tax class). Real Property Tax appraisers will collect “living unit” data which is consistent with the zoning’s code definition of “dwelling unit,” and an occupancy code to distinguish single-family, multi-family, 2-family, and guest house with no kitchen structures. Tax appraisers use a “neighborhood code” to identify vacant property.

⁴ (County of Kauai Real Property Assessment Division, Department of Finance, 2014)

⁵ (County of Kauai Real Property Tax Division, Department of Finance, 2014), PDF brochure download. Although the website post has the same title as the PDF brochure, “Understanding Your Real Property Taxes”, the section on Calculation of Taxes differs.

- Transient Vacation Units. The tax appraisers use PITT 200 for transient vacation rentals and could cross-check with the Planning Department’s single-family and multi-family transient vacation rental register and nonconforming use certificate database to identify dwellings that should be taxed at the Vacation Rental class tax rates. The tax appraisers also use a “neighborhood code” to distinguish timeshare units. The Planning Department could cross-check the properties assessed as PITT 700 (hotels and resorts), PITT 200 (transient vacation rentals), and timeshare coding against Hawai’i Tourism Authority’s Visitor Plant Inventory.
- Commercial/Industrial. The tax appraisers will collect gross floor area and use PITT 300 for commercial uses and PITT 400 for industrial uses. An outdated 1995 inventory could be used as a starting point (see Appendix C for a copy of this inventory).
- Agricultural. Agricultural dedication is allowed only for commercial agricultural. In comparison, the farm dwelling agreement that the Planning Department requires can be for non-commercial subsistence farming. The Real Property Division will create a GIS layer for condominiums. The Planning Department can share updates to the Important Agricultural Land (IAL) designations that may factor in the tax rates.

TABLE 3. PITT CODES AND PROPERTY TAX RATE CLASS CORRELATION

Tax Class	Tax Rate <i>(Per \$1,000 Net Assessed Valuation)</i>	PITT Code	PITT Code Description	Special Field	Planning Department Data
Homestead	\$3.05	800	Exclusively used by owner as primary residence		
Residential	\$5.75	100	Improved or Unimproved Residential	Neighborhood Code= vacant; Occupancy Code= SF, MF, 2-Family, Guest house no kitchen; living units	Zoning Permit Class 1
Vacation Rental	\$8.00	200	Transient Vacation Rental		Nonconforming Use Certificate; TVR Register; Visitor Plant Inventory
Hotel and Resort	\$9.00	700	Hotel and Resort	Number of rooms/units; Neighborhood Code=	Visitor Plant Inventory

				timeshare	
Commercial	\$8.00	300	Commercial	Gross floor area	TAZ inventory
Industrial	\$8.00	400	Industrial	Gross floor area	TAZ inventory
Agricultural	\$6.75	500	Agricultural	Ag dedication acreage	IAL
Conservation	\$6.75	600	Conservation		

Source: Kaua'i County Real Property Tax website and personal communication with Supervising Appraiser

3.1 Residential

3.1.1 Definition

A residential use is a housing unit. A housing unit, using the same definition as the SMS Study, “is a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters.”⁶

3.1.2 Methodology

The initial thought was to use the property tax appraisals based on the PITT code to identify single-family residences (PITT 100) and multi-family residences (PITT 200). A quick check of the parcel GIS records, however, showed that the sum of PITT 100 and 200 does not come close to the SMS Study’s 2010 total housing units (which comes from the 2010 Census)—2010 SMS total housing units for the County was 29,793 and the sum of PITT 100 and 200 was 17,670 parcels. The PITT 200 multi-family parcels would need a density of 17 units per parcel for the PITT code sum to equal the 2010 SMS number. Real Property Tax has used the PITT 200 for vacation rentals, so an inventory of the existing multi-family properties and number of units is not possible with the existing data.

The Real Property Tax appraisal system has the potential to update an inventory of housing units. Proposed changes to the tax appraisal system would identify the number of separate living quarters. For example, a PITT 100 could be assigned to a parcel that has a single-family dwelling and an ‘ohana unit. With the finer appraisal, the parcel would have a data field for 2 living quarters, and the property tax appraised value adjusted accordingly. Special coding by the real property tax appraisers will enable distinguishing single-family, multi-family, and two-family (duplex) units.

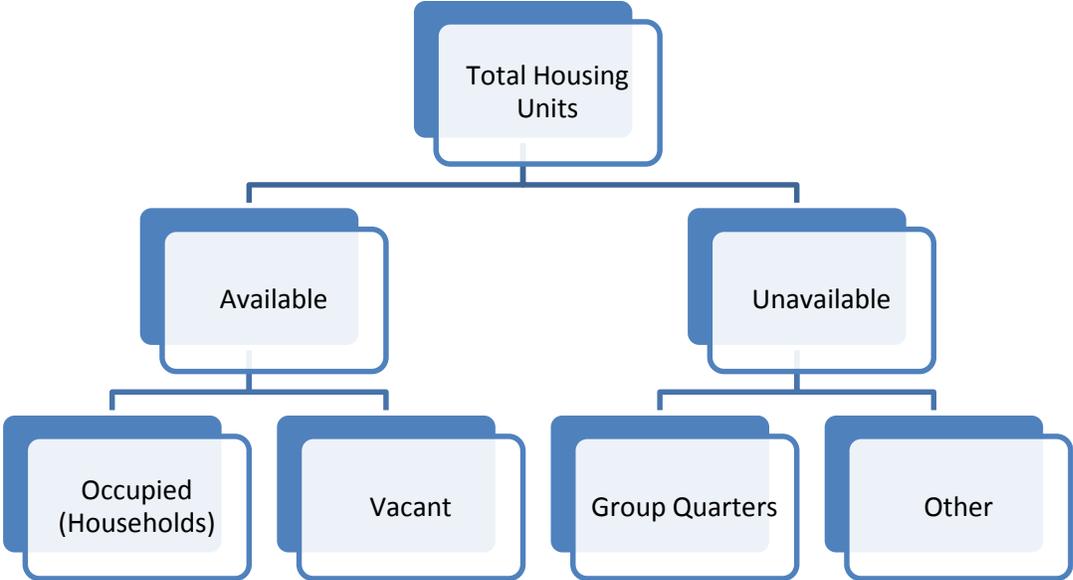
Until that finer property tax data is available, the SMS Study’s analysis of the census data was used for this study. Therefore, the housing units “inventory” is aggregated at the planning district level and cannot at this time drill down to the parcel level.

⁶ (SMS Research & Marketing Services, Inc., February 2014, p. 15)

3.1.3 Results

The SMS Study distinguished *total* housing units from *occupied* housing units. “Occupied” housing units is equal to the number of households. Persons who do not live in households live in “group quarters” (e.g., hospitals, prisons, nursing homes, dormitories); hence, the occupied housing unit count does not include group quarters. The number of “available” housing units equals occupied housing units plus vacant housing units. Unavailable units are those units not open to the residential housing market (e.g., seasonal, migrant). Since the SMS housing units forecast is a function of residential population, it is assumed that the unavailable units do not include individual vacation rentals (which should be a function of visitor arrivals). “Total” housing units is the sum of “available” plus “unavailable” housing units. The density allowed by zoning is the total housing units.

FIGURE 11. DEFINITION OF TOTAL HOUSING



According to the SMS Study, “available” units fell historically from 96 percent of the total units in 1990 to about 84 percent in 2000 (see Table 4). The forecast through 2035 conservatively assumed the lower end of the range at 84 percent. The SMS forecast assumes that the vacancy rate will nearly double in 2035 compared to 1990.

TABLE 4. HOUSING UNITS FORECAST, COUNTY OF KAUA‘I, 1990-2035

	1990	2000	2010	2020	2030	2035
Total Units	17,613	25,331	29,793	33,553	37,519	39,676
Available Units	16,985	21,398	24,915	28,085	31,379	33,169
Occupied Units	16,253	20,370	23,240	25,902	28,788	30,349
% Available	96%	84%	84%	84%	84%	84%
% Vacant	4.31%	4.80%	6.72%	7.77%	8.26%	8.50%

Source: SMS Research & Marketing Services, Inc., August 5, 2013; see Appendix A- Excel file Housing Units

The SMS Study forecasts that Līhu‘e will have the highest growth rate of total housing units, consistent with the residential population projection (see Table 5 and Table 6, and Figure 12 and Figure 13).

TABLE 5. TOTAL HOUSING UNITS BY PLANNING DISTRICTS, 1990-2035

<i>Planning District</i>	1990	2000	2010	2020	2030	2035	2010-2035 Ave Annual Growth Rate
Līhu‘e	3,562	4,501	5,296	6,916	8,846	9,900	3.48%
South Kaua‘i	3,442	5,780	5,764	6,748	7,766	8,292	1.75%
Hanapēpē-‘Ele‘ele	1,669	1,942	2,240	2,563	2,921	3,120	1.57%
Waimea-Kekaha	1,734	1,997	2,262	2,506	2,599	2,652	0.69%
North Shore	3,470	3,896	5,066	5,167	5,235	5,284	0.17%
Kapa‘a-Wailua	3,736	7,215	9,165	9,653	10,153	10,428	0.55%
County of Kaua‘i	17,613	25,331	29,793	33,553	37,520	39,676	1.33%

Source: SMS Research & Marketing Services, Inc., August 5, 2013; see Appendix A- Excel file Housing Units

TABLE 6. RESIDENTIAL POPULATION BY PLANNING DISTRICTS, 1990-2035

<i>Planning District</i>	1990	2000	2010	2020	2030	2035	2010-2035 Ave Annual Growth Rate
Līhu‘e	11,169	12,507	14,683	18,017	21,595	23,456	2.39%
South Kaua‘i	9,600	10,545	11,696	13,623	15,737	16,855	1.76%
Hanapēpē-‘Ele‘ele	3,873	4,362	6,157	6,463	6,860	7,094	0.61%
Waimea-Kekaha	4,698	5,660	5,561	5,901	6,323	6,566	0.72%
North Shore	5,913	6,605	8,002	8,286	8,686	8,933	0.47%
Kapa‘a-Wailua	16,192	18,784	20,992	22,403	24,128	25,110	0.78%
County of Kaua‘i	51,445	58,463	67,091	74,693	83,329	88,014	1.25%

Source: SMS Research & Marketing Services, Inc., August 5, 2013; see Appendix A- Excel file Housing Units

FIGURE 12. 2035 TOTAL HOUSING UNITS PROJECTION BY PLANNING DISTRICT

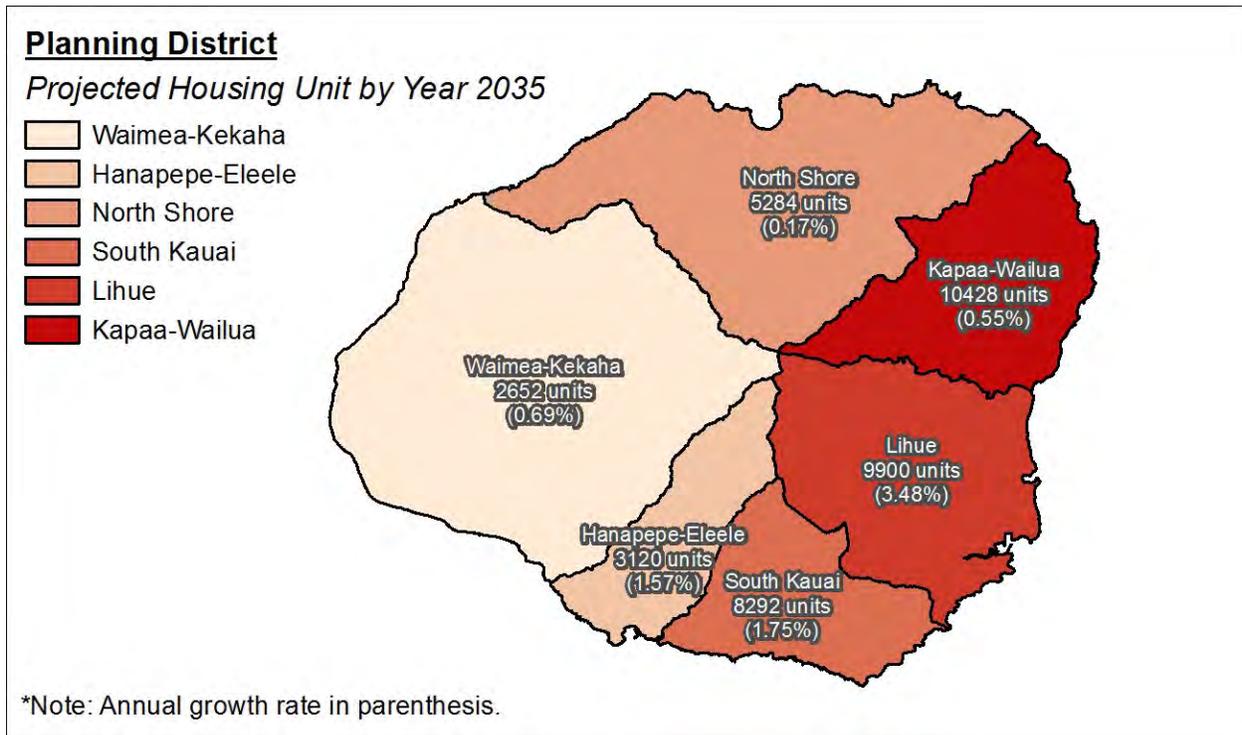
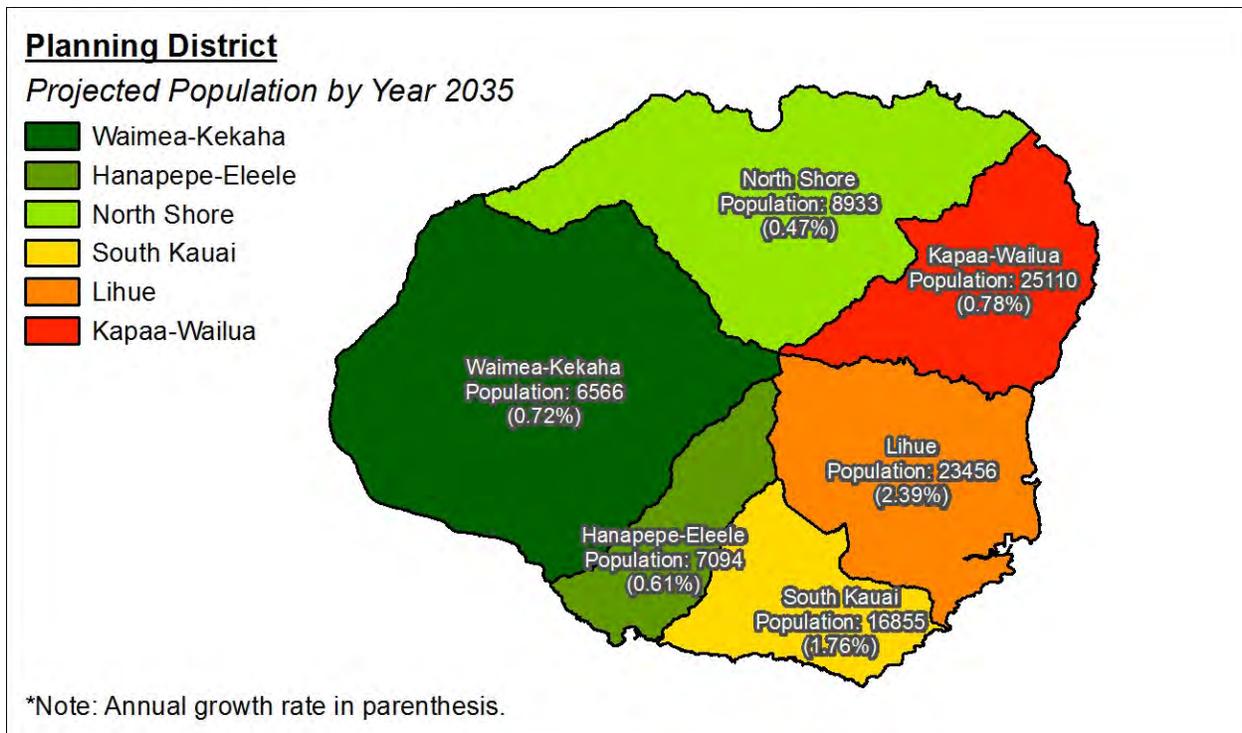


FIGURE 13. 2035 POPULATION PROJECTION BY PLANNING DISTRICT



Although the total housing units growth rate approximates the residential population growth rate at the County level, it does not track at the Planning District level except for South Kaua'i (e.g.,

compare the growth rates of Table 5 with Table 6). The total housing unit growth rate for Hanapēpē-‘Ele‘ele is double the residential population growth rate whereas the total housing growth rate is less than the population growth rate for North Shore and Kapa‘a-Wailua. The number of occupied housing units (equivalent to households), however, does track the population growth rate at the Planning District level (see Table 7).

Future updates to the inventory of residential units should use data from the Real Property Tax Office. The tax office will be able to provide the number of units per parcel. Table 7 below compares the tax office numbers to the census occupied housing units. The tax office numbers seem higher probably because the tax office counts “available” units (see Figure 11 above).

TABLE 7. OCCUPIED HOUSING UNITS BY PLANNING DISTRICTS, 1990-2035

Planning District	1990 ¹	2000 ¹	2010 ¹	2014 ²	2020 ¹	2030 ¹	2035 ¹	2010-2035 Ave Annual Growth Rate (Occupied Housing Units) ³
Līhu‘e	3,542	4,187	4,983	5,195	6,051	7,281	7,923	2.36%
South Kaua‘i	3,208	3,862	4,250	6,698	4,946	5,699	6,096	1.74%
Hanapēpē-‘Ele‘ele	1,035	1,491	1,987	2,194	2,084	2,207	2,279	0.59%
Waimea-Kekaha	1,460	1,893	1,962		2,165	2,253	2,306	0.70%
North Shore	2,070	2,552	2,881	4,672	2,998	3,123	3,201	0.44%
Kapa‘a-Wailua	4,937	6,385	7,177	8,181	7,658	8,224	8,545	0.76%
County of Kaua‘i	16,252	20,370	23,240	26,940	25,902	28,787	30,350	1.22%

1. Source: SMS Research & Marketing Services, Inc., August 5, 2013; see Appendix A- Excel file Housing Units
2. Kaua‘i County Real Property Tax Office
3. Average annual growth rate computed only with SMS data

The SMS Study estimated the household size for occupied housing units by Planning District, and forecasted the household size to remain unchanged through 2035 from its 2010 household size (see Table 8).

TABLE 8. HOUSEHOLD SIZE BY PLANNING DISTRICTS, OCCUPIED HOUSING UNITS, 1990-2035

Planning District	1990	2000	2010	2020	2030	2035	2010-2035 Ave Annual Growth Rate
Līhu‘e	3.15	2.99	2.95	2.98	2.97	2.96	0.02%
South Kaua‘i	2.99	2.73	2.75	2.75	2.76	2.76	0.02%
Hanapēpē-‘Ele‘ele	3.74	2.93	3.10	3.10	3.11	3.11	0.02%
Waimea-Kekaha	3.22	2.99	2.83	2.73	2.81	2.85	0.02%
North Shore	2.86	2.59	2.78	2.76	2.78	2.79	0.02%
Kapa‘a-Wailua	3.28	2.94	2.92	2.93	2.93	2.94	0.02%
County of Kaua‘i	3.17	2.87	2.89	2.88	2.89	2.90	0.02%

Source: SMS Research & Marketing Services, Inc., August 5, 2013; see Appendix A- Excel file Housing Units

If it is assumed that the group quarters proportion remains unchanged through 2035, the household size based on total housing units is shown in the following table (see Table 9).

TABLE 9. HOUSEHOLD SIZE BY PLANNING DISTRICT, TOTAL HOUSING UNITS, 1990-2035

<i>Planning District</i>	1990	2000	2010	2020	2030	2035	2010-2035 Ave Annual Growth Rate
Līhu‘e	3.14	2.78	2.77	2.61	2.44	2.37	-0.58%
South Kaua‘i	2.79	1.82	2.03	2.02	2.03	2.03	0.01%
Hanapēpē-‘Ele‘ele	2.32	2.25	2.75	2.52	2.35	2.27	-0.69%
Waimea- Kekaha	2.71	2.83	2.46	2.35	2.43	2.48	0.03%
North Shore	1.70	1.70	1.58	1.60	1.66	1.69	0.28%
Kapa‘a-Wailua	4.33	2.60	2.29	2.32	2.38	2.41	0.21%
County of Kaua‘i	2.92	2.31	2.25	2.23	2.22	2.22	-0.06%

Source: SMS Research & Marketing Services, Inc., August 5, 2013; see Appendix A- Excel file Housing Units

3.2 Resort

3.2.1 Definition

A Resort use is a *transient accommodation unit*, defined as “an accommodation unit or a portion thereof in a *hotel, timeshare facility, resort condominium, fractional ownership facility, vacation rental unit* or other similarly-used dwelling that is rented or used by one or more persons for whom such accommodation unit is not the person’s primary residence under the Internal Revenue Code.”⁷ This “transient accommodation unit” definition from the Charter *excludes* bed and breakfast establishments (B&B) since a B&B must be within a person’s primary residence.⁸ The Zoning Code’s definition of “transient accommodation unit,” consistent with the Charter, includes *hotel* units (in an apartment hotel, hotel, motel, visitor destination area, or resort district), *time share* unit, or *transient vacation rental* (single-family or multifamily).⁹ The Zoning Code restricts the various types of transient accommodation units to the following zoning districts:

- hotels or condo hotels: only in the Resort (RR) or Commercial General (CG) zoning districts.¹⁰
- timeshare units: only in hotels or in the Resort (RR-10, RR-20) and multi-family Residential districts (R-10, R-20) when such districts are located within a Visitor Destination Area.¹¹
- individual vacation units (IVU): The zoning code refers to IVU’s as single-family or multi-family transient vacation rentals, and requires that such units be located in a Visitor Destination Area,¹² unless the County has issued a Nonconforming Use Certificate.¹³ All single-family transient vacation rentals must register with the Director of Finance.¹⁴

⁷ County Charter sec. 3.19.

⁸ Zoning Code refers to B&B as “homestay”. The definition of “single-family transient vacation rental” is “a single-family dwelling unit, other than a homestay, which is used as a transient vacation rental.” (Zoning Code section 8-1.5)

⁹ Zoning Code section 8-28.1.

¹⁰ Zoning Code, Table 8-2.4 Table of Uses. Zoning Code refers to condo hotels as apartment hotels.

¹¹ (Hawai‘i Tourism Authority, 2014)

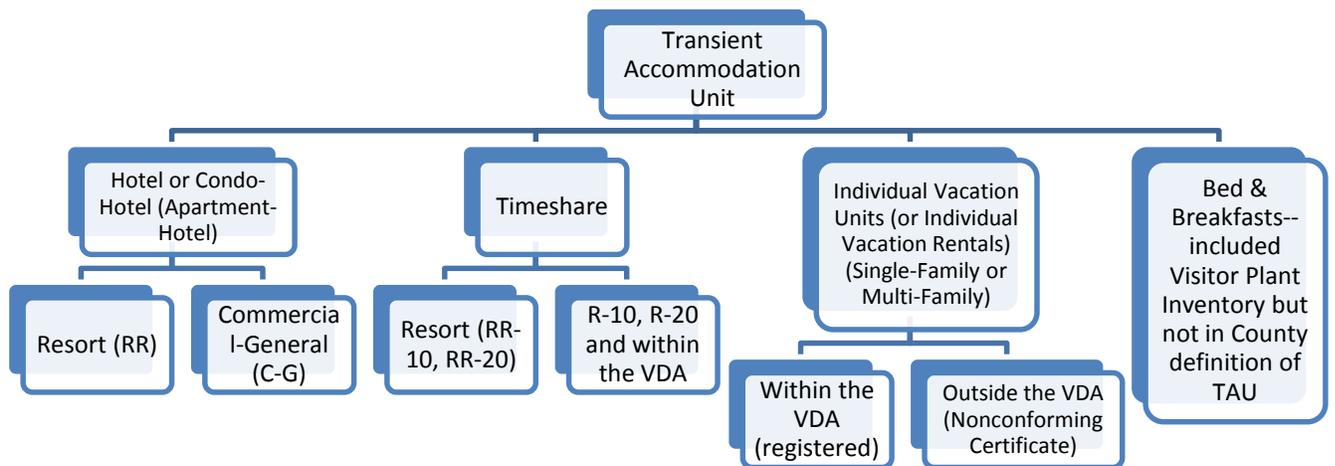
¹² Zoning Code section 8-17.3 and -17.8(a).

¹³ Zoning Code section 8-17.9(b) and 8-17.10.

¹⁴ Zoning Code section 8-17.10.

The Visitor Plant Inventory includes bed and breakfasts and classifies the various types of transient accommodation units into *hotel*, *condo hotel*, *timeshare*, *bed and breakfasts*, and *individual vacation unit (IVU)*.

FIGURE 14. DEFINITION OF TRANSIENT ACCOMMODATION UNIT



Although the County attempted to regulate the growth rate of visitor units through the Transient Accommodation Unit Certificate Allocation Program (TAU CAP),¹⁵ a district court judgment repealed this provision.

3.2.2 Methodology

Resort units were inventoried using the following steps:

1. The property list from the Visitor Plant Inventory was imported into Excel.
2. The parcel layer was exported to Google Earth to enable using website search methods to locate the TMK for properties listed in the Visitor Plant Inventory and enter the TMK in the Excel worksheet.
3. The Excel worksheet was joined to the GIS parcel layer using the TMK field.
4. The PITT data from the parcel layer were cross-tabulated against the Visitor Plant Inventory property type classifications.
5. Since the County's transient vacation rental register (for conforming and nonconforming single family) is still being developed, the number of IVU's identified in the Visitor Plant Inventory were assigned an aggregate number to the respective VDA, and the existing IVU's outside the VDA were not inventoried.

¹⁵ Zoning Code article 28.

3.2.3 Results

3.2.3.1 Relationship to Visitor Plant Inventory

According to the Visitor Plant Inventory, Kaua'i County had 9,203 transient accommodation units in 2008, the base year to calculate the Allocation Base Year Transient Accommodation Unit Target notwithstanding the repeal of the TAU CAP.¹⁶ This number includes 110 bed & breakfast units on 30 properties.¹⁷ Since the County definition excludes bed & breakfasts, the adjusted Visitor Plant Inventory unit count for 2008 would be 9,093.

According to the latest Visitor Plant Inventory (2012), Kaua'i County had 8,289 transient accommodation units. This number includes 98 bed and breakfast units on 27 properties.¹⁸ The adjusted unit count (without bed & breakfasts) would be 8,191.

Since the Hawai'i Tourism Authority, who maintains the Visitor Plant Inventory, is not willing or able to share the TMK or address of the properties included in the inventory, PBR Hawai'i used its best efforts to locate properties (only a few individual vacation units located and no bed & breakfasts). The GIS layer includes 7,171 units of the 8,191 adjusted unit count (88%) (see Table 10 below).

TABLE 10. COMPARISON OF VISITOR PLANT INVENTORY UNIT COUNT BY UNIT TYPE CATEGORY VS. GIS VISITOR UNITS INVENTORY

Unit Type	Visitor Plant Inventory Units (2012) ¹	GIS Units ²	Difference
Apartment/Hotel	4	3	1
Condominium Hotel	1,563	1,553	10
Hostel	--		
Hotel	2,660	2,836 ¹⁹	(176)
Individual Vacation Unit	1,172	415	757
Other	61	24	37
Timeshare	2,731	2,340	391
Bed & Breakfast	98		98
Total	8,289	7,171	1,118

1. (Hawai'i Tourism Authority, 2014)

2. GIS source: See Appendix A- Resort Map Package

See Appendix A: Kauai Hotels- Visitor Plant Inventory Excel file

¹⁶ (Department of Business & Economic Development, State of Hawaii), Table 1.

¹⁷ (Department of Business & Economic Development, State of Hawaii), Tables 2 and 3.

¹⁸ (Hawai'i Tourism Authority, 2014), Figures 9 and 10.

¹⁹ The odd discrepancy where the GIS units seemingly exceed the Visitor Plant Inventory is due to the inconsistency between the VPI's unit counts in Figure 10 and the Property List (beginning on page 56 for the VPI 2012 for Kaua'i).

Of the 7,171 units in the GIS, 5,656 units were located within the Visitor Destination Area (79%). The PITT codes included PITT 100, 200, 300, 700, and 999, probably reflecting the zoning rather than actual use. Major resort properties classified by the Visitor Plant Inventory as Hotel, Condo-Hotel, Apartment-Hotel, and Timeshare were inconsistently classified as PITT 200, 300, 700, and 999 (see Table 11).

TABLE 11: COMPARISON OF PITT CODE TO VISITOR PLANT INVENTORY PROPERTIES

PITT Code¹	Transient Accommodation Unit Type²	Property Name²	Available Units²
0		Kapa‘a	85
	IVU-CONDO		85
		Kōloa Landing at Poipu Beach	85
100			11
	IVU-CONDO		11
		Aloha Estates At Kalāheo Plantation	6
		Kahakai Beach Cottage	1
		Turtle Cove Suites	4
200			1,568
	APARTMENT/HOTEL		3
		Hideaway Cove Villas	3
	CONDOMINIUM HOTEL		746
		Hanalei Colony Resort	48
		Kapa‘a Sands Resort	22
		Kiahuna Plantation	335
		Plantation Hale Suites	97
		Poipu Kapili Condominiums	53
		Prince Kuhio	72
		Waikomo Stream Villas	36
		Wailua Bay View Resort	29
		Whaler’s Cove at Poipu	54
	IVU-CONDO		240
		Kamahana	2

PITT Code¹	Transient Accommodation Unit Type²	Property Name²	Available Units²
		Kuhio Shores	69
		Paniolo at Princeville	13
		Plantation at Princeville, The	4
		Poipu Palms	4
		Poipu Sands, The	67
		Princeville Resort Mauna Kai	1
		Puu Poa	9
		Regency at Poipu Kai, The	3
		Sandpiper Village I	1
		Sealodge at Princeville Resort	4
		Sunset Kahili	12
		Villas of Kamali'i	1
		Villas on the Prince	3
		Waipouli Beach Resort	47
	TIMESHARE		579
		Kapa'a Shore	86
		Kaua'i Kailani I & II	57
		Westin Princeville Ocean Resort Villas (Estimated)	179
		Wyndham Bali Hai Villas (Estimated)	257
300			195
	CONDOMINIUM HOTEL		70
		Aston at Poipu Kai	70
	HOTEL		62
		Kaua'i Palms Hotel	28
		Tip Top Motel	34
	IVU-CONDO		39
		Manualoha at Poipu Kai	25

PITT Code¹	Transient Accommodation Unit Type²	Property Name²	Available Units²
		Nihi Kai Villas	14
	OTHER		24
		Kalāheo Inn	16
		Motel Lani, Inc.	8
600			12
	IVU-CABIN		12
		Kokee Lodge	12
700			3,134
	CONDOMINIUM HOTEL		697
		Aqua Kaua'i Beach Resort	332
		Aston Hawai'i Islander On The Beach	154
		Kaha Lani Resort	72
		Lae Nani	121
		Lanikai Resort	18
	HOTEL		1,921
		Aloha Beach Hotel Kaua'i	216
		Courtyard Kaua'i Coconut Beach	311
		Garden Island Inn	23
		Hotel Coral Reef	21
		Kaua'i Inn	45
		Kaua'i Marriott Resort & Beach Club	590
		Kaua'i Sands Hotel	200
		Koa Kea Hotel & Resort	121
		Sheraton Hotel Kaua'i Resort	394
	IVU*		6
		Pali Kai Cottages	6
	IVU-CONDO		20

PITT Code ¹	Transient Accommodation Unit Type ²	Property Name ²	Available Units ²
		Pali Ke Kua I, II, & III	20
	TIMESHARE		490
		Kaua'i Coast Resort at The Beachboy	108
		Marriott Waiohai Beach Club (Estimate)	246
		Mokihana Of Kaua'i	79
		Wyndham Makai Club	57
999			2,166
	CONDOMINIUM HOTEL		40
		Poipu Shores Resort	40
	HOTEL		853
		Grand Hyatt Kaua'i Resort & Spa	602
		St Regis Princeville	251
	IVU-CONDO		2
		Manako Hale	1
		Poipu Makai	1
	TIMESHARE		1,271
		Ali'i Kai	42
		Banyan Harbor Resort	63
		Hanalei Bay Resort	140
		Kaua'i Beach Villas and Resort	105
		Lawai Beach Resort	180
		Pono Kai Resort	188
		The Cliffs at Princeville	180
		The Point at Poipu	216
		Wyndham Kaeo Kai (Estimate)	125
		Wyndham Shearwater (Estimate)	32
Grand Total			7,171

1. PITT code from GIS parcel layer

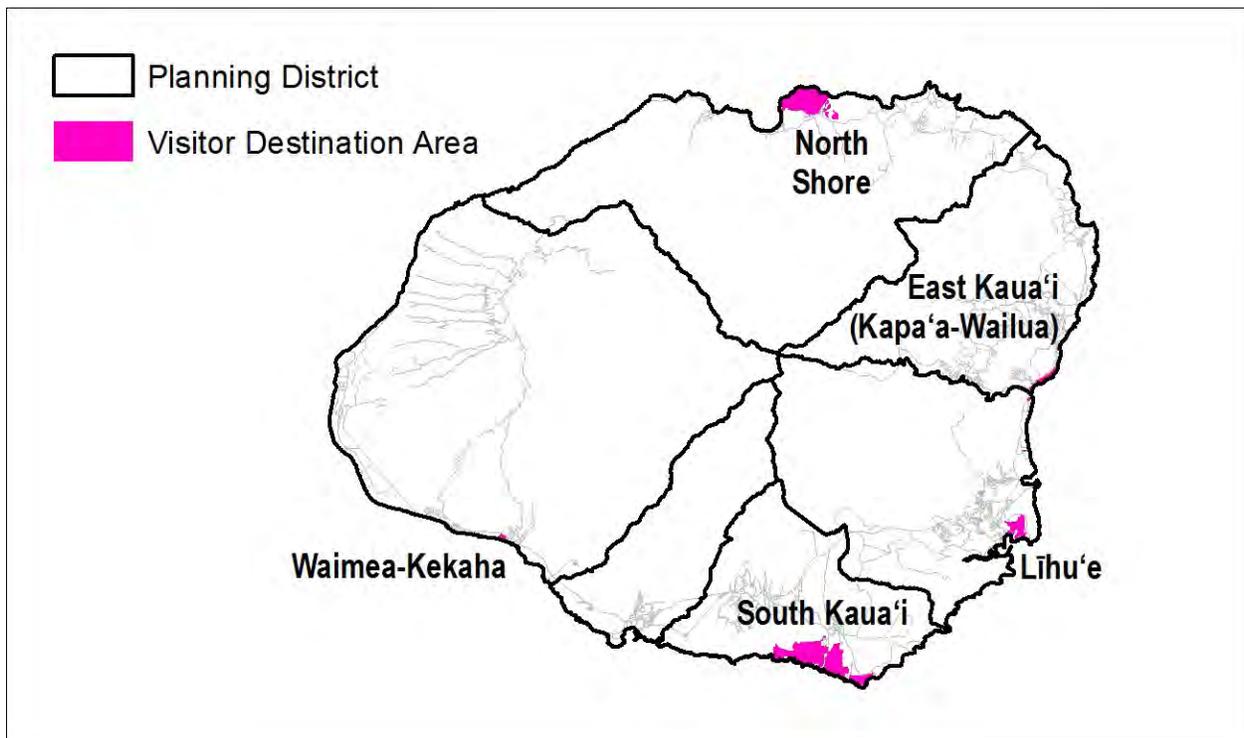
2. Unit type, property name, and available units from (Hawai'i Tourism Authority, 2014)
 Visitor Plant Inventory joined to GIS parcel layer: see Appendix A- Resort Map Package; Data Source=
 Kauai Hotels Visitor Plant Inventory Excel file

The results shown in the above table could imply that the County may be under-appraising several resort properties (i.e., inventoried as transient units by the Visitor Plant Inventory but not coded as PITT 700), thereby losing potential property tax revenue.

3.2.3.2 Relationship to VDA and Planning District

All Planning Districts have Visitor Destination Areas (VDA), except Hanapēpē-‘Ele‘ele (see Figure 15). The Planning District with the largest VDA in terms of acreage is South Kaua‘i, followed by North Shore, Līhu‘e, Kapa‘a-Wailua, and Waimea-Kekaha (see Table 12). In terms of units, South Kaua‘i ranks first, however, the order changes with Kapa‘a-Wailua second, followed by North Shore, then Līhu‘e.

FIGURE 15. VISITOR DESTINATION AREAS



GIS Source: See Appendix A- Resort Map Package; Excel file Kauai_GIS_Zoning_VDA

TABLE 12. VISITOR DESTINATION AREAS BY PLANNING DISTRICTS- RANK BY ACREAGE AND VISITOR UNITS

Planning District	Visitor Destination Area (acres) ¹	Rank	Visitor Plant Inventory (units) ²	Rank
Līhu‘e	342	3	1437	4
South Kaua‘i	1720	1	3112	1

Hanapēpē- 'Ele'ele	0	6	0	6
Waimea-Kekaha	43	5	43	5
North Shore	1087	2	1751	3
Kapa'a-Wailua	144	4	1946	2

1. Calculated from GIS. See Appendix A- Resort Map Package; Excel file Kauai_GIS_Zoning_VDA
2. (Hawai'i Tourism Authority, 2013), Table 5b, Inventory by Area and Unit Type—Kaua'i Island

The zoning within the VDAs include the expected Resort (RR), Residential (R), and Commercial (C-G, C-N), but also Agricultural (A), Conservation (Con) and Open (O) (see Table 13 and Figure 16 through Figure 20).

TABLE 13. EXISTING ZONING WITHIN VISITOR DESTINATION AREAS BY PLANNING DISTRICTS

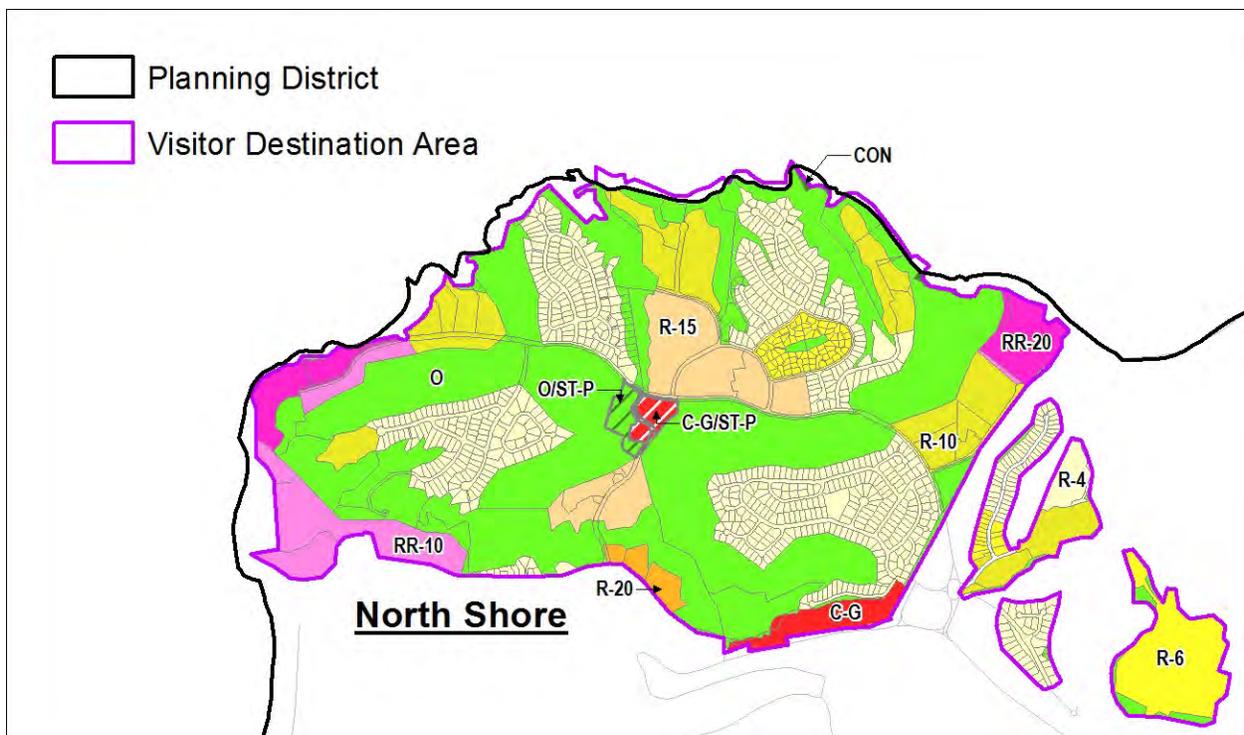
Planning District	Acres
Kapa'a-Wailua	143.28
C-N	0.16
NO ZONING	4.42
O	9.82
O/ST-C	0.18
R-10	6.24
R-20	13.46
RR-20	108.99
Līhu'e	341.56
A	0.39
C-G	15.68
C-N	0.23
CON	1.66
I-G/ST-P	0.25
NO ZONING	0.84
O	156.36
R-10	5.99
R-2	38.77
R-20	18.13
RR-10	11.35
RR-20	91.91
North Shore	1,087.41

C-G	15.23
C-G/ST-P	6.08
C-N	0.14
CON	1.67
NO ZONING	3.16
O	458.34
O/ST-P	5.94
R-10	106.51
R-15	62.14
R-20	8.53
R-4	277.57
R-6	60.41
RR-10	48.26
RR-20	33.42
South Kaua'i	1,719.53
A	0.45
C-N	40.21
CON	0.21
I-L/ST-P	27.58
NO ZONING	34.04
O	307.03
O/ST-C	36.04
O/ST-O	168.06
O/ST-P	1.43
O/ST-P/ST-C	0.26
R-10	213.01
R-2	0.09
R-20	96.44
R-4	659.88
R-4/ST-P	6.14
R-6	14.97
RR-10	70.93
RR-20	42.74

Waimea-Kekaha	42.99
A	0.03
NO ZONING	0.13
O	1.35
P-D	0.01
RR-4	41.48
Grand Total	3,334.78

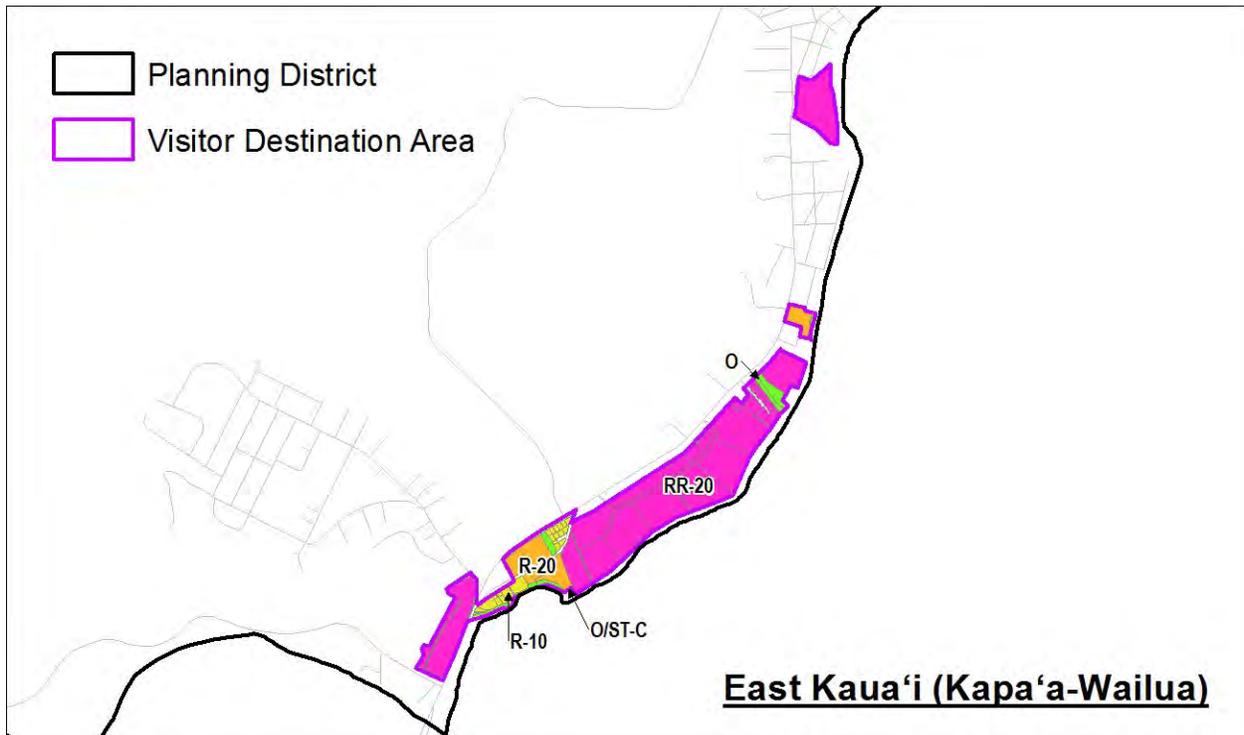
Source: Calculated from GIS. See Appendix A- Resort Map Package; Excel file Kauai_GIS_Zoning_VDA

FIGURE 16. VISITOR DESTINATION AREA ZONING- NORTH SHORE



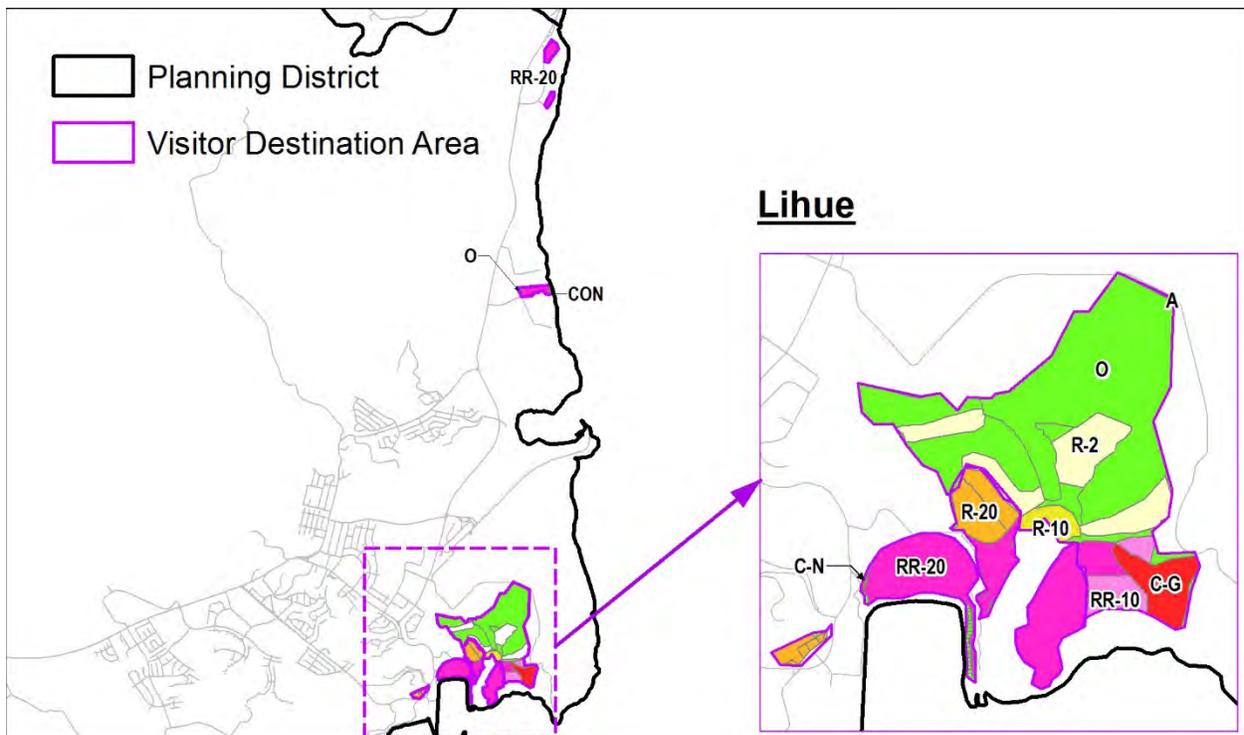
GIS Source: See Appendix A- Resort Map Package

FIGURE 17. VISITOR DESTINATION AREA ZONING- KAPA'A-WAILUA



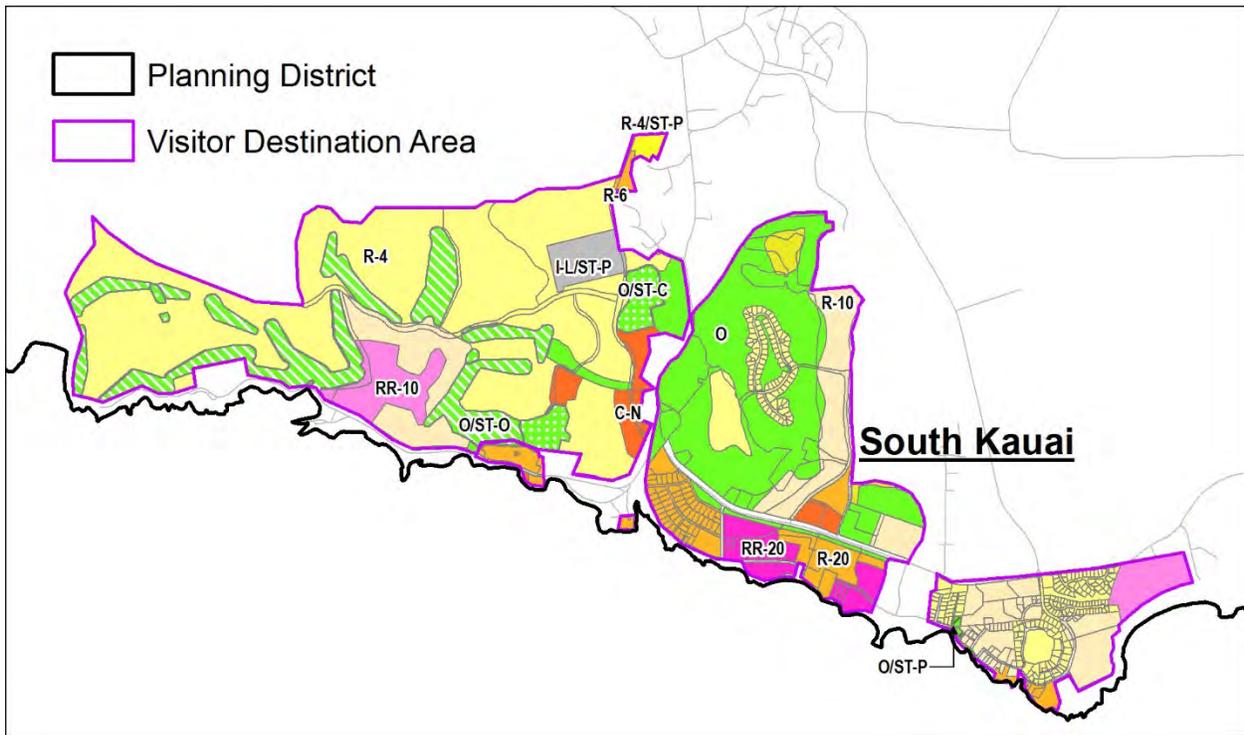
GIS Source: See Appendix A- Resort Map Package

FIGURE 18. VISITOR DESTINATION AREA ZONING- LIHU'E



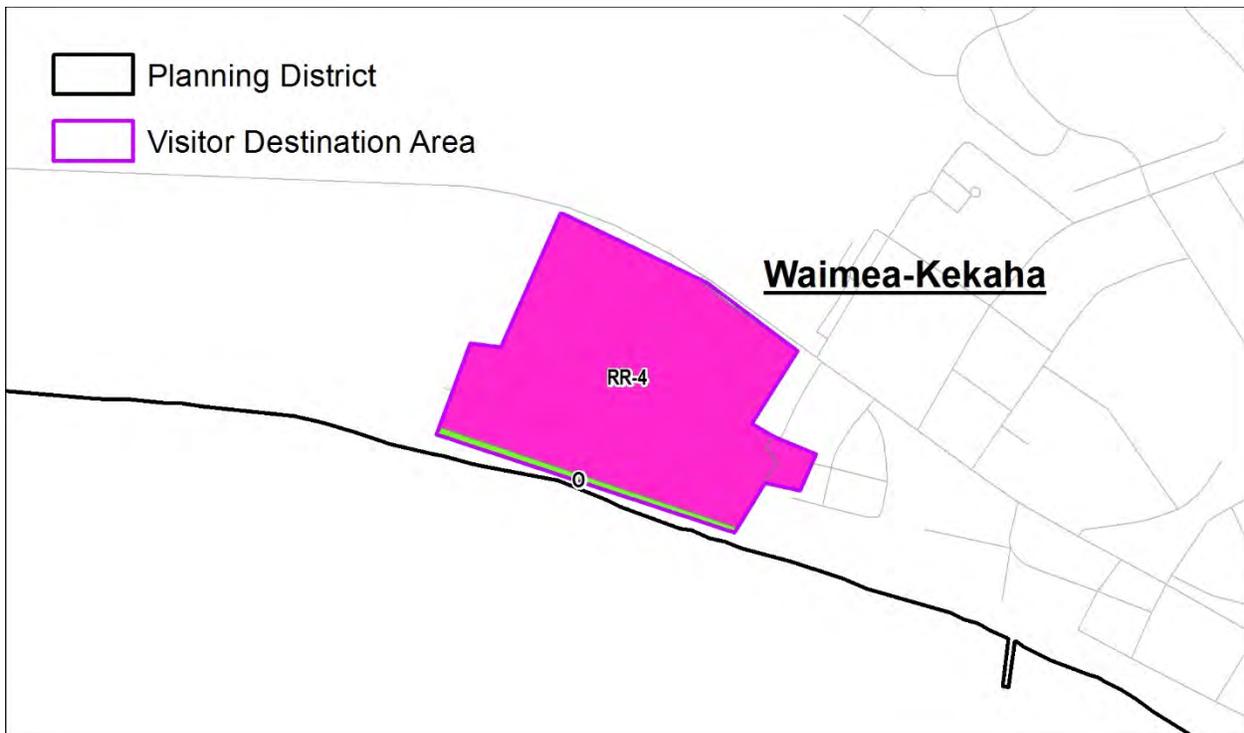
GIS Source: See Appendix A- Resort Map Package

FIGURE 19. VISITOR DESTINATION AREA ZONING- SOUTH KAUAI



GIS Source: See Appendix A- Resort Map Package

FIGURE 20. VISITOR DESTINATION AREA ZONING- WAIMEA-KEKAHA



GIS Source: See Appendix A- Resort Map Package

The estimated zoning capacity for transient vacation units within the VDA Residential zoning is shown in Table 14 below. Although the Visitor Plant Inventory of transient vacation units includes units outside the VDA (nonconforming units), theoretically the VDA Residential zoning districts could easily absorb all existing units. Note in Figure 20 above that the VDA in Waimea-Kekaha does not have any Residential (R) zoning districts, and would therefore not have any existing or future conforming single- or multi-family transient vacation rentals.

TABLE 14. ESTIMATED ZONING CAPACITY FOR SINGLE FAMILY TRANSIENT VACATION UNITS

Planning District	Estimated Capacity of Dwelling Units¹	Visitor Plant Inventory IVU 2012²
<i>Kapa'a-Wailua</i>	54	114²⁰
R-10	43	
R-20	11	
<i>Līhu'e</i>	305	67
R-20	305	
<i>North Shore</i>	2,222	352
R-10	544	
R-15	552	
R-20	163	
R-4	869	
R-6	94	
<i>South Koa'i</i>	3,537	639²¹
R-10	798	
R-2	1	
R-20	1,265	
R-4	1,422	
R-6	51	
Grand Total	6,118	1,172

1. Calculated from GIS using CommunityViz Buildout Wizard; see Appendix A- Resort Map Package; Excel file *Kauai_GIS_Zoning_VDA*

2. (Hawai'i Tourism Authority, 2013), Table 5b (Inventory by Area and Unit Type- Koa'i Island)

According to County records, the estimated total nonconforming use single-family transient vacation rental properties is 450.²² The Visitor Plant Inventory total unit count likely includes the

²⁰ The Planning District boundary for Līhu'e probably includes areas that the VPI includes in Wailua/Kapa'a.

²¹ Includes 91 units that VPI 2012 Table 5b includes in Kalāheo/Waimea.

²² Personal communication with Planning Department staff.

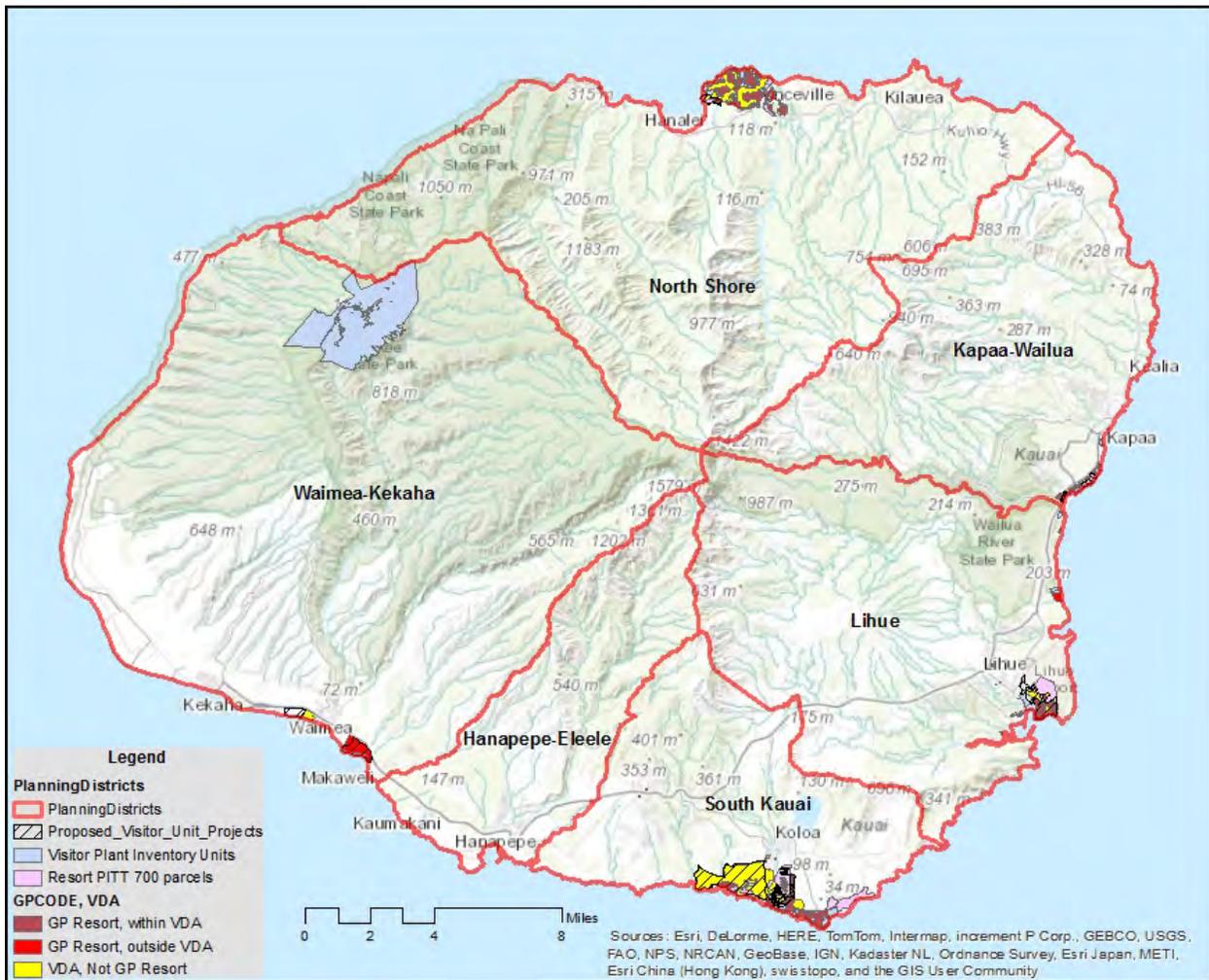
non-conforming properties (outside the VDA) that have or have not been legitimized with Nonconforming Use Certificates. When the County transient rental vacation unit records are complete, the resort inventory should be able to locate and distinguish at the parcel level the following:

- Nonconforming single-family transient vacation rentals (outside the VDA) (Planning Department)
- All single-family transient vacation rentals registered with the Director of Finance (Real Property Tax Division)
- All properties on the Visitor Plant Inventory, updated with each new year, cross-referenced with PITT code (HTA cross-checked by the Planning Department and Real Property Tax Division)
- Illegal units that are actually being used as transient vacation rentals but not registered (Real Property Tax Division records cross-checked with Planning Department records)
- Proposed resort projects with status of approval, type of project consistent with the Visitor Plant Inventory classification, number of units, and anticipated date of occupancy (Planning Department records cross-checked with HTA data from the Visitor Plant Inventory).

3.2.3.3 State Land Use, General Plan, Zoning

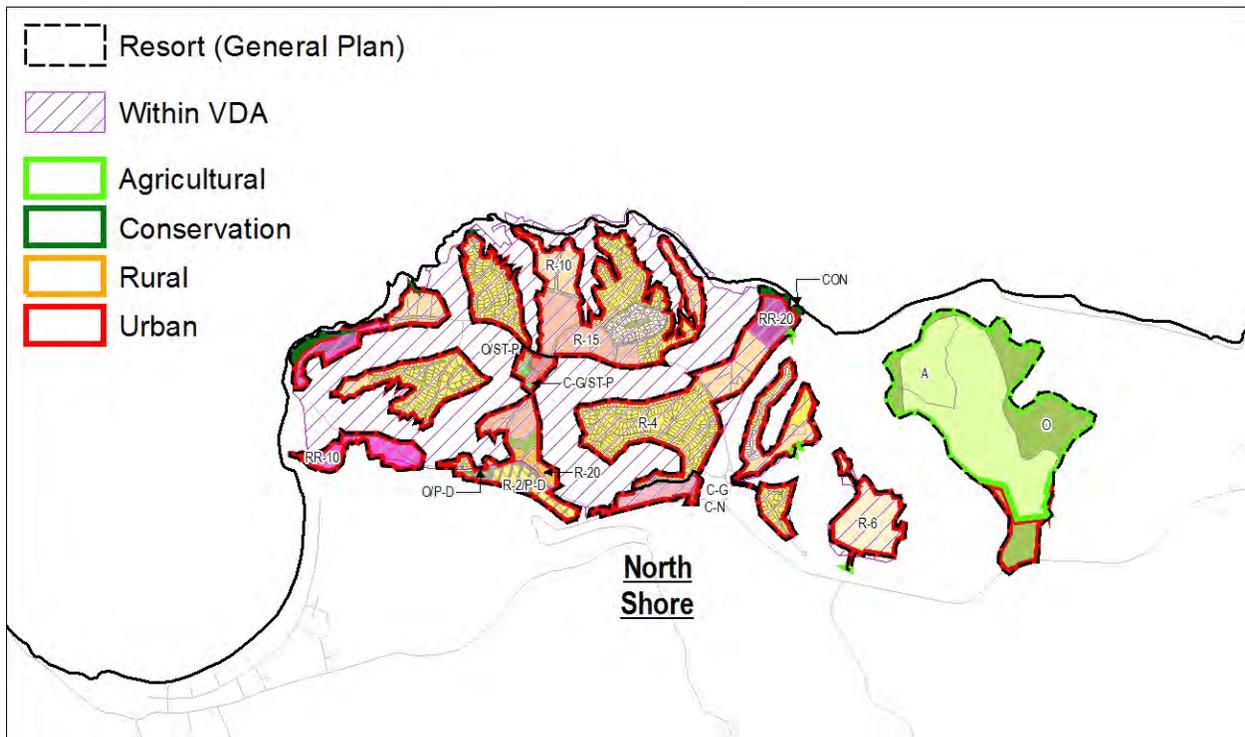
All General Plan Resort designations are in the State Land Use Urban District, except for two areas—one in the Waimea-Kekaha Planning District and the other in the North Shore district that are in the Agricultural District (see Figure 22 through Figure 26). The General Plan Resort areas for South Kaua'i and East Kaua'i are within the VDA; North Shore, Līhu'e and Waimea-Kekaha have General Plan Resort areas outside the VDA. Not all VDA areas are within the General Plan Resort (see Figure 21).

FIGURE 21. COMPARISON OF GENERAL PLAN RESORT & VACATION DESTINATION AREAS



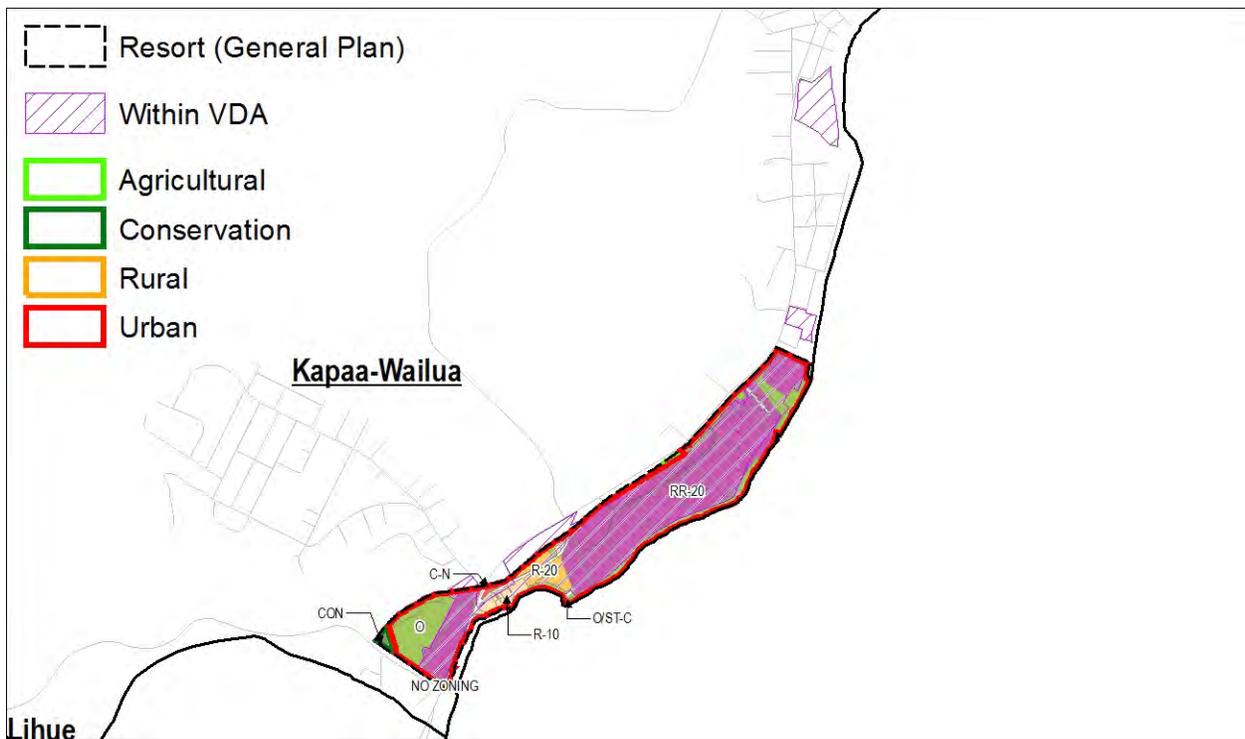
GIS Source: See Appendix A- Resort Map Package

FIGURE 22. COMPARISON OF GENERAL PLAN RESORT TO STATE LAND USE DISTRICTS AND VDA- NORTH SHORE



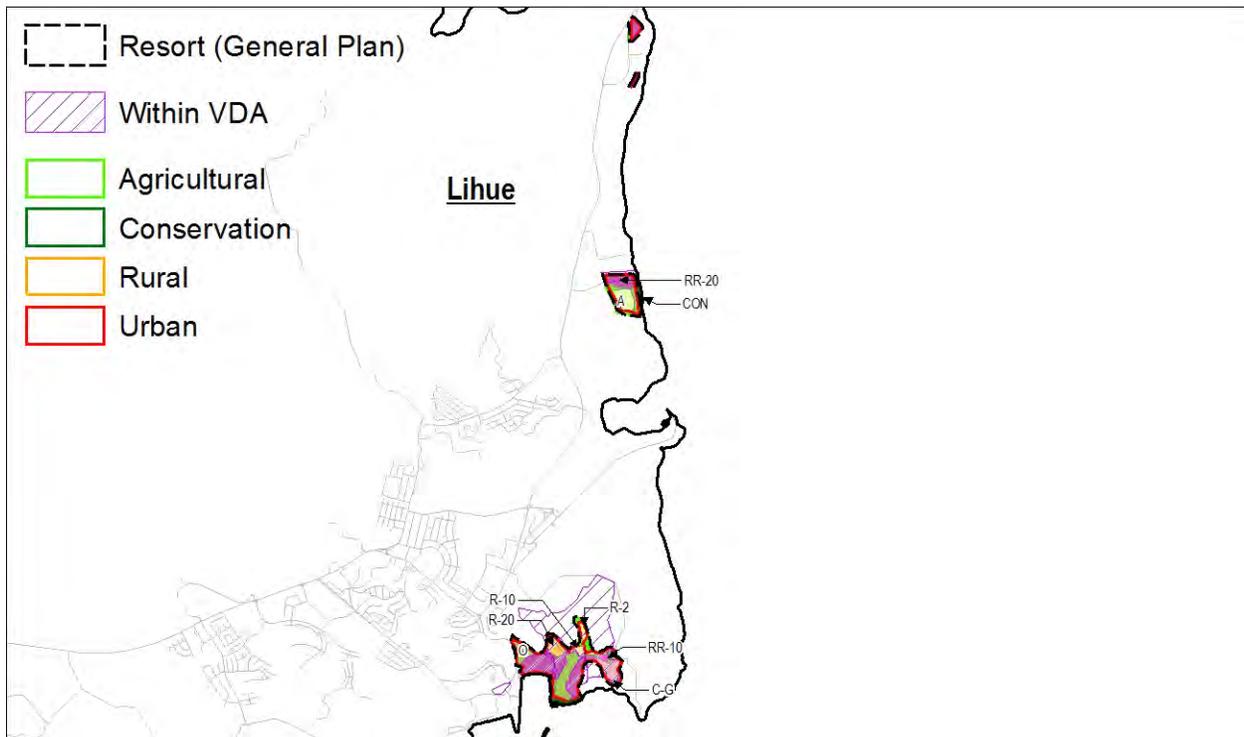
GIS Source: See Appendix A- Resort Map Package

FIGURE 23. COMPARISON OF GENERAL PLAN RESORT TO STATE LAND USE DISTRICTS AND VDA- KAPA'A-WAILUA



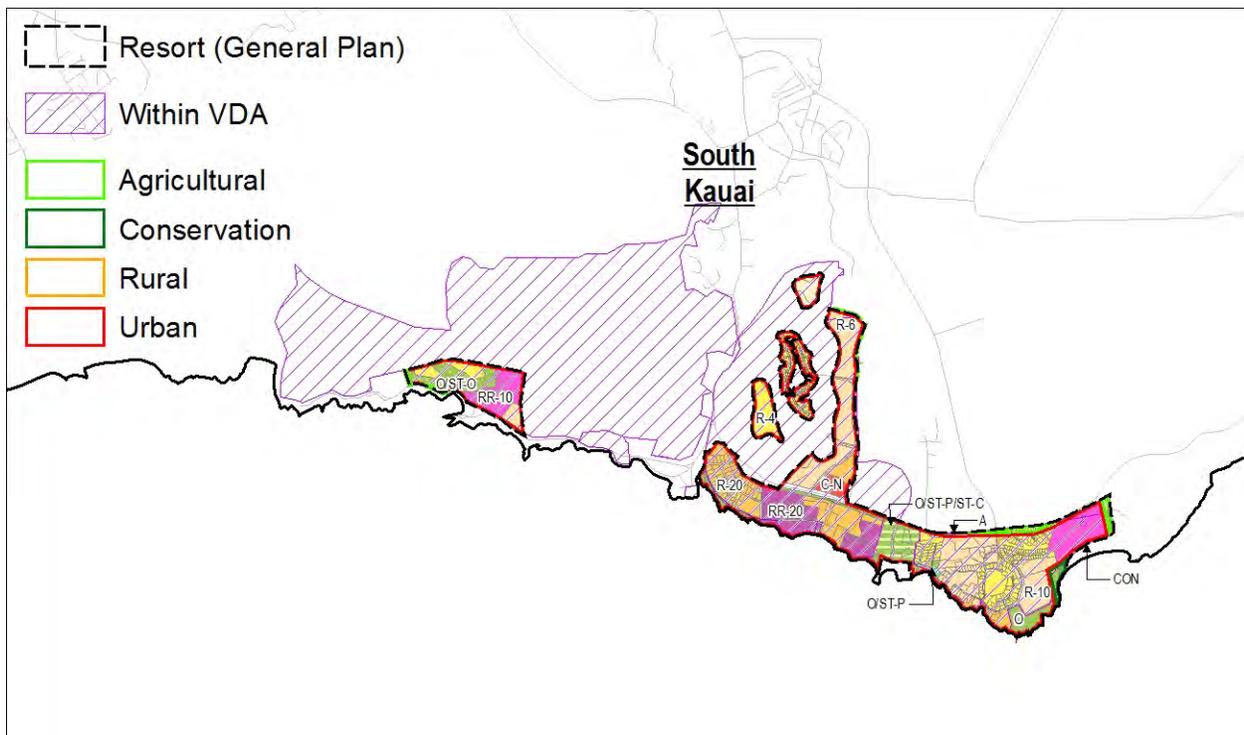
GIS Source: See Appendix A- Resort Map Package

FIGURE 24. COMPARISON OF GENERAL PLAN RESORT TO STATE LAND USE DISTRICTS AND VDA- LIHU'É



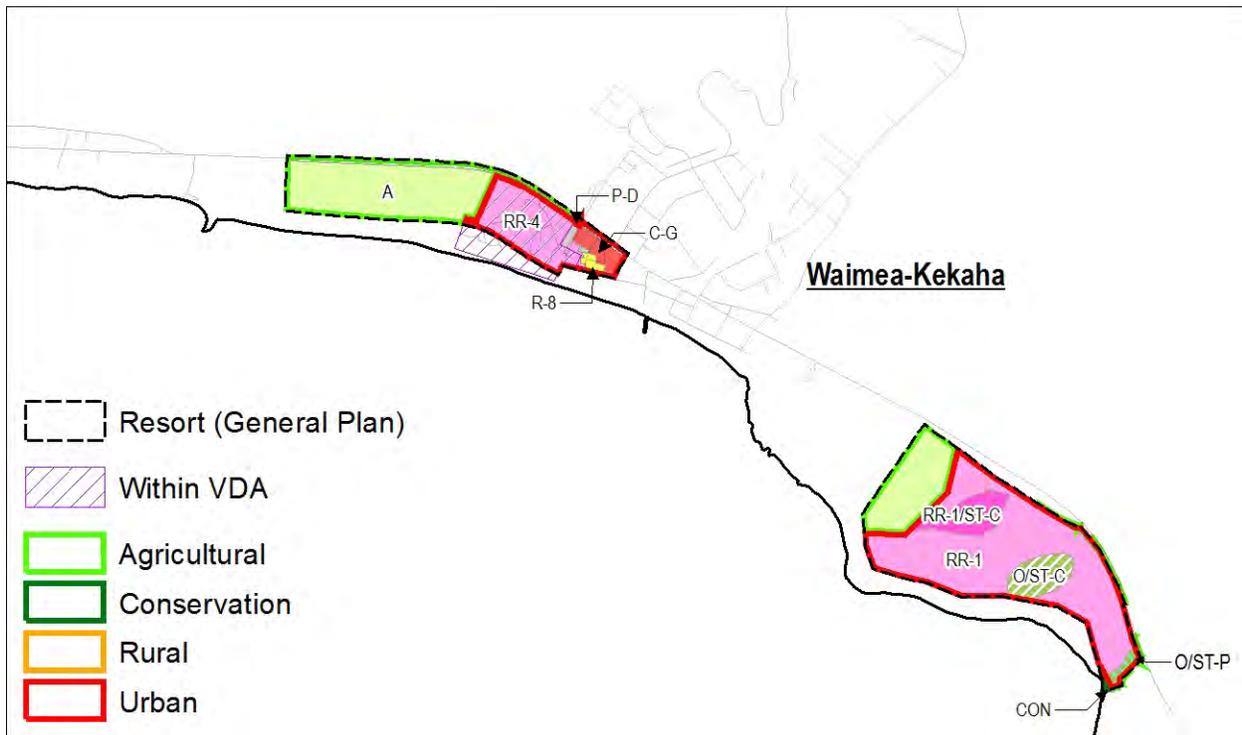
GIS Source: See Appendix A- Resort Map Package

FIGURE 25. COMPARISON OF GENERAL PLAN RESORT TO STATE LAND USE DISTRICTS AND VDA- SOUTH KAUA'I



GIS Source: See Appendix A- Resort Map Package

FIGURE 26. COMPARISON OF GENERAL PLAN RESORT TO STATE LAND USE DISTRICTS AND VDA- WAIMEA-KEKAHA



GIS Source: See Appendix A- Resort Map Package

All Resort zoned parcels are located within the General Plan Resort or VDA, except for two parcels: TMK 458011013 and 458011027 in the North Shore District.

3.3 Commercial

3.3.1 Definition

According to the Zoning Code, 'Commercial Use' means the purchase, sale or other transaction involving the handling or disposition (other than that included in the term "industry" as defined in this section) of any article, substance or commodity for profit or a livelihood, including in addition, public garages, office buildings, offices of doctors and other professionals, public stables, recreational and amusement enterprises conducted for profit, shops for the sale of personal services, places where commodities or services are sold or are offered for sale, either by direct handling of merchandise or by agreements to furnish them but not including dumps and junk yards."²³ Commercial uses are permitted in the General and Neighborhood Commercial zoning districts (C-G, C-N).

3.3.2 Methodology

Commercial uses were inventoried using the following steps:

²³ Zoning Code section 8-1.5.

1. Commercial uses were identified based on property tax appraisals for commercial (PITT 300).
2. The existing floor area was determined as follows:
 - a. For each parcel coded PITT 300, the building footprint layer was used to obtain the footprint area.
 - b. The number of stories was assumed as one story.
 - c. The GIS calculated the floor area by multiplying the floor area by stories, which assumes that the floor area for each story is the same as the footprint. This approximation suffices for planning purposes.
3. The zoning capacity (2035 floor area) was estimated with CommunityViz Buildout Wizard for the CG and CN zoning districts.
4. The estimated commercial floor area based on PITT code was compared to a 1995 inventory of commercial uses prepared for a land transportation study as an order of magnitude comparison.
5. Future inventory updates would benefit from Real Property including a gross floor area field for each property, possibly using the 1995 inventory as a baseline to update.

3.3.3 Results

3.3.3.1 Planning Districts

The Planning District with the most commercial floor area is Līhu‘e followed by Kapa‘a-Wailua, South Kaua‘i, Hanapēpē-‘Ele‘ele, Waimea-Kekaha, North Shore (see Table 15 and Figure 27). The 1995 inventory of commercial uses results in approximately 60% of the total floor area estimated using the PITT and building footprint methodology, but the same ranking order among the Planning Districts. The total floor area of the 1995 inventory is a detailed on-the-ground inventory at a point in time. It serves as an excellent baseline for possibly the Real Property Tax appraisers to update.

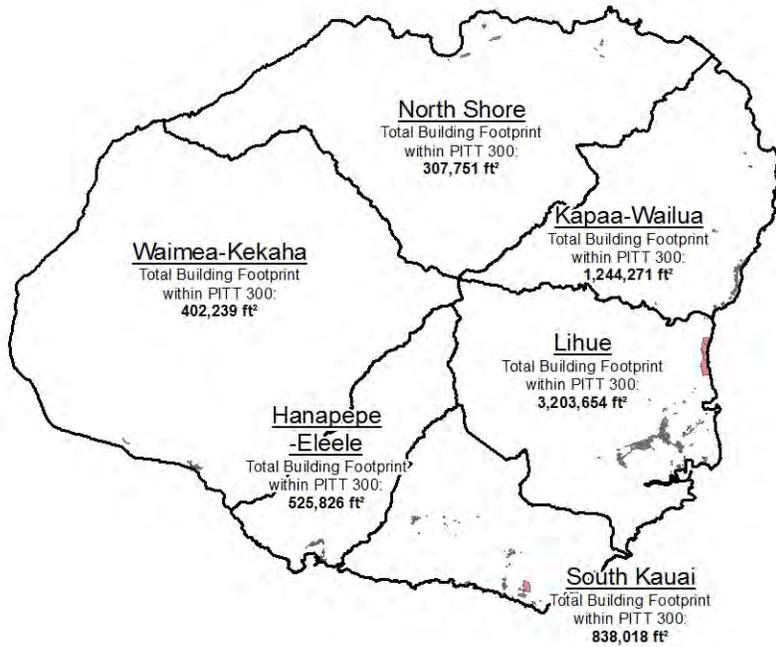
TABLE 15. COMMERCIAL FLOOR AREA BY PLANNING DISTRICT

Planning District	Floor Area (ft²)¹	% of Total Commercial Floor Area	1995 Inventory²
Līhu‘e	3,203,654	49%	2,590,728
South Kaua‘i	838,018	13%	249,903
Hanapēpē-‘Ele‘ele	525,826	8%	228,831
Waimea- Kekaha	402,239	6%	122,134
North Shore	307,751	5%	-
Kapa‘a-Wailua	1,244,271	19%	670,206
TOTAL	6,521,759	100%	3,861,802

1. Calculated from GIS based on PITT code 300. See Appendix A- Comm_Indus Map Package; Excel file Comm_Indus
2. Calculated from GIS based on 1995 Commercial Inventory. See Appendix A- Comm_Indust-calculation Map Package; Excel file Comm_Indus

FIGURE 27. COMMERCIAL (PITT 300) FLOOR AREA BY PLANNING DISTRICT

- Planning Districts
- PITT 300 - Commercial
- Building Footprint (ft²)



GIS Source: See Appendix A—Comm_Indus Map Package

The SMS Study has a projection for jobs. The preferred methodology would be to relate the jobs projection to land use requirements. However, that would require the jobs projection to breakout projected jobs by resort, agriculture-related, retail and office, and industrial, to respectively correlate to land use requirements for resort, agriculture, commercial, and industrial. For commercial zoning, a gross square feet per employee factor from census data would then be multiplied by the projected jobs to obtain the projected need in commercial floor area.²⁴

In lieu of that preferred methodology, Table 16 is a ratio of the commercial floor area to resident population. The assumption is that the existing floor area is a function of and adequate for the existing population, and that projected commercial land use patterns could be based on maintaining that ratio. The only potential exception to that assumption is Kapa'a-Wailua. This Planning District is heavily influenced by visitors, yet the ratio of commercial floor area to population is less than most of the other districts.

²⁴ (Nelson, 2004)

TABLE 16. RATIO OF COMMERCIAL FLOOR AREA TO RESIDENT POPULATION

	A	B	C	D	E	F	G	H
<i>Planning District</i>	Footprint (ft²)¹	% County²	2010 Pop.³	Floor Area: Pop. 2010⁴	Commercial Service Area⁵	2035 Pop.⁶	2035 Floor Area⁷	2035 vs 2010 Increase⁸
Līhu'e	3,203,654	49%	14,683	218	Regional	23,456	5,117,817	1,914,163
South Kaua'i	838,018	13%	11,696	72	Resort-Influenced	16,855	1,207,660	369,642
Hanapēpē-'Ele'ele	525,826	8%	6,157	85	Rural Town	7,094	605,849	80,023
Waimea-Kekaha	402,239	6%	5,561	72	Rural Town	6,566	474,933	72,694
North Shore	307,751	5%	8,002	38	Rural Town	8,933	343,557	35,806
Kapa'a-Wailua	1,244,271	19%	20,992	59	Resort-Influenced	25,110	1,488,360	244,089
County of Kaua'i	6,521,759	100%	67,091	97		88,014	9,238,175	2,716,416

1. From Table 15 in this report.
 2. Value from Col. A for Planning District divided by value for County of Kaua'i in Col A.
 3. 2010 Census allocated to Planning Districts by SMS Research & Marketing Services, Inc., August 5, 2013
 4. Col. A divided by Col. C
 5. Consultant's opinion
 6. 2035 population projection allocated to Planning Districts by SMS Research & Marketing Services, Inc., August 5, 2013
 7. Col. F multiplied by Col. D
 8. Col. G minus Col. A
- See Appendix A- Excel file Comm_Indus

Assuming a floor area ratio (FAR) of 0.5, the capacity of the existing commercial zoning (CG, CN) is more than adequate to accommodate the projected 2035 floor area needs based on this ratio of population to existing floor area.

TABLE 17. COMMERCIAL ZONING CAPACITY

	A	B	C
<i>Planning District</i>	2035 Floor Area (ft²)¹	CG/CN Zoning Capacity²	2035 % Zoning Capacity³
Līhu'e	5,117,817	14,623,523	35%
South Kaua'i	1,207,660	6,184,967	20%
Hanapēpē-'Ele'ele	605,849	866,465	70%
Waimea-Kekaha	474,933	1,000,689	47%
North Shore	343,557	2,293,241	15%
Kapa'a-Wailua	1,488,360	1,240,467	120%
County of Kaua'i	9,238,175	26,209,352	35%

1. From Table 16 in this report, Col. G

2. Calculated in GIS using CommunityViz Buildout Wizard. See Appendix A- Excel file Comm_Indus
3. Col. A divided by Col. B

The commercial component is diverse, changes, and can be mixed with all types of other uses. Recognizing this dynamic characteristic, the current General Plan does not have a separate Commercial designation; rather, the General Plan assumes commercial uses would be mixed with other uses in the Urban Center, Residential Community, or Resort designations.

Increasingly, commercial uses would be mixed “horizontally” (single purpose commercial building adjacent to non-commercial uses) or “vertically” (a single building with commercial and non-commercial uses). Perhaps a new PITT code may be needed for a mixed-use parcel. At a minimum, the commercial component could be distinguished from the other mix of uses by collecting floor area and living unit data.

3.4 Industrial

3.4.1 Definition

According to the Zoning Code, ‘Industry’ means the manufacture, fabrication, processing, reduction or destruction of any article, substance or commodity, or any other treatment thereof in a manner so as to change the form, character or appearance thereof, and storage other than that accessory to a nonmanufacturing use on the same parcel including storage elevators, truck storage yards, warehouses, wholesale storage and other similar types of enterprises.”²⁵ Industrial uses are permitted in the General and Limited Industrial zoning districts (I-G, I-L).

3.4.2 Methodology

Industrial uses were inventoried using the following steps:

1. Industrial uses were identified based on property tax appraisals for commercial (PITT 400).
2. The floor area was determined as follows:
 - a. For each parcel coded PITT 400, the building footprint layer was used to obtain the footprint area.
 - b. The number of stories was assumed as one story.
 - c. The GIS calculated the floor area by multiplying the floor area by stories, which assumes that the floor area for each story is the same as the footprint. This approximation suffices for planning purposes.
3. Future inventory updates would benefit from Real Property including a gross floor area field for each property.

²⁵ Zoning Code section 8-1.5.

3.4.3 Results

3.4.3.1 Planning Districts

The ratio of the industrial floor area to resident population assumes that the existing floor area is a function of and adequate for the existing population, and that projected industrial land use patterns could be based on maintaining that ratio (see Table 18 and Figure 28).

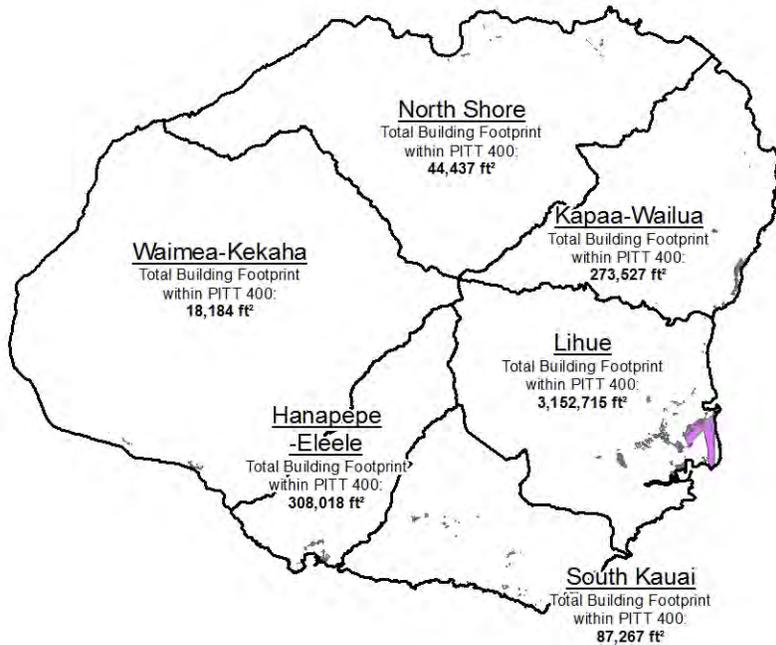
TABLE 18. RATIO OF INDUSTRIAL FLOOR AREA TO RESIDENT POPULATION

	A	B	C	D	E	F	G	H
Planning District	Footprint (ft ²) ¹	% ²	2010 Pop. ³	Floor Area: Pop. 2010 ⁴	Industrial Service Area ⁵	2035 Pop. ⁶	2035 Floor Area ⁷	2035 vs 2010 Increase ⁸
Līhu'e	3,152,715	81%	14,683	215	Regional	23,456	5,036,442	1,883,727
South Kaua'i	87,267	2%	11,696	7	Rural Town	16,855	125,760	38,493
Hanapēpē-'Ele'ele	308,018	8%	6,157	50	Port	7,094	354,894	46,876
Waimea-Kekaha	18,184	0%	5,561	3	Rural Town	6,566	21,470	3,286
North Shore	44,437	1%	8,002	6	Rural Town	8,933	9,607	5,170
Kapa'a-Wailua	273,527	7%	20,992	13	Relative proximity to Līhu'e	25,110	327,185	53,658
County of Kaua'i	3,884,148	100%	67,091	58		88,014	5,915,358	2,031,210

1. Calculated from GIS based on PITT code 400. See Appendix A- Comm_Indus Map Package; Excel file Comm_Indus
 2. Value from Col. A for Planning District divided by value for County of Kaua'i in Col A.
 3. 2010 Census allocated to Planning Districts by SMS Research & Marketing Services, Inc., August 5, 2013
 4. Col. A divided by Col. C
 5. Consultant's opinion
 6. 2035 population projection allocated to Planning Districts by SMS Research & Marketing Services, Inc., August 5, 2013
 7. Col. F multiplied by Col. D
 8. Col. G minus Col. A
- See Appendix A- Excel file Comm_Indus

FIGURE 28. INDUSTRIAL FLOOR AREA BY PLANNING DISTRICT

-  Planning Districts
-  PITT 400 - Industrial
-  Building Footprint (ft²)



GIS Source: See Appendix A- Comm_Indus Map Package

3.5 Public Facilities

3.5.1 Definition

According to the Zoning Code, "'Public Facility' means a facility owned or controlled by a governmental agency."²⁶ This inventory includes federal, state, and county facilities. The inventory also goes beyond the definition by including *private* schools, hospitals, and electric plants. The types of public facilities inventoried include: transportation (airport, harbors), public safety (fire stations, police stations, correctional center), medical (hospitals), waste disposal (wastewater treatment plants, landfill), recreation (parks), education (schools, college), community (neighborhood centers), and energy (electric power plants).

3.5.2 Methodology

Public facilities were inventoried using the following steps:

1. The County provided a spreadsheet listing the public facilities (including selected private facilities) with TMK numbers. This spreadsheet was joined to the parcel layer to create a GIS shapefile.
2. To test a methodology to estimate the relative population served by selected facilities, a map was created to show the relative density of residential address points (PITT 100

²⁶ Zoning Code section 8-1.5.

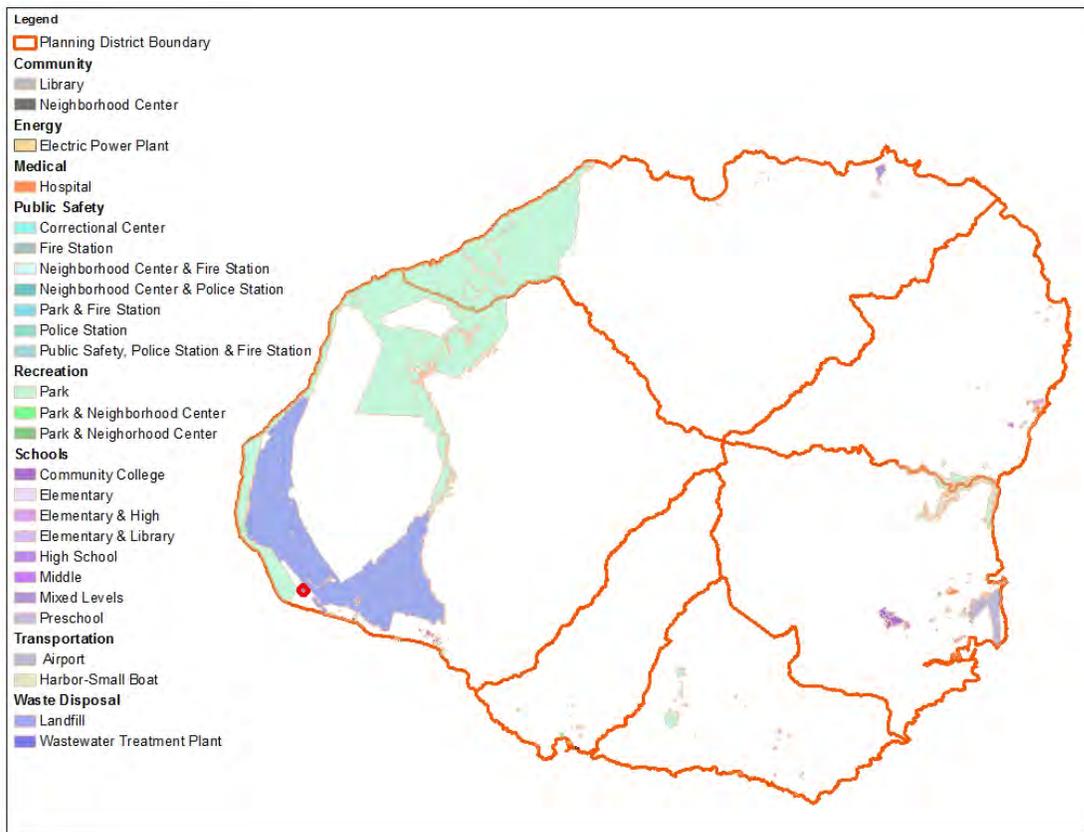
and 200) within a 5 mile buffer of fire stations. The County could use this method to assess level of service for the facilities whenever the County establishes level of service standards.

3.5.3 Results

3.5.3.1 Planning Districts

The inventory of public facilities shown in Figure 29 and Table 19 provides a basis to assess level of service adequacy. The map shows the parcel where the facility is located and not building locations. Subsequent refinements to this GIS inventory can add a point layer for building locations.

FIGURE 29. PUBLIC FACILITIES LOCATIONS



GIS Source: See Appendix A- Pub Fac Map Package

FIGURE 30. PUBLIC FACILITIES, WAIMEA-KEKAHA



FIGURE 31. PUBLIC FACILITIES, HANAPĒPĒ-‘ĒLE‘ĒLE



FIGURE 32. PUBLIC FACILITIES, KAPA'A-WAILUA

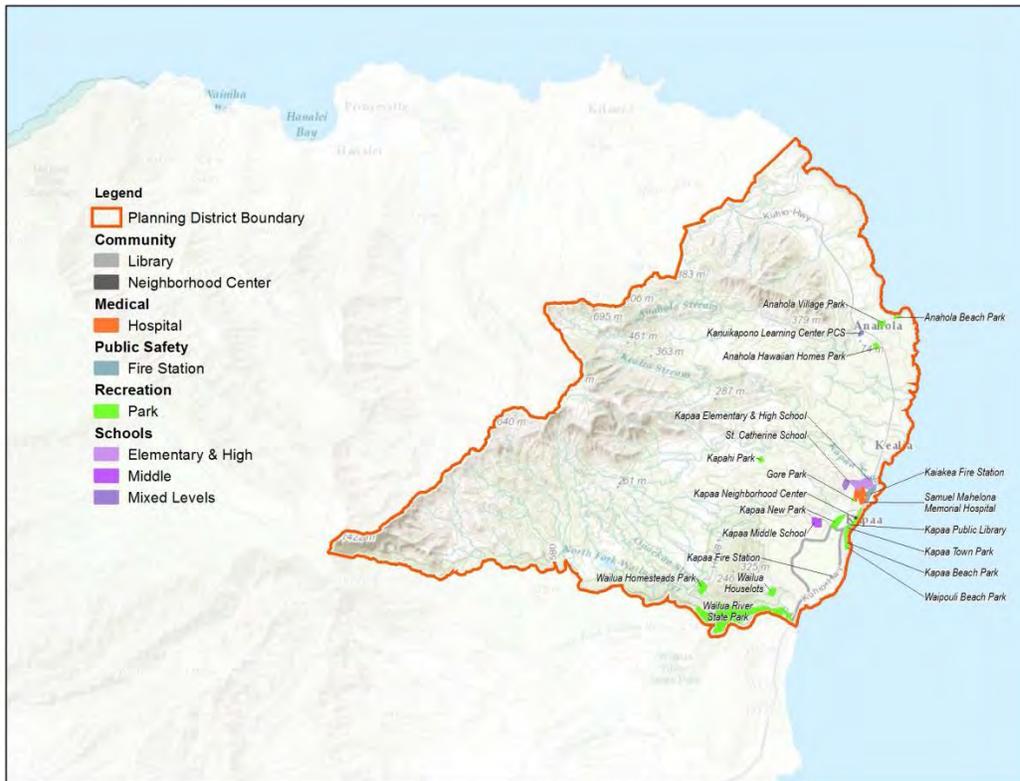


FIGURE 33. PUBLIC FACILITIES, LIHU'E

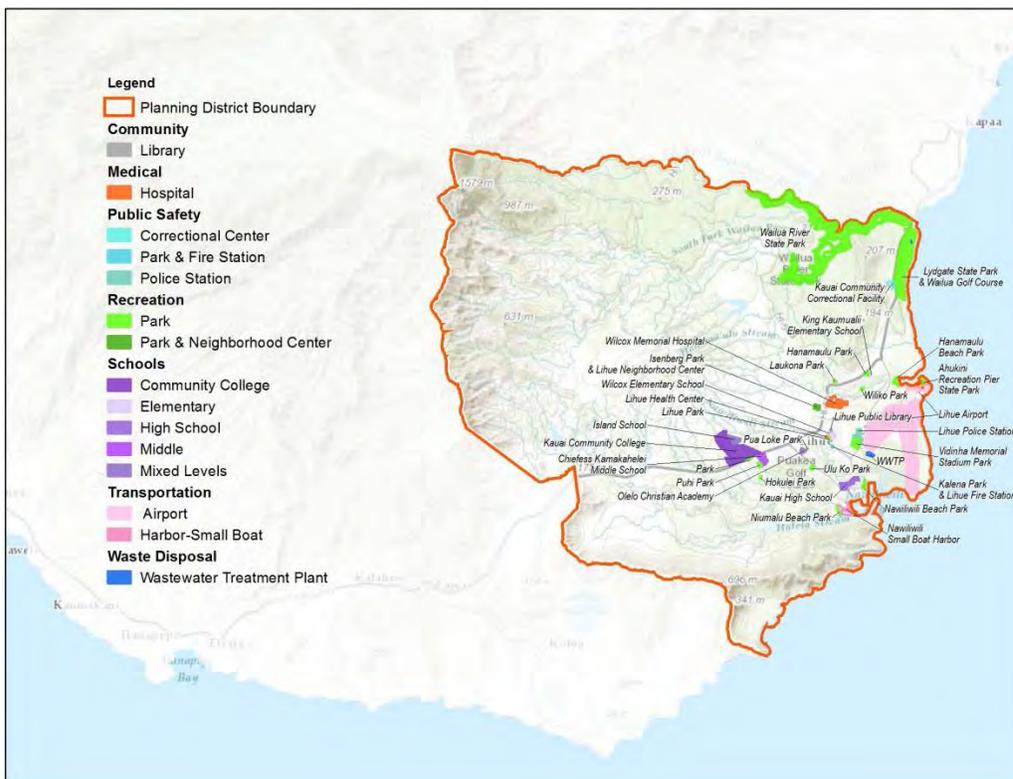


FIGURE 34. PUBLIC FACILITIES, NORTH SHORE



FIGURE 35. PUBLIC FACILITIES, SOUTH KAUA'I



TABLE 19. PUBLIC FACILITIES BY PLANNING DISTRICTS

Planning District	Category	Type	Name	Jurisdiction	Acres
LĪHU‘E	COMMUNITY	<i>Library</i>	Līhu‘e Public Library	State	1.23
		Community Total			
	MEDICAL	<i>Hospital</i>	Līhu‘e Health Center	State	0.85
			Wilcox Memorial Hospital	Private	45.83
		Medical Total			
	PUBLIC SAFETY	<i>Correctional Center</i>	Kaua‘i Community Correctional Facility	State	8.81
		<i>Park & Fire Station</i>	Kalena Park & Līhu‘e Fire Station	County	1.35
		<i>Police Station</i>	Līhu‘e Police Station	County	20.28
		Public Safety Total			
	RECREATION	<i>Park</i>	Ahukini Recreation Pier State Park	State	1.52
			Hanamā‘ulu Beach Park	County	8.91
			Hanamā‘ulu Park	County	3.91
			Hokulei Park	County	1.99
			Laukona Park	County	2.59
			Līhu‘e Park	County	2.61
			Lydgate State Park & Wailua Golf Course	County	253.93
			Nāwiliwili Beach Park	County	6.47
			Niumalu Beach Park	County	3.55
			Park	County	3.31
			Pua Loke Park	County	0.63
			Puhi Park	County	4.42
			Ulu Ko Park	County	4.08
			Vidinha Memorial Stadium Park	County	22.79
			Wailua River State Park	State	844.17
			Wiliko Park	County	2.33
			<i>Park & Neighborhood Center</i>	Isenberg Park & Līhu‘e Neighborhood Center	County
		Recreation Total			
	SCHOOLS	<i>School-Community College</i>	Kaua‘i Community College	State	199.11
		<i>School-Elementary</i>	King Kaumuali‘i Elementary School	State	2.91
			Wilcox Elementary School	State	10.32
		<i>School-High School</i>	Kaua‘i High School	State	31.26

		<i>School-Middle</i>	Chiefess Kamakahahelei Middle School	State	22.11
		<i>School-Mixed Levels</i>	Island School	Private	29.72
			Olelo Christian Academy	Private	6.04
		Schools Total			
	TRANSPORTATION	<i>Airport</i>	Līhu'e Airport	State	768.12
		<i>Harbor-Small Boat</i>	Nāwiliwili Small Boat Harbor	State	10.10
		Transportation Total			
	WASTE DISPOSAL	Wastewater Treatment Plant	Wastewater Treatment Plant	County	9.51
		Waste Disposal Total			
	LĪHU'E TOTAL				
SOUTH KAUA'I	PUBLIC SAFETY	<i>Fire Station</i>	Kōloa Fire Station	County	3.85
		<i>Neighborhood Center & Fire Station</i>	Kalāheo Neighborhood Center & Fire Station	County	2.82
		<i>Neighborhood Center & Police Station</i>	Kōloa Neighborhood Center & Police Station	County	0.99
		Public Safety Total			
	RECREATION	<i>Park</i>	Kalāheo Multipurpose & Recreation Center	County	2.72
			Kalawai Park	County	21.42
			Kōloa Park	County	11.33
			Kukuiolono Park	Private	172.60
			Kukui'ula Harbor Park	County	0.37
			'Ōma'o Park	County	1.47
			Po'ipū Beach	County	5.69
			Spouting Horn Park	County	2.39
			Waha Park	County	1.96
			Wahiawa Mauka State Park Reserve	State	52.38
			Waikomo Park	County	3.83
			Weliweli Park	County	8.80
	Recreation Total				284.94
	SCHOOLS	<i>School-Elementary</i>	Kalāheo Elementary School	State	7.50
		<i>School-Elementary & Library</i>	Kōloa Elementary School & Public Library	State	7.49
		<i>School-Mixed Levels</i>	Kahili Adventist School	Private	4.45

		Schools Total			19.44
	TRANSPORTATION	<i>Harbor-Small Boat</i>	Kukui'ula Small Boat Harbor	State	7.83
		Transportation Total			7.83
SOUTH KAUA'I TOTAL					319.87
HANAPĒPĒ-'ELE'ELE	COMMUNITY	<i>Library</i>	Hanapēpē Public Library	State	0.90
		Community Total			0.90
	ENERGY	<i>Electric Power Plant</i>	Electric Power Plant	Private	4.55
		Energy Total			4.55
	PUBLIC SAFETY	<i>Fire Station</i>	Hanapēpē Fire Station	County	0.37
		Public Safety Total			0.37
	RECREATION	<i>Park</i>	'Ele'ele Nani Park	County	7.19
			'Ele'ele Park	County	2.95
			Hanapēpē Cliffside Park	County	1.65
			Hanapēpē Heights House Lots Park	County	0.90
			Hanapēpē Playground	County	1.08
			Salt Pond Park	County	8.26
		<i>Park & Neighborhood Center</i>	Hanapēpē Park & Neighborhood Center	County	13.30
			Kaumakani Park & Neighborhood Center	County	7.21
		Recreation Total			42.56
	SCHOOLS	<i>School-Elementary</i>	'Ele'ele Elementary School	State	14.25
	Schools Total			14.25	
TRANSPORTATION	<i>Harbor-Small Boat</i>	Port Allen Small Boat Harbor	State	12.81	
	Transportation Total			12.81	
HANAPĒPĒ-'ELE'ELE TOTAL					75.44
WAIMEA-KEKAHA	COMMUNITY	<i>Library</i>	Waimea Public Library	State	0.62
		<i>Neighborhood Center</i>	Kekaha Neighborhood Center	County	9.63
			Waimea Neighborhood Center	County	3.05
		Community Total			13.30
	MEDICAL	<i>Hospital</i>	Kaua'i Veterans Memorial Hospital	Private	7.67
	Medical Total			7.67	
PUBLIC SAFETY	<i>Police Station & Fire Station</i>	Waimea Police & Fire Station	County	0.51	

		Public Safety Total		0.51
RECREATION	<i>Park</i>	Barking Sands	Federal	172.00
		Captain Cook Memorial Park	County	6.64
		Hofgaard Park	County	0.30
		Kehaha Gardens	County	3.57
		Kekaha Beach Park	County	36.66
		Kekaha Faye Park	County	8.57
		Koke'e State Park	State	3,684.04
		Lucy Wright Park	County	4.60
		Nā Pali Coast State Park	State	672.00
		Poli Hale State Park	State	148.31
		Russian Fort Elizabeth State Park	State	19.26
		Smokey Valley Park	County	0.48
		Waimea Athletic Field	County	12.99
		Waimea Canyon State Park	State	1,747.90
		Waimea Neighborhood Park	County	1.87
		Waimea State Recreation Pier	State	1.96
	Recreation Total			6,521.15
SCHOOLS	<i>School-Elementary</i>	Kekaha Elementary School	State	7.20
	<i>School-High School</i>	Waimea High School	State	13.40
	<i>School-Middle</i>	Waimea Canyon Middle School	State	15.68
	<i>School-Mixed Levels</i>	Ke Kula Ni'ihau O Kekaha Learning Center PCS	State	1.48
		Kula Aupuni Ni'ihau A Kahelelani Aloha PCS	State	1.85
		St. Teresa School	Private	3.25
Schools Total			42.86	
TRANSPORTATION	<i>Harbor-Small Boat</i>	Kikialoa Small Boat Harbor	State	16.38
	Transportation Total			16.38
WASTE DISPOSAL	<i>Landfill</i>	Kekaha Landfill	State	65.00
	<i>Wastewater Treatment Plant</i>	Wastewater Treatment Plant	County	3.85
	Waste Disposal Total			68.85
WAIMEA-KEKAHA TOTAL				6,670.72

NORTH SHORE	COMMUNITY	<i>Library</i>	Princeville Public Library	State	1.60	
		Community Total				1.60
	PUBLIC SAFETY	<i>Police Station & Fire Station</i>	Hanalei Police & Fire Station		County	1.02
		Public Safety Total				1.02
	RECREATION	<i>Park</i>	'Anini Beach Park		County	12.63
			Emmalani Park		Private	2.31
			Hā'ena Beach Park		County	5.65
			Hā'ena State Park		State	203.63
			Hanalei Beach Park		County	2.54
			Hanalei Pavilion		County	1.36
			Koke'e State Park		State	672.99
			Nā Pali Coast State Park		State	5,317.94
			Waioli Beach Park		State	6.33
		<i>Park & Neighborhood Center</i>	Kilauea Park & Neighborhood Center		County	4.63
	Recreation Total				6,230.01	
	SCHOOLS	<i>School-Elementary</i>	Hanalei Elementary School		State	3.70
			Kīlauea Elementary School		State	7.66
		<i>School-Mixed Levels</i>	Kaua'i Christian Academy		Private	96.07
		<i>School-Preschool</i>	Natural Bridges School		Private	0.28
		Schools Total				107.71
NORTH SHORE TOTAL					6,340.34	
KAPA'A-WAILUA	COMMUNITY	<i>Library</i>	Kapa'a Public Library	State	1.01	
		<i>Neighborhood Center</i>	Kapa'a Neighborhood Center	County	0.83	
		Community Total				1.84
	MEDICAL	<i>Hospital</i>	Samuel Mahelona Memorial Hospital		Private	33.42
		Medical Total				33.42
	PUBLIC SAFETY	<i>Fire Station</i>	Kaiakea Fire Station		County	16.57
			Kapa'a Fire Station		County	0.56
		Public Safety Total				17.13
	RECREATION	<i>Park</i>	Anahola Beach Park		County	1.52
			Anahola Hawaiian Homes Park		County	4.94

		Anahola Village Park	County	6.61
		Gore Park	County	0.75
		Kapa'a Beach Park	County	14.49
		Kapa'a New Park	County	18.18
		Kapa'a Town Park	County	2.77
		Kapahi Park	County	4.07
		Wailua Homesteads Park	County	17.03
		Wailua Houselots	County	10.07
		Wailua River State Park	State	236.47
		Waipouli Beach Park	County	3.01
		Recreation Total		319.92
	SCHOOLS	<i>School- lementary & High</i>	Kapa'a Elementary & High School	State 51.49
		<i>School-Middle</i>	Kapa'a Middle School	State 18.65
		<i>School-Mixed Levels</i>	Kanuikapono Learning Center PCS	State 3.68
			St. Catherine School	Private 11.81
		Schools Total		85.63
KAPA'A-WAILUA TOTAL				457.93
GRAND TOTAL = 16,208.42				

Data Source: Calculated from GIS. See Appendix A- Excel file PublicFacility

3.6 Agriculture

3.6.1 Definition

The State Land Use Law requires that a dwelling in the State Land Use Agricultural District be a “farm dwelling,” defined as “a single-family dwelling located on and used in connection with a farm, including clusters of single-family farm dwellings permitted within agricultural parks developed by the State, or where agricultural activity provides income to the family occupying the dwelling”²⁷ However, the farm dwelling requirement does not apply to lots existing before June 4, 1976.²⁸ Although it is not feasible to identify all lots in the Agricultural District created before June 4, 1976, one class of agricultural lots that are known to be created before 1976 is the homestead lots created by the pre-Statehood government.

According to the Zoning Code, the permitted residential density on parcels zoned Agriculture is one dwelling unit per parcel with one additional dwelling unit for each additional three acres in the same parcel up to five dwelling units.²⁹ Condominium property regimes (CPR) enable

²⁷ HRS 205-4.5(a)(4).

²⁸ HRS 205-4.5(b).

²⁹ Kaula'i County Code §8-8.2(c). Minimum lot size of 1 acre required, except if the parcel existed prior to September 1, 1972 (§8-8.2(c)(3)). “Farm worker housing” is a special type of residence on a commercial

separate ownership of the multiple dwellings on a single parcel. Besides the number of dwellings permitted on a parcel, residential density is also determined by the minimum lot size into which a parcel may be subdivided, provided the lot was created prior to 1972.³⁰ Contiguous lots or parcels of record in common ownership existing prior to or on September 1, 1972 may be subdivided according to a sliding scale of minimum lot sizes based on the parent lot size as follows:³¹

Parent Lot Size	Minimum Lot Size of Resulting Lots	Notes
≤10 acres	1 acre	
>10 acres and ≤20 acres	≤4 lots 1 acre, others 2 acres	
>20 acres and ≤30 acres	≤4 lots 1 acre, others 3 acres	
>30 acres and ≤50 acres	5 acres	
>50 acres and ≤300 acres	5 acres up to 10 lots	
>300 acres and ≤1,575 acres	≤75 acres: 5 acres up to 10 lots; additional 20% of the total parcel: 25 acres	1575 acres represents the maximum of 20% of the total parcel equal to the maximum 300 acres
>1,575 acres	≤75 acres: 5 acres up to 10 lots; additional 300 acres: 25 acres; balance unsubdivided	

Source: Adapted from *Kaua'i County Zoning Code (County Code Chapter 8, Article 8)*

Property tax incentives encourage bona fide agricultural use of lands whereby lands may be dedicated to agriculture for real property tax purposes for 10- or 20-year periods.³² The dedicated lands are taxed at the value of the use for 10-year dedications and 50% of the assessed value for 20-year dedications. Other incentives are available for lands classified as Important Agricultural Lands pursuant to the State Land Use Law.³³

Based on the foregoing discussion, the inventory of agricultural land use identifies: 1) homestead lots exempt from the farm dwelling requirement; 2) density classification based on lot size; 3) lands dedicated to agriculture for real property tax purposes; 4) lands in the State Land Use Agricultural District where the parcel has been subject to a condominium property regime; and 5) land designated as Important Agricultural Lands.

farm where a Use Permit may allow a maximum of three housing structures to house farm workers (Kaua'i County Code §8-8.6).

³⁰ Lots created after 1972 may not be resubdivided unless the parcel is redistricted to Urban or Rural under the State Land Use Law and rezoned to a district other than Agriculture or Open under the zoning code, except for public purposes or consolidation/resubdivision where no increase in density results (Kaua'i County Code § 8-8.3(c)).

³¹ Kaua'i County Code § 8-8.3(b).

³² Kaua'i County Code § 5A-9.1 and Department of Finance Real Property Tax Division Agricultural Dedication Program Rules adopted August 28, 2002 pursuant to Kaua'i County Code section 5A-9.1.

³³ HRS § 205-46 (incentives for Important Agricultural Lands).

3.6.2 Methodology

Homestead lots were inventoried using the following steps:

1. Consulted a historic USGS map that identified homesteads. Used the maps as a guide to find plat maps.
2. The State Department of Accounting and General Services (DAGS) has list of plat maps from the Territorial days. This list, HTSS/HSS Plan Map Index, was consulted to identify the plat numbers of homesteads created on Kaua'i.³⁴
3. Created GIS polygons defining the homestead areas based on the plat maps downloaded using the plat numbers from the index.
4. Used the ArcGIS spatial join feature to identify the parcels located within homestead areas.

Potential residential density on agriculture-zoned lands were inventoried as follows:

1. Table 21 below integrated the permitted units per lot and permitted subdivision to develop a density classification.
2. A rough estimate of the buildout capacity of agricultural zoned parcels was developed using CommunityViz's Build-Out Wizard based on the density classes developed in Table 21.

Lands dedicated to agricultural use were inventoried using the following steps:

1. The County provided a spreadsheet listing the parcels assessed under agricultural dedication tax rates. This spreadsheet was joined to the parcel layer to create a GIS shapefile.
2. The ag dedication parcel layer was compared to the prime agricultural lands (as defined by the Agricultural Lands of Importance to the State of Hawai'i (ALISH) and Land Study Bureau Class A or B lands) to determine to what extent the prime ag lands are committed to agriculture.
3. It was not clear from the property tax data what portion of the total parcel acreage was assessed as dedicated.

Condominiumized agricultural lands were inventoried using the following steps:

1. The County provided a spreadsheet listing the agricultural parcels that have CPR units. This spreadsheet was joined to the parcel layer to create a GIS shapefile.
2. The Real Property Division will develop a condo GIS layer where it will be possible in the future to determine the number of condo units on agricultural lands.

Important Agricultural Lands were inventoried using the following steps:

1. The County provided a shapefile of the Important Agricultural Lands (IALs) approved by the State Land Use Commission.
2. The IALs were mapped in relation to other agricultural lands classification (ALISH, LSB), tax dedication, and CPRs.

³⁴ HTS/HSS Plat Map Index, [file:///C:/Users/rtakemoto/Downloads/htsindex%20\(1\).pdf](file:///C:/Users/rtakemoto/Downloads/htsindex%20(1).pdf).

3.6.3 Results

3.6.3.1 Agricultural Homestead Lots

Based on historical USGS maps and DAGS map index, the homesteads are located only in the Kapa‘a-Wailua and South Kaua‘i Planning Districts as noted in the following table:

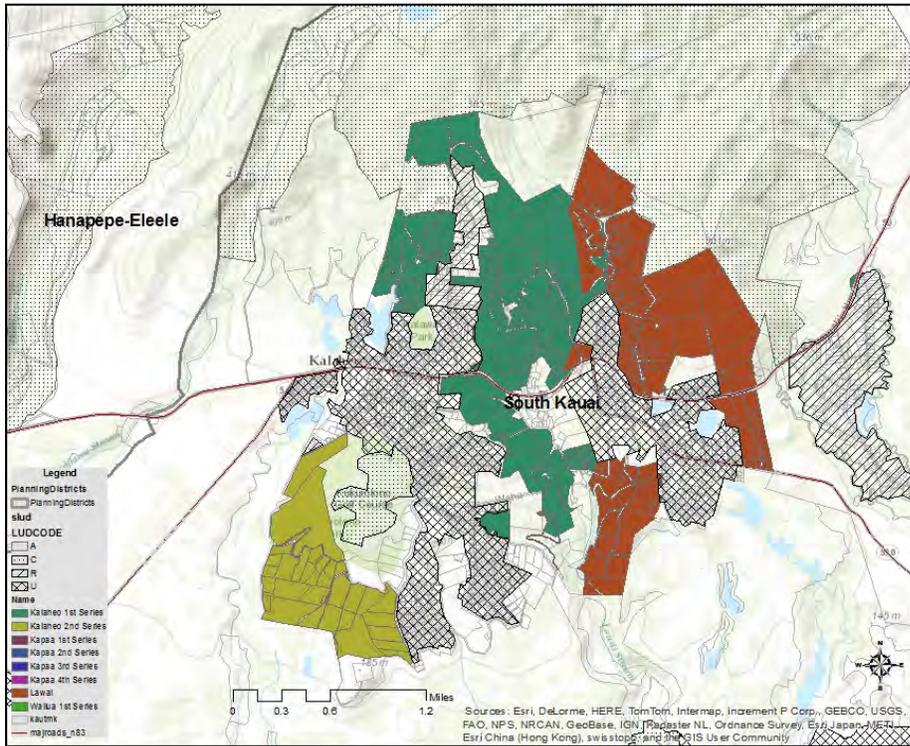
TABLE 20. HOMESTEAD PLAT MAPS

Planning District	Homestead	Date Created	Plat No.
South Kaua‘i	Kalāheo Homesteads	1907	3011
	Kalāheo Homesteads, 1 st Series	1906	3009
	Kalāheo Homesteads, 2 nd Series	1913	3010
	Lāwa‘i Homesteads	1914	3024
	‘Ōma‘o Homesteads	1914	3029
Kapa‘a-Wailua	Kapa‘a Homesteads, 1 st Series	1915	3015
	Kapa‘a Homesteads, 2 nd Series	1912	3016
	Kapa‘a Homesteads, 3 rd Series	1913	3017
	Kapa‘a Homesteads, 4 th Series	1916	3018
	Wailua Homesteads, 1 st Series	1919 1946	3033 3078

Source: HTS/HSS Plat Map Index, accessible online at [file:///C:/Users/rtakemoto/Downloads/htsindex%20\(1\).pdf](file:///C:/Users/rtakemoto/Downloads/htsindex%20(1).pdf).

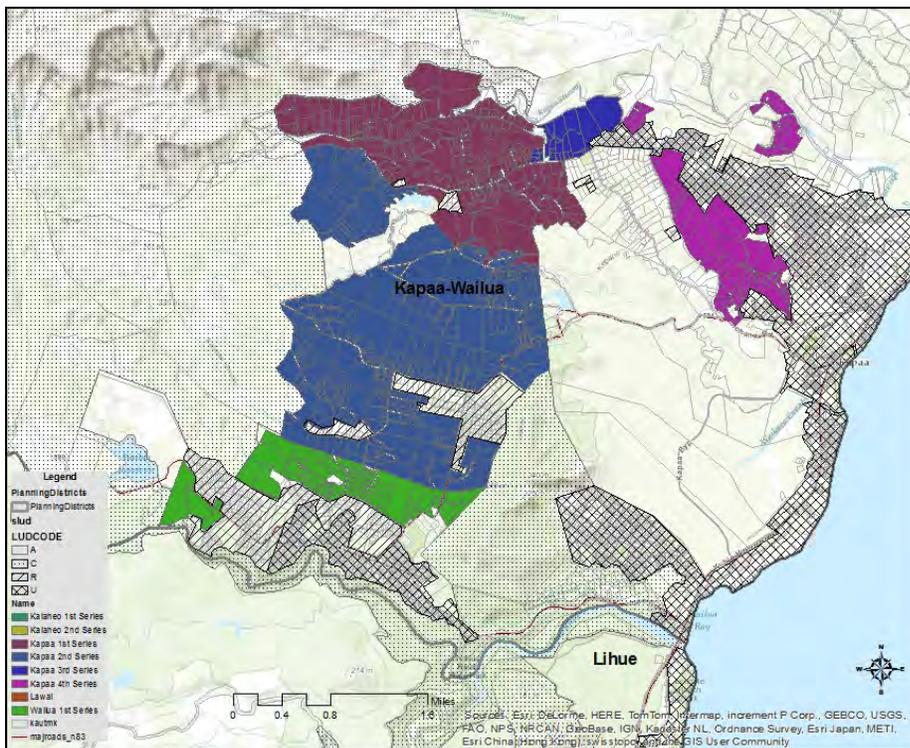
Figure 30 and Figure 31 map the homestead parcels that are in the State Land Use Agricultural District to identify those lots that are exempt from the “farm dwelling” requirement, unless the owner has dedicated the land to agriculture for real property tax purposes. Some of the original homestead lots have been placed in the Urban or Rural Districts, or zoned other than Agriculture (e.g., Open). For example, the entire ‘Ōma‘o Homesteads is in the Rural District so those homestead lots are not identified on the maps. Many of the original lots have been subdivided.

FIGURE 36. AGRICULTURAL HOMESTEAD LOTS- SOUTH KAUA'I



GIS Source: See Appendix A- Ag Map Package

FIGURE 37. AGRICULTURAL HOMESTEAD LOTS- EAST KAUA'I



GIS Source: See Appendix A- Ag Map Package

3.6.3.2 Residential Density on Agriculture-Zoned Parcels

Agriculture-zoned parcels were classified into seven classes based on the minimum lot sizes to subdivide (KCC §8-8.3) and permitted number of residential dwellings per parcel (KCC §8-8.2).

TABLE 21. AGRICULTURAL DENSITY CLASSIFICATION

Class	Parcel Size (acres)	Zoning Code	Density Formula	Notes
1	≤10	parcels not more than ten (10) acres may be subdivided into parcels not less than one (1) acre in size	1 unit/ acre	
2	>10 and ≤20	parcels larger than ten (10) acres, but not more than twenty (20) acres, may be subdivided into parcels not less than two (2) acres in size, except that not more than four (4) lots in the parcel may be one (1) acre in size	4 units @ 1 unit/acre + [(Parcel Size- 4 acres) / 2 acres] e.g., 12 acre parcel $4 + (12-4)/2 = 4 + 8/2 = 4+4 = 8$ units	
3	>20 and ≤30	parcels larger than twenty (20) acres, but not more than thirty (30) acres, may be subdivided into parcels not less than three (3) acres in size, except that not more than four (4) lots in the parcel may be one (1) acre in size	4 units @ 1 unit/acre + [(Parcel Size- 4 acres) / 3 acres] e.g., 22 acre parcel $4 + (22-4)/3 = 4 + 18/3 = 4+6 = 10$ units	
4	>30 and ≤50	parcels larger than thirty (30) acres, but not more than fifty (50) acres, may be subdivided into parcels not less than five (5) acres in size	0.2 unit/acre x 2 e.g., 35-acre parcel $35 / 5$ (or 35×0.2) = 7 7 lots x 2 units/lot = 14 units	5-acre parcel entitled to 2 units
5a	>50 and ≤70	parcels larger than fifty (50) acres, but not more than three hundred (300) acres may be subdivided into ten (10) or fewer parcels, none of which may be smaller than five (5) acres	10 lots @ 5 acres x 2 units/lot	5-acre parcel entitled to 2 units
5b	>70 and	Same as above	10 lots @ 7 acres x 3	7-acre parcel

	≤100		units/lot	entitled to 3 units
5c	>100 and ≤130	Same as above	10 lots @ 10 acres x 4 units/lot	10-acre parcel entitled to 4 units
5d	>130 and ≤300	Same as above	10 lots @ 13 acres x 5 units/lot	13-acre parcel entitled to 5 units
6a	>300 and ≤1,575	a maximum of seventy-five (75) acres may be subdivided into not more than ten (10) parcels, none of which shall be smaller than five (5) acres; an additional twenty percent (20%) of the total parcel area or three hundred (300) acres, whichever is less, may be subdivided into parcels, none of which shall be smaller than twenty five (25) acres	10 7-acre lots x 3 units/lot + [(300 acres / 25 acres) x 5 units lot]	1575 acres represents the maximum of 20% of the total parcel equal to the maximum 300 acres
6b	>1575	Same as above	10 parcels @ 5 acres x 2 units/parcel + 300 /25 x 5 = 80 units	

Source: Adapted from *Kaua'i County Zoning Code (County Code Chapter 8, Article 8)*

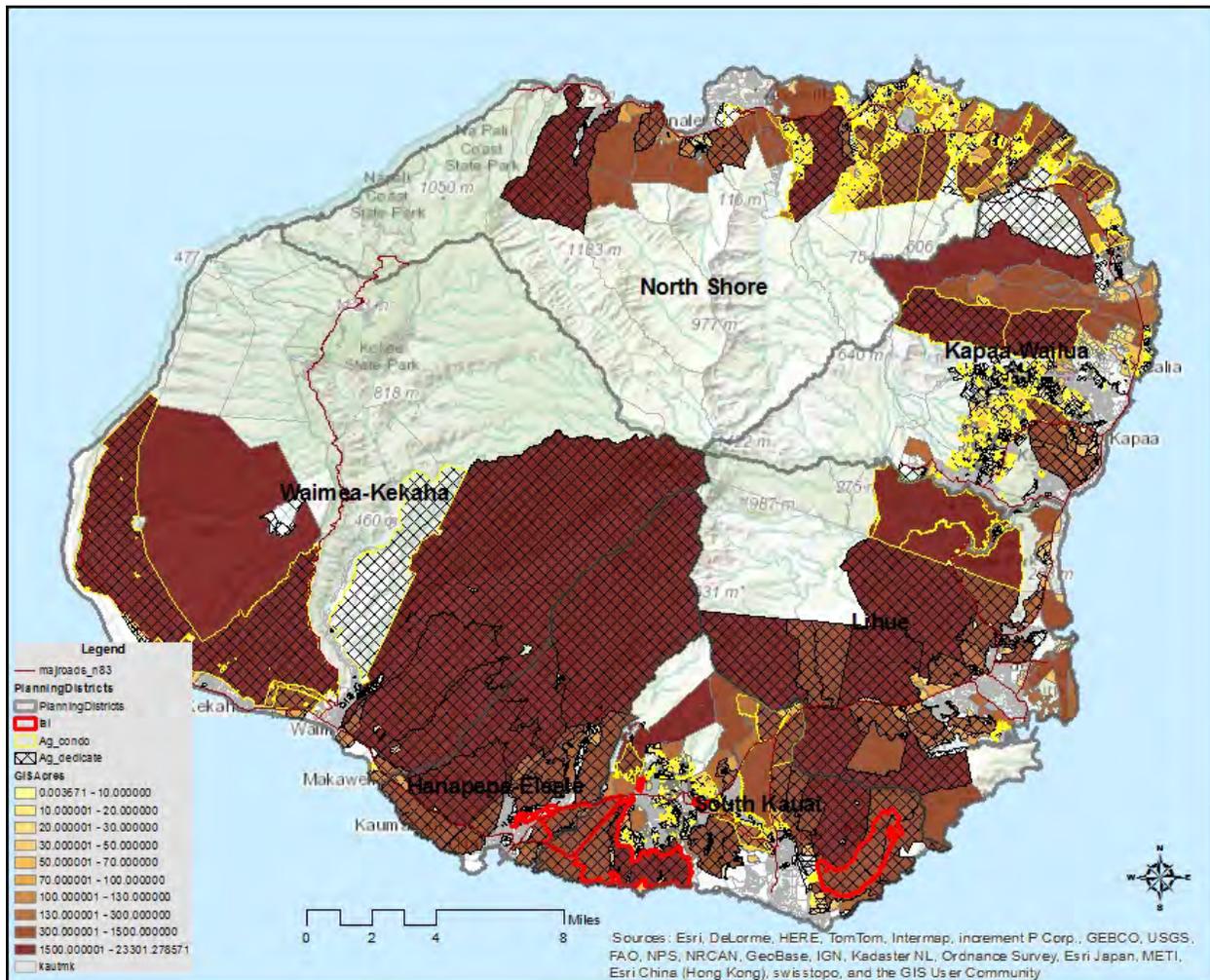
Based on averaging the density formula, a rough estimate of the permitted zoning capacity on agricultural lots is approximately 16,000 units (see Table 22).

TABLE 22. ESTIMATED DWELLING UNITS CAPACITY ON AGRICULTURAL-ZONED PARCELS

Density Class	DU/Acre	Dwelling Units
A1	1	5,079
A2	0.643	1,695
A3	0.44	1,082
A4	0.4	937
A5a	0.3	268
A5b	0.3	423
A5c	0.3	353
A5d	0.2	1,158
A6a	0.2	5,694
A6b	0	-
TOTAL		16,689

Data Source: Calculated from GIS using CommunityViz Buildout Wizard. See Appendix A—Ag Map Package.

FIGURE 38. AG DENSITY CLASSES, IAL, AG CONDOS

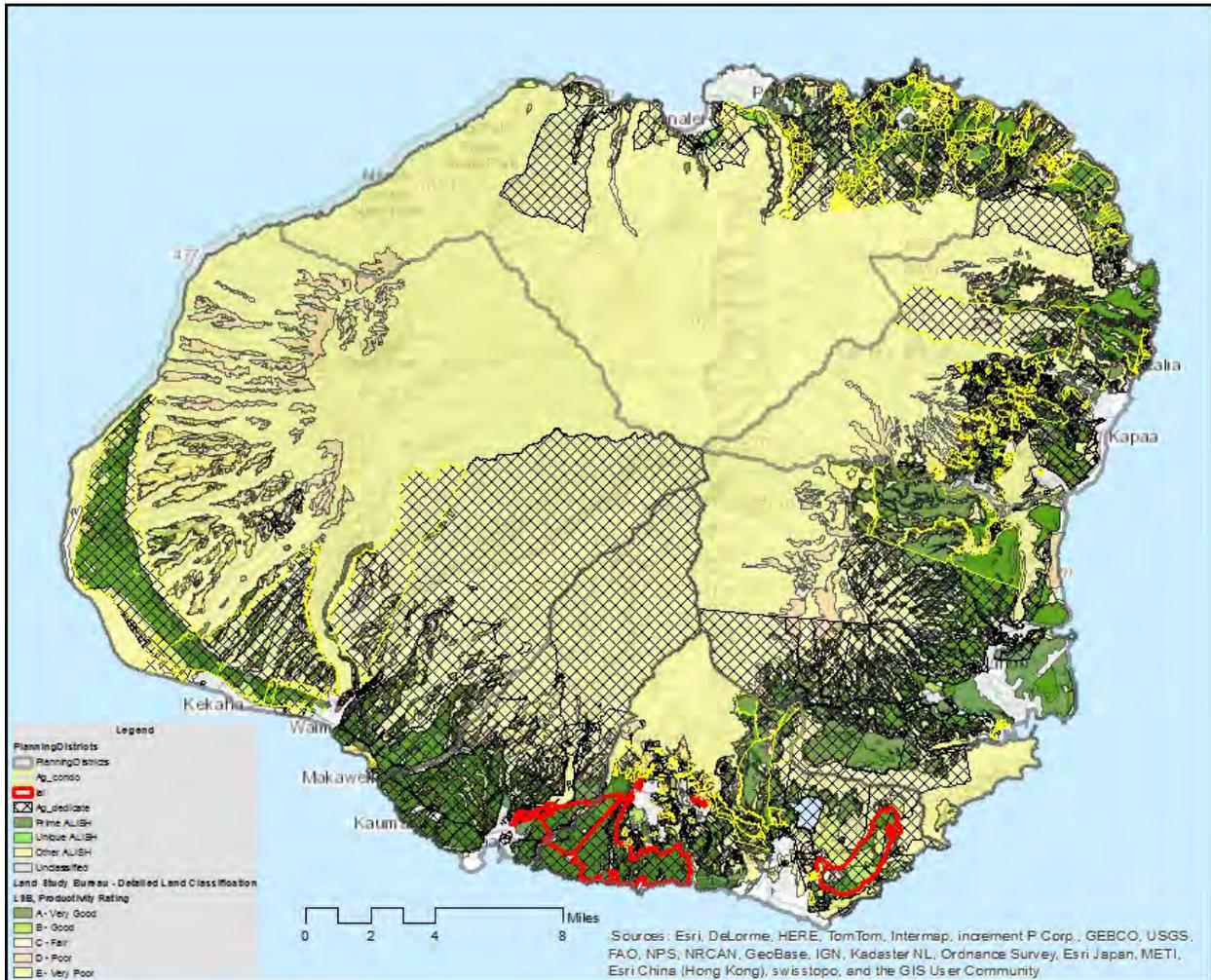


GIS Source: See Appendix A- Ag Map Package

3.6.3.3 Agricultural Dedication for Real Property Tax Purposes & IAL

The green-colored areas in Figure 33 below identify the “prime” agricultural lands defined by the Land Study Bureau Class A or B or the Agricultural Lands of Importance to the State of Hawai‘i (ALISH) Prime or Unique. Most of the prime agricultural lands have been dedicated to agriculture for real property tax purposes. The larger parcels that have not been dedicated are mostly owned by the State or DHHL, except in the North Shore Planning District where the undedicated prime agricultural lands are mostly privately owned.

FIGURE 39. AG DEDICATION, IAL, AND CONDOMINIUMS IN RELATION TO PRIME AGRICULTURAL LANDS



GIS Source: See Appendix A- Ag Map Package

4 Buildout Capacities

4.1 Residential Projections and Buildout Capacity

4.1.1 Methodology

Residential zoning capacity was analyzed as follows:

1. CommunityViz accounted for the size of the parcel and determined the dwelling unit capacity for each parcel within the Residential zoning districts.³⁵ The results from this analysis answers the following question: *if the existing Residential-zoned lots were built to full capacity, how many units could be accommodated under the existing zoning?*
2. CommunityViz was used again to run the same analysis but just for vacant lots. The results from this analysis answers the following question: *assuming that the existing developed Residential-zoned lots will not be redeveloped to add more units, are there adequate vacant lots to accommodate the projected 2035 residential population?*
3. Vacant residential parcels were identified using the following steps:
 - a. For parcels zoned Residential, determined whether there is a structure using a proxy of building value < \$20,000.
 - b. Verified whether the parcel has a homeowner's exemption. If it does, the parcel is not vacant.
 - c. Verified whether the Pictometry aerial photo building footprint layer identifies a structure. If there is a structure, it is not vacant.
 - d. Verified whether there is an address assigned. If there is, double check occupancy.
4. Dwelling units were converted to population using the household size for *occupied* units (compared to total units). According to the census and SMS report, the occupied units equate to the number of households counted in the census.

4.1.2 Results

If all existing and projected residential dwellings were located entirely on Residential-zoned parcels, the supply of existing Residential-zoned parcels *cannot* accommodate the 2035 projected population (see column F in Table 23 below). However, this is a very conservative assumption since existing dwelling units do in fact occur on Agricultural and Conservation zoned lands. Nevertheless, keeping with the assumption, the Planning District with the greatest “shortage” of Residential-zoned parcels in terms of discrepancy from the 2035 population is Waimea-Kekaha and East Kaua'i, followed by Hanapēpē-'Ele'ele and Līhu'e. North Shore's zoned capacity comes close to being able to accommodate the 2035 projected population, provided that all Residential zoning within the VDA are counted. The number of dwelling units for South Kaua'i exclude the VDA.

³⁵ The CommunityViz report documenting the assumptions and results are included in Appendix ___.

When analyzing the supply of vacant Residential-zoned parcels, the existing supply of vacant Residential zoned parcels is nearly adequate to accommodate the projected population from 2010 to 2035, except Līhu‘e (see column J in Table 23 below).

When considering alternatives to ensure that there is adequate zoning to accommodate the projected population, thought should be given to increase the supply of higher-density residential options especially within walkable town centers. Table 23 below color-codes housing types by single-family, duplex, and multi-family potential. Only Līhu‘e has R-8 zoning that could provide flexible higher density options in-between a typical single-family experience and a higher-density development. All districts have multi-family zoning, but could perhaps use more or integrate into mixed-use zoning categories that may emerge in the future, particularly Līhu‘e and East Kaua‘i.

In short, even if the buildout analysis indicate a potential deficiency of Residential-zoned lands to accommodate the 20-year projected population, the Urban and Town Centers could readily compensate with mixed-use higher densities. Moreover, the buildout analysis is a conservative analysis that does not factor market conditions, infrastructure constraints, environmental constraints, and many other factors that influence actual buildout. Therefore, the point of this analysis is that the capacity of Residential-zoned lands is at that margin that bears monitoring, but this analysis should not be used as the sole justification for rezoning.

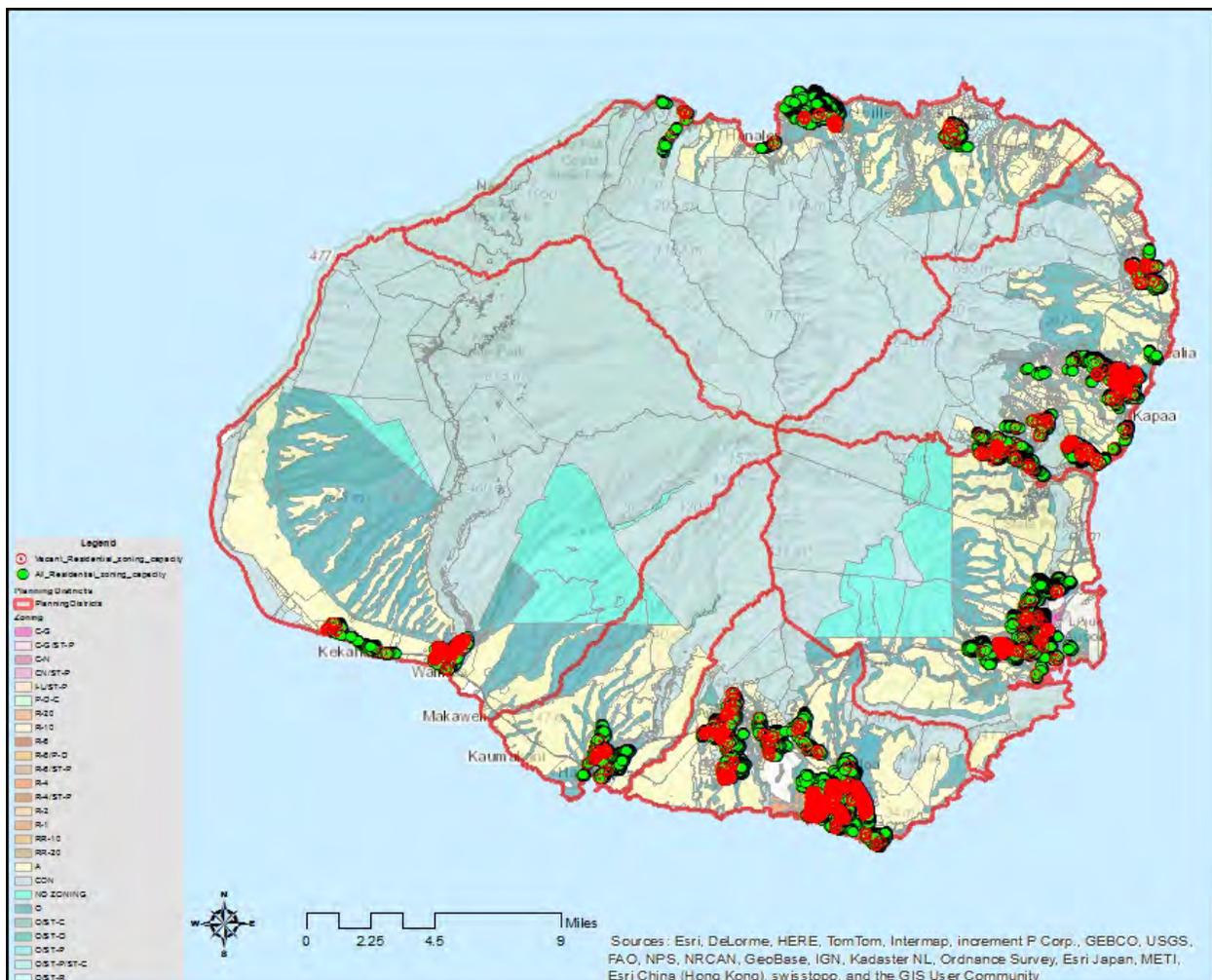
TABLE 23. CAPACITY OF RESIDENTIAL ZONING TO ACCOMMODATE 2035 POPULATION PROJECTION BY PLANNING DISTRICTS

	SFD	Duplex	MFD	>30% Discrepancy from 2035 Population							
Ex	A	B	C	D	E	F	G	H	I	J	
Planning District	Total Units ¹	Vacant Units ²	2035 HH Size (Occupied) ³	2035 Pop Projection ⁴	Zoning Capacity		Vacant Lots Capacity				
					Zoning Capacity (A*C) ⁵	Difference (E-D) ⁶	2010 Population ⁷	Vacant lot population (B*C) ⁸	Vacant lot+2010 Population (G+H) ⁹	Difference (I-D) ¹⁰	
LĪHUʻE	6,206	293	2.96	23,456	18,370	-5,086	14,683	867	15,550	-7,906	
R-2	4										
R-4	1,184	103									
R-6	1,958	18									
R-8	40	40									
R-10	169	2									
R-20	2,851	130									
SOUTH KAUAʻI	5,576	777	2.76	16,855	15,390	-1,465	11,696	2,145	13,841	(3,014)	
R-1	20	5									
R-2	575	36									
R-4	1,887	107									
R-6	2,531	462									
R-6/P-D	24										
R-10	149	46									
R-20	390	121									
HANAPĒPĒ ʻELEʻELE	1,604	28	3.11	7,094	4,988	-2,106	6,157	87	6,244	-850	
R-2	93	14									
R-4	149	6									
R-6	1,107	6									
R-10	205	2									
R-20	50										
WAIMEA	1,235	177	2.85	6,566	3,520	-3,046	5,561	504	6,065	-501	

	A	B	C	D	E	F	G	H	I	J
Planning District	Total Units ¹	Vacant Units ²	2035 HH Size (Occupied) ³	2035 Pop Projection ⁴	Zoning Capacity		Vacant Lots Capacity			
					Zoning Capacity (A*C) ⁵	Difference (E-D) ⁶	2010 Population ⁷	Vacant lot population (B*C) ⁸	Vacant lot+2010 Population (G+H) ⁹	Difference (I-D) ¹⁰
P-D	70	33								
R-1	7									
R-2	132	57								
R-4	546	65								
R-6	319	19								
R-6/P-D	40									
R-10	121	3								
NORTH SHORE	3,054	144	2.79	8,933	8,521	-412	8,002	402	8,404	-529
R-1	27	2								
R-2	10									
R-2/P-D	32									
R-4	1,078	54								
R-6	620	10								
R-10	544	5								
R-10/P-D	28									
R-15	552									
R-20	163	73								
EAST KAUA'I	5,724	381	2.94	25,110	16,829	-8,281	20,992	1,120	22,112	-2,998
R-1	43	3								
R-2	784	58								
R-4	2,024	197								
R-6	2,293	102								
R-10	207	2								
R-20	373	19								
GRAND TOTAL	23,399	1,800	2.9	88,014	67,617	-20,397	67,091	5,125	72,216	-15,798

1. Capacity of R zoning districts calculated by GIS using CommunityViz Buildout Wizard. See Appendix A- Residential Buildout Map Package; Excel File- All_Residential_zoning_capacity; South Kaua'i total and vacant units exclude those located within the VDA due to nature and extent of the VDA units; all other districts include VDA units.
 2. Capacity of vacant R zoning districts calculated by GIS using CommunityViz Buildout Wizard. See Appendix A- Residential Buildout Map Package; Excel File- All_Residential_zoning_capacity; South Kaua'i total and vacant units exclude those located within the VDA due to nature and extent of the VDA units; all other districts include VDA units. See Table 8 in this report.
 3. See Table 6 in this report.
 4. Col. A multiplied by Col. C.
 5. Col. E minus Col. D.
 6. See Table 6 in this report.
 7. Col. B multiplied by Col. C.
 8. Col. G plus Col. H.
 9. Col. I minus Col. D.
- See Appendix A- Excel file All_Residential_zoning_capacity.

FIGURE 40. RESIDENTIAL ZONING CAPACITY



GIS Source: See Appendix A- Residential Buildout Map Package

4.2 Visitor Unit Projections and Buildout Capacity

4.2.1 Methodology

Resort zoning capacity was analyzed as follows:

1. The SMS Study projected the number of visitor units needed in 2035 to accommodate the projected visitor arrivals (i.e., demand).
2. The projected need was compared to the existing inventory as supplemented with proposed development (i.e., supply). The source of the proposed development units was the Visitor Plant Inventory and the County Planning Department.
3. The proposed projects listed in the Visitor Plant Inventory were located in GIS to determine if the project required rezoning to Resort.

4.2.2 Results

Proposed resort projects are listed in Table 25 and mapped in Figure 35 together with vacant Resort-zoned parcels. All proposed projects have Resort zoning. In all Planning Districts except the North Shore and Līhu‘e, the proposed development exceeded the projected need (see Table 24). Waimea-Kekaha had the most excess followed by Kapa‘a-Wailua and South Kaua‘i. As a note, the North Shore has an extensive supply of potential single-family transient vacation rentals within the VDA that could respond to market demand (refer to Table 14). Even if projections may indicate a current excess of Resort-zoned land, there may be other reasons on a case by case basis to rezone to Resort such as aging of the resort infrastructure, vagaries in the occupancy rate, unpredictable global economy, or shifts in visitor accommodation preferences.

TABLE 24. VISITOR UNITS SUPPLY (EXISTING & PROPOSED) VS. DEMAND (BASED ON VISITOR ARRIVAL PROJECTIONS)

		North Shore	East Kaua‘i	Līhu‘e	South Kaua‘i	Hanapēpē-‘Ele‘ele	Waimea-Kekaha	TOTAL
Visitor Arrivals								
A	Existing (2010) ¹	239,000	224,000	180,000	377,000	0	13,000	1,033,000
B	Projected (2035) ²	320,000	306,000	199,000	491,000	0	14,000	1,330,000
C	Increase ³	81,000	82,000	19,000	114,000	0	1,000	297,000
D	Average annual % ⁴	1.36%	1.46%	0.42%	1.21%	0.00%	0.31%	1.15%
Visitor Units								
E	Existing (2013) ⁵	1,854	2,229	1,303	3,169	0	120	8,675
F	Projected Need (2035) ⁶	2,718	2,567	1,852	4,171	0	162	11,470
G	Net Need vs. Existing ⁷	864	338	549	1,002	0	42	2,795
H	Planned Additions ⁸	0	799	772	1,632	0	500	3,703

		North Shore	East Kaua'i	Līhu'e	South Kaua'i	Hanapēpē-'Ele'ele	Waimea-Kekaha	TOTAL
I	Planned Additions @ 70% Occupancy ⁹	0	559	540	1,142	0	350	2,592
J	Excess (Deficit) ¹⁰	-864	221	-9	140	0	308	-203

<0 Deficit

0-100 Excess

>100 Excess

1. SMS Research & Marketing Services, Inc., August 5, 2013
 2. SMS Research & Marketing Services, Inc., August 5, 2013
 3. Row B minus Row A
 4. (Row C divided by Row A) divided by 25 years
 5. Hawai'i Tourism Authority, Visitor Plant Inventory 2013 Table 5b (Inventory by Area and Unit Type- Kaua'i Island)
 6. SMS Research & Marketing Services, Inc., February 2014.
 7. Row F minus Row E
 8. Visitor Plant Inventory 2013 proposed visitor units (see Table 25 below); except South Kaua'i from South Kaua'i Community Development Plan
 9. Row H multiplied by 0.70
 10. Row I minus Row G
- See Appendix A- Excel file Visitor Units

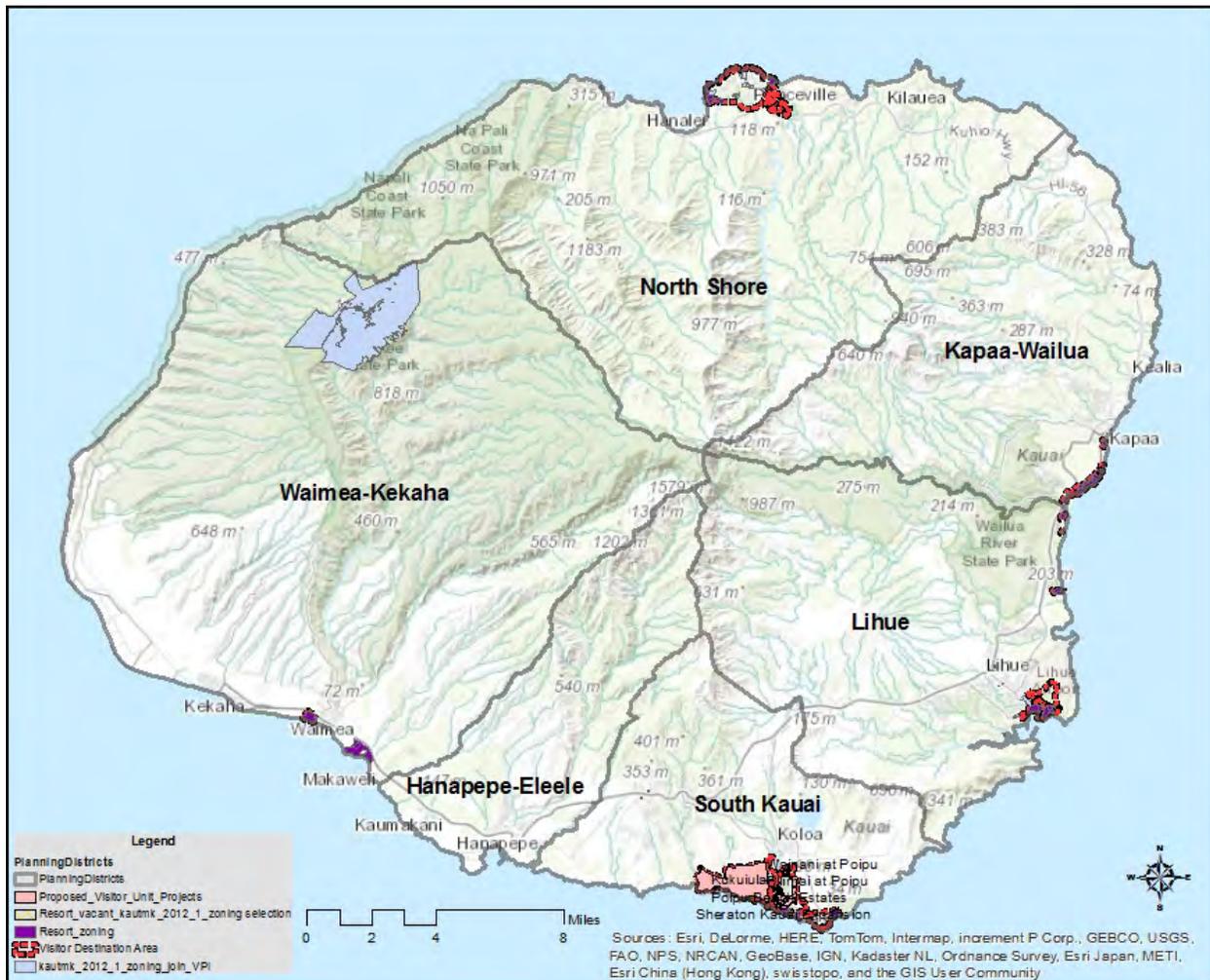
TABLE 25. VISITOR UNITS—PROPOSED VISITOR UNIT PROJECTS

Name of Facility	Planned Type	Total Units	Est. Completion	Notes
Waimea-Kikiaola Land Co.	Hotel	Approx. 250	N/A	Zoning permits obtained. Building permits not yet obtained.
Kapalawai-Robinson Family	Hotel-Cottage type	250	N/A	Land use permits issued. Building permits not applied for yet.
Kukui'ula-Kukui'ula Development Co. (Hawai'i), LLC	Resort, Single Family, Multi-Family, Golf course, Hotel, Condo/Timeshare	1,500 (all types) (max of 750 visitor units)	21 by 2011	21 guest cottages constructed. Project features high-end residential development.
Koloa Landing	Resort Condo	323	N/A	Phase I complete and in operation. Phase II is under construction.
Po'ipū Realty Partner LLC/Royal	Resort Condo	164	N/A	Zoning permits obtained. Building permits not obtained yet.

Name of Facility	Planned Type	Total Units	Est. Completion	Notes
Palms at Po'ipū Beach				
Kiahuna Fairways, LLC/Pili Mai at Po'ipū	Resort Condo	191	N/A	Zoning permits obtained. Building permits not obtained yet.
Kiahuana Po'ipū Golf Resort	Resort Condo	282	N/A	Zoning permits obtained. Building permits not obtained yet.
Po'ipū Beach Estates	Res. Subdivision	106	N/A	Residential Subdivision in the VDA
Po'ipū Sheraton Expansion/SV O Pacific Inc.	Timeshare	382 Multi-family units & 186 Hotel	N/A	Land permits issued. Building permits not applied for yet.
Kaua'i Lagoons- Mori Gold LLC	Hotel, Resort Single Family, Resort Multi-Family	772	N/A	72 units in operation.
Coco Palms Reconstruction	Timeshare/Hotel	Approx. 252	N/A	Land use permits issued.
Waipouli-Niu Pia Farms/Coconut Beach Development LLC	Apartment/Hotel	343 Multi-Family, 6 Hotel	N/A	Land use permits issued. Building permits not applied for yet.
Waipouli-Niu Pia Farms/Coconut Beach Development LLC	Apartment/Hotel	192 Multi-Family, 6 Hotel	N/A	Land use permits issued. Building permits not applied for yet.
Princeville-Moody property	Hotel or Timeshare	N/A	N/A	There have been inquiries on this property, no formal permit applications.

Data Source: Hawai'i Tourism Authority, 2013 (Planned Additions and New Development, Table 10)

FIGURE 41. PLANNED VISITOR UNIT ADDITIONS



GIS Source: See Appendix A- Resort Map Package

4.3 Trends Analysis

This section analyzes the buildout rate and pattern based on building permit data from 1995 to 2010.

4.3.1 Methodology

The building permit data received from the County was analyzed as follows:

1. The Excel worksheet of building permit data from the County was filtered as follows:
 - a. Removed records prior to 1995 since many structure descriptions were missing for records prior to 1995.
 - b. Selected records that were new construction, primarily residential, based on the structure description (see Appendix D for a pivot table list). The original list contained approximately 83,300 records with approximately 3,900 different

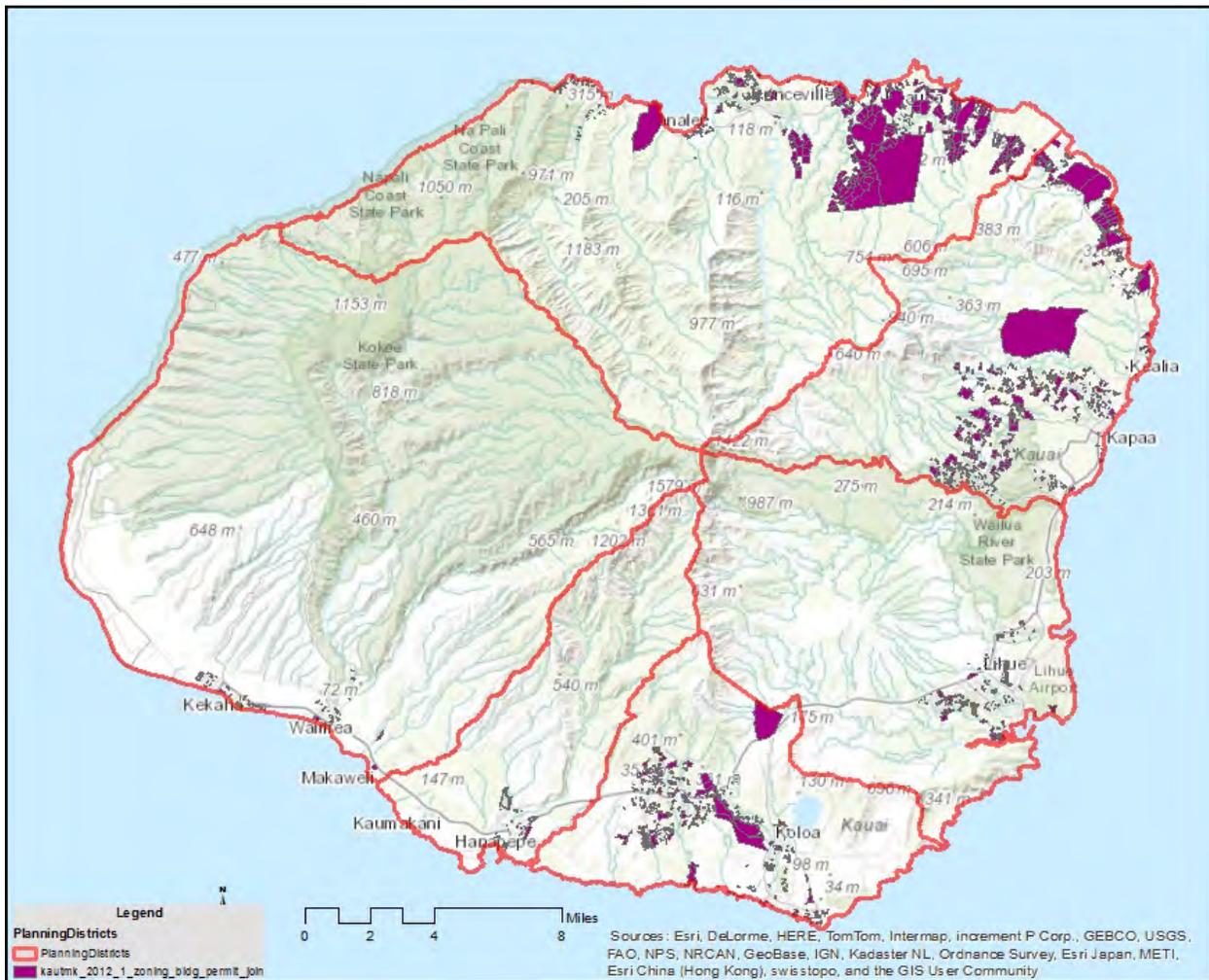
structure descriptions. The resulting list consisted of approximately 30,000 records with approximately 450 structure descriptions.

2. Additional fields were added to the filtered list:
 - a. Added a field for the year the permit was issued to facilitate the analysis since the permit date was in a day/month/year format (Excel formula for “Year”). Used the year to cluster the data into 5-year increments (1995-1999, 2000-2004, 2005-2009).
 - b. Added a field for the Planning District using the common TMK fields of the permit list and the parcel layer described in the next step below that had a field for the Planning District (Excel formula for “Vlookup”).
3. Joined the filtered building permit list to the GIS parcel layer that had a zoning field. This parcel layer also had a field for the Planning District (parcel layer spatially joined with the Planning District layer). The resulting layer identifies the parcels that were issued building permits. There were approximately 2,800 parcels; several permits were issued to the same parcel (see Appendix D).
4. Used the joined GIS layer to create a map of the parcels with issued building permits. This map could also be used to create a buildout time-series animation. If desired in the future, the building permit data could be linked to the building footprint layer for a time series analysis at the building level rather than parcel level.

4.3.2 Results

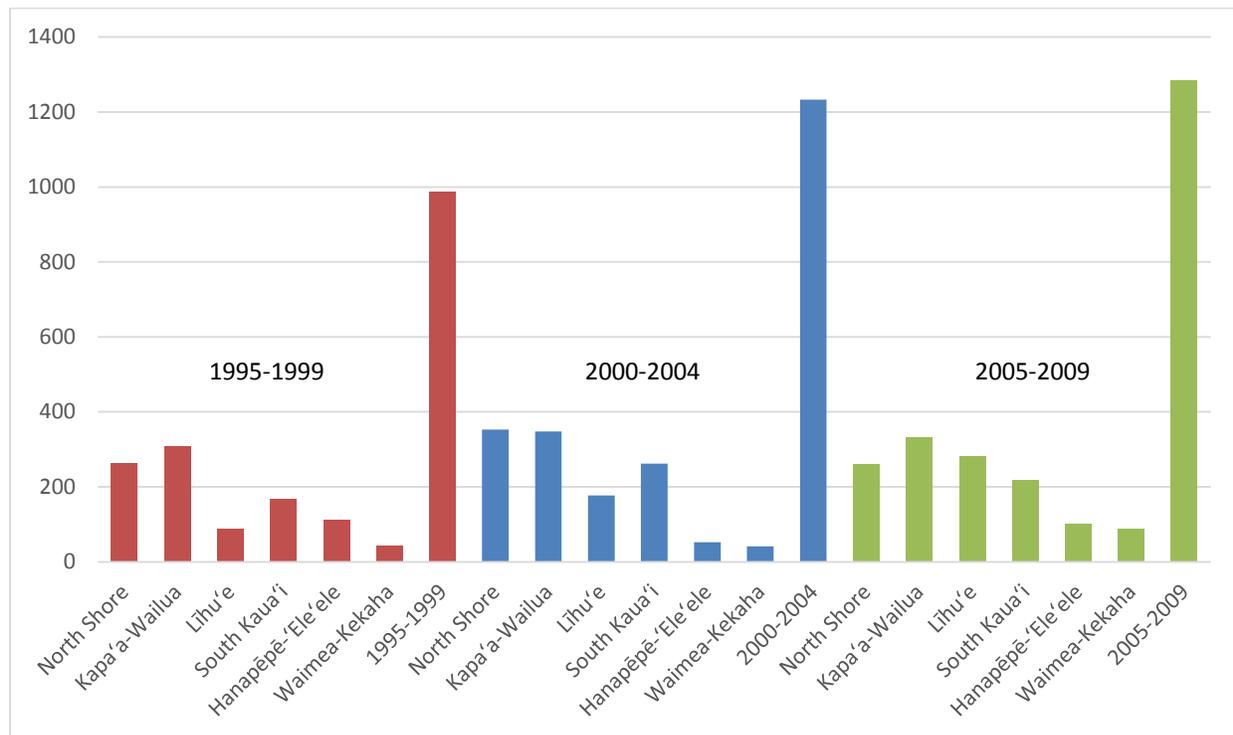
The number of new primarily residential construction increased slightly during each five-year interval from 1995 to 2009 (see Figure 36, Figure 37, and Table 26). During the mid-1990’s, Kapa’a-Wailua and North Shore had the most activity. During the early 2000’s, Kapa’a-Wailua and North Shore were still active, but South Kaua’i and Līhu’e also picked up. During the latter 2000’s, North Shore, Kapa’a-Wailua, and South Kaua’i remained active, but Līhu’e became more active than South Kaua’i and North Shore. Over the 15-year period, a total of approximately 3500 new homes were built on the island resulting in an average of 230 homes per year.

FIGURE 42. PARCELS ISSUED BUILDING PERMITS FOR NEW RESIDENTIAL CONSTRUCTION, 1995-2010



GIS Source: See Appendix A- Bldg_Permit Map Package

FIGURE 43. BUILDING PERMITS FOR NEW RESIDENTIAL CONSTRUCTION, BY YEAR AND PLANNING DISTRICTS, 1995-2009



Data Source: See Appendix A- Excel file COK Bldg Permits

TABLE 26. BUILDING PERMITS FOR NEW RESIDENTIAL CONSTRUCTION, BY YEAR AND PLANNING DISTRICTS, 1995-2009

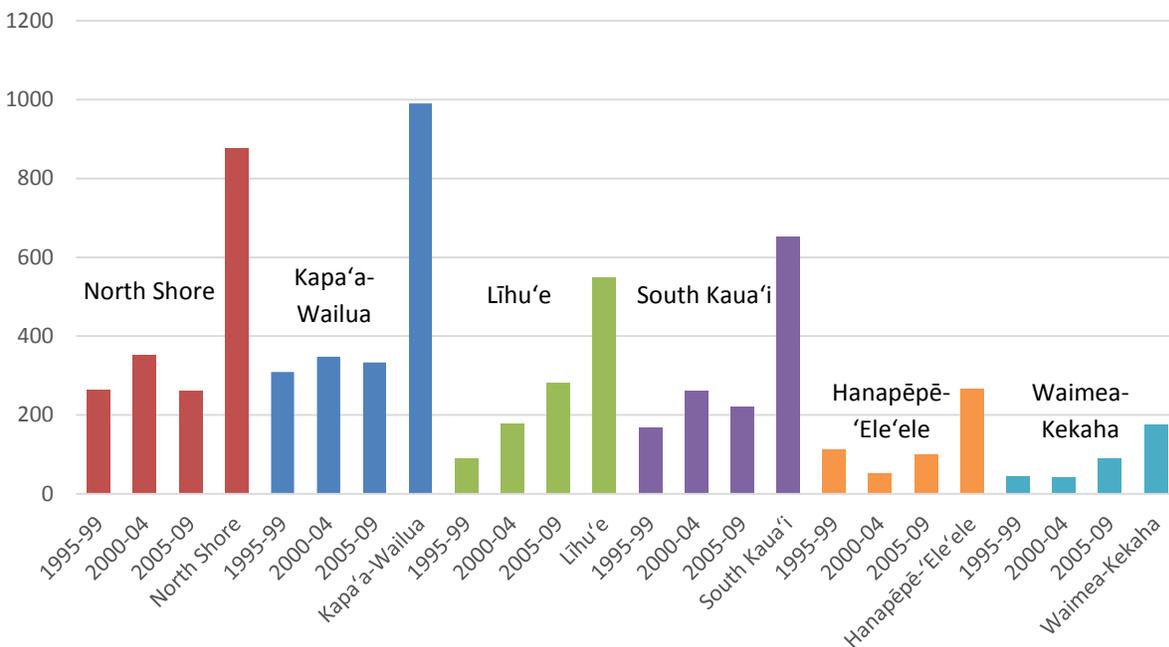
Planning District	Number of Permits
1995-1999	
North Shore	263
Kapa'a-Wailua	309
Līhu'e	89
South Kaua'i	169
Hanapēpē-'Ele'ele	113
Waimea-Kekaha	44
TOTAL 1995-1999	987
2000-2004	
North Shore	353
Kapa'a-Wailua	348
Līhu'e	177
South Kaua'i	262
Hanapēpē-'Ele'ele	52
Waimea-Kekaha	41

TOTAL 2000-2004	1,233
2005-2009	
North Shore	260
Kapa'a-Wailua	333
Līhu'e	282
South Kaua'i	220
Hanapēpē-'Ele'ele	101
Waimea-Kekaha	90
TOTAL 2005-2009	1,286
TOTAL 1995-2009	3,506

Data Source: See Appendix A- Excel File COK Bldg Permits

Most activity occurred in Kapa'a-Wailua and North Shore, followed by South Kaua'i, Līhu'e, Hanapēpē-'Ele'ele, and Waimea-Kekaha. Līhu'e experienced a significant increase in activity in the later 2000's. South Kaua'i had steady activity for a 10-year period from 2000-2009. Hanapēpē-'Ele'ele has been relatively low but steady over the 15-year period. Waimea-Kekaha has experienced increasing activity over the 15-year period. The North Shore and Kapa'a-Wailua peaked in the early 2000's and have remained relatively steady over the 15-year period (see Figure 38 and Table 27).

FIGURE 44. BUILDING PERMITS FOR NEW RESIDENTIAL CONSTRUCTION, BY PLANNING DISTRICTS AND YEAR, 1995-2009



Data Source: See Appendix A- Excel File COK Bldg Permits

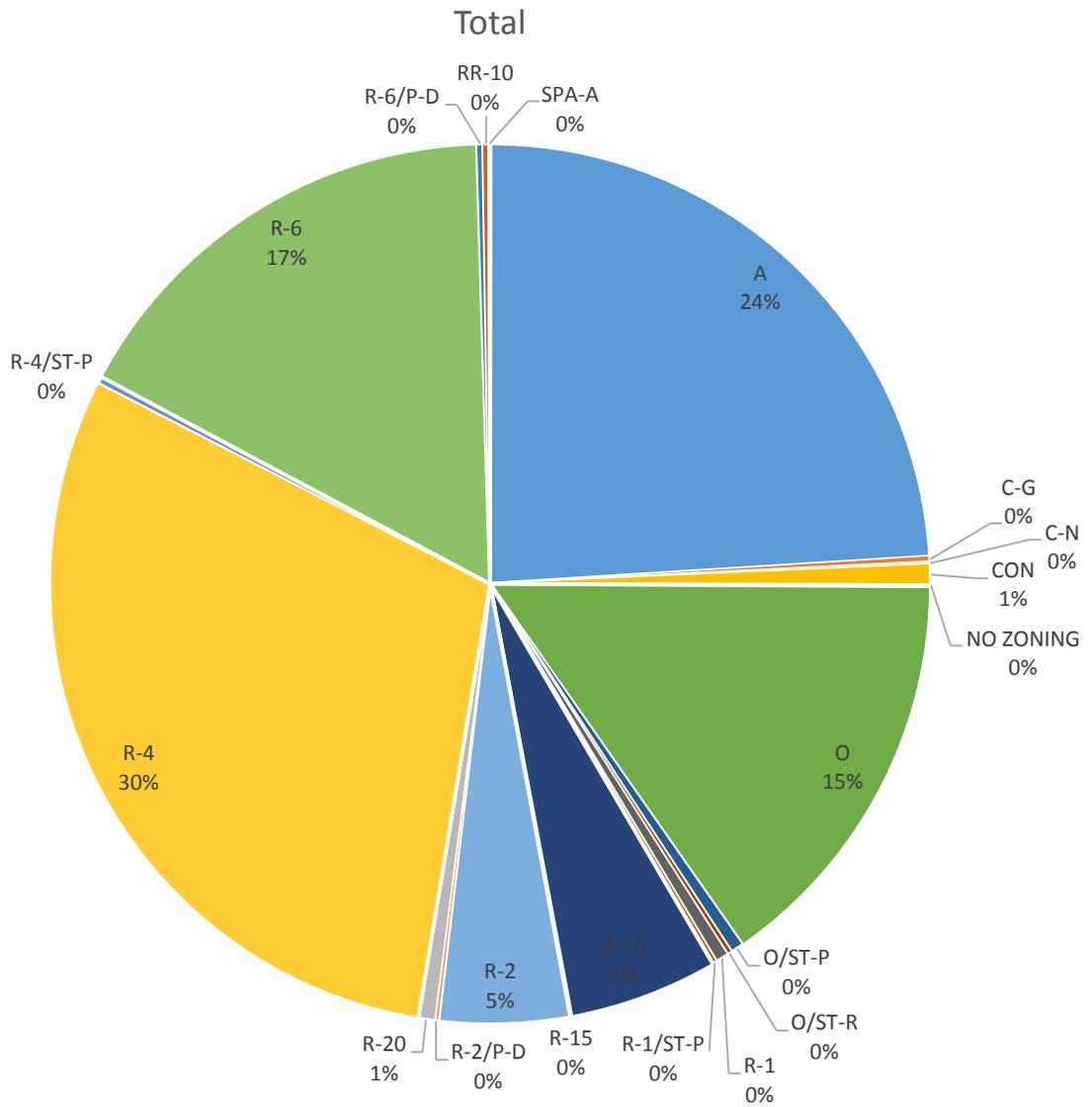
TABLE 27. BUILDING PERMITS FOR NEW RESIDENTIAL CONSTRUCTION, BY PLANNING DISTRICTS AND YEAR, 1995-2009

Year	Number of Building Permits
1995-99	263
2000-04	353
2005-09	260
North Shore	876
1995-99	309
2000-04	348
2005-09	333
Kapa'a-Wailua	990
1995-99	89
2000-04	177
2005-09	282
Līhu'e	548
1995-99	169
2000-04	262
2005-09	220
South Kaua'i	651
1995-99	113
2000-04	52
2005-09	101
Hanapēpē-'Ele'ele	266
1995-99	44
2000-04	41
2005-09	90
Waimea-Kekaha	175
TOTAL 1995-2009	3,506

Data Source: See Appendix A- Excel File COK Bldg Permits

Most of the building permit activity occurred on parcels zoned R-4 (30%) and Agriculture (24%), followed by R-6 (17%), Open (15%), and R-2 (5%). Less than 1% occurred on lands zoned for multi-family dwellings (e.g., R-15, R-20) (see Figure 39).

FIGURE 45. BUILDING PERMITS FOR NEW RESIDENTIAL CONSTRUCTION, % BY ZONING DISTRICTS, 1995-2009



Data Source: See Appendix A- Excel File COK Bldg Permits

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5 Forecasted Buildout

5.1 Alternative Scenarios

Given the 2035 residential population projection, this section presents two alternative growth pattern scenarios. The purpose of these scenarios is to illustrate how policy could potentially influence growth patterns. The “status quo” scenario assumes that growth will follow where residents presently live or the most affordable lands. Since the existing population reside on lands zoned Residential, Agriculture, or Open, the growth pattern will assume growth would continue in those zones if they are the most affordable. The “directed growth” scenario assumes that future growth beyond the existing population will be encouraged more in the Urban Centers, Town Centers, Residential-zoned land, and Ag Homestead areas, thereby leaving undeveloped as much agriculture and open zoned lands.

5.2 Methodology

A software called CommunityViz, which operates as an extension for ArcGIS, was used to simulate the buildout under the two scenarios. The simulated buildout works in three steps: first, the total number of potential dwelling units based on zoning density and parcel sizes is determined using CommunityViz’ Buildout Wizard. Second, the most desirable areas to develop are identified using CommunityViz’ Suitability Wizard so that buildout occurs from most to least desirable areas. The final step is to allocate the buildout in the order of the suitability ratings using CommunityViz’ Allocator Wizard.

The assumptions used for each scenario are set forth in the table below.

TABLE 28. ASSUMPTIONS FOR ALTERNATIVE SCENARIOS

Factor	Status Quo Scenario	Directed Growth Scenario
Ownership	Public lands were excluded from the buildout scenarios, except for lands owned by DHHL, HFDC, and HHA (using the “Major Owner” field in the parcel layer; the parcel layer had a “zoning” field).	Same as Status Quo Scenario
Capacity (Buildout Wizard)	Zoning and Density: Residential (density based on zoning), Agriculture (density classes discussed in section 3.6.3.2 above), and Open (assumed 1 unit/acre) Constraints: No buildout was allowed on lands designated Floodway, reservoir, IAL, or Conservation (except	Zoning and Density: Same as Status Quo Scenario, with addition of Commercial (mixed use buildings CG at 30% apartments (1200 sf/unit), 40% retail, 30% office; CN at 30% apartments (1200 sf/unit), 60% retail, 10% office) Constraints: same as Status

	subzones General and Resource where single-family dwellings are allowed).	Quo Scenario
Suitability (Suitability Wizard)	<ol style="list-style-type: none"> 1. Occupied. To follow the existing growth pattern, parcels in proximity to other parcels with street addresses were assigned a higher rating (assumes the County assigns street addresses only when a building permit is issued); 2. Land Value. Assuming the market would favor more affordable lots, lower tax values (calculated as the sum of the land and building values) were assigned higher ratings. 	<ol style="list-style-type: none"> 1. Urban & Town Centers. To direct future growth to urban and town centers, parcels that overlapped with the General Plan Urban Center or Town Center designation were assigned a higher rating; 2. Residential Zoning. Beyond the Urban and Town Centers, parcels zoned Residential were assigned a higher rating; 3. Occupied. To account for the existing growth pattern, parcels in proximity to other parcels with street addresses were assigned a higher rating (assumes the County assigns street addresses only when a building permit is issued); 4. Ag Homesteads. Future infilling on agriculture zoned land was confined to Agriculture Homestead lots. 5. Other Ag and Open. Allocation would occur on Ag and Open lands to meet the 2035 population projection only after all of the above have been fulfilled.
Allocation (Allocator Wizard)	Total "Demand": 30,350 occupied dwelling units based on SMS Study 2035 projection	Same as Status Quo Scenario

5.3 Results

5.3.1 Buildout Capacity

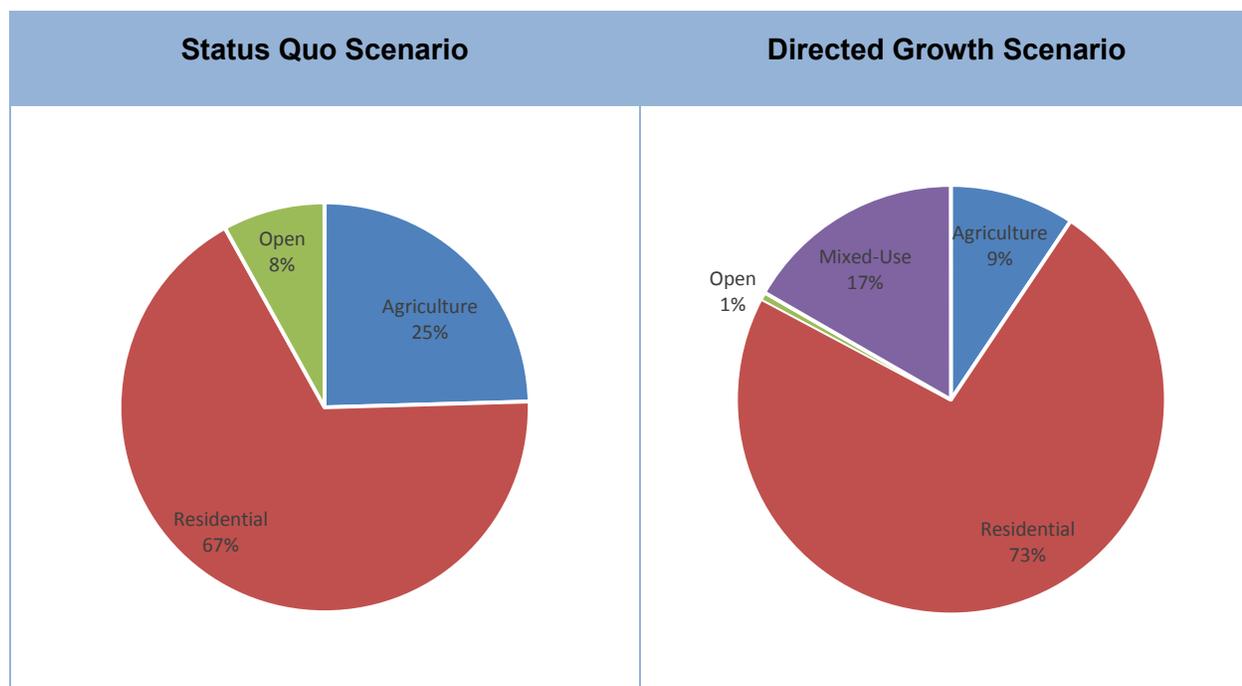
If the island were allowed to buildout to full capacity allowed by zoning, the total number of dwelling units could be as follows:

- assuming buildout only within the Residential zoning districts: approximately 27,000 units (see section 4.1.2 above)
- assuming Residential, Agriculture, and Open zoning districts (Status Quo Scenario): additional 20,000 units on the Agricultural and Open zone totaling approximately 47,000 units (see Build-Out Report for Status Quo Scenario in Appendix B)
- assuming Residential, Agriculture, Open, and Commercial districts (Directed Growth Scenario): additional 12,000 units within the Commercial, Urban Center, and Town Center areas totaling approximately 59,000 units (see Build-Out Report for Directed Growth Scenario in Appendix B).

5.3.2 Projected 2035 Alternative Scenarios

Under the Status Quo Scenario where growth would follow existing trends and affordable land values, significant growth would occur on lands in the agriculture and open zoning districts (see Figure 40). In contrast, if redevelopment of the Urban and Town Centers were encouraged at higher density, these urban and town centers together with the existing Residential zoning could absorb 90% of the future growth projected to 2035.

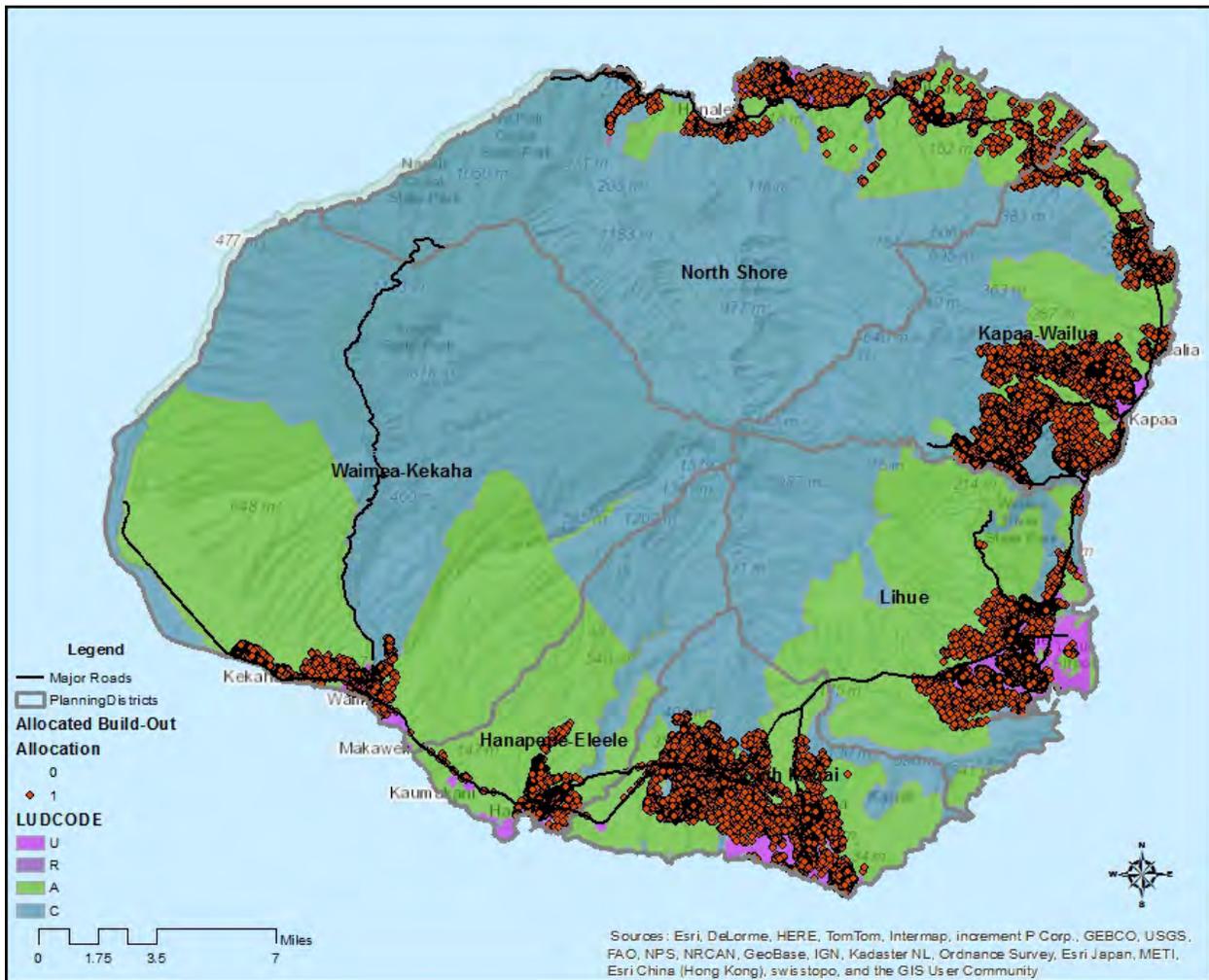
FIGURE 46. COMPARISON OF ALTERNATIVE GROWTH SCENARIOS BY ZONING DISTRICT



Data Source: See Appendix A- Excel File CVScenarios_070814

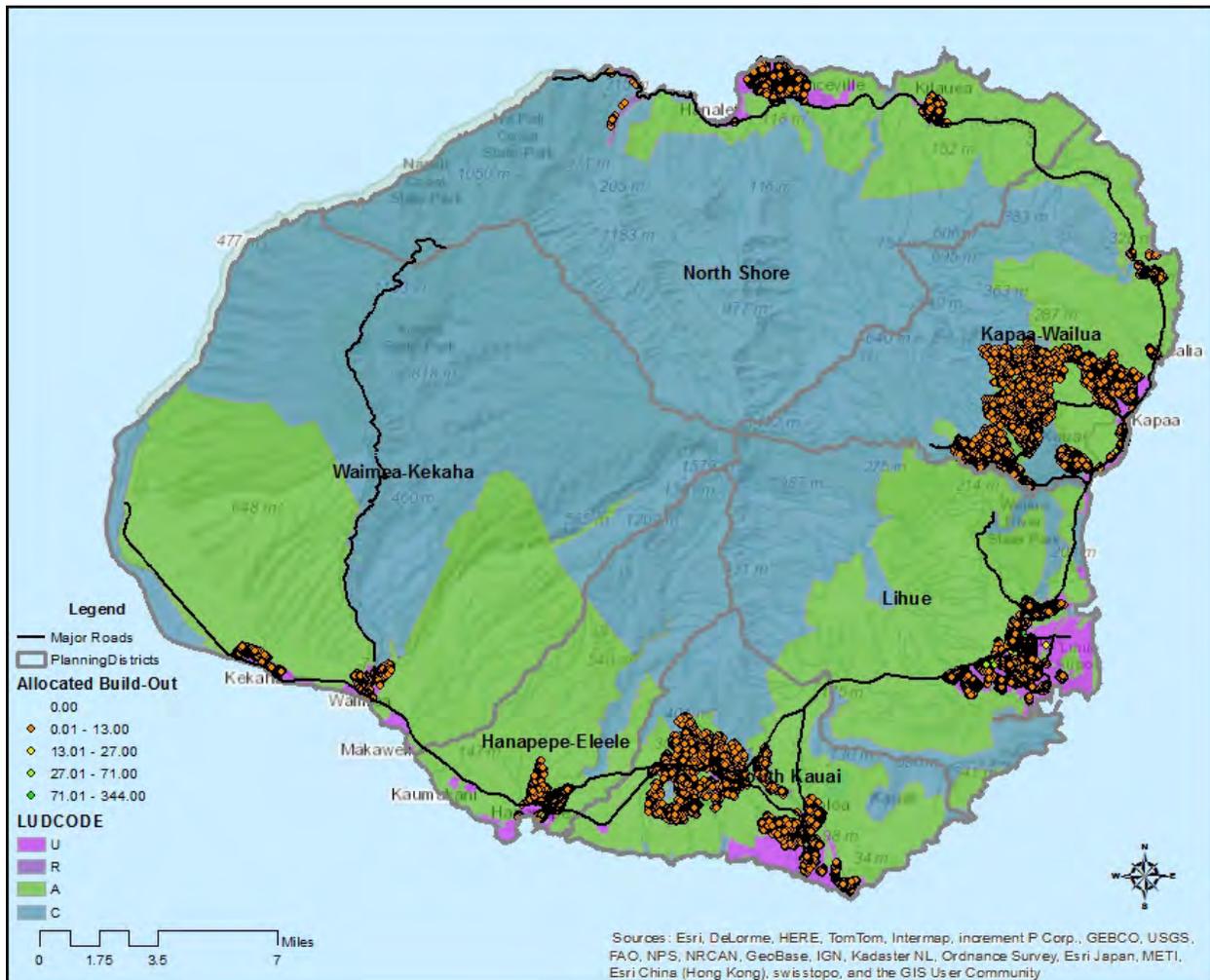
Figure 41 and Figure 42 below show the buildout patterns for the two scenarios.

FIGURE 47. STATUS QUO SCENARIO



GIS Source: See Appendix A- Status Quo Analysis Map Package

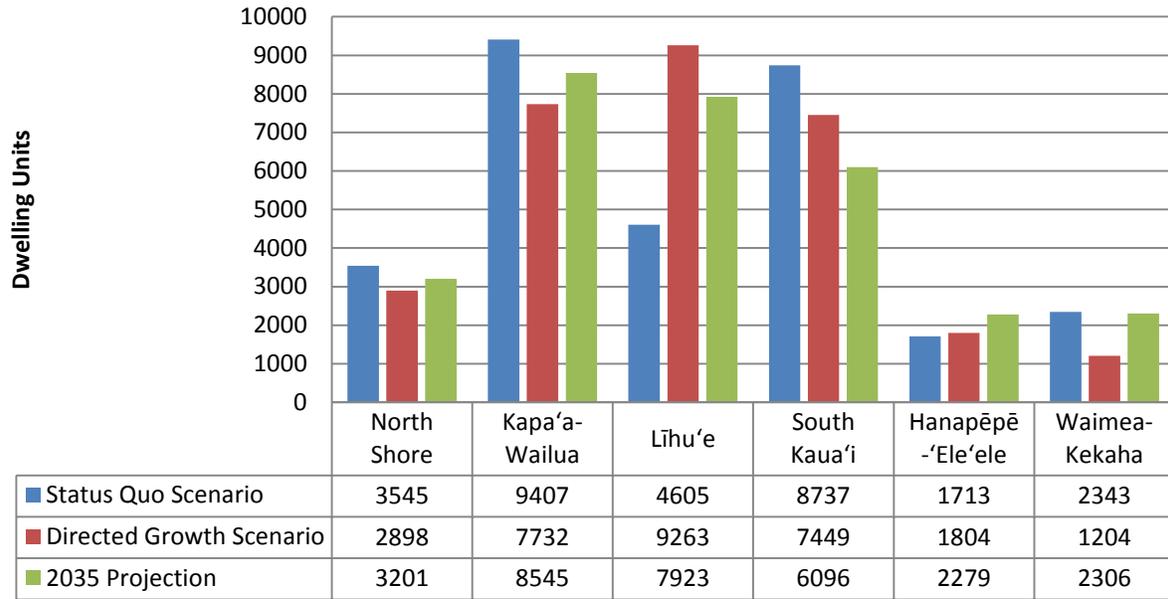
FIGURE 48. DIRECTED GROWTH SCENARIO



GIS Source: See Appendix A- Status Quo Analysis Map Package

Figure 43 compares the alternative scenarios by Planning Districts. The district most impacted by the differing growth policies would be Līhu‘e. Under the Status Quo Scenario, the growth that would have occurred in Līhu‘e under the SMS projection would instead be dispersed among the North Shore, Kapa‘a-Wailua, and South Kaua‘i districts. In contrast, under the Directed Growth Scenario, Līhu‘e, as the major Urban Center, would receive a significant proportion of the future growth. Besides Līhu‘e, South Kaua‘i would also receive more growth than the SMS projection, while all other districts would receive slightly less growth than the SMS projection.

FIGURE 49. COMPARISON OF STATUS QUO SCENARIO, DIRECTED GROWTH SCENARIO, AND SMS 2035 PROJECTION BY PLANNING DISTRICTS



Data Source: See Appendix A- Excel File CVScenarios_070814

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