

**Honolulu  
General  
Plan  
Update**

# **SUSTAINABILITY TREND REPORT**

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## ACRONYMS

APA	American Planning Association
BWS	City and County of Honolulu Board of Water Supply
DPs	Development Plans
HCEI	Hawai'i Clean Energy Initiative
SCPs	Sustainable Communities Plans
SLH	Session Laws of Hawai'i
WMP	Watershed Management Plans

# INTRODUCTION

This report was prepared to support the City and County of Honolulu’s General Plan Update Project. The purposes of this report are to: (1) present information about the concept of “sustainability” as it relates to the *General Plan*; and (2) generate discussion during the update process.

The first section of this paper provides background about “sustainability” and attempts to clarify its meaning. Section II provides a context for land use policies and development strategies that promote sustainability. Section III is an overview of current sustainability policies in Hawai‘i. In closing, Section IV considers strategies that other municipal governments across the United States are using to incorporate sustainability into planning and implementation mechanisms, identifies several approaches for the organization and structure of the *General Plan*, and presents examples of sustainability measures related to the specific subject areas in the existing *Honolulu General Plan*. This paper is intended to help define major issues, and is not intended to be a comprehensive review of the topic. It is structured to address several key issues and questions regarding the implications of incorporating sustainability into the *General Plan*, such as:

- What is sustainability?
- What do policies that address sustainability look like?
- How does the movement towards sustainability affect current land use and development practices and policy formation?
- Are the goals of the climate change initiative the same as sustainability? Is there a difference between climate change policies and policies that promote sustainability?
- Are there any existing policies and plans at the State and/or City level that provide guidance for incorporating sustainability into the *General Plan*?
- What approach have other municipalities in the United States used to incorporate sustainability into their General Plans?
- What types of policies may be appropriate for Honolulu’s *General Plan*?

## 1. DEFINITION OF SUSTAINABILITY

In recent years, increasing public awareness and interest in sustainability created far-reaching effects on almost all sectors of society: from decisions made by government leaders, public officials and private sector executives, to the way that industries and businesses operate, the content of our media coverage, individual consumer choices, land use/development patterns, and building design and construction practices. The widespread, global interest in sustainability is largely a delayed reaction to modern society’s insatiable consumption of natural resources and production of waste/pollution,

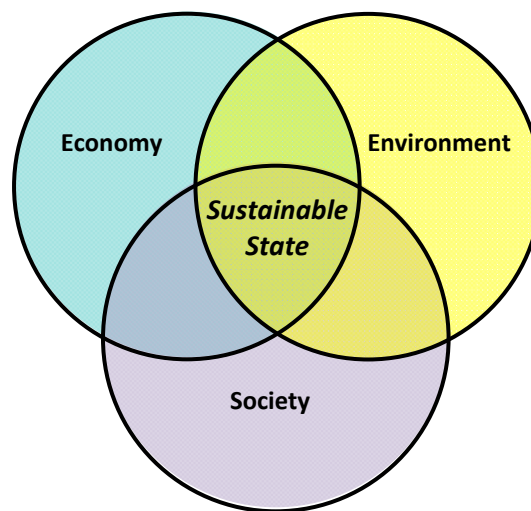
and the resulting detrimental impacts to environmental, social, political and cultural systems. Global trends that have contributed to the rise of the environmental movement and the recent push for sustainability include:

- Urban population growth
- Development pressures on natural ecosystems, including deforestation and destruction of ecosystems
- Loss of biodiversity and native species
- Climate change effects (i.e., atmospheric and sea levels changes attributed to greenhouse gases)
- Environmental and health-related concerns resulting from high concentrations of pollutants and toxic waste
- Growing demand and dependence on non-renewable energy sources
- Growth in urban and suburban areas contributing to sprawl, traffic congestion and the loss of agricultural lands and open space
- Devastation from natural hazards (i.e., flooding, earthquakes, hurricanes and tsunami)
- Social, economic and political inequalities between developed and developing nations, and
- Increased interest in the protection and preservation of historic and cultural resources.

As the concept of sustainability and the “green” movement gains in popularity, the term is being applied to many different facets of society. Agriculture, architecture, business, energy, tourism and travel, are just a few of the activities, products and services that are being influenced by the movement towards sustainability. As concepts such as “sustainable agriculture,” “sustainable design,” “sustainable/renewable energy,” and “sustainable tourism” entice consumers, and businesses find marketing sustainable lifestyle choices profitable, “sustainability” has become a major international buzzword. Now a part of the common vernacular, the term has taken on many different meanings, depending on the group using the term and the situation and reason for its use. Is sustainability an awareness of reducing the amount of water and electricity we use? Is it modifying consumption patterns to generate less waste and recycle more, and making a choice to buy locally-grown produce and products? Or is it a philosophical lifestyle change that involves living without modern technologies and conveniences? Is sustainability the same as anti-development? Or is it about development that values protecting agricultural lands and natural/physical resources? Considering the widespread use of the term and its application to “green” or environmentally-friendly practices, what is sustainability?

The word *sustainability* comes from the Latin *sustinere*, which means to hold up or support (derived from *tenere*, meaning to hold, and *sus*, meaning up). Definitions of *sustain* listed in the *Websters Ninth New Collegiate Dictionary* (1984) include “to give support or relief to maintain,” “nourish,” “keep up, prolong” and “to support the weight of.” Within this context, at its core, sustainability is the capacity to continue and keep going.

Review of existing literature suggests that sustainability is a complex idea that cannot be unequivocally described or simply defined (Martens 2006). There are numerous definitions, although the most widely quoted definition of sustainability is from the 1987 United Nations’ World Commission on Environment and Development report entitled *Our Common Future* (commonly referred to as the “Brundtland Report,” after the Commission Chairman, Norwegian Prime Minister Grö Harlem Brundtland). The Brundtland Report, which is largely responsible for introducing the concept of sustainability to an international audience and achieving global consensus on the concept, defines sustainable development as “development that meets the needs of the present without endangering the ability of future generations to meet their own needs.” Unlike the traditional development approach that emphasizes the primary goal of economic growth and prosperity, the concept of sustainability places equal weight on each of the three systems that influence the health and prosperity of a community by balancing economic prosperity, social well-being and the need to minimize human impact on the environment and preserve natural resources for the infinite future (see Figure 1). Recognizing the links between the economy, the environment and society, sustainability acknowledges the ecological limits of natural systems, and asserts that humanity’s well-being is fundamentally dependent on the health of our environment.



### **Figure 1: Concept of Sustainable Development**

The three systems that shape communities (i.e., economy, environment, society) overlap and are affected by the others. For a community to be sustainable, each system must be healthy and in balance with the other two.

The *Sustainability Primer Hawai'i Step by Natural Step* defines sustainability as “the promise of a better world” (County of Hawai'i and The Kohala Center 2009, 1). “Sustainability is about creating the kind of world we want for ourselves, our neighbors, and future generations. It challenges us to live our lives and make decisions as individuals, organizations and societies so that we make sure that future generations have access to the same opportunities and quality of life that we do” (2009 iii).

## **2. SUSTAINABLE LAND USE POLICIES AND DEVELOPMENT STRATEGIES**

### ***2.1 Sustainability and Climate Change***

Planning actions related to sustainability address a wide range of development issues for the purpose of improving existing environmental concerns at both the local and global scale (see Section 1 for summary of global trends). In general, the desired outcomes of such planning actions include the conservation and protection of all natural resources (including water resources), access to natural areas, ensuring community health/quality of life, hazard mitigation and disaster preparedness, environmental justice, and the reduction of greenhouse gas emissions to mitigate climate change.

Although the terms “climate change” and “sustainability” are often used interchangeably when discussing concepts that address global environmental issues, it is important to note that the terms are not entirely analogous or identical in meaning. Climate change is only one of the many facets of sustainability. Both initiatives share the same goal of climate change mitigation<sup>1</sup> to improve global environmental conditions, and promote strategies that reduce greenhouse gas emissions and lessen an individual’s carbon footprint<sup>2</sup>. Typical climate change mitigation strategies address the need to decrease fossil fuel consumption and dependency, and include approaches such as technological advancements that increase energy efficiency and enable switching to alternative fuels; expanded use of renewable energy sources; low-impact site design, conservation measures and resource-efficient building standards to minimize energy/water use; waste stream reduction and recycling programs; marketing and educational programs to modify personal lifestyle and consumer

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<sup>1</sup> Adaption to the consequences of climate change is a critical community planning challenge. Unlike climate change mitigation strategies that emphasize reducing greenhouse gas emissions, adaption strategies consider protecting communities from the potentially increased environmental hazards and impacts related to climate change and sea-level rise, including coastal storms and erosion, flooding, ecosystem losses, increased stress on drainage systems, and potential for salt water intrusion into wells.

<sup>2</sup> A carbon footprint measures the impact an individual has on the environment through the greenhouse gases produced by his/her daily activities. It is a measurement of the direct and indirect emissions of carbon dioxide produced from the burning of fossil fuels for domestic energy consumption and transportation, and the products consumed. <http://www.carbonfootprint.com/carbonfootprint.html>

choices; and physical improvements such as compact, mixed-use development forms and multi-modal transportation systems to alter existing travel behaviors.

While both initiatives promote strategies to reduce fossil fuel consumption, the goals of the climate change initiative are to slow the rate of climate change by minimizing greenhouse gas emissions, and to adapt existing developments in preparation for the physical effects of climate change (i.e., coastal changes, rising sea levels, water supply threats). In comparison, sustainability assumes a broader, whole-systems approach that places equal value on environmental, economic and social conditions and the overall quality of life for current and future generations, such that reducing fossil fuel consumption is considered to be only one of the many components in the foundation of a healthy, sustainable community. Within this larger context, strategies that reduce fossil fuel consumption are consistent with sustainability's goals of improving environmental conditions at all levels (local/regional/global) and increasing self-sufficiency and self-reliance at the local/regional level. In addition to climate change strategies (described in the previous paragraph), other strategies that promote local/regional sustainability include using local resources to generate energy (i.e., solar, wind and biodiesel), consuming locally-grown agriculture (i.e., food production and security), and minimizing waste (i.e., waste stream reduction).

## ***2.2 Shifting Paradigm for Land Use and Development***

There is a growing recognition across the global community that existing land use planning approaches and building forms hinder our ability to achieve sustainability. Recognizing that the segregation of land uses typical of current spatial planning practices is one of the primary constraints to creating a sustainable future, the movement towards sustainability has been instrumental in transforming conventional development concepts, introducing new land use planning and design approaches such as “smart growth,” “new urbanism,” “traditional neighborhood development” and “livable communities” that promote sustainability principles in the organization and form of communities. This shifting paradigm of sustainable urban land use and development – which draws upon and reintroduces former development patterns that preceded the spread of American suburbs and the proliferation of “sprawl” – is changing the physical layout and design of both new and existing communities and presenting new goals for long-range planning and land use. It is characterized by compact and mixed-use development that allows for higher-densities in developed areas, the revitalization of existing urban areas, multi-modal transportation networks to reduce automobile use (i.e., creating areas that are walkable, bikeable and transit accessible), and the preservation of agricultural and environmental resources. Table 1 compares the elements of the typical urban area (i.e., conventional development) and the emerging model of sustainable urban land use and development. While the typical urban area is characterized by sprawl and automobile-centered transportation systems, the sustainable land use model is largely consistent with the principles of “smart growth.”

Smart Growth is a comprehensive planning approach that advocates compact, transit-oriented, walkable, and bicycle-friendly land use, characterized by mixed-use development, pedestrian-friendly streets, multi-modal transportation networks, and a range of housing choices to protect agricultural and environmental resources and avoid urban sprawl. The Smart Growth Network, which is a coalition of national and regional organizations, advocates ten basic principles of Smart Growth that align with the principles of sustainability.

- (1) Mix land uses (residential, retail and business)
- (2) Take advantage of compact building design
- (3) Create a range of housing opportunities and choices
- (4) Create walkable neighborhoods
- (5) Foster distinctive, attractive places with a strong sense of place
- (6) Preserve open space, farmland, natural beauty, and critical environmental areas
- (7) Strengthen and direct development towards existing communities
- (8) Provide a variety of transportation choices
- (9) Make development decisions predictable, fair and cost-effective, and
- (10) Encourage community and stakeholder collaboration.

The sustainable land use model described in Table 1 recognizes that existing land use patterns, transportation and land use relationships, and urban design have substantially influenced energy consumption and greenhouse gas emissions, encouraged the conversion of undeveloped lands, and negatively impacted various physical, social and cultural resources. The new model engenders a fundamental shift away from the economically- and environmentally-unsustainable sprawling residential subdivisions and automobile dependency that are the consequences of current land use and development practices. Central to this shifting paradigm is a cultural and philosophical shift at all levels of society. This is a shift from energy consumption to resource conservation; from sprawling to more compact and transit-oriented development; from shopping at outlying malls to more urbanized retail; from expensive and expansive suburban housing to affordable housing closer to work; from reliance on taxes to creative, market-oriented ways to finance infrastructure needs; from local thinking and acting to regional collaboration; from separating land and transportation planning to combining them; from capacity to sustainability; and from a culture of “me” to a culture of “we” (Hudnut 2008, viii-ix).

**Table 1:  
Comparison Summary of Land Use Characteristics**

	<b>Conventional Urban Development</b>	<b>Sustainable Land Use Paradigm</b>
<b>Density</b>	Lower-density, dispersed activities	Higher-density, clustered activities
<b>Land Use Pattern</b>	Multiple commercial centers, suburbs distant/disconnected from downtown and from each other	Central commercial center in downtown, suburbs close to and accessible to downtown
<b>New Development</b>	Urban periphery (greenfield)	Infill (brownfield)
<b>Land use mix</b>	Homogeneous, with uses separated and disconnected	Mixed-use, both vertical and horizontal
<b>Scale</b>	Often large scale. Larger buildings, superblocks and wide roadways. Minimal design detail since people experience the landscape at a distance, as motorists	Human scale. Smaller buildings, blocks and roads, with emphasis on design elements to encourage people to experience the landscape as pedestrians
<b>Public services (shops, schools, parks)</b>	Regional, consolidated, larger. Requires automobile access	Local, distributed, smaller. Accommodates walking access
<b>Primary Mode of Transportation</b>	Automobile-centric transportation and land use patterns dominated by highway/street systems	Multi-modal transportation and land use patterns encourage walking, cycling, public transit
<b>Commute patterns</b>	Long, congested commutes with limited transit options	Reduced commutes, with extensive modal options
<b>Connectivity</b>	Hierarchical road network with emphasis on private “pods” leading to unconnected roads and walkways, and barriers to nonmotorized travel	Well-connected roads, sidewalks and paths, allowing more mobility options
<b>Street design</b>	Streets designed to maximize motor vehicle traffic volume and flows	“Complete streets” designed for a variety of activities. Traffic calming.
<b>Public space</b>	Attention to private spaces contributes to sense of separation (e.g., internally oriented)	Emphasis on public spaces promotes sense of community (streetscapes, pedestrian areas, public parks, public facilities)
<b>Dominant housing form</b>	Families living in single-family homes	Multi-family housing for a diversity of households (singles, couples, families, non-families)

### 3. SUSTAINABILITY POLICIES AND PLANS IN HAWAI'I

The American Planning Association (APA) *Policy Guide on Planning for Sustainability* (2000) identifies objectives for planning actions in the direction of sustainability. The objectives – which recognize that subject areas such as housing, land use, transportation, economic development, infrastructure and public services are inextricably linked and need to be considered in regional planning to meet sustainability principles – are intended to provide a guiding framework for all levels of policy development (i.e., local, state, regional and federal) and subject areas addressed by planners:

*“Planning for sustainability requires a systematic, integrated approach that brings together environmental, economic and social goals and actions directed toward the following four objectives:*

- 1. Reduce dependence upon fossil fuels, extracted underground metals and minerals.*
- 2. Reduce dependence on chemicals and other manufactured substances that can accumulate in Nature.*
- 3. Reduce dependence on activities that harm life-sustaining ecosystems.*
- 4. Meet the hierarchy of present and future human needs fairly and efficiently.”*

The APA also identifies specific policy positions that support the APA’s objectives and provide a context for planning (APA 2000). The APA emphasizes specific planning and policy measures that contribute to sustainability:

- (1) Alternative transportation that encourages reduced use of privately-owned gas-powered vehicles
- (2) Use of alternative renewable energy sources to reduce dependence on fossil fuels
- (3) Development and agricultural practices that reduce or eliminate the use of extracted underground substances such as mercury, cadmium and phosphorus
- (4) Reducing the use of chemical and synthetic substances in the built environment, especially in paved surfaces, building materials, and industrial and maintenance operations
- (5) Landscape design, maintenance and agricultural practices that reduce or eliminate the use of pesticides, herbicides, and synthetic fertilizers
- (6) Compact mixed-used development during the redevelopment of existing urban sites, in order to minimize sprawl and reduce the need to travel by car
- (7) Protecting undeveloped lands and other important ecological, open space and agricultural resources

- (8) Reducing the use of water, and employing innovative wastewater treatment alternatives to protect groundwater resources
- (9) Equitable protection of public health, safety and welfare for all population groups, regardless of income, race, gender or ethnicity
- (10) Reducing and reusing waste products
- (11) Citizen participation in planning
- (12) Initiatives and partnerships that support well-informed policy decisions, and
- (13) Incentives and other economic tools that encourage approaches that support sustainable development.

Efforts to characterize and incorporate sustainability into the *Honolulu General Plan* should be driven by existing State and County goals, policies and plans. This section provides a summary of each of the key State and County policies and plans that address sustainability in Hawai'i:

- Act 234, Hawai'i's Global Warming Solutions Act
- Hawai'i Clean Energy Initiative
- Hawai'i 2050 Sustainability Plan
- Complete Streets Task Force Legislative Report
- Board of Water Supply Watershed Management Plans
- City and County Development Plans and Sustainable Communities Plans

### **3.1 State Policies**

#### **3.1.1 Act 234, Hawai'i's Global Warming Solutions Act**

Act 234, Session Laws of Hawai'i (SLH) 2007, is known as Hawai'i's Global Warming Solutions Act<sup>3</sup>. It establishes the State's policy framework and requirements to address greenhouse gas emissions, and commits Hawai'i to reduce its statewide greenhouse gas emissions to or below the 1990 levels by the year 2020. Act 234 also creates a ten-member task force to prepare a workplan for how to best and most cost-effectively achieve the reductions, and requires the State Department of Health to pass rules on mandatory reductions for large emitters of six specific greenhouse gases (i.e., carbon dioxide, methane, nitrogen oxides, hydrofluorocarbons, perfluorocarbons, and sodium hexafluoride) beginning in 2012. The recommended workplan presented to the 2010 State Legislature in the Greenhouse Gas Emissions Reduction Task Force Report (December 2009) supports the implementation of the Hawai'i Clean Energy Initiative (see Section 4.1.2) and additional policy initiatives, including modifications to existing renewable and energy

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<sup>3</sup> Available on DBEDT website at: <http://hawaii.gov/dbedt/info/energy/greenhouse/>

efficiency portfolio standards and alternative fuel standards, updating building codes, assessing freight transportation options, and establishing a smart growth framework to guide land use planning and transportation.

### **3.1.2 Hawai'i Clean Energy Initiative**

The Hawai'i Clean Energy Initiative (HCEI)<sup>4</sup> is a partnership (i.e., energy agreement) signed in 2008 between the State of Hawai'i, the U.S. Department of Energy, and the Hawaiian Electric Companies that aims to decrease Hawai'i's heavy reliance on imported petroleum. Recognizing that Hawai'i is the country's most oil-dependent state due to imported oil providing almost 90% of Hawai'i's electricity and transportation needs, the goal of the HCEI is to decrease energy demand and accelerate the use of available renewable energy resources, such that 70% or more of the State's energy needs will be from renewable "clean" sources by 2030. The Agreement – which identifies renewable energy commitments, measures to increase energy efficiency, and improvements to grid operation and infrastructure – establishes policies for end-use efficiency, transportation, fuels, and electricity. Specific solutions include: biodiesel to fuel power plants; energy efficiency portfolio standard targets; development of renewable energy sources; consumer demand reduction strategies; seawater cooling systems servicing both downtown Honolulu and Waikiki to reduce air conditioning loads; hybrid vehicles powered by alternative fuels and plug-in electricity; and higher fuel efficiency standards for new vehicles.

### **3.1.3 Hawai'i 2050 Sustainability Plan**

In the 1970s, the State of Hawai'i was one of the pioneers in long-range planning, with the *Hawai'i State Plan* and its related functional plans being one of the first planning documents in the nation to provide integrated policies for the economic, social and environmental future of an entire state. The State Legislature adopted the *Hawai'i State Plan* in 1978 (Hawai'i Revised Statutes, Chapter 226 Hawai'i State Planning Act) to serve as a comprehensive guide for the long-range future development of the state. The last comprehensive review and revision of the *Hawai'i State Plan* occurred in 1986, with selective amendments completed since then.

Recognizing that sustainability issues are essential to Hawai'i's quality of life, the State Legislature enacted Act 8 (SLH 2005), which provided for the development of a sustainability plan to address the vital needs of Hawai'i through the year 2050. Specifically, Act 8 (SLH 2005) established the Hawai'i 2050 Sustainability Task Force to review the *Hawai'i State Plan* and the State's comprehensive planning system, and required the State Auditor to prepare the *Hawai'i 2050 Sustainability Plan*.

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<sup>4</sup> Available on DBEDT website at: <http://hawaii.gov/dbedt/info/energy/hcei>

The *Hawai'i 2050 Sustainability Plan*<sup>5</sup> (2008) is the state's first long-range statewide planning process in more than 30 years. It establishes the state's definition and guiding principles of sustainability, and identifies statewide goals, priority actions and indicators to measure future progress towards achieving a sustainable future.

The "People's Definition" of sustainability in Hawai'i is intended to guide all actions:

*"Sustainability in Hawai'i means achieving a quality of life that:*

- *Respects the culture, character, beauty and history of our state's island communities*
- *Strikes a balance between economic, social and community, and environmental priorities*
- *Meets the needs of the present without compromising the ability of future generations to meet their own needs."*

Goals for Hawai'i's sustainable future consist of:

- *"Living sustainably is part of our daily practice in Hawai'i.*
- *Our diversified and globally competitive economy enables us to meaningfully live, work and play in Hawai'i.*
- *Our natural resources are responsibly and respectfully used, replenished and preserved for future generations.*
- *Our community is strong, healthy, vibrant and nurturing, providing safety nets for those in need.*
- *Our kanaka maoli and island cultures and values are thriving and perpetuated."*

The *Hawai'i 2050 Update* (2010) was conducted by the University of Hawai'i at Mānoa Social Sciences Public Policy Center to review the findings of the *Hawai'i 2050 Sustainability Plan* and identify data sources and benchmarks that support implementation of the Plan's major goals. Statewide priority actions were identified for issue areas requiring immediate action, and that are intended to be in progress by the year 2020 (see Table 2).

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<sup>5</sup> Available online at: <http://www.hawaii2050.org/>

**Table 2:  
Hawai'i 2050 Update Statewide Priorities and Supported Actions**

<b>Goals</b>	<b>Priority Actions</b>	<b>Specific Actions</b>
<b>WAY OF LIFE</b> Living sustainably is part of our daily practice in Hawai'i.	Create a sustainability ethic	<ul style="list-style-type: none"> <li>• Creatively educate the community about the importance of living sustainably</li> <li>• Launch programs in the schools to teach sustainability strategies</li> </ul>
<b>THE ECONOMY</b> Our diversified and globally competitive economy enables us to meaningfully live, work and play in Hawai'i	Strengthen public education	<ul style="list-style-type: none"> <li>• Support early learning initiatives</li> <li>• Increase the development of charter schools</li> </ul>
	Develop a more diverse and resilient economy	<ul style="list-style-type: none"> <li>• Increase production and consumption of local foods and products</li> <li>• Provide incentives to foster sustainability-related industries, such as renewable energy and environmentally technologies</li> </ul>
	Increase production and consumption of local foods and products	<ul style="list-style-type: none"> <li>• Provide incentives to grow and buy local products</li> <li>• Provide funding or loans to local farmers</li> <li>• Educate the public on why buying local produce is important to building a sustainable economy</li> </ul>
<b>ENVIRONMENT</b> Our natural resources are responsibly and respectfully used, replenished and preserved for future generations.	Reduce reliance on fossil (carbon-based) fuels	<ul style="list-style-type: none"> <li>• Increase the amount of electricity generated by renewable resources</li> <li>• Adopt green building codes</li> </ul>
	Increase recycling, reuse and waste reduction strategies	<ul style="list-style-type: none"> <li>• Support recycling systems for bottle, cans and paper in every neighborhood</li> <li>• Provide incentives for businesses to initiate recycling</li> </ul>
<b>COMMUNITY &amp; SOCIAL WELL-BEING</b> Our community is strong, healthy, vibrant and nurturing, providing safety nets for those in need	Increase affordable housing opportunities	<ul style="list-style-type: none"> <li>• Provide incentives for private developers to build low income housing</li> <li>• Adopt inclusionary zoning laws that require all new housing developments to include some affordable housing units</li> </ul>
	Provide access to long-term care and elderly housing	<ul style="list-style-type: none"> <li>• Provide tax credits or exemptions for developers of long term care and/or elderly housing</li> <li>• Provide funding for developers of elder care housing projects</li> </ul>
<b>KANAKA MAOLI CULTURE &amp; ISLAND VALUES</b> Our kanaka maoli and island cultures and values are thriving and perpetuated.	Preserve and perpetuate our kanaka maoli and island cultural values	<ul style="list-style-type: none"> <li>• Celebrate diversity and island cultural practices</li> <li>• Support and encourage kanaka maoli cultural practices and support subsistence-based businesses</li> </ul>

As part of the community dialogue conducted for the *Hawai'i 2050 Update*, two community meetings were held on O'ahu to discuss sustainability within the context of Honolulu. The first meeting was held in downtown Honolulu (urban) and the second meeting was held in Wai'anae (rural). The major theme from both meetings was the desire to focus future action on creating and refining a sustainability ethic. Meeting attendees identified a range of possible actions that aimed to educate people about living sustainably and promoting sustainability, such as innovative school-based curriculum and higher education degrees, social networking media and public information campaigns, development of a clearinghouse website dedicated to sustainability, and the incorporation of Native Hawaiian values. Some strategies to live a sustainable lifestyle were defined, such as "eating more local foods; recycling more; reducing use of fossil fuels (support alternative transit modalities); reducing energy and the waste stream; and changing behaviors and buying habits to create a sustainable ethic" (University of Hawai'i at Mānoa Social Sciences Public Policy Center 2008, 15).

### **3.1.4 Complete Streets Task Force Legislative Report**

The Complete Streets Task Force (established under Act 54, SLH 2009) ("Act 54") is a statewide task force convened to review existing state and county highway design standards and guidelines, and develop recommendations for design standards and guidelines consistent with the principles of Complete Streets.<sup>6</sup> As part of Act 54, State and County transportation departments are required to adopt and implement a "Complete Streets" policy, which is intended to create and configure a connected street system that provides safe mobility for all users – including bicyclists, pedestrians, transit riders, freight, and motorists – and that is appropriate to the function and context of the facility (2010, 4).

The Complete Streets Policy recognizes that roadway networks are vital for the livability of communities and serve functions beyond their intended use for vehicular transportation. Emphasizing safety and mobility for all users, the Complete Streets Policy encourages flexibility and better accommodations for transit, walking, bicycling, other non-motorized transport, and alternate fuel vehicles. Given the emphasis placed on alternative modes of transportation, the Complete Streets Policy can help to decrease the demand for imported oil and contribute to Hawai'i's clean energy future, as well as promote long-term sustainability.

## **3.2 City and County of Honolulu**

The City and County of Honolulu has been taking steps to address sustainability in its facilities and natural resources management. In recognition of its efforts, Honolulu has been given high scores in recent sustainability and environmental performance studies:

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<sup>6</sup> The Complete Streets principles for Hawai'i include: safety, flexible design (context sensitive solutions), accessibility and mobility for all, use and comfort for all riders using the transportation system, consistent use of design standards and guidelines, improved energy efficiency, emphasis on health, appropriate funding, building organizational partnerships, and green infrastructure/streets to provide social and environmental benefits.

- The 2007 *Earth Day Network Urban Environment Report* ranked Honolulu 11<sup>th</sup> out of 72 major U.S. cities for its environmental performance.  
[http://www.earthday.net/UER/report/hi\\_honolulu.html](http://www.earthday.net/UER/report/hi_honolulu.html)
- The 2008 *SustainLane U.S. Cities Sustainability Rankings* ranked Honolulu 17<sup>th</sup> out of the 50 most-populous U.S. cities for urban sustainability.  
<http://www.sustainlane.com/us-city-rankings/cities/honolulu>

County-level plans that discuss sustainability are summarized in this section.

### **3.2.1 Board of Water Supply Watershed Management Plans**

The Board of Water Supply (BWS) Watershed Management Plans (WMPs) are to be the water use and development plans for the island of O‘ahu. There are eight regional plans that would coincide with the City’s Development Plan and Sustainable Communities Plan areas. The goal of the WMPs is to provide guidance for the sustainable management and use of all water resources (both surface and groundwater) in each region. Based on the principle that healthy, sustainable watersheds should be the foundation for both land use and water resources management planning, the WMPs promote water use that balances the preservation and management of O‘ahu’s watersheds, while allowing sustainable ground and surface water use and development to serve present and future generations. The WMPs identify sustainability policies and programs that guide land use plans, inventories of available water supply and water use, future water use and development projects, conservation practices and watershed management projects that protect and improve the health of O‘ahu’s watersheds and water resources.

### **3.2.2 Development Plans and Sustainable Communities Plans**

The Development Plans (DPs) and Sustainable Communities Plans (SCPs) form the second tier of plans under the General Plan. The plans identify conceptual long-range visions and policies to guide regional land use and infrastructure decisions. There are eight regional plans; two of the Plans (Primary Urban Center and ‘Ewa) are DPs, while the other six (East Honolulu, Ko‘olau Poko, Ko‘olau Loa, North Shore, Wai‘anae, and Central O‘ahu) are designated SCPs.

Per the adopting ordinance for each DP/SCP, each plan is required to be reviewed and updated every five years to ensure that the vision statement, policies and guidelines remain current and to assess the progress towards implementation. During recent community discussions conducted in support of the on-going five-year reviews for the Wai‘anae, North Shore, and Ko‘olau Loa regions, community members raised questions about the role of sustainability in the current SCPs and the need for an islandwide policy framework to define the City’s approach to sustainability, given the inclusion of the term “sustainability” in the titles of the Plans, the lack of policies at the General Plan level explaining the City’s goals for sustainability, and the absence of sustainability references in the SCPs. Based on

the structure and content of the current plans, achieving sustainability is not the primary purpose in distinguishing between DPs and SCPs. Rather, the current reference to “sustainable” in the SCP designation is to differentiate the City’s growth management policies for the stable areas (SCP regions) and the areas targeted for growth (DP regions),<sup>8</sup> specifically highlighting the City’s intent to maintain and enhance the existing character and development patterns of the existing SCP areas by directing future growth to the DP areas.

## **4. GENERAL PLANS AND SUSTAINABILITY**

### ***4.1 Approaches to Incorporate Sustainability***

In the United States, local governments are increasingly promoting sustainability ethics and incorporating sustainability goals into their General Plans as a means of influencing all levels of municipal decisions and activities. The California Sustainability Alliance identifies three distinct approaches that local governments in California are using to incorporate sustainability principles into their General Plans (largely due to State statutory requirements under the California Environmental Quality Act to address climate change impacts and greenhouse gas emissions reductions). The three approaches consist of:

- (1) Including a separate chapter on sustainability that establishes guiding principles to define the community’s vision of sustainability, and identifies policies and implementation actions;
- (2) Identifying sustainability policies and implementation actions as part of other subject areas (i.e., no separate sustainability chapter); or
- (3) Integrating sustainability throughout the General Plan using a combined approach, with a discussion of sustainability grouped into a separate chapter that outlines the community’s priorities for a sustainable future, and identification of policies and implementation actions as part of other subject areas (i.e., combination of the two previous approaches).

A community’s preferred approach to incorporating sustainability into the General Plan is influenced by a number of factors, including the available resources (i.e., staffing, funds, project timeframe), as well as the community’s motivation to adopt sustainable lifestyles and the extent to which the community is willing to change (see Section 2.2 Shifting Paradigm for Land Use and Development for physical, cultural and philosophical

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<sup>8</sup> The *North Shore SCP* preface states, “Two of the eight planning regions, ‘Ewa and the Primary Urban Center, are the area to which major growth in population and economic activity will be directed over the next 20 years and beyond. The plans for these regions will continue to be titled ‘Development Plans,’ and will serve as the policy guides for development decisions and actions needed to support that growth....The remaining six planning regions...are envisioned to remain relatively stable...(and)...have been titled ‘Sustainable Community Plans’” (2000, P-1).

differences between traditional development and sustainability). The first approach – limiting the discussion of sustainability to a separate chapter – is the simplest and easiest approach to satisfy the objective of incorporating sustainability into the General Plan. It leaves the existing document intact while providing guidance for sustainability, although it lacks the detail of clarifying which measures overlap multiple subject areas. The second approach – which weaves sustainability into the specific subject areas/chapters of the General Plan – buries sustainability within the substance of the General Plan and minimizes its significance. Like the first approach, it does not provide a framework to correlate overlapping measures. The third approach is a hybrid approach that adds a separate chapter about sustainability and also weaves sustainability into the specific subject areas/chapters of the General Plan. This is the most detailed and thorough approach for internal consistency (i.e., ensuring no policy conflicts between subject areas), resulting in a comprehensive statement that demonstrates the community’s commitment to achieving sustainability.

## **4.2 Implementation Tools**

Conventional tools that implement the General Plan typically consist of zoning regulations, specific geographic area plans, functional planning, and capital improvement programming. Due to the systemic, organizational and philosophical changes typically involved in the transformation to a “sustainable community,” local governments are finding that additional tools are needed to support the implementation of sustainability. Two commonly used implementation tools – program coordination and community indicators – are summarized in this section.

**Program Coordination.** A number of local governments have established departments, offices or management positions to be responsible for the formal coordination and implementation of sustainability policies. Responsibilities may include plan preparation and monitoring, policy analysis, educational campaigns and public outreach, and coordinating activities of different departments and organizations. For example, the City of Davis, California employs a sustainable program manager (under the Parks and General Services Department) whose primary duties include advocacy, facilitating sustainability efforts and networking between the various City departments, and analysis of policy options (<http://cityofdavis.org/pgs/sustainability/>). In Santa Monica, California, the Office of Sustainability and the Environment (within the City Manager’s Office) is responsible for the development and implementation of the Sustainable City Plan and other policy initiatives and programs related to environmental management, and collaborates with other city departments to integrate sustainability practices with ongoing city operations (<http://www.smgov.net/departments/ose/>). In Portland, Oregon, the Bureau of Planning and Sustainability was created in 2009 by merging the Bureau of Planning and the Office of Sustainable Development. In line with Portland’s objectives to become a model city of sustainability, the Bureau’s principal functions include promoting integrated land use planning and development based on sustainability principles and practices, and developing and implementing policies and programs that ensure that integral part of all planning and management of the City (<http://www.portlandonline.com/bps/index.cfm>).

**Community Indicators.** The use of indicators to monitor and identify sustainability trends and track progress towards the attainment of desired goals and target conditions has been used in a number of communities (e.g., Seattle/King County, Washington<sup>9</sup>; Portland, Oregon; Santa Monica, California; and Kauai County, Hawai‘i). As defined in *The Community Indicators Handbook* (Redefining Progress 2006), an indicator is “a measurement that reflects the status of some social, economic, or environmental system over time.” Some sample indicators of sustainability are open space acreage, public transportation ridership, local agriculture production and consumption, energy use, air/water quality factors, wastewater flows, and the availability/distribution of affordable housing units. By tracking changes in the community, indicators provide information about the overall direction of a community in relation to its values and priorities, revealing whether conditions have improved, declined or stayed the same, and whether programs are effective or need to be strengthened or redirected.

Indicators – like vision statements – are unique to reflect each community’s specific goals and objectives. The development of indicators can be a technical process involving the identification of the community’s vision, consultation with agencies and other data sources to locate available data, research to gather specialized data (e.g., surveys, data compilation and evaluation), and review/selection of the indicators, as well as a high level of community participation.

Recent and on-going indicator projects in Hawai‘i with relevance to the *Honolulu General Plan* include the following:

- ***Measuring What Matters for Kaua‘i: Community Indicators Report 2008***

The impetus of Kaua‘i’s Community Indicators Report (Kaua‘i Planning & Action Alliance 2009) was to satisfy an implementing action identified in the *Kaua‘i General Plan 2000*, “Collaborate with community organizations in developing indicators and benchmarks to measure progress.” Working with an advisory committee of representatives from various government, private, non-profit and community groups, the project resulted in the creation of 55 indicators. The indicators are organized around seven subject areas that reflect the community vision of the *Kaua‘i General Plan 2000*: (1) economic and business climate; (2) public education; (3) neighborhood and community health and well-being; (4) civic engagement; (5) natural environment; (6) land use and rural character; and (7) cultures and arts. Report updates are planned at approximately two year intervals (the first 2006 Indicators Report was issued in June 2007, followed by the second 2008 Indicators Report released in July 2009).

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<sup>9</sup> Redefining Progress reports that more than fifty percent of the community indicator projects in the United States have been modeled after the Sustainable Seattle program <http://sustainableseattle.org/> (Phillips 2003, 8).

- ***Quality of Life in Hawai'i 2009 Report***

The *Quality of Life in Hawai'i 2009 Report* (University of Hawai'i at Mānoa Center on the Family 2009) was prepared for the State of Hawai'i Department of Business, Economic Development and Tourism as a follow-up to the first *Quality of Life in Hawai'i* report completed in 2005. It is based on an extensive research literature review, national and international indicator projects, and previous work undertaken in Hawai'i, including the *Hawai'i 2050 Plan*. The report provides a comprehensive framework for assessing quality of life factors in Hawai'i, and presents trend information for 67 different indicators that relate to the six major quality-of-life domains that influence the well-being of a community: economic, education, environment, health, housing and transportation, and social. National, state and county-level data are presented for each of the indicators. Trends (i.e., increases/positive trends or decreases/negative trends) over time are identified, and county-level data is compared to see if there are any differences between the counties and to rank the counties.

- ***Hawai'i 2050 Sustainability Plan; Hawai'i 2050 Update***

The *Hawai'i 2050 Plan* (Hawai'i 2050 Sustainability Task Force 2008) identified 55 possible indicators, benchmarks and possible data sources to measure progress towards the goal of sustainability (see Section 3.1.3 for discussion). Following up on the work of the Hawai'i 2050 Task Force, the *Hawai'i 2050 Update* (University of Hawai'i at Mānoa Social Sciences Public Policy Center 2010) validated the findings of the *Hawai'i 2050 Plan*, confirming the availability of the data and identifying additional potential indicators (specific indicators and data were not provided). Implementation of a community-based process to select and develop the specific indicators and data sources is recommended as a follow-on action.

## **5. OBSERVATIONS**

### ***5.1 Ways to Achieve Sustainability***

Honolulu's current *General Plan* last underwent a comprehensive review in 1987, at a time when sustainability was not widely publicized or universally considered as a major topic of concern. Although the current Plan includes several elements of sustainability, the current Plan lacks a clear definition of sustainability, and specific objectives and policies to achieve sustainability.

It may not be possible for O'ahu – or Hawai'i as a whole – to be an entirely self-sufficient, self-contained entity that does not consume any imported goods. We are 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 (see page 10). In addition, the State economy is heavily dependent on the tourism industry. 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.

Table 3 lists examples of measures that promote sustainability, and demonstrates that the concept of sustainability touches on all subject areas of the *General Plan*. Some of the measures are included in the existing *General Plan*, although many are new concepts not currently addressed in the *General Plan*.

**Table 3:  
Examples of Sustainability Measures by  
Honolulu General Plan Subject Areas**

Subject Area	Sustainability Measures
1. Population	<ul style="list-style-type: none"> <li>• Account for available water resources in the consideration of future growth</li> <li>• Direct development towards designated growth areas</li> </ul>
2. Economic activity	<ul style="list-style-type: none"> <li>• Protect agriculture and open space resources</li> <li>• Encourage the development of a diversified, resilient economy</li> <li>• Support local agriculture</li> <li>• Increase production and consumption of local foods and products</li> <li>• Promote energy- and resource-efficient industries</li> <li>• Locate jobs close to housing</li> </ul>
3. Natural environment	<ul style="list-style-type: none"> <li>• Protect and conserve natural resources</li> <li>• Protect and preserve natural areas from incompatible development</li> <li>• Enhance air and water quality</li> <li>• Protect and enhance water quality and quantity</li> <li>• Ensure adequate watershed protection and management</li> <li>• Minimize sediment and pollutant discharges into streams and nearshore coastal waters</li> </ul>
4. Housing	<ul style="list-style-type: none"> <li>• Make efficient use of building materials</li> <li>• Raise energy efficiency standards</li> <li>• Support housing opportunities for all income levels/population groups</li> <li>• Increase the diversity of housing types and forms, promoting multi-family housing as the dominant form</li> <li>• Encourage housing development accessible to jobs and transportation</li> </ul>
5. Transportation and Utilities	<ul style="list-style-type: none"> <li>• Encourage physical improvements and incentives that promote alternative modes of transportation and reduce automobile use</li> <li>• Design and construct streets to support safe and efficient pedestrian and bicycle travel</li> </ul>

Subject Area	Sustainability Measures
	<ul style="list-style-type: none"> <li>• Improve connectivity between neighborhoods and activity nodes</li> <li>• Adopt low-impact development and rural infrastructure standards</li> <li>• Expand recycling, reuse and waste reduction strategies</li> <li>• Expand the use of technologies that increase fuel efficiency and energy conservation</li> <li>• Upgrade/expand the capacity of existing infrastructure systems to accommodate higher-density</li> </ul>
6. Energy	<ul style="list-style-type: none"> <li>• Expand the use of renewable energy sources</li> <li>• Adopt energy efficient codes</li> <li>• Expand the use of technologies that increase efficiency and conservation</li> </ul>
7. Physical Development and Urban Design	<ul style="list-style-type: none"> <li>• Adopt green building standards that promote conservation</li> <li>• Adopt low-impact development and rural infrastructure standards</li> <li>• Encourage compact, mixed use (higher-density) development patterns</li> <li>• Provide for multi-modal transportation networks</li> <li>• Direct development to designated growth areas to maintain agriculture/natural resources</li> <li>• Encourage the use of native plants</li> </ul>
8. Public Safety	<ul style="list-style-type: none"> <li>• Reduce exposure to hazardous materials and waste</li> <li>• Incorporate lighting and design principles known to discourage crime in the design of buildings, roadways and public areas</li> <li>• Establish and maintain response plans for natural hazard and disaster mitigation</li> <li>• Consider coastal hazards and sea level changes in decision-making</li> </ul>
9. Health and Education	<ul style="list-style-type: none"> <li>• Encourage mixed-use developments and other physical improvements that encourage walking/bicycling</li> <li>• Increase public awareness about the importance of environmental ethics and living sustainably</li> <li>• Support educational and job training opportunities that complement Honolulu’s major industries</li> <li>• Strive for a measureable reduction in residents’ ecological footprint</li> </ul>
10. Culture and Recreation	<ul style="list-style-type: none"> <li>• Preserve and expand open space resources</li> <li>• Integrate urban parks and green spaces with other urban uses</li> <li>• Respect and perpetuate the island’s history and cultural values</li> <li>• Protect and preserve historic and cultural resources</li> <li>• Foster participation in civic affairs and community activities</li> </ul>
11. Government Operations and Fiscal Management	<ul style="list-style-type: none"> <li>• Adopt an ethic of sustainability to guide City operations</li> <li>• Establish an administrative commitment for issues relating to sustainability</li> <li>• Practice participatory community planning and decision-making</li> <li>• Encourage public-private collaborations and partnerships</li> <li>• Establish systemic indicators and benchmarks to measure progress</li> </ul>

## 5.2 Recommendations

This report presents general information about sustainability and the key issues relative to the *General Plan*. It is clear from this analysis that there is universal recognition that sustainability is an important theme for the General Plan Update, and that sustainability issues need to be considered at every level of City policy decision-making. Therefore, it is recommended that:

- the *General Plan* should include goals and objectives related to sustainability.
- Honolulu's position on sustainability should be broad, and not confined to climate change initiatives.
- there is a need for public discussion about what policies and measures are appropriate for Honolulu and its *General Plan*.
- strong consideration should be given to establishing implementation tools (including program coordination and a community indicators program).

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