

Commuter Adjusted Daytime Population on Oahu

How many people stay in an area during typical business hours, and how many workers commute in and out of the area on a typical workday is important information needed for various planning purposes. This brief presents estimates of commuter adjusted daytime population for the island of Oahu. For the estimates, adjustment was made for commuting of workers who include people 16 years and over, employed either full-time or part-time and at work during the reference week. Therefore, movement and daytime population change due to other groups of people such as students, shoppers, and tourists were not included in the adjustment.

The area defined in this brief is based on the Census geography called Census Designated Places (CDPs) on Oahu which are statistical concentrations of population that are identifiable by name but are not legally incorporated under the laws of the state.

Daytime population can be estimated by adding to total resident population of an area all in-commuters for work and subtracting all out-commuters for work. Using the 2009-2013 American Community Survey 5 year estimates from the Census Bureau, this brief addresses the questions “What areas expand or contract during daytime?”, “What percentage of workers commute into and out of their area of residency each day?”

$$\begin{aligned} \text{Daytime Population} \\ &= \text{Resident Population} \\ &+ \text{In-commuters for Work} \\ &- \text{Out-commuters for Work} \end{aligned}$$

This brief includes two tables. Table 1 shows commuter adjusted daytime population along with information on the percentage change from resident population and the percentage of workers living and working in the same place. Table 2 shows employment/working resident ratio, which is an indicator of the balance between the number of jobs and the number of workers in an area. An area with a low percentage of workers living and working in the same place would have a large volume of out-commuters, resulting in a large population loss during daytime unless the area offers many work opportunities to draw in-commuters. By the same token, areas with a high percentage of workers living and working in the same place would have less out-commuters. These areas are more likely to show a moderate to significant increase in daytime population depending on the size of work opportunities offered in the area.

Commuter flow statistics for Oahu show that military bases such as Hickam Housing CDP (73%), Wheeler AFB (66.3%), and Schofield Barracks CDP (36.2%) received a large increase in daytime population due to a large number of in-commuters to the area. Among non-military areas, Ko Olina was the area that experienced the largest daytime population increase. Although the percentage of workers living and working in the same place was low at 8.8%, its population increased by 75.4% during daytime due to incoming commuters as the area offered 2.4 times more jobs than workers residing in the area. Another major non-military area with a large population increase during daytime was Urban Honolulu. Unlike Ko Olina CDP, a majority of workers in Urban Honolulu, 84.1%, lived and worked within the same geographical boundary without needing to commute further. In conjunction with 1.7 times more jobs per worker residing in the area, commuter-adjusted daytime population of Urban Honolulu CDP was 32.8% more than its resident population in the 2009 to 2013 time period.

Contrastingly, many CDPs in Ewa had the largest percentage of population loss during daytime due to workers commuting out to work each day. Population loss during daytime in these areas includes West Loch Estate (-50.6%), Makakilo (-49.5%), Ewa Gentry (-49.3%), Royal Kunia (-46.1%), Ocean Pointe (-42.2%), and Ewa Villages (-40.2%). During the 2009 to 2013 time period, the percentage of workers living and working in the same place was all much lower than 10 percent and the employment to working resident ratio was also very low in these areas.

Unlike most other areas in Ewa, Kapolei CDP experienced a relatively low population loss during daytime despite of a low percentage, 7.1%, of workers living and working in the same place. Daytime population of Kapolei CDP was only 3.1% smaller than its resident population, indicating possibly a significant number of workers moving into the area from adjacent or other residential areas to offset a large number of out-commuters from Kapolei.

More workers living in Windward seem to be employed closer to home. With the exception of Ahuimanu CDP, most Windward areas showed a relatively high percentage of workers living and working in the same place. 26.4% of workers living in Kailua and 18.8% of workers living in Kaneohe was estimated to work within the same geographic boundary with no need to travel further to work. Together with relatively more job opportunities, population loss during daytime was moderate in these areas; Kailua (-19.5%), Waimanalo (-18.3%) and Kaneohe (-17%).

Although the percentage of workers living and working in the same places was not as high as in the areas in Windward, many CDPs in Central Oahu showed a relatively small percentage of population loss during daytime, indicating large in-commuters to the area to offset large out-commuter from the area.

Table 1. Commuter Flow and Daytime Population by CDPs on Oahu*

Daytime population change due to commuting (% of resident population)		Commuter Adjusted Daytime Population	Resident Population	% Workers living & working in the same place
Ko Olina	75.4%	3,451	1,967	8.8%
Hickam Housing	73.0%	13,039	7,538	38.3%
Wheeler AFB	66.3%	4,019	2,416	14.3%
Schofield Barracks	36.2%	24,687	18,126	60.9%
Urban Honolulu	32.8%	452,331	340,639	84.1%
Haleiwa	2.6%	3,916	3,817	25.2%
Laie	1.7%	5,749	5,654	60.5%
Kaneohe Station	-1.1%	10,317	10,434	44.1%
Wahiawa	-1.8%	16,959	17,268	21.0%
Kapolei	-3.1%	15,024	15,501	7.1%
Kahuku	-7.5%	2,335	2,524	23.2%
Halawa	-8.5%	12,965	14,164	7.4%
Waianae	-9.3%	11,495	12,680	21.2%
Waimalu	-11.7%	11,946	13,529	6.6%
Aiea	-17.0%	7,519	9,057	8.8%
Kaneohe	-17.0%	28,543	34,386	18.8%
Waimanalo	-18.3%	4,669	5,718	14.7%
Kailua	-19.5%	32,038	39,803	26.4%
Waipahu	-21.7%	31,324	40,015	11.7%
Hauula	-22.2%	2,840	3,649	14.1%
Makaha	-22.4%	6,452	8,312	5.9%
Pearl City	-24.1%	36,232	47,724	13.8%
Waipio	-24.6%	8,734	11,580	3.5%
Ewa Beach	-26.0%	10,814	14,606	8.4%
Kahaluu	-27.3%	3,440	4,733	13.4%
Nanakuli	-27.7%	8,697	12,028	7.6%
Waimanalo Beach	-29.5%	3,204	4,542	7.5%
Waialua	-32.5%	2,494	3,697	7.3%
Mililani Town	-32.9%	18,939	28,214	10.1%
Maili	-32.9%	5,817	8,666	4.5%
Pupukea	-34.4%	3,425	5,224	21.9%
East Honolulu	-35.8%	31,790	49,523	14.3%
Heeia	-36.9%	2,918	4,625	6.8%
Ewa Villages	-40.2%	4,341	7,254	9.2%
Whitmore Village	-41.7%	2,889	4,955	3.8%
Ocean Pointe	-42.2%	5,631	9,750	3.6%
Waikele	-42.8%	4,416	7,719	2.5%
Mililani Mauka	-44.8%	11,790	21,350	6.5%
Iroquois Point	-44.9%	1,924	3,490	5.1%
Royal Kunia	-46.1%	7,997	14,845	4.5%
Ewa Gentry	-49.3%	11,044	21,764	4.3%
Makakilo	-49.5%	9,413	18,631	3.5%
Waipio Acres	-49.6%	2,493	4,942	2.9%
West Loch Estate	-50.6%	3,048	6,176	3.5%
Ahuimanu	-50.9%	4,282	8,715	7.5%

Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-year estimates

*Statistics for a small geographic area may subject to large margin of errors.

Table 2. Employment/Working Resident Ratio by CDPs on Oahu*

	Total Population	Total workers living in the place (R)	Total workers working in the place (W)	Employment/ Working Resident Ratio (W/R)
Wheeler AFB	2,416	935	2,538	2.7
Hickam Housing	7,538	3,363	8,864	2.6
Ko Olina	1,967	1,045	2,529	2.4
Schofield Barracks	18,126	8,512	15,073	1.8
Urban Honolulu	340,639	171,087	282,779	1.7
Haleiwa	3,817	1,765	1,864	1.1
Laie	5,654	2,332	2,427	1.0
Kaneohe Station	10,434	6,191	6,074	1.0
Wahiawa	17,268	7,941	7,632	1.0
Kapolei	15,501	7,811	7,334	0.9
Kahuku	2,524	1,149	960	0.8
Halawa	14,164	7,154	5,955	0.8
Waimalu	13,529	7,264	5,681	0.8
Waianae	12,680	4,850	3,665	0.8
Kaneohe	34,386	17,504	11,661	0.7
Aiea	9,057	4,589	3,051	0.7
Kailua	39,803	20,247	12,482	0.6
Waimanalo	5,718	2,295	1,246	0.5
Waipio	11,580	6,219	3,373	0.5
Waipahu	40,015	18,480	9,789	0.5
Pearl City	47,724	23,272	11,780	0.5
Ewa Beach	14,606	6,181	2,389	0.4
Hauula	3,649	1,259	450	0.4
Kahaluu	4,733	1,998	705	0.4
Mililani Town	28,214	14,305	5,030	0.4
Pupukea	5,224	2,752	953	0.3
Makaha	8,312	2,750	890	0.3
Waialua	3,697	1,772	569	0.3
East Honolulu	49,523	25,313	7,580	0.3
Heeia	4,625	2,427	720	0.3
Waikele	7,719	4,668	1,365	0.3
Waimanalo Beach	4,542	1,755	417	0.2
Nanakuli	12,028	4,365	1,034	0.2
Ewa Villages	7,254	3,636	723	0.2
Ocean Pointe	9,750	5,008	889	0.2
Mililani Mauka	21,350	11,488	1,928	0.2
Royal Kunia	14,845	7,836	988	0.1
Iroquois Point	3,490	1,782	216	0.1
Maili	8,666	3,234	385	0.1
Ahuimanu	8,715	5,010	577	0.1
Whitmore Village	4,955	2,323	257	0.1
Ewa Gentry	21,764	11,892	1,172	0.1
West Loch Estate	6,176	3,338	210	0.1
Makakilo	18,631	9,789	571	0.1
Waipio Acres	4,942	2,598	149	0.1

Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-year estimates

*Statistics for a small geographic area may subject to large margin of errors.

Figure 1. Daytime Population Change Due to Commuting (as Percentage of Resident Population) by CDPs on Oahu

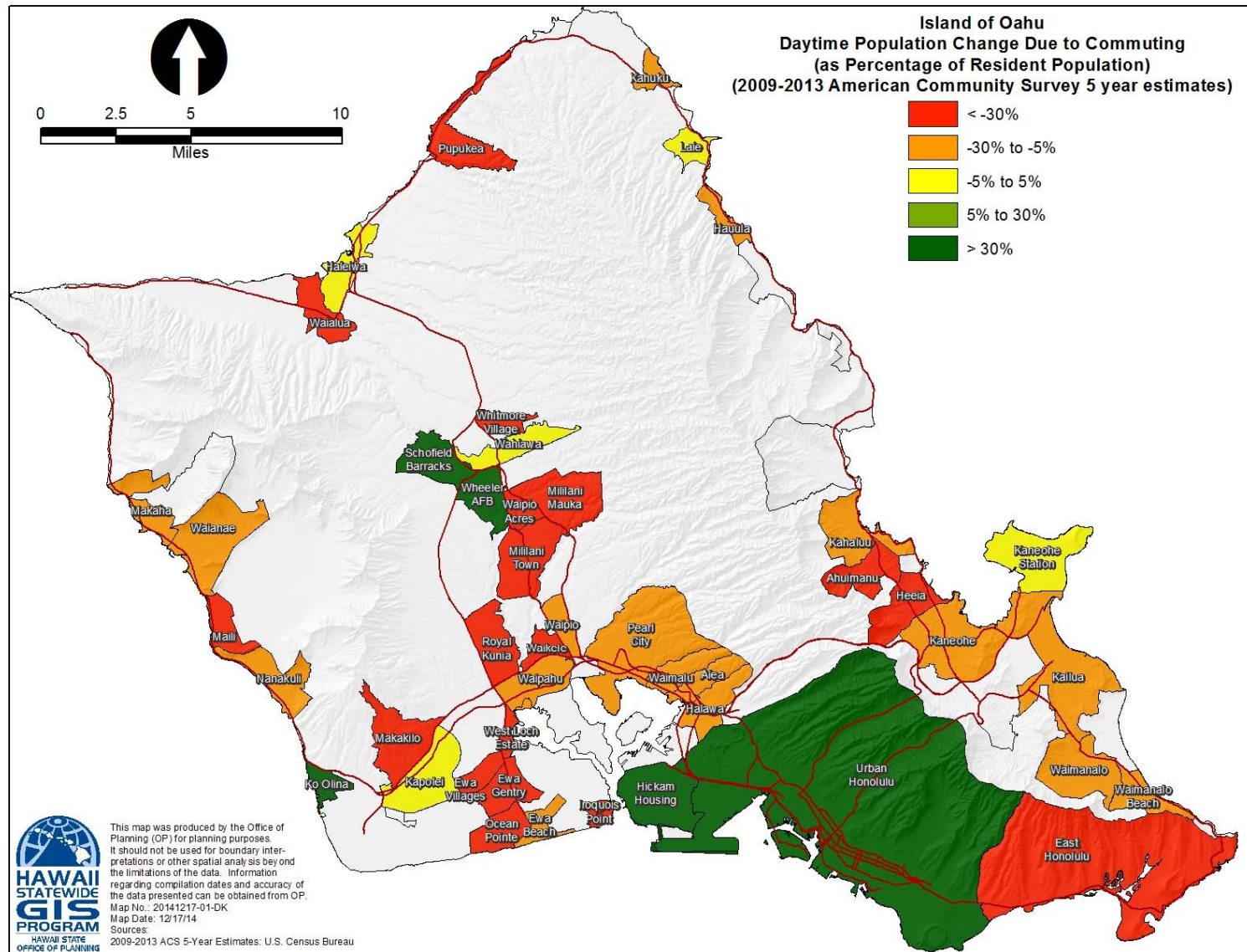


Figure 2. Workers Who Lived and Worked in the Same Place (as Percentage of Resident Population) by CDPs on Oahu

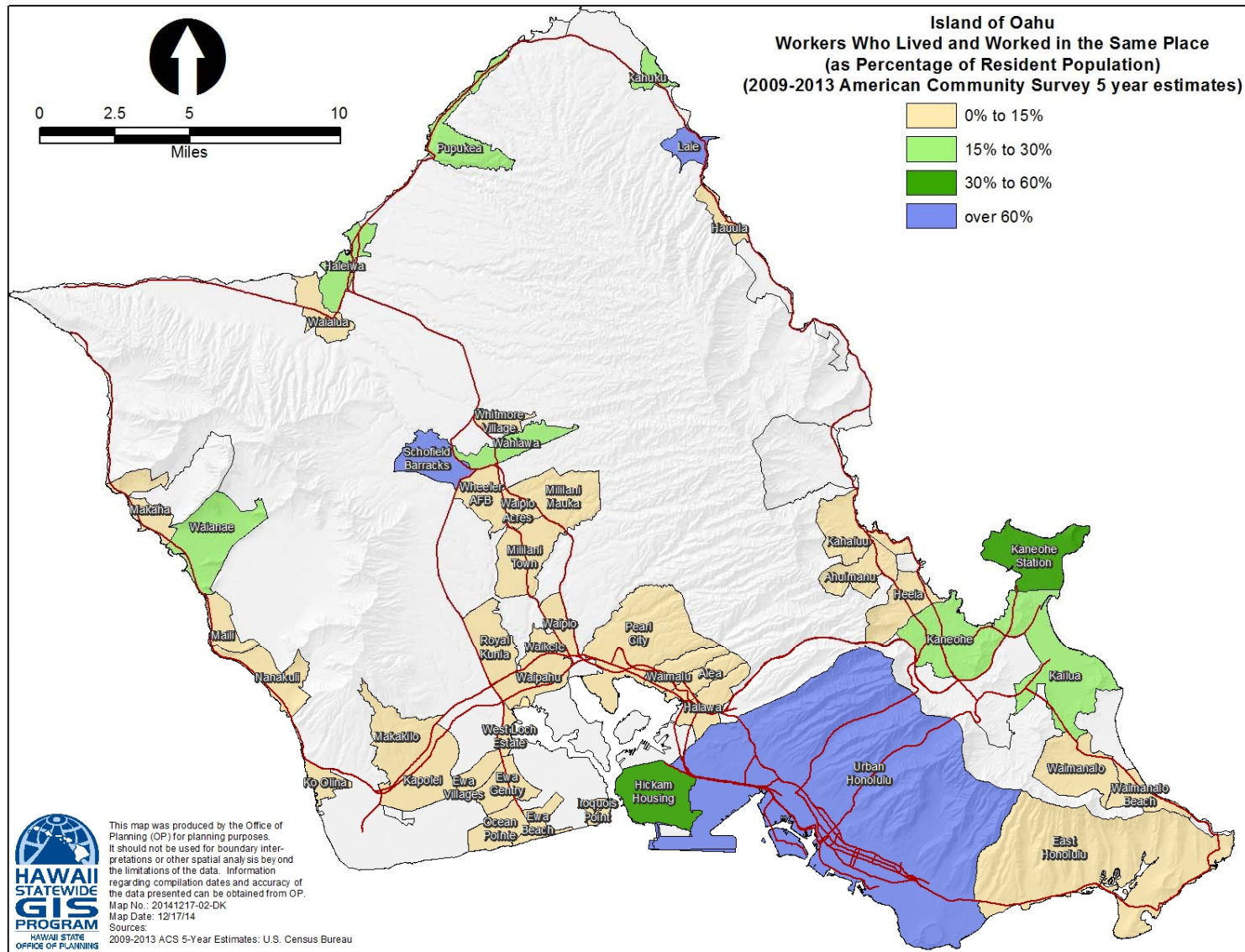
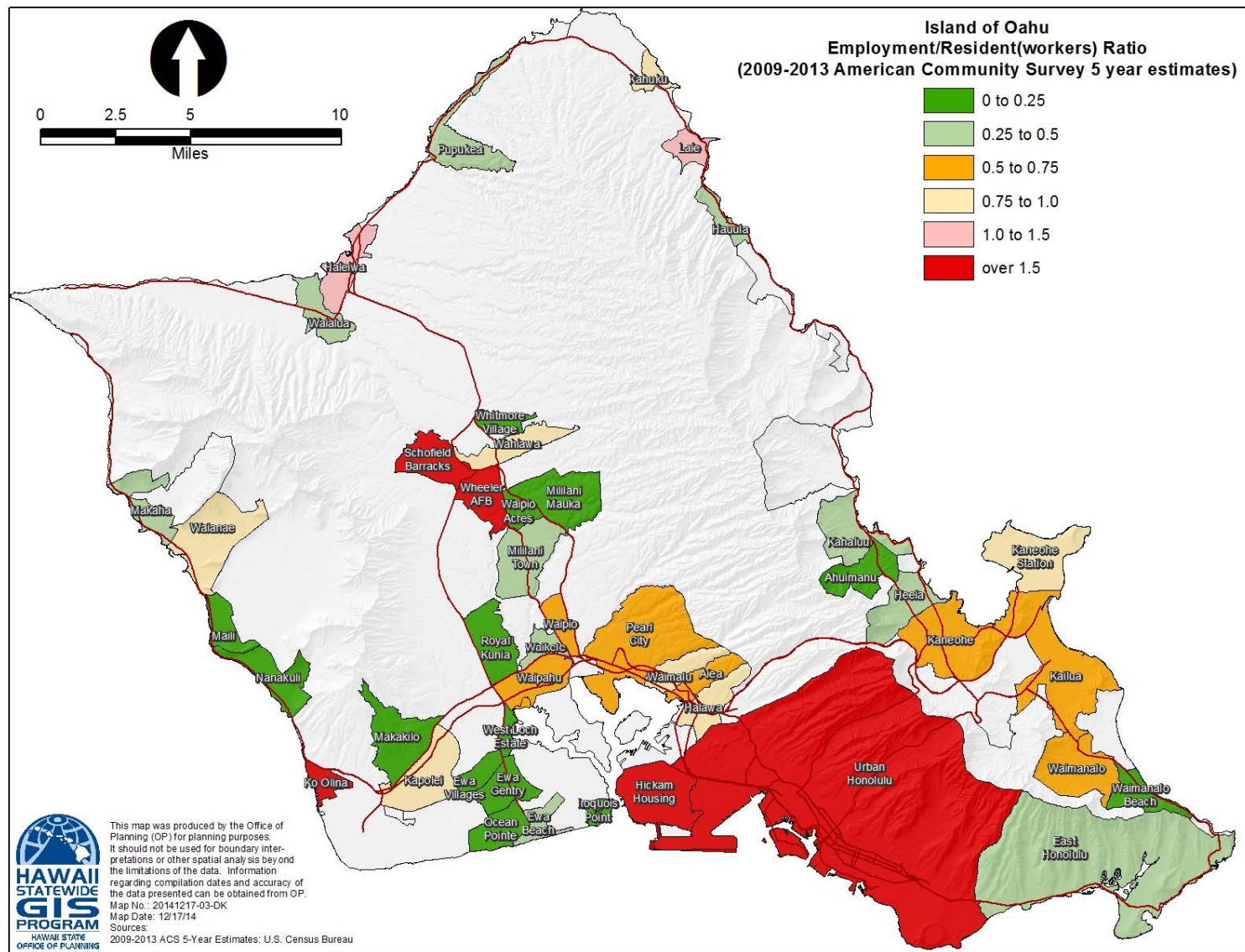


Figure 3. Employment/ Resident (workers) Ratio by CDPs on Oahu



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