June 2011

KEY PLANNING ISSUES


City and County of Honolulu
Department of Planning and Permitting
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PROJECT PURPOSE

The General Plan is a guide for all levels of government, private sector organizations, and individual citizens, with specific guidance for 11 areas:

1. Population
2. Economic activity
3. Natural environment
4. Housing
5. Transportation and utilities
6. Energy
7. Physical development and urban design
8. Public safety
9. Health and education
10. Culture and recreation
11. Government operations and fiscal management.

The current General Plan was adopted in 1977, and was last updated in 2002.

This current revision being conducted by the Department of Planning and Permitting is focused on updating objectives and policies related to O‘ahu’s overall growth, the economy, affordable housing, and sustainability. The following summarizes the key planning issues, or “hot topics,” noted by the Department of Planning and Permitting to be the critical concerns for the future development of O‘ahu.

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1. FUTURE GROWTH PRESSURES AND CONSTRAINTS

Defining the Issue
Over the past century, O‘ahu has seen its population increase more than 15 times since 1900 (from about 58,500 in 1900 to 953,207 in 2010). Although projections indicate a slower rate of growth in the future due to an aging population and a mature economy, some growth will occur. One of the fundamental objectives of the General Plan is to direct growth to appropriate areas of O‘ahu.

Key Trends
Since 1960, O‘ahu has seen explosive development and the near doubling of its population. However, since 1975 the pace of growth has slowed drastically. As Figure 1 shows, our total population has risen from an estimated 500,000 in 1960 to about 953,000 in 2010, but the growth per year has dropped from 13,000 in the 1960s and 1970s to about 6,000 per year over the last two decades. Furthermore, O‘ahu has been in the “mature” stage of economic growth since around 1990, and periods of flat economic growth are becoming common. As a result, the State government has been revising its population projections for O‘ahu downward, and the long-term trend line (see Figure 1) suggests that increasingly slower growth will continue.

Figure 1. O‘ahu's Long-term Population Growth Trends 1900 to 2035

Sources: U.S. Census Counts, State DBED&T Projections

1 State Department of Business, Economic Development & Tourism. State of Hawaii Data Book, 2009. Table 13.03
Prospects for the future are that resident births and deaths will add fewer people in decades to come, and future economic growth will continue to attract immigrants. With our military population projected to remain stable, the population is expected to see net in-migration add 3,000 more people a year up through 2035, while the natural increase (births minus deaths) should drop from 3,000² per year today to only 1,000 people per year by 2035, for a total population gain of only 4,000 more residents a year by 2035.

**General Plan Issues**

The General Plan requires the City to plan for future population growth and, to the extent possible, to control the pace and geographic distribution of development through the City’s regulatory and fiscal powers. Both goals are being achieved. On the first matter, the City’s land use and infrastructure plans are striving to provide sufficient land and infrastructure capacity to satisfy the State’s population projections. On the second matter, City regional plans and zoning controls along with City and State permitting processes and capital improvement budgets are influencing the pace and location of physical development and population growth.

² Recent evidence from the 2010 Census suggests that net in-migration will be higher than previously projected.
2. REGIONAL POPULATION DISTRIBUTION

Defining the Issue
The City adopted the current General Plan in 1977. The plan initiated the City’s “directed growth” policy, which calls for: (1) greater intensity of use in the urban core; (2) a new “second city” in ‘Ewa; and (3) strict limits on development in the rest of the island, especially in rural areas. A later revision added parts of Central O‘ahu as a growth area for housing.

The City’s ongoing program to update the eight regional Development Plans and Sustainable Communities Plans is finding that the General Plan’s directed growth policy has been effective, except for some discrepancies in the population percentages for the Primary Urban Center (PUC), ‘Ewa and Wai‘anae.

Key Trends
Since 1980, ‘Ewa, Central O‘ahu and the PUC have been the three main growth areas, just as the General Plan’s directed growth policy calls for. ‘Ewa has seen significant growth since 1990; Central O‘ahu continues its rapid growth; and the PUC, which grew rapidly during the 1980s, is now only seeing infill developments and redevelopments at higher densities. As a result, growth in the other five development plan areas (East Honolulu, Ko‘olau Poko, Ko‘olau Loa, North Shore and Wai‘anae) has slowed greatly, as the General Plan calls for.

In the last three decades, the PUC, ‘Ewa and Central O‘ahu together have received the majority of the island’s growth, increasing their share of island-wide growth from 69% to over 85% of all new residents and all new homes, and rising from 88% to 98% of all new non-construction jobs. In contrast, growth has slowed greatly in Ko‘olau Poko, Ko‘olau Loa and the North Shore areas; only East Honolulu and Wai‘anae are still growing steadily. Population projections for the year 2035 indicate that two areas – Ko‘olau Loa and the North Shore – will grow more and more slowly, while Wai‘anae will continue to grow slightly, and populations in Ko‘olau Poko and East Honolulu may even decrease beginning in 2020.

General Plan Issues
To guide the implementation of this “directed growth” policy, the General Plan provides a set of population percentages (in Objective C Policy 4) to describe the desired distribution of the island’s population amongst the eight planning areas for the year 2025. These percentages are intended to serve as “markers” to measure how well the directed growth policy is being achieved. Figure 2 displays the area population growth trends from 2000 to the year 2035, both in terms of population numbers and in terms of each area’s share of the total O‘ahu population. Superimposed on the graph are the General Plan markers, which have been placed at the year 2025. The graph shows clearly that all the planning areas are trending in the direction envisioned by the
General Plan, except Wai‘anae, which appears unlikely to approach its General Plan marker. The graph also shows that the PUC population share is expected to decline faster than the GP vision, while ‘Ewa’s share is expected to increase slightly faster. The other areas are essentially “on target,” except again for Wai‘anae. At issue is whether the General Plan markers for the PUC, ‘Ewa and Wai‘anae should be revised to better reflect current land use and demographic realities.

**Figure 2. Population Growth Trends and General Plan Population Distribution Policy**

- **General Plan % share of 2025 islandwide population**
- **Resident Population**
- **% of Total Population**

- **Primary Urban Center**: 2000, 2010, 2025
- **‘Ewa**: 2010, 2025
- **Central O‘ahu**: 2010, 2025
- **East Honolulu**: 2010, 2025
- **Ko‘olau Poko**: 2010, 2025
- **Ko‘olau Loa**: 2010, 2025
- **North Shore**: 2010, 2025
- **Wai‘anae**: 2010, 2025

- Population shares for 2025:
  - ‘Ewa: 46.0%
  - Central O‘ahu: 13.0%
  - East Honolulu: 11.6%
  - Ko‘olau Poko: 8.3%
  - Ko‘olau Loa: 1.4%
  - North Shore: 1.7%
  - Wai‘anae: 4.0%
Defining the Issue
The General Plan calls for ‘Ewa to become O‘ahu’s second major center for economic activity. This is indeed happening, but slowly. Since 1990, ‘Ewa has achieved only about 30% of the new permanent jobs projected by 2035. The percent of residents who live and work in ‘Ewa is also projected to increase from 17% in 1990 to 46% by 2030. Even with this increase of residents who both live and work in ‘Ewa, it is anticipated that a majority of residents will still commute to jobs outside the region. Considering future mobility trends, the current policy to add jobs and economic growth in ‘Ewa will continue to be an important strategy to reduce the demand on regional highway networks.

Key Trends
Since the 1970s, the City’s policy has been to direct growth to ‘Ewa and to support the development of Kapolei as O‘ahu’s second city. The physical transformation of the ‘Ewa plain from agricultural to urban use is apparent, as new residential communities, commercial and office complexes, and a major resort area are being built on lands once used for sugarcane production. More than 7,000 new homes were constructed in the region between 1997 and 2005, and the region accounted for over half of O‘ahu’s population growth between 1990 and 2005. In addition, 1.5 million square feet of new commercial space and 4,500 new jobs were added between 1990 and 2002. By 2035, the number of homes and residents living in the ‘Ewa region is projected to more than double from 2005, increasing from 25,400 homes and 82,600 residents in 2005 to an estimated 56,300 homes and 164,600 residents by 2035. Projections also indicate greater employment opportunities in the region, with employment projected to increase from 37,900 jobs in 2005 to 103,400 in 2035.

Although the projections for future job growth remain optimistic, area residents are presently living with the reality that the majority of jobs are still centralized within the Primary Urban Center, and that regional job growth has not occurred in concert with the pace of residential development in ‘Ewa and Central O‘ahu.
3. REGIONAL EMPLOYMENT AND MOBILITY PATTERNS

Figure 3 shows the percent share of the island’s population and jobs in the ‘Ewa and Central O’ahu areas, as compared to those in the PUC in 2007. The PUC had 73% of the island’s jobs, but only 46% of the island’s population. In contrast, the ‘Ewa and Central O’ahu areas had a combined 27% of the population, but only 16% of the jobs. This concentration of employment in the PUC, combined with the significant population base in the ‘Ewa and Central O’ahu areas, has resulted in severe gridlock for commuters.

Traffic congestion and long travel times between West O‘ahu and Downtown Honolulu negatively affect the quality of life for O‘ahu’s residents, and future highway commuting times are expected to be no better than the present, even with planned transportation system improvements. In planning for the future, the City is supporting public infrastructure projects and private sector developments to encourage regional job growth in ‘Ewa and Central O’ahu. Providing alternative modes of transportation, including the Honolulu Rail Transit project, to connect Downtown Honolulu and ‘Ewa is an alternative strategy that addresses the demand for residents working outside the region.

**Figure 3. Share of O‘ahu Population and Jobs in 2007**

![Bar chart showing the percent share of O‘ahu’s population and jobs in 2007](chart.png)

Source: DPP Estimates.

**QUESTION**

Should the General Plan emphasize the need for additional jobs and economic growth directed towards ‘Ewa?
4. THE CHANGING CHARACTER OF POPULATION AND HOUSING

Defining the Issue
Future demographic trends indicate that household sizes on O‘ahu will continue to decrease. These trends include fewer children per household, the aging of O‘ahu’s population, the rise in “empty nest” households, and the rise in single-occupant households. These factors will lead to changes in demand for both the type and location of housing units and the services necessary to support various elements of the population. In addition, these factors suggest that demand for housing will continue to exceed the rate of population growth. Since 2000, the increase in housing units has been 1.7 times faster than population growth.

Key Trends
As the first of the baby boomer generation (those born between 1946 and 1964) reach retirement age, the 65+ age cohort will increase rapidly. Projections estimate that the proportion of O‘ahu’s population over 65 years old will increase from 13.4% to 23.9% between 2000 and 2035. Hawai‘i’s percentage of elderly already exceeds the national average, so in the future overall housing and service priorities and programs may shift as a consequence of this aging population.

Among Hawai‘i’s elderly population, 2000 census data reveal that 21.9% are considered low income and qualify for public housing assistance. Moreover, 18.9% of elderly homeowners and 48.7% of renters spend over 30% of their income on housing, indicating that housing affordability remains a burden on much of the elderly population. As this cohort increases, the affordable housing stock will have to be adjusted for elderly needs, including accommodations for wheelchair-accessible units and housing located convenient to public transit, social and medical services and shopping areas. Also, the aging population will increase the demand for medical and health-related services, such as nursing homes, assisted living, hospitals and outpatient clinics, as well as housing with pedestrian access to social services and public transportation.

QUESTION
Does the General Plan give enough direction on population and housing, given continuing demographic changes and their implications for future housing and service needs?
5. AFFORDABLE HOUSING NEEDS

Defining the Issue
The issue of adequate affordable housing has been a compelling concern in Hawai‘i for decades. Existing language in the General Plan supports the desire to provide all O‘ahu residents with safe, affordable places to live. Although the City has recently formalized long‐practiced policies regarding the provision of affordable housing through approvals for residential zone changes, solutions for all of our affordable housing problems, including homelessness, require continual effort. Many of the forces that affect the affordability of housing are shaped by factors beyond the County’s control, such as development‐financing practices and policies.

Key Trends
In 2009, the median price of a single‐family home on O‘ahu was $570,000, and Honolulu had the second highest housing prices in the nation, exceeded only by the San Francisco metropolitan area. The need for affordable housing is indisputable, as approximately 53% of O‘ahu residents spend more than 30% of their income on housing (i.e., overspending) and Hawai‘i was ranked in 2008 as having the third largest homeless population after Oregon and Nevada.

Since the 1970s, the City has been able to deliver more than 14,000 affordable housing units by requiring developers to build such units when they receive zoning approvals for residential development projects.

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Another longstanding source of homes for qualified Native Hawaiians is the State Department of Hawaiian Home Lands (DHHL). On O‘ahu, DHHL has homestead communities in Wai‘anae, Nānākuli, Kapolei, Waimānalo and Papakōlea. Over the last decade, DHHL has increased the number of homes built by pursuing an aggressive development program.

In urban Honolulu, where land values are higher than other parts of the island and affordable housing is in high demand, gentrification and higher-density redevelopment may reduce the supply of lower-cost housing over time. This is especially true in low-rise areas such McCully, Mō‘ili‘ili, Kaimuki, Kapahulu, Liliha and Kalihi. Given that low-income residents depend on relatively low housing costs in these neighborhoods, any large-scale changes which significantly increase rents or property taxes may displace a significant number of lower-income families and workers.

**QUESTIONS**

What aspects of the continuing demand for affordable housing need to be added to the General Plan?

Should the City’s role in addressing the problem of homelessness be addressed in the General Plan?

Should the General Plan facilitate the maintenance and construction of affordable housing units when existing urban areas are redeveloped?

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6 The Brookings Institution Center on Urban and Metropolitan Policy defines gentrification as “the process of neighborhood change that results in the replacement of lower income residents with higher income ones, changing the essential character and flavor of that neighborhood” (Kennedy and Leonard, 2001).
Defining the Issue
Chapter II of the General Plan lays out a framework for a healthy economic environment for O‘ahu. It pays special attention to the visitor industry, federal spending, agriculture and ocean activities, and the geographic distribution of employment centers. Since the General Plan was initially conceived, there have been many changes to O‘ahu’s economy, including: (1) the evolution of the agricultural industry away from plantation agriculture to smaller farms; (2) technological advancements that have reshaped our ability to conduct business; (3) higher energy and transportation costs; (4) potential changes in the pattern of federal spending; and (5) the vulnerability of Hawai‘i’s economy to global events. It is important to re-evaluate the General Plan Objectives for economic activity in this context.

Key Trends
Tourism has been Hawai‘i’s major industry since the early 1970s, when it surpassed federal spending and agriculture as Hawai‘i’s primary industry. It is currently an approximately $11 billion industry, representing about one-third of Hawai‘i’s total Gross State Product.\(^7\) O‘ahu hosts about 4 million visitors annually, with an estimated 81,000 visitors on the island on any given day (accounting for roughly 10% of O‘ahu’s de facto population). Although concerns that we are overly dependent on tourism are not new, public discussions about tourism’s dominant role in our economy and the need for economic diversification are increasing, largely due to an industry subject to fluctuating visitor levels and international economic forces such as the recent downturn in tourism caused by the global recession.

Despite the recent global downturn in the travel industry, tourism continues to be Hawai‘i’s primary industry, accompanied by federal spending and construction. In 2007, total visitor spending of $13 billion was well over the $9 billion in federal salaries and military expenditures.\(^8\)

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\(^7\) Hospitality Advisors LLC. *Visitor Industry Analysis City and County of Honolulu General Plan Update.* Prepared for Helber Hastert & Fee, Planners. Honolulu, September 2010.

While Hawai‘i will always be an essential strategic location for U.S. military defense programs, reduced federal spending is likely in the near future due to new national policies aimed at reducing the federal deficit.

Following the closure of O‘ahu’s sugar cane and pineapple plantations, the diversified agricultural industry continues to grow as small farms emphasize the value of locally-grown agricultural products. Sales of farm products grown on O‘ahu have steadily increased from an estimated $107 million in 1997 to almost $168 million in 2008.9

**General Plan Issues**

Tourism and federal spending will likely continue as our major economic drivers because Hawai‘i’s natural beauty and mild climate, cultural and racial diversity, and strategic location between Asia and the U.S. Mainland create a strong competitive advantage for these sectors. Even so, it is the long-term interest of our community to move towards a more diverse and resilient economy capable of withstanding volatility and substantial changes in global economic conditions. Components of a sustainable economy are built upon industries that promote economic self-sufficiency and sustainable trade, environmental stewardship, and competitive locally-produced goods to reduce imports into the State (even though total economic self-sufficiency and self-reliance are very ambitious goals for an island state like ours). Industries that support a sustainable economy and are compatible with Hawai‘i’s natural assets include diversified agriculture (including aquaculture grown for both local consumption and export), innovation and science-based industries, health care, film and digital media, and renewable energy to reduce our dependence on imported oil.

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7. WAIKIKI’S FUTURE ROLE AS A VISITOR DESTINATION

Defining the Issue
The General Plan currently identifies Waikīkī as one of the key drivers of the City’s economy. Waikīkī has matured as an international visitor destination. In order to remain competitive with other destinations, over the last several years there has been a significant amount of re-investment in Waikīkī to redevelop properties and to revitalize aging buildings. This re-investment, along with changes to provide larger, high-end visitor units, has resulted in fewer but often larger visitor units in Waikīkī. It has also resulted in a more “up-scale” ambience for Waikīkī. The end result is a visitor destination area re-positioned to better compete with other tourist destination areas around the world. This re-investment comes at an important juncture of Waikīkī’s life cycle as a visitor destination.

Key Trends
Waikīkī is a major employment center for O‘ahu, accounting for nearly half of the State’s hotel rooms and employing nearly 32,700 workers and paying total wages of $881 million in 2008. Waikīkī’s effectiveness in competing for visitors and providing them a satisfying vacation experience is important for the stability and growth of both the state’s and island’s economy.10 Completed and planned investment in Waikīkī between 2000 and 2015 total over $3.6 billion.11

The transformation and destination market repositioning of Waikīkī has been dramatic and crucial in maintaining its position as a world-class destination. Within the short-term, a significant percentage of Waikīkī’s hotel and commercial properties will have undergone renovation or redevelopment, positioning the entire Waikīkī beachfront as a diverse urban resort that attracts more upscale visitors. Approximately 57% of O‘ahu’s visitors units in 2010 were in the luxury and deluxe price ranges, marking a period of ongoing rejuvenation rather than decline, in comparison

to 2000 when the number of luxury and deluxe units accounted for about 27% of O’ahu’s total inventory.

While traditional hotel units continue to represent the majority of Waikīkī’s visitor units, there has been a shift in the mix and number of units away from traditional hotel inventory towards timeshare and resort condominium inventory. This is reflective of the shift in visitor preference to larger units driven in part by an expanding family travel segment. The number of visitor units in Waikīkī has dropped over 12% between 1992 and 2010, from 32,539 to 28,546. Although the number of units has declined, market demand for accommodations in Waikīkī had been gaining momentum, with occupancy rates and room rates rebounding from 2008-2009 recession-period lows, until Japanese visitor arrivals fell sharply immediately following the March 11, 2011 catastrophic earthquake and tsunami in Japan. Despite such fluctuations, Waikīkī continues to be a major employment and income center and also a central component to the overall economic health of the City and County of Honolulu.

**QUESTIONS**

*Should the General Plan continue to support Waikīkī as O'ahu’s primary resort area?*

*Given the trend toward larger, but fewer units, is there still a need to prohibit further growth in the permitted number of hotel and resort condominium units in Waikīkī?*
8. OTHER CHANGES IN THE VISITOR INDUSTRY

Defining the Issue
Policies for the visitor industry in the General Plan also focus on identifying appropriate areas for resort destinations. Specifically, the General Plan recognizes Waikiki as O‘ahu’s primary resort area, and recognizes secondary resort areas at West Beach (Ko Olina Resort), Kahuku 12, Mākaha, and Lā‘ie. One of the proposed large-scale resort areas identified in the General Plan is successfully being developed, but as two other areas that have been previously identified as secondary resort areas (Mākaha and Kahuku) have not expanded much beyond their original hotels, and there are concerns about the scale of resort development that infrastructure can support in those rural areas. Against the backdrop of planned resort areas, two market-driven trends for smaller non-resort visitor facilities have emerged: (1) proposals for smaller hotels to serve existing demand in select communities around the island; and (2) continuing debate about the negative impacts of bed and breakfast units (B&Bs) and transient vacation units (TVUs) in certain residential neighborhoods that have appeal for visitors. 13

Key Trends
Ko Olina Resort has clearly been successful, and is approaching the halfway mark in its overall development. The Turtle Bay Resort began as a single hotel and golf course (with some resort condominiums), as the Del Webb Kuilima Resort and Country Club in the 1970s. Since that time, there has not been any major progress on the resort master plan approved in 1985. Mākaha Valley Resort has had difficulties attracting visitors, and in recent years converted some of its units to fractional ownership. One of the resort’s golf courses (300 acres) is being donated to Kamehameha Schools and the State Department of Hawaiian Home Lands for the development of a learning center and housing for Native Hawaiians. This is one more sign that the market does not support further resort development at Mākaha at this time.

12 The General Plan defines Kahuku as the area encompassing Kuilima (currently Turtle Bay Resort).

There appears to be an evolving interest in “community based” hotels that serve community needs rather than the tourism industry. Such hotels include the Lā‘ie Inn (currently proposed for redevelopment into a 220-room hotel to better serve the Brigham Young University-Hawai‘i and the Ko‘olau Loa community), the proposed 150-room Koa Ridge hotel to serve Central O‘ahu demand (including military, sports and health and wellness travel), and at least two hotels proposed in Kapolei to serve military, government, and business demand.

In recent years, the increase in B&Bs/TVUs has created controversy in local communities. Some residents of neighborhoods with a high proportion of B&Bs/TVUs are opposed to such units, citing noise, congestion, parking issues, and loss of residential neighborhood character. Others voice concern regarding the potential impact on property values. Supporters of B&Bs/TVUs maintain that such accommodations are simply responding to demand, and that the B&B industry contributes to the local economy. Amid much controversy, a bill proposing to lift the ban of new B&Bs failed to pass in late-2009.

**QUESTIONS**

*Should the General Plan recognize small, community-based hotels as appropriate in some neighborhoods?*

*Should the General Plan recognize the changes in the visitor industry that have created a demand for smaller de-centralized visitor accommodations?*
Defining the Issue
The agricultural industry has undergone a fundamental shift since the General Plan was originally conceived. This was due to the demise of plantation agriculture. Acreage in agricultural production has declined by almost 37,000 acres since 1980; livestock production has decreased by at least 70% since 1980; and O‘ahu’s last major dairy closed in 2008. There are also serious concerns about food security and the ability to grow our own food in an international agricultural marketplace where many out-of-state food products are cheaper than locally-produced commodities.

Considering that approximately 30,000 acres of productive agricultural land on O‘ahu are fallow or used for low-value grazing, and that the agricultural industry has been slow to find new uses for former plantation land, the City’s challenge is to identify and preserve O‘ahu’s agricultural resources (land, water resources, irrigation systems and road networks) for future generations. The systemic issues that are preventing existing and aspiring farmers from accessing and making productive use of fallow acreage need to be addressed, along with proactive measures that enable the growth of food production on O‘ahu. Another challenge is to balance the preservation of agricultural land and the diversification of the industry against the demand to urbanize for future growth.

Key Trends
As of 2008, there were approximately 11,000 acres of land in agricultural production, with a majority of that acreage (over 6,000 acres) being used for specialty crops (primarily seed corn, pineapple, and floriculture and nursery products). This amount includes about 2,425 acres in ‘Ewa and Central O‘ahu designated for future urban growth. Over 9,500 acres are slated to stay in agricultural use. Statewide, Hawai‘i farmers supplied about 32% of the fresh fruit consumed locally, about 34% of the fresh vegetables and melons, about 20% and 10% of the eggs and milk respectively, and less than 5% of the beef and pork consumed.

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About 85% of total farm and livestock sales in 2008 were sold for export, indicating that agricultural exports continue to make up the majority of agricultural sales.

This data suggests that a greater volume of local food products could be consumed locally. Anecdotally, local retail grocers have said they could sell more local produce than is currently available. The language in the current version of the General Plan is left over from the days when sugar cane and pineapple were the two leading crops that were grown on tens of thousands of acres (“Provide sufficient agricultural land in ‘Ewa, Central O’ahu, and the North Shore to encourage the continuation of sugar and pineapple as viable industries”). Emphasis has been placed on agriculture as an economic activity, and not as a sustainable practice that feeds island residents.

**QUESTIONS**

*Should the General Plan be amended to recognize that the era of plantation agriculture has ended?*

*Should the General Plan be amended to suggest that agriculture on O’ahu has a sustainable role that includes providing a larger market share of the food products consumed by its residents?*

*Should the General Plan be amended to underscore the importance of defining and protecting high-quality agricultural land, similar to how it underscores the need to define urban growth areas?*
10. PREPARING FOR THE IMPACTS OF GLOBAL WARMING

Defining the Issue
Significant scientific research and data indicate that average temperatures around the world are rising, and there is concern about the effects these changes may have on coastal communities susceptible to a rise in sea level. These effects include increased shoreline erosion, increased exposure to devastating tsunamis and storm surges, and flooding in low-lying areas due to higher water tables. Projections are also being made for possible changes in rainfall patterns on O‘ahu. Global warming is a relatively recent concern, and was not obvious in the 1970s when the General Plan was written. Suggestions that these concerns be included in City policy documents have increased.

Key Trends
Scientists at the University of Hawai‘i School of Ocean and Earth Science and Technology estimate that a one meter rise in sea levels (which is predicted to occur at the end of this century) will have a dramatic effect on O‘ahu’s developed areas. It is projected that coastal areas such as Waikīkī, Māpunapuna/Airport and ‘Ewa Beach/Kapolei will be flooded at high tide when the sea level increase reaches the one meter mark. Furthermore, projections indicate that wetlands may develop in mauka areas such as McCully and Makiki due to the higher water table and the lack of drainage capacity. O‘ahu’s windward communities along the coastal Kamehameha Highway are also at risk. Given this scenario, it is necessary to consider the long-term effects that rising sea levels will have on O‘ahu’s physical development. Planning for the future should consider the need to safeguard our existing developed areas and should ensure adequate protection for future developments. Strategies to address this concern include increasing shoreline setbacks to encourage future development away from coastal areas, infrastructure investments to protect or re-locate coastal roadways, and drainage system improvements.

In addition to adapting to the effects of global warming, reducing greenhouse gas emissions that contribute to global warming is also important. Assuming that global warming is a worldwide problem that needs to be addressed, there is a major effort by governments and individuals to promote sustainability and “green” practices. Some examples of these strategies include reducing
energy consumption through building design and the use of alternative energy sources, reducing automobile dependency by providing transportation choices and encouraging mixed-use developments, reducing waste by encouraging recycling, and emphasizing the importance of consuming local products.

A number of critics remain unconvinced that human activities are influencing global warming, and question the value of investing in strategies to protect against rising sea levels. This opposing viewpoint debates the accuracy of the scientific predictions and the need to take action to reduce the impacts of global warming.

QUESTIONS
Should the General Plan recognize that O‘ahu is a contributor of greenhouse gases, and include policies to reduce emissions that contribute to global warming?

Should the General Plan include policies to modify existing land use patterns as needed to help communities adapt to the potential effects that rising sea levels and increased flooding may have on coastal areas?
Defining the Issue
Over the last few decades, there has been worldwide recognition that communities large and small must recognize that there are limits to the complex network of systems (social, economic, and environmental) that define our lives. Within this context, we all must strive to achieve a balance between using the resources necessary to move society forward and leaving sufficient resources for future generations. While this is a very simplistic definition, this paradigm is widely called “sustainability.” Several recent City programs, projects, and plans have been imbued with some discussion of sustainability. However, the General Plan (the County’s overarching land use planning document) is currently silent on this subject, although taken as a whole, its objectives and policies reflect many sustainability principles.

Key Trends
The movement to promote sustainability is influencing the choices we are making in our daily lives and is also shaping future development on O’ahu. Some examples of land use planning strategies that promote sustainability are:

- land use development forms that encourage compact and mixed-use development at higher densities
- multi-modal transportation networks and transit-oriented developments to reduce automobile use
- energy-efficient building design and technology to reduce energy consumption
- increased public awareness about reducing consumption and expanding reuse/recycling to promote waste stream reduction
- renewable energy sources to reduce dependence on imported fossil fuels
- emphasizing a diversified, resilient economy, and
- preserving and protecting agricultural, natural, and open space resources.

Encouraging self-sufficiency and self-reliance at the local level – including using local resources to generate energy, consuming locally-grown food, and minimizing waste – are major elements of sustainability.
As participants in a modern economy, O‘ahu residents and businesses import products that cannot be produced in Hawai‘i (e.g., items made from metals, plastics, etc.). Thus, it is not possible for O‘ahu – or Hawai‘i as a whole – to be an entirely self-sufficient, self-contained entity. We are currently unable to produce all of our food and goods consumed in the State (about 80-90% of our goods are imported), and imported fossil fuels provide almost 90% of our energy. In addition, the State economy is heavily dependent on the tourism industry and Federal spending. Despite the major barriers to self-sufficiency, Honolulu can – like many other cities have done– embrace an ethic of long-term sustainability that strives to balance environmental, economic and social conditions without compromising the ability of future generations to meet their own needs.

**QUESTIONS**

Should the General Plan specifically reference sustainability?

Should the General Plan continue to focus on reducing our dependence on imported fossil fuels and on conserving energy, or should they be broadened to address increased self-sufficiency to the extent economically feasible?

Given Hawai‘i’s overall dependence on imports and the barriers that keep us from being completely self-sufficient, what are the specific policies and measures that are appropriate for O‘ahu and its General Plan?