
A BILL FOR AN ACT

MAKING AN APPROPRIATION FOR A STUDY ON ENERGY EFFICIENT
TRANSPORTATION STRATEGIES.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

1 SECTION 1. The legislature finds that transportation is
2 responsible for an inordinate amount of fuel consumption,
3 including fuel used in motor vehicles, buses, and jet planes.
4 The legislature further finds that reducing the demand for fuel
5 in transportation modalities would greatly reduce our dependence
6 on oil.

7 The Hawaii energy policy forum, a part of the social
8 sciences public policy center at the University of Hawaii at
9 Manoa, proposes to conduct a study on energy-efficient
10 transportation strategies in conjunction with the department of
11 business, economic development, and tourism.

12 The purpose of this Act is to appropriate funds for the
13 University of Hawaii to conduct a study on energy-efficient
14 transportation strategies.

15 SECTION 2. (a) The Hawaii energy policy forum at the
16 University of Hawaii at Manoa shall conduct a study on energy-



1 efficient transportation strategies in conjunction with the
2 department of business, economic development, and tourism.

3 (b) The energy-efficient transportation strategies study
4 under subsection (a) shall include but not be limited to:

5 (1) Developing tangible goals, objectives, desired
6 outcomes, and actions to implement an energy-efficient
7 transportation strategy;

8 (2) Developing implementation benchmarks for measuring
9 outcomes of energy-efficient transportation
10 strategies; and

11 (3) A cost-benefit analysis of each energy-efficient
12 transportation strategy.

13 (c) The social sciences public policy center shall engage
14 and integrate Hawaii's business, government, labor, and
15 community leaders into the study on energy-efficient
16 transportation strategies.

17 (d) The department of business, economic development, and
18 tourism shall consult with and otherwise assist the social
19 sciences public policy center at the University of Hawaii at
20 Manoa on the energy-efficient transportation strategies study.



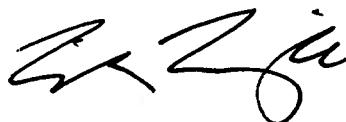
1 (e) The Hawaii energy policy forum shall submit a report
2 on its findings and recommendations to the legislature no later
3 than twenty days prior to the convening of the regular session
4 of 2008.

5 SECTION 3. There is appropriated out of the general
6 revenues of the State of Hawaii the sum of \$50,000 or so much
7 thereof as may be necessary for fiscal year 2007-2008 for a
8 study on energy-efficient transportation strategies.

9 The sum appropriated shall be expended by the University of
10 Hawaii social sciences public policy center for the purpose of
11 this Act.

12 SECTION 4. This Act shall take effect on July 1, 2007.

APPROVED this 5 day of JUL , 2007



GOVERNOR OF THE STATE OF HAWAII



Appendix II - List of Working Group Members

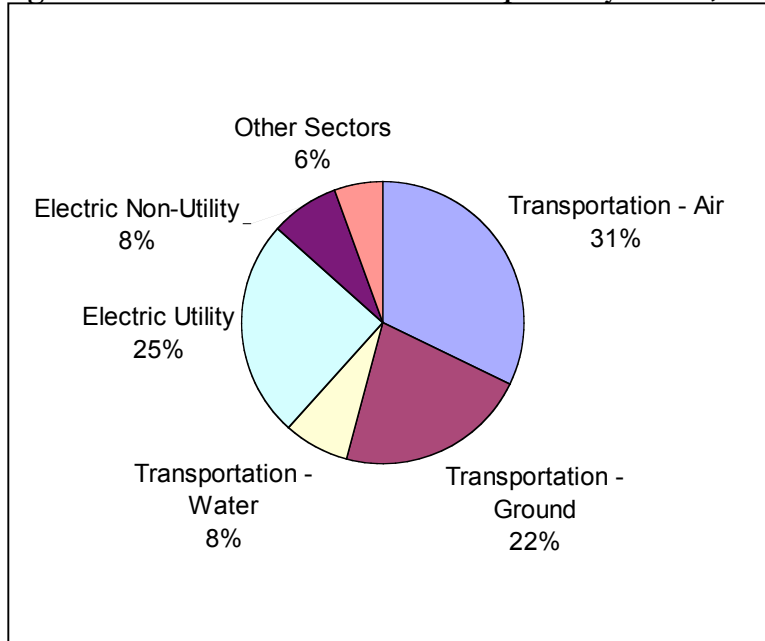
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Appendix III - Related Data on Energy Consumption

The following charts provide additional data on energy consumption and on the growth in the transportation sector.

I. **Hawaii's Energy Consumption.** Figure 1 shows the large share of Hawaii's petroleum consumption by the transportation sector. In 2005, 61% of the petroleum used was for transportation.

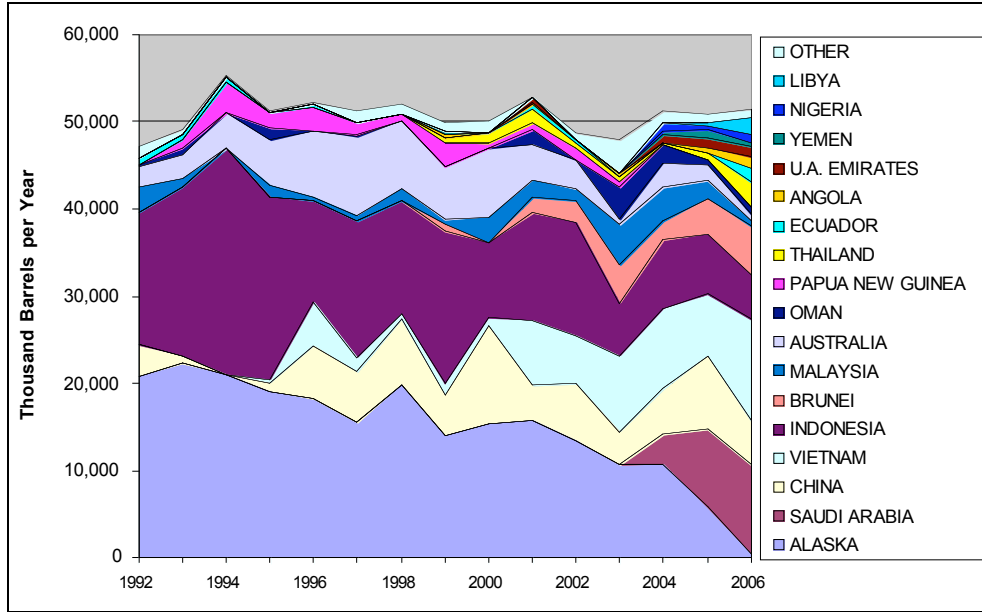
Figure 1. Hawaii Petroleum Consumption By Sector, 2005



Source: Strategic Industries Division, DBEDT, State of Hawaii

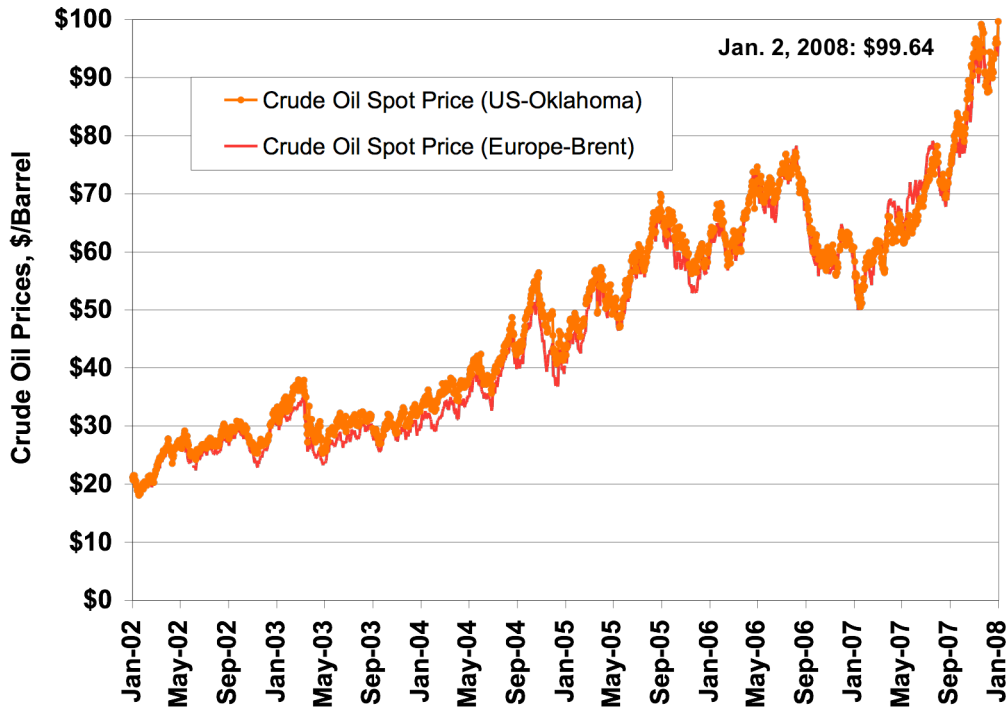
II. **Hawaii's Dependence on Foreign Oil.** One of the reasons for focusing on energy efficiency of its transportation system is Hawaii's increasing dependence on imported oil. As shown in Figure 2, Hawaii received a large portion of its crude oil from Alaska in 1992, but due to an increase in the demand for oil and the declining production of oil in Alaska, Hawaii must now import nearly all of its oil from foreign countries. This dependence on foreign oil could render Hawaii susceptible to supply shocks or continuing price increases. Also of concern is the increasing cost of crude oil, which was increased steadily from a low of less than \$20/barrel in January 2002 to a high of \$99.64/barrel in January 2008, as is shown in Figure 3.

Figure 2. Hawaii's Crude Oil Sources, 1992 to 2006



Sources: State of Hawaii Strategic Industries Division and U.S. Energy Information Administration, 2007

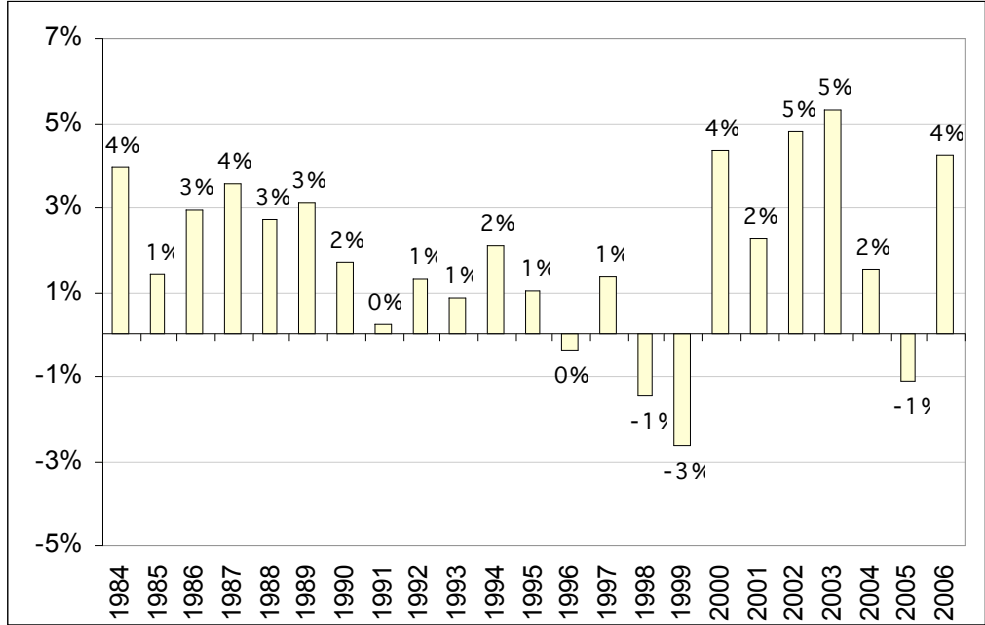
Figure 3. Crude Oil Prices 2002-2008



Source: US Energy Information Administration, Table pet_pri_spt_s1_d.xls

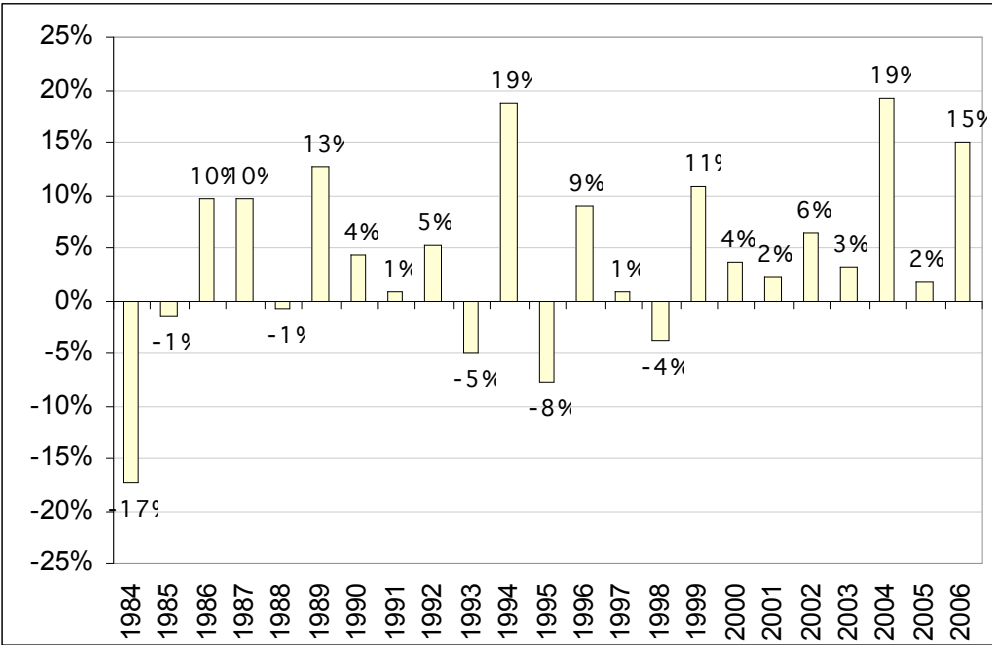
III. Highway Gasoline and Diesel Demand. In 2006 Hawaii consumed 525 million gallons of gasoline and diesel for ground transportation. Figure 4 presents the annual changes in gasoline demand from 1984 to 2006. The average annual change is +1.8 percent, ranging from -3 percent to +5 percent. Figure 5 presents the annual changes in diesel demand for the same period, showing the average change fluctuated more than gasoline, ranging from -17 percent to +19 percent, with an average increase of 4.23 percent.

Figure 4. Annual Change in Gasoline Demand 1984 to 2006



Source: Department of Business, Economic Development, and Tourism, State of Hawaii

Figure 5. Annual Change in Highway Diesel Demand 1984 to 2006

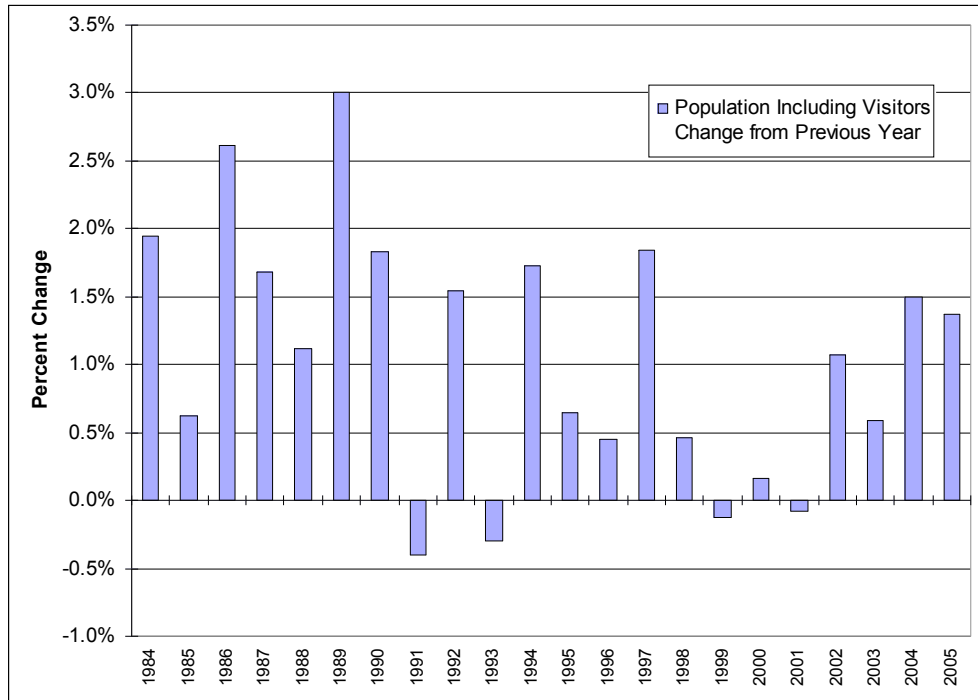


Source: Department of Business, Economic Development, and Tourism, State of Hawaii

IV. Population and Vehicle Registration and Energy Consumption

Looking at a somewhat longer timeframe for population changes, as shown in Figure 6, the population has increased at a somewhat faster rate of 1.1 percent per year on average since 1984, with annual changes varying from about -0.5 percent to +3 percent.

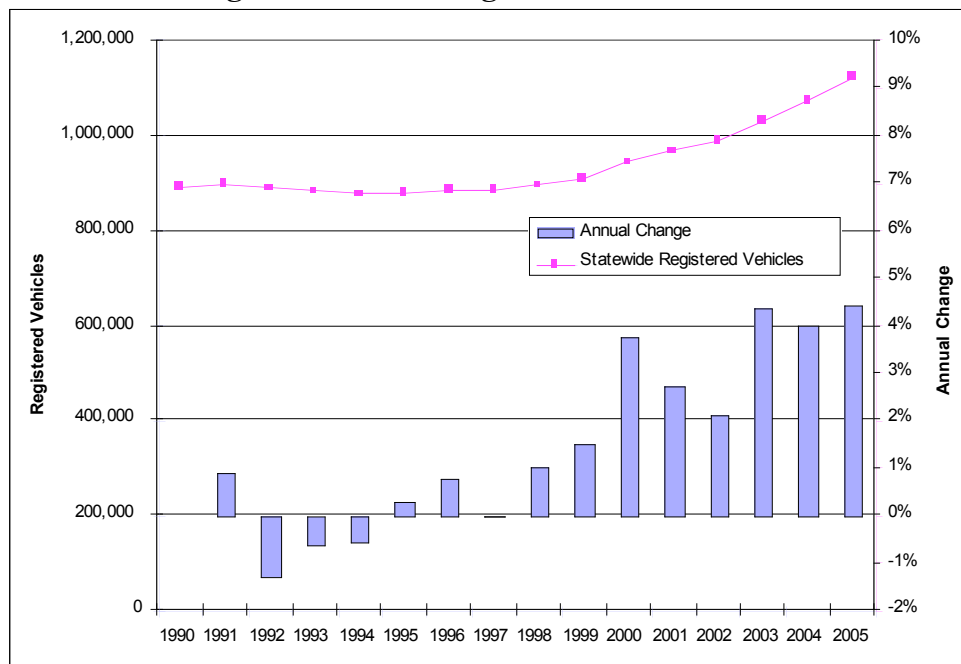
Figure 6. Annual Percent Change in Population Including Visitors 1984-2005



Source: Department of Business, Economic Development, and Tourism, State of Hawaii

Figure 7 presents statewide vehicle registrations from 1990 to 2005, and the annual change. During this time period, the average annual increase in vehicle registrations was +1.5 percent. However, as shown below, vehicle registration has increased more quickly since the year 2000 (an average annual increase of 3.6 percent during the most recent years). In either case, vehicle registration has increased faster than the increase in population. Note that no annual change is indicated for 1990 since that was the first year for which data were available. In 1992, 1993, 1994, and 1997 there were decreases in registered vehicles, perhaps due to a slowdown in the Hawaiian economy during that period.

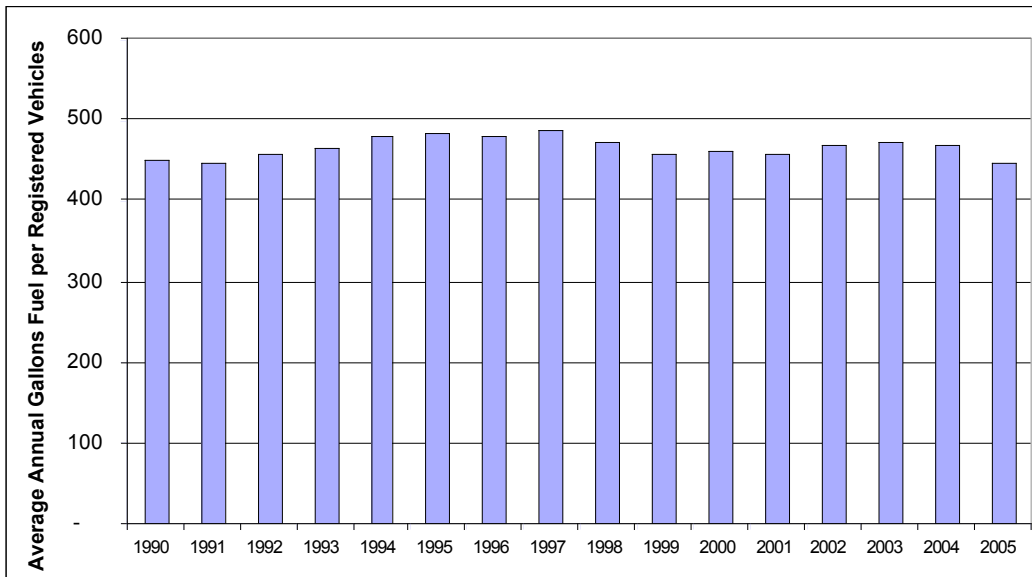
Figure 7. Vehicle Registrations 1990 to 2005



Source: Department of Business, Economic Development, and Tourism, State of Hawaii

Figure 8 presents average annual gasoline consumption per registered vehicle from 1990 to 2005. As shown in Figure 8, gasoline consumption per vehicle has remained fairly constant over this time period, although fluctuating very slightly from year to year. Although there was a slight decrease in average vehicle gasoline consumption in the year 2005, according to DBEDT (based on State of Hawaii report of fuel tax collections), fuel consumption in 2006 and 2007 has been on the increase again.

**Figure 8. Average Annual Fuel Consumption Per Registered Vehicle
1990 to 2005**



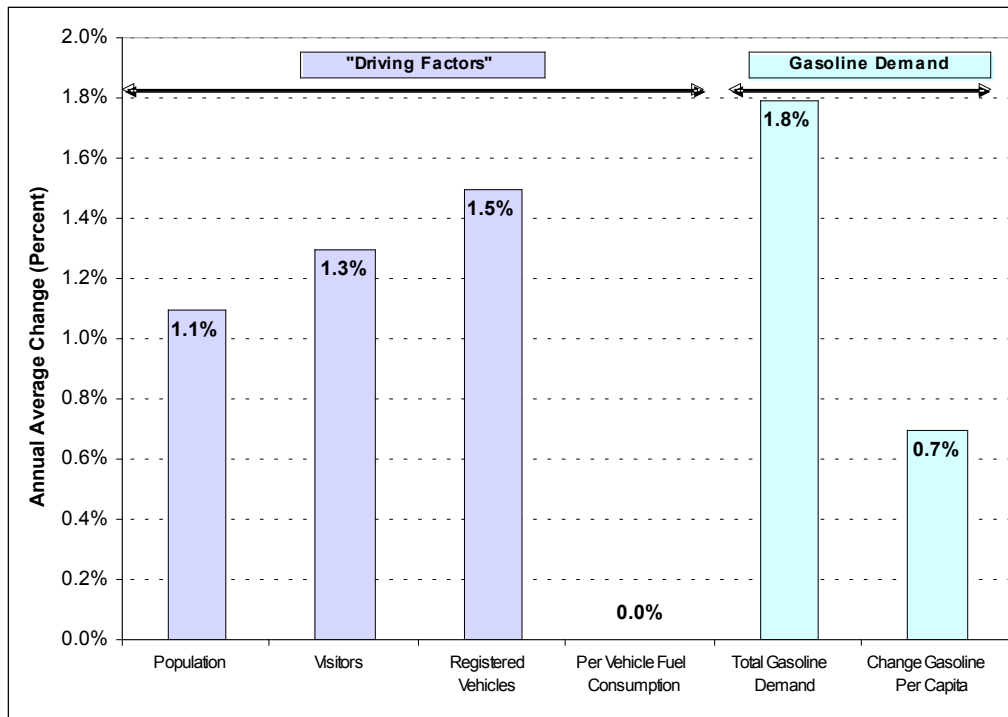
Source: Department of Business, Economic Development, and Tourism, State of Hawaii

V. Summary of Hawaii Transportation and Energy Trends

The following is a summary of gasoline demand as it relates to population and vehicles. As shown in Figure 9, gasoline consumption is rising to a greater degree as a result of more vehicles in the fleet, and to a lesser extent because of population increases, as opposed to average vehicle fuel consumption:

- Since 1984, the population (including visitors) has increased by about 1.1 percent annually, while daily visitor count has increased by about 1.3 percent annually.
- Since 1990, the number of registered vehicles has increased by about 1.5 percent a year, with most of the increase in registered vehicles occurring since the year 2000.
- Since 1990, gasoline consumption per vehicle has fluctuated only slightly from year to year, but on average has remained about the same.
- Since 1984, the demand for gasoline has increased by an average of 1.8 percent a year, while gasoline consumption *per capita* has increased by about 0.7 percent a year.

Figure 9. Summary Chart: Average Annual Changes in Population, Registered Vehicles, and Gasoline Demand (1984/1990 to 2005/2006)



Source: Parsons Brinckerhoff, based on data from DBEDT

Appendix IV - Plans and Documents Reviewed

State and Local Plans and Documents Reviewed

The following plans and documents were reviewed to determine the goals and policies relevant to achieving energy efficient transportation:

Statewide

- Hawaii Statewide Transportation Plan (HDOT; Counties of Hawaii, Kauai, and Maui, Oahu MPO; 2002)
- Bike Plan Hawaii (HDOT, 2003)
- Hawaii 2050 Sustainability Plan (Hawaii 2050 Sustainability Task Force, In Process)

County of Maui

- County of Maui General Plan 2030 (in progress), includes:
 - Countywide Policy Plan (County of Maui, 2007)
 - Proposed Roadway Development Program (County of Maui, 2007)
 - Maui Island Plan 2030 (County of Maui, 2007)
 - Short-Range Transit Plan (County of Maui, 2005)
- 1997 Long Range Transportation Plan (HDOT and County of Maui, 1997)

County of Hawaii

- County of Hawaii General Plan (County of Hawaii, 2005)
- 1998 Long Range Transportation Plan (HDOT and County of Hawaii, 1998)
- Hawaii County Energy Sustainability Plan (County of Hawaii Council, 2007)

County of Kauai

- Kauai General Plan (County of Kauai, 2000)
- 1997 Long Range Land Transportation Plan (HDOT and County of Kauai, 1997)

County of Oahu

- Oahu Regional Transportation Plan 2030 (Oahu MPO, 2006)
- Mayor's Energy and Sustainability Task Force (Mayor Hannemann, 2007)
- Sustainable Communities Plans (City and County of Honolulu, In Process)

Other Local Publications

- Publications from the Hawaii Automobile Dealers Association
- Hawaii at the Crossroads: A Long-Term Energy Strategy (Hawaii Energy Policy Forum, 2004)

Summary of Energy Relevant Goals and Policies in State & Local Transportation Plans

Energy-relevant goals and policies in the various plans and documents reviewed are as follows:

Hawaii Statewide Transportation Plan (2002)

Summary of policies related to energy efficiency or mode share/land use changes:

- Most relevant goal:
 - Achieve an integrated multi-modal transportation system that provides mobility and accessibility for people and goods.
- Most relevant objectives:
 - To increase the efficiency of the air, land, and water transportation systems' operations.
 - To promote alternative air, land, and water transportation mode choices.

Hawaii 2050 Sustainability Plan (2007)

- Encourage “smart growth” concepts in land use and community planning.
- Encourage production and use of locally produced biofuels.

Bike Plan Hawaii (2003)

Proposes to increase bike lanes statewide from 331 existing to 1,722 miles by (not a 2020 constrained network, but the complete network), most built on existing roadways, and some of which may be beyond 20 years out.

County of Kauai General Plan (2000)

Summary of projects (or categories of projects) that would impact the systems energy efficiency

A number of new roadways or expansion of existing roadways, just a few of which are:

- A new two-lane connector road between Port Allen and Poipu.
- Widening of Koloa By-Pass/Maluhia Road to 4 lanes.
- Construct a new 2-lane Lihue-Hanamaulu By-Pass Road.
- Widen Kapule Highway to a 4-lane divided roadway.
- Construct a new 4-lane Kapaa By-Pass Road.

Transit service/facilities:

- Increased bus service in Koloa/Poipu;
- Increased paratransit service in various regions of the island;
- Improvements to pullover areas along roadways in order to create safe and accessible bus stops; and
- Designated areas at housing projects (particularly those with elderly and disabled residents) that provide safe and accessible paratransit stops.

Bike and pedestrian facilities:

- A number of new bike lanes as identified in the master plan *Bikeplan Hawaii 2003*.

County of Hawaii General Plan (2005)

Energy Goal: strive towards energy self-sufficiency.

Most Relevant Policies:

- Encourage the development of alternate energy resources.
- Encourage the development and use of agricultural products and by-products as sources of alternate fuel.
- Provide incentives that will encourage the use of new energy sources and promote energy conservation.
- Strive to diversify the energy supply and minimize the environmental impacts associated with energy usage.

Transportation System Goals:

- Provide a transportation system whereby people and goods can move efficiently, safely, comfortably and economically.
- Make available a variety of modes of transportation that best meets the needs of the County.

Most Relevant Policies:

- The agencies concerned with transportation systems shall provide for present traffic and future demands, including the programmed development of mass transit programs for high growth areas by both the private and public sectors.
- Develop a comprehensive, island wide multi-modal transportation plan that identifies the location and operation of automobile, mass transit, bicycle and pedestrian systems, in coordination with appropriate Federal and State agencies.
- Improve the integration of transportation and land use planning in order to optimize the use, efficiency, and accessibility of existing and proposed mass transportation systems.
- Support and encourage the development of alternative modes of transportation, such as enhanced bus services and bicycle paths.

Summary of projects (or categories of projects) that would impact the systems energy efficiency

- The general plan identifies potential transportation improvements for each district. Various state and county roadway systems located throughout the island were identified for improvement, including the reconstruction of Saddle Road (Highway 200) and the widening of Queen Kaahumanu Highway (Highway 19) to four lanes between Waikoloa Road and Kona International Airport at Keahole.
- The Hawaii Long-Range Land Transportation Master Plan recommends that additional routes be provided to link Waimea town and the towns in North Kohala with Kailua-Kona and the resorts located along the South Kohala coast.
- Bike/pedestrian: A number of new bike lanes as identified in the master plan *Bikeplan Hawaii 2003*.

County of Maui General Plan 2030 (In Progress) – Includes Countywide Policy Plan (2007), Maui Proposed Roadway Development Program (2007), Short-Range Transit Plan (2005)

From Countywide Policy Plan:

Goal: Diversify Transportation Options

Objectives:

- (1) Build capacity in today's roadway system through multi-modal transportation facilities (with five supporting policies).
- (2) Require high quality and attractive design in all transportation infrastructure (with five supporting policies).
- (3) Support the development of efficient, economical, and environmentally sensitive means of moving goods and people throughout the County and between islands (with four supporting policies).

Goal: Promote Sustainable Land Use Planning and Development

Objective: utilize public transit, pedestrian, bicycle, and public right-of-ways as design elements to make neighborhoods and community plan areas attractive and unique (with four supporting policies).

From Maui Island Plan:

Goal: Maui Island will have a uniquely Maui transit service that addresses the mobility needs of all local residents and contributes to sustainable land use planning by proactively coordinating future growth and transit planning.

Relevant objectives include:

- 1) Provide transit services, facilities, and roadway infrastructure, which meet the needs of all Maui's people (with six supporting policies).
- 2) A transit system and planning process that effectively promotes sustainable development and reduces traffic congestion (with seven supporting policies).
- 3) Increased ridership through the establishment of a transit service that accommodates and celebrates island lifestyle (with four supporting policies).
- 4) A robust transportation planning program capable of providing public transit service at levels sufficient to accommodate projected population growth (with four supporting policies).

Summary of projects (or categories of projects) that would impact the systems energy efficiency

From County of Maui Proposed Roadway Development Plan:

Planned or proposed long-range roadway improvements include improvements to a number of roadways including: Haleakala; Kihei Corridor, realignment of Honoapiilani, Keawe Street extension, Mill Street extension, Paia bypass, Mokulele widening, Kihei North-South collector road; Waiale Extension, Honoapiilani widening, Waiale/Kuihelani Highway Connector; Lono Avenue extension; Imi Kala/Piihana extension; Imi Kala/Waiale – Mill Street extension; Paniolo

connector; Kehekili Highway widening; Maui Lani parkway; Kuikahi Drive extension; Kehalani collector road; and Kehalani Loop Road.

From Maui Island Plan:

Examples of proposed actions/strategies include:

- Relocate rental car facilities to West and South Maui and provide transit from airport to new facilities.
- Conduct a study to identify future rail corridors and transit stations.
- Prepare a system-wide Transit Master Plan.
- Amend the County Subdivision Code to include requirements for transit supportive roadway infrastructure.
- Require private transit services for large residential developments.
- Conduct ongoing community surveys to assess successes and deficiencies of transit service.
- Enhance bus stop amenities system-wide.
- Establish HOV lanes within major arterials.
- Implement Guaranteed Ride Home Program.
- Establish additional park-n-ride facilities in key locations.

From County of Maui Short Range Transit Plan:

- In short-term (within next five years), phasing in of enhancements to fixed route service (fixed route circulator service; islander service; and villager services) and paratransit service.

Bike/pedestrian:

- A number of new bike lanes as identified in the master plan *Bikeplan Hawaii 2003*.

Oahu Regional Transportation Plan 2030 (City and County of Honolulu) (2006)

Summary of policies related to energy efficiency or mode share/land use changes

Three overarching goals:

1. Transportation Services System: Develop and maintain Oahu's island-wide transportation system to ensure efficient, safe, convenient, and economical movement of people and goods.
2. Environment and Quality of Life: Develop and maintain Oahu's transportation system in a manner that maintains environmental quality and community cohesiveness.
3. Land Use and Transportation Integration System Goal: Develop and maintain Oahu's transportation system in a manner that integrates land uses and transportation.

Policies that encourage greater use of transit and nonmotorized modes of transportation are forecast to result in an increase in the percentage of trips by transit and a decrease in the percentage of people making trips by auto (from 83.6% in 2005 to 81.4% in the ORTP 2030). However, there is still projected to be over 540,000 additional auto trips. The added population growth in the ORTP 2030 will generate more travel during the day, resulting in a 22% increase in both vehicle miles traveled (VMT) and vehicles hours traveled (VHT).

Summary of projects (or categories of projects) that would impact the systems energy efficiency

- New fixed guideway providing transit service between East Kapolei and Ala Moana.
- An additional 280 lane miles on Oahu's roadways, including increasing the capacity of H-1 with new interchanges, additional High Occupancy Vehicle (HOV) lanes, freeway widening, and operational improvements at key locations; expansion of the North-South Road and Kapolei Parkway; widening of Farrington Highway, Fort Barrette Road, and Kunia Road; and expansion of Kamehameha Highway.
- Intra-island commuter ferry from Ewa to downtown Honolulu and the Nimitz flyover HOV facility.
- Bikeway plan to provide an integrated network of on-road bike lanes and off-road shared-use paths. Many specific bike lanes identified in the master plan *Bikeplan Hawaii 2003*.
- Development of pedestrian plan for Oahu.
- Bus system expansion.

City of Honolulu Sustainability Plan – Mayor's Energy & Sustainability Task Force (2007)

Current transportation/energy related efforts and on-going projects:

- Install a tire pressure monitoring system on all City fleet vehicles as part of standard equipment by 2009.
- Establish Vehicle Usage Guidelines to minimize the amount of fuel consumed by City operations by December 2007.

Guidelines include:

- Assign smallest vehicle appropriate to the task.
- Purchase fuel-efficient vehicles.
- Increase driver awareness of fuel-efficient driving techniques.
- Reduce trips.
- Reduce fleet size.
- Use alternatives to driving.
 - Implement a vehicle "Greening" 5-year program that sets the paradigm for use of alternate fuels and alternate fueled vehicles within the City's fleet.
 - Promote and support strategic development of alternate fuels and emerging technologies that allow for an efficient fleet mix of efficient, low emission vehicles that lower use of petroleum fuels as well as reduce emission of air pollutants and greenhouse gasses through a combination of regulatory compliance, purchasing policies and proven product demonstrations.
 - Encourage bus use as an alternative to the single occupant Automobile (e.g. employer-centered BONUS commuter program; University UPASS program).
 - Make transit operations "cleaner".
 - Plan a fixed guideway transit system.
 - Make Honolulu a pedestrian-and-bicycle-friendly city.

Future city actions:

- Plan, design and construct multi-modal transportation to include pedestrian and bicycle friendly options to improve the quality of life for the communities of Oahu.

- Fixed guideway transit system
- Continue to pursue alternative fuel vehicles for the City's bus fleet.
- Encourage employers to provide incentives to employees who use alternative methods of transportation.
- Encourage use of alternative fuel vehicles including hybrids and biodiesel-fueled vehicles.

Sustainable Communities Plans, City and County of Honolulu (Ongoing):

Central Oahu Policies:

Reduction in Automobile Use.

Reliance on the private passenger vehicle should be reduced by:

- Provision of circulation systems with separated pedestrian and bicycle paths and convenient routes for public transit service;
- Design of street systems in new development areas with layouts to facilitate bus routes and encourage pedestrian travel;
- Provision of supporting facilities and amenities for pedestrian, bicycle, and public transit use (bicycle racks at commercial centers, bicycle storage facilities at employment centers, and bus shelters at bus stops will be encouraged);
- Preservation of existing right-of-way and establishment of setback areas sufficient to permit future development of a dedicated transit right-of-way on Farrington Highway; and
- Support for medium-density and high-traffic land uses along the Farrington Highway transit corridor, especially within a quarter-mile of the transit nodes.

Transportation Development Priorities. Projected demand for peak-hour transportation in Central Oahu should be met by:

- Increased use of transit; and
- Transportation demand management through:
 - HOV facilities, including HOV lane on length of H-2.
 - Park-and-ride facilities, including the transit center at Mililani Mauka, which has 176-stalls, and the 50-stall Wahiawa park-and-ride lot, across from Wheeler A.F.B.
 - Other programs, which encourage reduced use of the private automobile.

Relying on adding private automobile commuting capacity to meet the projected growth in demand from Oahu's Leeward areas would be prohibitively expensive and have undesirable results. To increase commuting capacity from Central Oahu to Honolulu would require widening or double-decking the freeways in the Aiea/Pearl City area, between the H-201 (Moanalua Freeway) and H-2 junctions of H-1, and other major works. Even if this extra capacity was added in the Aiea/Pearl City area, destructive, divisive, and expensive street widening would have to be done in Central Honolulu to create sufficient capacity to absorb the extra cars that the expanded freeways could bring to the central city.

Planning Principles:

- Increased Arterial Capacity for Transit.
- Land Use Anticipating Dedicated Transit Lanes on Farrington Highway.
- Transit-Oriented Community Street Systems.

Summary of Projects that would impact systems energy efficiency

- Widening of several roadways (including Kamehameha Highway, Kunia Road, Waipahu Street, and various interchanges).
- Expansion of transit service, including construction of new transit centers. Four significant transit facilities currently exist:
 - Mililani Mauka, 95-1101 Ukuwai St. Covered waiting area, 176 parking stalls.
 - Mililani Town Center, Meheula Parkway. Covered waiting area, restrooms. Adjacent to major shopping center (opened August 2007).
 - Royal Kunia park-and-ride lot. 149 stalls. This has also become a site for a regular “farmer’s market” and a recyclable collection center.
 - Wahiawa park and ride. A shared-use facility with the Hawaii National Guard, on Leilehua Road, located across from Wheeler A.F.B.
- An additional transit center has been proposed for a location at Wahiawa to be designated in the future.
- Expansion of bike facilities.
- Land development decisions, including:
 - Future development of Mililani Mauka lands east of H-2.
 - Possible development of former Dole pineapple lands along Kunia Road. (Dole suddenly closed operations in November 2006)
 - Redevelopment of Wahiawa, a depressed small urban area.

East Honolulu (Ongoing)

East Honolulu is an area in which, due to geography, relatively little change in land use or transportation is expected over the next several decades. Little additional land is available for residential use, other than areas presently dedicated for parkland, including Ka Iwi State Scenic Shoreline. Also, as neither a controlled-access highway or fixed-guideway transit line is proposed for the area, nor any major employment centers, substantially increasing the population is not feasible. The most substantial change is expected to be a steady shift out of older residents by a replacing population of younger households with some children.

General policies and guidelines.

General policy:

- Commuter travel.
 - Reduce reliance on private passenger vehicles by promoting transportation system management (e.g., the HOV lane from the west end of Hawaii Kai to H-1) and travel demand management (e.g., mass transit, carpool, and vanpool programs).
 - Provide more frequent, larger capacity, and more comfortable vehicles and expansion of improved park-and-ride facilities.
- Local trips.
 - Modify residential neighborhood street design, where appropriate, to provide more safe, accessible, convenient and comfortable pedestrian routes, bus stops, and bike routes, even if this requires somewhat slower travel speeds or less direct routes, and

fewer on-street parking spaces for automobiles. This may require review and revision of city street standards.

- Provide more convenient pedestrian paths within commercial and other high-activity areas (e.g., from the park and ride facility to the Hawaii Kai Town Center) to encourage people to walk between buildings instead of moving their car. Construct paved paths around the Hawaii Kai Marina to improve accessibility to various waterfront locations.
- Implement traffic calming measures in residential areas to reduce average motor vehicle speeds, thereby increasing safety and enjoyment for pedestrians and bicyclists.

Planned roadways:

- Extend Hawaii Kai Drive to Kamilonui Place, and thence on to Lunalio Home Road, to create a more direct and safe bicycle route from Lunalio Home Road and the Kalama Valley to points west.

Neighborhood commercial centers, resorts, and institutions:

- Provide street frontage improvements for bus stops, including a bus shelter and a dedicated pull-out area, along all bus routes.
- Provide clearly marked paths from bus stops to commercial center entrances. Pathway should be clearly indicated with special paving or markings and covered to provide weather protection, if not incorporated into commercial center buildings.
- Develop a pedestrian route along the Hawaii Kai marina, especially between Hawaii Kai Towne Center and the Hawaii Kai Shopping Center. This route should incorporate a pedestrian bridge across the Hawaii Kai lagoon to provide convenient access between the two centers, and enhance the recreational value of the marina.
- Provide bicycle racks that securely protect bicycles and are visible from streets outside commercial centers.

Summary of projects (or categories of projects) that would impact the systems energy efficiency

- Expansion of transit service.
 - One significant transit facility currently exists: Hawaii Kai Park and Ride, 240 Keahole Street. Covered waiting area, 134 parking stalls.
 - In May 2007, the City and County of Honolulu announced that East Honolulu bus service would be revamped to speed travel between East Honolulu and the principal urban region. A new Route 1L bus will provide peak-hour express service between Kahala Mall, along the western edge of the East Honolulu district, and Chinatown, running local thence to Hawaii Kai. The existing Route 1 will be terminated at Kahala Mall when Route 1L is operating.
 - Route 1 and 1L will cease diverting into Aina Haina, and this area will be served by the new Route 233 circulator.
 - Two circulators in Hawaii Kai, Routes 231 and 232 will eliminate much local running in Hawaii Kai by Route 1.
 - Circulators Route 234 and 235, will replace Route 21 in Waialae Iki.

- Route 58, running half-hourly from Waikiki and Kahala to Sea Life Park, just north of Makapuu Point, will be replaced by an hourly Route 23 and coordinated better with Route 22 service between Waikiki, Kahala, Hawaii Kai, and Hanauma Bay.
- Expansion of bicycle facilities, including new bicycle lanes in Aina Haina, Niu Valley, and throughout Hawaii Kai, and a separate bicycle route through the new Ka Iwi State Scenic Shoreline park between Hawaii Kai and Makapuu Point.
- Land development decisions, including:
 - Development of Ka Iwi State Scenic Shoreline Park, which may convert Kalaniana'ole Highway to a scenic parkway.
 - Expiration of long-term leases committing lands, mostly east of Hawaii Kai, to agricultural use.
 - A proposal, active since 2003, to convert the last 87 acres of Kamilonui Valley on the north side of Hawaii from nurseries and other agriculture to housing.

Appendix V - Strategies from Other Jurisdictions: Modes of Travel

Overview

United States

In the United States, the implementation of vehicle efficiency measures have proven to be some of the most effective strategies to improve energy efficiency in the transportation sector. State improvements in vehicle energy efficiency have been shown to reduce energy consumption from 9 to 15 percent. These improvements are achieved through strategies that target total vehicle miles traveled, and the amount of fuel consumed per mile of travel.¹ In some regions, the formation of strategic partnerships has also been key to enhancing or enforcing state energy efficiency goals. Some of these regional partnerships include the Conference of the New England Governors and Eastern Canadian Premiers (NEG-ECP), Northeast States for Coordinated Air Use Management (NESCAUM), Western Climate Initiative (WCI), and Regional Greenhouse Gas Initiative (RGGI).

Northeastern United States

In the northeast region of the U.S., states are working together to reduce energy consumption through NESCAUM, NEG-ECP and RGGI. NESCAUM is an association of air quality agencies in the northeast with Air Board Directors from eight northeastern states (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont). NESCAUM provides scientific, technical, analytical, and policy support to the air quality programs in each respective state.

The New England Governors' (NEG) Conference, on the other hand, is a forum for the Governors of Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and Maine to work together to respond to regional issues. The NEG Conference, in partnership with the Eastern Canadian Provinces, developed a region-wide action plan to reduce energy consumption. In 2001, the New England Governors' Conference and the Eastern Canadian Premiers (NEG-ECP) set a region-wide goal of reducing energy consumption by at least 10 percent below 1990 levels by 2020 for the whole economy, including the transportation sector. As part of the action plan to achieve this goal, the NEG-ECP developed a variety of programs and policies, including the Regional Greenhouse Gas Initiative (RGGI). RGGI is the first U.S. mandatory cap and trade program for carbon dioxide.

Western United States

In the western region of the U.S., states like Arizona, California, Colorado, Montana, New Mexico, Oregon, Utah and Washington have created state action plans to reduce their reliance on petroleum and increase energy efficiency in the transportation sector. A western regional partnership, similar to that of the RGGI in the northeastern states, has also been formed with the region-wide goal of reducing energy consumption by 15 percent below 2005 levels by 2020 across all sectors, including transportation. Members of this partnership, known as the Western Climate Initiative (WCI), have committed to vehicle efficiency measures such as the Clean Car Program, and plan to institute

¹ Source: PB using data analyzed from State Climate Action Plans of Arizona, California, Connecticut, New Mexico, New York, and Rhode Island.

regional market-based mechanisms to enhance the effectiveness of the states' individual action plans.

International

Asia Pacific

Since the Asia-Pacific region is home to both some of the poorest and wealthiest countries in the world, energy efficiency benchmarks and strategies are not yet coordinated among the different countries. That said there are a number of regional organizations and programs that have been established to encourage energy-efficiency through collaboration, education, grant funding, soft loans, and data provision. For example, the Asia-Pacific Economic Cooperation (APEC) is currently establishing guidelines for the development of bio-diesel standards for the APEC region, surveying transport efficiency policies in APEC economies, and developing alternative transport fuels implementation guidelines. Other multi-lateral efforts include the Asian Environmental Compliance and Enforcement Network (ASCEN), which promotes improved compliance with environmental legal requirements in Asia; the World Bank Asia Alternative Energy Program (ASTAE), which provides financing for alternative energy projects; and the Clean Air Initiative Asia (CAI Asia), which promotes and demonstrates innovative ways to improve air quality throughout Asia.

In recent years, two countries in the Asia-Pacific region have been particularly active in promoting energy-efficiency: Singapore and Japan.

Like Hawaii, Singapore is an environmentally-conscious island economy, with limited space to grow and relatively high fuel costs. Since the mid-nineties, the Singaporeans have initiated a series of programs and regulations intended to integrate land use and transport planning, encourage transit use, improve fleet efficiency, and reduce car ownership.

Japan has virtually no domestic oil or natural gas reserves, and in 2005, Japan was the second largest net importer of crude oil in the world. In the past few decades, Japan has significantly improved energy conservation and is widely considered a global leader in the development and implementation of energy efficiency innovations. Between 1995 and 2004, average vehicle fuel efficiency in Japan has improved by 22%.

European Union

The European Community, together with its Member States, is working to improve energy efficiency in all sectors, while increasing use of renewable energies. While there is no formal, mandatory target for energy consumption reduction across the Union, the European Commission-endorsed Green Paper on Energy Efficiency states the European Union (EU) could, by 2010, reduce its present energy consumption by 20 percent in a cost-effective manner, equivalent to EUR 60 billion per year, or the present combined energy consumption of Germany and Finland.

There are at least two EU-wide schemes that induce better energy efficiency in road transport, namely fuel economy standards (which, unlike other countries, are voluntary and are based on CO₂ emissions) and emissions-based toll-charging. The EU directive for tolling schemes requires that fees are scaled both according to the duration of the use made of the infrastructure and to vehicles' emission classes (Non-EURO, EURO I, EURO II, etc.). Although the application of tolls and user

charges is not mandatory for member states, any state wishing to implement tolls is expected to follow the directive.

In October 2003, the EU Parliament and Council issued Directive 2003/87/EC, establishing an emissions trading scheme which became operational in January 2005. Although mobile (e.g., transport) emissions are not currently included in the scheme, proposals have been made for inclusion after 2012.

Most of the following examples, which are illustrative of the European Union's innovation and leadership in energy efficiency strategies, have been drawn from the United Kingdom.

The UK is the largest producer of oil and natural gas in the EU. However, after years of being a net exporter of both fuels, the UK became a net importer of natural gas in 2004, and may now be (or soon will be) a net importer of oil. In response, the government has begun a multi-pronged strategy to address predicted domestic shortfalls, including a series of programs and regulations targeted at the transportation sector. Working closely with the UK Department for Transportation to design, promote, and implement these strategies is the Energy Saving Trust, which also provides free consultancy services to public and private sector parties.

Providing More Choices in Modes of Travel

United States

Northeastern United States

In the transportation sector, the Northeast is taking steps to increase transportation system efficiency through commuter trip reduction initiatives and VMT (vehicle miles traveled) reduction measures.

Rhode Island, in particular, is reducing vehicle use through a state-wide Commuting Trip Reduction Initiative. The Rhode Island Department of Administration set up a Committee on State Employee Transportation consisting of Directors of the Departments of Administration, Transportation, Environmental Management, Health, and Statewide Planning, the General Manager of the Rhode Island Public Transit Authority (RIPTA)², or their designees, and a representative from a state employee union. The Committee was charged to develop, publicize, and implement a plan giving incentives to state employees to reduce vehicle miles in commuting to work. The Committee investigated employee incentives offered by other public entities around the country, such as practices developed by EPA's Best Workplaces for Commuters Program. The Committee also considered the implementation of carpool, flex time, telecommuting, guaranteed-ride-home, bike-to-work and walk-to-work programs. Additionally, the plan will offer a RIPTA transit pass to employees in lieu of parking privileges.

Land use is another factor that is important in changing mode choice. The Northeast region's transportation and land use strategies can best be depicted through transit-oriented development and improved bicycle and pedestrian infrastructure. New York is a good example for smart growth planning and reduced VMT growth. For New York, slowing VMT growth through efficient land

² Rhode Island Greenhouse Gas Process.

<http://rihg.raabassociates.org/events.asp?type=grp&event=Stakeholder%20Committee>.

use planning involves targeted infrastructure investments (invest in more energy efficient alternatives and less in energy inefficient modes), enforcing integration of land use development and efficient transportation modes (by requiring reporting pursuant to the State Environmental Quality Review Act (SEQRA), Transportation Improvement Programs and Long Range Transportation Plans)³, and initiating an annual competitive grant solicitation for local governments and private companies to propose energy saving ideas. Implementing a number of these “smart growth” strategies has the potential to reduce transportation energy consumption up to 11 percent.

Western United States

Many states in the Northeast and Western regions of the US are focusing on land and location-efficient growth strategies. Some of these strategies used in the West include infill and urban brownfield redevelopment; transit-oriented development, including multi-modal transit proposals; targeted open space protection; and smart growth planning and tools that allow and support location efficient growth in communities that are proximate to household amenities (i.e., jobs, shopping, school, services, entertainment) as opposed to growth in areas that require greater travel distance and have less mode choice. These strategies allow for mixed land uses with a range of housing opportunities and multiple transportation options including increased pedestrian and bicycle access. Western states that have adopted these measures have seen increases in energy efficiency in the range of 3 to 11 percent.

Another strategy that could encourage the use of alternative modes is Pay-As-You-Drive (PAYD) insurance. PAYD is a form of variable priced insurance whereby a portion of vehicle insurance payments are assessed on a per mile basis. PAYD has been promoted by a variety of groups for reasons that include emissions reductions, safety (through decreased driving), and fairness (by changing insurance costs to more closely track the portion of individuals' risk that is created by miles driven). PAYD insurance is available through GMAC for GM car owners in at least 34 states and pilot programs have or are currently being run by other insurance companies in Arizona, Oregon, Washington and a few other Midwest states. Progressive Insurance, for example, has seen reductions in driving of about 20 percent as a result of an initial 5,000 car pilot project.

International

Asia Pacific

Singapore has led the region for many years with its innovative strategies for reducing vehicle miles traveled. The two most well-known schemes are the national car registration quota, which both restricts the number of cars that may be purchased each year and substantially increases the cost of ownership, and electronic, dynamic congestion charging, which discourages car travel in central parts of the city during select times of the day. In addition to these, Singapore has also initiated smaller schemes to reduce driving, such as a park and ride program, which includes the sale of convenient combined parking and transit monthly passes, and personalized RFID (Radio Frequency ID) fare cards that can be used for all transit and taxi fares, as well as downloading coupons and making store purchases. There are also private sector-led initiatives that reduce overall vehicle miles

³ Recommendations to Governor Pataki for Reducing New York State Greenhouse Gas Emissions, 2003. http://www.ccap.org/pdf/04-2003_NYGHG_Recommendations.pdf.

traveled, e.g., a competitive car sharing program and a new, high-tech bicycle sharing scheme, similar to the program recently initiated in Paris.

In Japan, the private sector has created efficiencies in the transport system, through promotion of transit use. For example, strict government control of fares have led private transit operators in Tokyo and Osaka to diversify their businesses by introducing services linked to their train operations and entering other sectors, including road-based transit services, suburban residential development near stations, and retail services and “leisure centers” near train stations – all of which promote transit-oriented development and additional ridership.

In an attempt to better integrate land use and transportation planning, in 1995, the Singaporean government created the Land Transport Authority (LTA) by merging four separate public entities: Registry of Vehicles, Mass Rapid Transit Corporation, Roads and Transportation Division of the Public Works Department, and Land Transport Division of the then-Ministry of Communications. With the ultimate goal of encouraging transit use, the LTA oversees both private surface transport and public transport, and is permitted to manage real estate / urban development activities in areas adjacent to transit hubs and stations.

European Union

In general, transit ridership and non-motorized trip rates tend to be much higher in the EU than in the US. While there are many historical, cultural, and geographical reasons for this difference, there are also a myriad of policies that favor non-motorized and transit travel rather than automobile ridership – e.g., charging relatively high fuel taxes, dedicating fuel taxes to transit capital expenditures, developing universal fare card systems for transit, charging high parking fees, and investing in extensive bicycle lane networks.

While most European cities tend to feature the dense development and mixed uses that are conducive to transit ridership as well as targeted transit-oriented plans, Denmark and Sweden are often credited for having the most visible, successful transit-oriented development strategies, which focus pedestrian-friendly town and neighborhood development around light and heavy rail stations.

One of the most internationally visible examples of strategies that can encourage the use of alternative modes and VMT reduction in Europe is London’s successful Congestion Charge, which discourages automobile travel to the urban center and designates a portion of collected congestion fees toward transit improvements. Similar schemes have been established in Stockholm, Oslo, and Trondheim (Norway).

Less visible but also effective are the Pay-as-You-Drive (PAYD) Insurance schemes, where a portion of auto insurance premiums are linked to miles driven (while the remaining portion is a “fixed cost” as under current practice). Active schemes may be found in the UK, Italy, and the Netherlands. PAYD schemes are advantageous from an energy efficiency standpoint in that they provide a financial incentive to both commercial and non-commercial drivers to drive less. Also, management and costs are typically borne by the private sector.

Appendix VI – Strategies from Other Jurisdictions: Fuel Efficient Vehicles

United States

Northeastern United States

A variety of vehicle efficiency measures have been implemented in this part of the country, including the Clean Car Standards, California Low Emission Vehicle (LEV) II Emissions Standards, feebates, incentives for advanced technology vehicles, and congestion pricing. A common vehicle efficiency strategy considered among the northeastern states of Rhode Island, Connecticut and New York, was a statewide feebate program. Feebate programs are applicable to the purchase of new vehicles and institute a schedule of fees and rebates to the consumer based on a vehicle's fuel economy.

Although feebate programs work best under multi-state participation, the program also acts as a backstop to programs and policies like the Clean Car Program, which has the potential to reduce energy consumption within the range of 12-19 percent, based upon the changeover of the entire fleet.

In addition, region-wide, many states are improving operational efficiency by adopting anti-idling laws for heavy-duty trucks and buses and implementing truck stop electrification/plug-in areas for heavy-duty vehicles and hybrids. In addition, states such as New York and Connecticut are educating the public about energy efficient driving practices through public education programs and driver education courses.⁴ Energy efficient driving behavior involves practices like eliminating “jack rabbit” starts, coolest temperature fueling, speed limit observation, proper vehicle maintenance, including proper tire inflation, fuel efficient tires, and regular tune ups.

Western United States

Over the past decade, some of the more stringent vehicle efficiency standards have come from California legislation. In 2002, AB 1493, the “Pavley Standards,” introduced by Assemblywoman Fran Pavley, was signed by the Governor. The Pavley Standards, also known as the Clean Car Program and the CA GHG Tailpipe Standards, will require a 30 percent reduction in emissions from all new passenger vehicles. This reduction is a result of improved technology design in new vehicles that also result in greater fuel economy, with a reduction in fuel consumption of about 15 percent. If approved by the US EPA, the stronger standards will be phased in from 2009 to 2016. New cars and light trucks in all states must comply with federal emission standards, and, generally speaking, states have the choice of adopting a stronger set of standards applicable in California. Thus far, seventeen states have already adopted the California Clean Car Program Standards including:

⁴ Recommendations to Governor Pataki for Reducing New York State Greenhouse Gas Emissions, 2003.

http://www.ccap.org/pdf/04-2003_NYGHG_Recommendations.pdf

Connecticut Climate Change Action Plan, 2005: Transportation and Land Use Sector.

http://www.ctclimatechange.com/documents/TransportationSector_CCCAP_2005.pdf

Arizona, California, Colorado, Connecticut, Florida, Maine, Maryland, Massachusetts, New Jersey, New Mexico, New York, Oregon, Pennsylvania, Rhode Island, Utah, Vermont and Washington.⁵

This part of the country is also adopting the Low Rolling Resistance (LRR) Replacement Tire Program in some areas. Currently, vehicle manufacturers use LRR tires on new vehicles, but they are not easily available to consumers as replacement tires. When installing original equipment tires, carmakers use LRR tires to meet federal corporate automobile fuel economy (CAFE) standards. When replacing the original equipment tires, consumers often purchase less fuel-efficient tires and potentially, more costly tires (depending on annual vehicle miles traveled). At present, tire manufacturers and retailers are not required to provide information about the fuel efficiency of replacement tires. The LRR Replacement Tire Program sets minimum energy efficiency standards for replacement tires and requires that greater information about LRR replacement tires, including the availability of all season/all weather LRR tires, be made available to consumers at the point of sale. The goal of this strategy is to improve the fuel economy of the light duty vehicle (LDV) fleet by setting minimum energy efficiency standards, which can result in up to 4.5 percent fuel savings.

Like many others, those in the western region are also adopting operational standards for heavy-duty and passenger vehicle fleets. Anti-idling measures and slower speed limits have been enforced for heavy-duty vehicles, particularly commercial trucks. These measures have been implemented to conserve energy during operations as much as possible and enforcing slower speed limits for commercial trucks can reduce energy consumption up to 13 percent. In efforts to lead by example, state government agencies have also set stronger standards for their own fleet vehicles.

International

Asia Pacific

To improve the vehicle efficiency of the nation's passenger fleet, the Singapore National Environment Agency sponsors a Fuel Economy Labeling Scheme for passenger vehicles, which helps consumers easily recognize and compare the fuel economy of different vehicles.

In 1999, Japan introduced the "Top Runner" program, which applies to multiple goods, including passenger and freight vehicles. The scheme sets future fuel efficiency standards higher than the performance of the best product among those currently commercially available in the same product category. Manufacturers who have not achieved the standards by the set deadline are given technical advice, publicly announced, and/or fined a sum less than or equal to US\$8,700.⁶

In 2002, Japan initiated a "Green Tax" program, which includes a combination of tax incentives and penalties for fuel and energy efficient passenger and commercial vehicles. Sales tax reductions for hybrid passenger cars are about 2.2%, and reductions for electric, CNG, and hybrid trucks are about 2.7%. Tax penalties for Diesel, gasoline, and LPG vehicles older than 10 years are about 10%.⁷ As of

⁵ States Poised to Adopt California Vehicle GHG Standards.

http://www.pewclimate.org/what_s_being_done/in_the_states/vehicle_ghg_standard.cfm.

⁶ Japan Ministry of Economy, Trade, and Industry; Energy Conservation and Renewable Energy Department. 6 December 2006. "Energy Efficiency and Conservation Policy in Japan."

⁷ Japan National Institute for Environmental Studies. May 2006. Global Carbon Project. "Japanese Efforts to Reduce CO2 from the Transportation." Power Point Presentation given at Regional Workshop on Climate Change Mitigation in the Transport Sector.

2006, hybrids, such as the Toyota Prius, accounted for almost 11 million, or 21 percent, of all autos on Japanese roads.⁸

Average vehicle fuel efficiency in Japan has improved by 22% between 1995 and 2004.⁹

To improve operational efficiency of vehicles, starting in 2003, Japan introduced the “Eco-Drive” program, which includes a public awareness campaign and partial government subsidies for purchasing cars equipped with a system for tracking fuel efficiency.

European Union

Similar to the fuel economy labeling programs in Singapore and Japan, in the UK, new cars feature labels that highlight the fuel efficiency. In addition, labels also feature information on how much drivers can expect to pay in fuel bills in a typical year for a particular car, and whether the car qualifies for a reduction in Vehicle Excise Duty.

Fuel efficient and cleaner fuel vehicles are also promoted in the UK through a special “add-on” to the London Congestion Charge infrastructure. For example, Transport for London offers a 100 percent discount on the US\$16 charge for vehicles on the “PowerShift” Register. Register approval is based on the particular combination of vehicle (make, model and model year), equipment (LPG, NG or hybrid) and manufacturer or converter. Full electric vehicles are not included on the PowerShift register since they are already exempt from the congestion charge scheme.

The UK Department for Transport is introducing new vehicle excise duties and company car taxes that are graduated according to CO2 emissions – which would, by default, reduce dependence on fossil fuels and/or improve energy efficiency.¹⁰

Finally, the UK Energy Savings Trust, partially funded by the Department for Transport also offers free “green fleet reviews” to provide organizations with tailored fleet management advice to help lower running costs, reduce environmental impact and enhance corporate social responsibility.

The UK Department for Transport actively promotes an anti-idling (e.g., the “Switch it Off”) campaign, and other countries, such as Sweden and Germany, may enforce anti-idling in commercial vehicles.

⁸ Faiola, Anthony. 16 February 2006. Washington Post. “Japanese Putting All Their Energy into Saving Fuel.” <http://www.washingtonpost.com/wp-dyn/content/article/2006/02/15/AR2006021502762.html>

⁹ Japan Ministry of Economy, Trade, and Industry; Energy Conservation and Renewable Energy Department. 6 December 2006. “Energy Efficiency and Conservation Policy in Japan.”

¹⁰ UK Department for Transport. Accessed 2007. “Delivering better transport: a summary of priorities 2004/05 .” <http://www.dft.gov.uk/about/publications/priorities/deliveringbettertransport200405?page=5>

Appendix VII – Strategies from Other Jurisdictions: Diversifying Energy Sources

United States

Northeastern United States

Some of the most innovative alternative energy production strategies have come from the northeast region of the United States. Alternative fuel incentive programs, state procurement of bio-diesel production, renewable fuel standards of 25 percent by 2025 (also known as the 25x25 program), and the development of infrastructure to handle low emission, alternative fuels are just a few of the strategies being implemented in the region. In Pennsylvania, for example, Governor Rendell created a public-private partnership to develop the East Coast's first state-of-the-art biofuels injection facility. The facility opened last fall and received \$219,908 in state aid. The plant will replace 3.2 million gallons of foreign oil with domestically produced biodiesel and keep \$6 million worth of energy dollars in the state by reducing the state's need to purchase imported fuels.

Western United States

Similar to the Northeastern United States region, the western region also has goals of decreasing petroleum dependency and increasing fuel diversity in the transportation sector. Like Pennsylvania's efforts to increase in-state alternative energy resources, western states are also setting goals to cut petroleum consumption and provide an increased diversity of alternative transportation fuels in the market. California, for example, created the Low Carbon Fuel Standard (LCFS) to address the growing need for petroleum independence. LCFS is a fuel neutral, market- and performance-based strategy to reach a 10% reduction in carbon intensity of motor fuels by year 2020¹¹. Low carbon fuels include, but are not limited to, biodiesel, cellulosic ethanol, hydrogen, compressed natural gas, liquefied petroleum gas, electricity, and low carbon blends such as E10 or E85. Additionally, California is seeking to further reduce petroleum consumption by converting some of its rail lines from diesel to electric service (e.g. Caltrain) and considering a high speed rail line in which Californians will vote on next year.

Other parts of the western region have also adopted aggressive goals of cutting oil usage. Areas like Portland, Oregon just recently announced its goal to cut oil and natural gas use by 50 percent over the next 25 years. Commissioner Adams will offer an implementation plan regarding transportation-related issues responsive to the Peak Oil Task Force recommendation in 2008¹².

¹¹ The Role of the Low Carbon Fuel Standard. <http://gov.ca.gov/index.php?/fact-sheet/5155/>. For other reports on LCFS, please visit: http://www.energy.ca.gov/low_carbon_fuel_standard/.

¹² Peak Oil Task Force. <http://www.portlandonline.com/osd/index.cfm?c=ecije>.

International

Asia Pacific

Both Japan and Singapore actively promote the use of alternative fuels. In Singapore, since 2003, the National Environment Agency has sponsored a Green Vehicle Rebate scheme, which reimburses consumers for purchasing vehicles that use energy sources other than petroleum and diesel, such as compressed natural gas (CNG), electricity, methanol, hydrogen, or solar energy.¹³ In Japan, the Green Tax program (mentioned previously) provides both tax incentives and penalties to encourage the use of alternative fuels and hybrid vehicles.

European Union

The UK Energy Savings Trust has recently established “Alternative Fueling Station” grants to help organizations install refueling or recharging stations for alternative, cleaner fuels.

¹³ Japan Ministry of Economy, Trade, and Industry; Energy Conservation and Renewable Energy Department. 6 December 2006. “Energy Efficiency and Conservation Policy in Japan.”

Appendix VIII - Draft Legislative Proposal and Budget for the 2008 Legislature

TWENTY-THIRD LEGISLATURE
REGULAR SESSION OF 2008
STATE OF HAWAII

_.B. NO.

A BILL FOR AN ACT

MAKING AN APPROPRIATION FOR A STUDY ON ENERGY EFFICIENT
TRANSPORTATION STRATEGIES.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII

SECTION 1. Act 254, 2007 Session Laws of Hawaii appropriated funds to the Hawaii energy policy forum at the University of Hawaii at Manoa to conduct a study on energy-efficient transportation strategies in conjunction with the department of business, economic development, and tourism. Act 254 required that the study include the following criteria in its analysis:

- (1) Developing tangible goals, objectives, desired outcomes, and actions to implement an energy-efficient transportation strategy;
- (2) Developing implementation benchmarks for measuring outcomes of energy-efficient transportation strategies; and
- (3) A cost-benefit analysis of each energy-efficient transportation strategy.

The Hawaii energy policy forum thus convened a working group in August 2007 to develop the parameters of the study. The energy-efficiency transportation strategies working group is a diverse group whose members include representatives from the state department of transportation, the department of business, economic development and tourism, each county's transportation division, labor organizations, transportation planning organizations, petroleum refineries, and from the automobile dealers and manufacturers industries.

The working group developed a vision of "an energy efficient transportation system that integrates effective community input and planning (demand), and offers people of all ages and walks of life flexible options (supply) including mass transit, private and public vehicles and self-powered conveyance in alternative combinations that provide mobility at acceptable cost".

The working group also established three goals on which the study should focus: (1) Increase choices for modes of travel, multiple modes of travel permit greater public choice for efficient and flexible trip planning; (2) Increase fuel efficiency of vehicle population, incentives to improve the fuel efficiency of Hawaii's vehicle population will influence consumer behavior in favor of buying and using more efficient vehicles; and (3) Diversify energy sources available to meet

transportation energy needs, greater diversity of energy sources provides additional flexibility in meeting the energy needs of the transportation sector.

The working group also agreed upon the following:

- (1) In order to agree upon specific transportation energy efficiency benchmarks and goals for the State of Hawaii as required in Act 254, additional review of relevant data is needed. The data that should be considered by the working group includes transportation demand and fuel consumption data from the State, county, and city jurisdictions and their respective government agency sources.
- (2) The State will be more likely to meet these goals and make progress toward meeting long-term benchmarks if current information on transportation system energy efficiency is regularly available and changes in energy efficiency of the transportation sector are regularly monitored; and
- (3) In order to regularly monitor progress toward meeting the benchmarks that would be recommended, a statewide transportation sector energy-efficiency information and monitoring system should be established and maintained.

The purpose of this Act is to appropriate funds for the Hawaii energy policy forum to continue its work with the energy-efficiency transportation strategies working group created by Act 254, 2007 Session Laws of Hawaii, to develop energy-efficient transportation strategies.

SECTION 2. (a) The Hawaii energy policy forum at the University of Hawaii at Manoa shall conduct a study on energy-efficient transportation strategies in conjunction with the department of business, economic development, and tourism, the department of transportation, and members of the energy-

efficient transportation strategies working group. The working group is comprised of representatives from the following:

- (1) Each of the counties;
- (2) Office of Hawaiian Affairs
- (3) research corporation of the University of Hawaii;
- (4) Hawaii Natural Energy Institute;
- (5) Oahu Metropolitan Planning Organization;
- (6) Honolulu Clean Cities;
- (7) Hawaii Center for Advanced Transportation Technologies;
- (8) Hawaii State AFL-CIO;
- (9) Hawaii Auto Dealers Association;
- (10) Hawaii Transportation Association;
- (11) Alliance of Automobile Manufacturers;
- (12) Energy Industries;
- (13) Tesoro Hawaii Corporation; and
- (14) Hawaiian Electric Company.

(b) The energy-efficient transportation strategies study under subsection (a) shall include but not be limited to:

- (1) Determining data available among government and business sources;
- (2) Identifying gaps in critical data; and
- (3) Developing a reasonable and workable plan for developing, using, and maintaining a statewide

transportation energy information and monitoring system.

(c) The social sciences public policy center shall continue to engage and integrate the energy-efficiency transportation strategies working group comprised of Hawaii's business, government, labor, and community leaders into the study on energy-efficient transportation strategies.

(d) The department of business, economic development, and tourism, the department of transportation and the members of the working group listed under Section 2(a) shall consult with and otherwise assist the social sciences public policy center at the University of Hawaii at Manoa on the energy-efficient transportation strategies study.

(e) The Hawaii energy policy forum shall submit a report on its findings and recommendations to the legislature no later than twenty days prior to the convening of the regular session of 2009.

SECTION 3. There is appropriated out of the general revenues of the State of Hawaii the sum of \$175,000 or so much thereof as may be necessary for fiscal year 2007-2008 to collect and analyze data and to develop a plan for developing, using, and maintaining a statewide transportation energy information and monitoring system.

The sum appropriated shall be expended by the University of Hawaii social sciences public policy center for the purpose of this Act.

SECTION 4. This Act shall take effect on July 1, 2008.

INTRODUCED BY:

2008 Budget

	Person - Mo.	Salary	Fringe	Total	cost share
A1. Senior Personnel					
Sharon Miyashiro	1.5	14,250	5,452	0	19,702
Susan Char	9.00	45,000	17,217	62,217	
Subtotal A1		59,250	22,669	62,217	
A2. Other Personnel					
Junior faculty (overload + CBO)				15,000	
Grad Student				17,000	
Admin Support				10,000	
Subtotal A2		0	0	42,000	
Total Salary, Wages, and Fringe		59,250	22,669	104,217	
C. Travel				15,000	
1. Domestic				15,000	
2. Foreign				0	
D. Permanent Equipment				0	
E. Materials and Supplies				5,000	
Postage & Supplies				5,000	
F. Subcontracts				40,000	
Consultant				40,000	
H. Other Direct Costs				10,000	
Stakeholder Meetings				10,000	
				0	
				0	

I. Total Direct Costs (A-G)	174,217
J. Indirect Costs (0%)	0
K. Total Direct and Indirect Costs	174,217

Appendix IX – Legislative Initiatives from Other Jurisdictions

State Transportation Energy Efficiency Incentive Fund

- Modeled after federal Congestion Mitigation and Air Quality Improvement Program (CMAQ)¹⁴ and California Carl Moyer programs
 - Model projects and programs are funded according to the following criteria:
 - Programs and projects result in documented shift in mode of travel from more energy intensive to less energy intensive mode.
 - Programs and projects result in documented trip reduction through telecommuting, electronic commerce, etc.
 - Programs and projects result in replacement of less fuel efficient fleet vehicles to more fuel efficient fleet vehicles
 - Programs and projects result in documented reduction in size of existing fleets through carsharing and other fleet economizing measures.
 - Incentive programs and projects result in documented replacement of less fuel-efficient vehicles with more fuel-efficient vehicles by individual households and consumers.
 - Other programs and projects to be determined by the Department to be consistent with the vision and goals stated in this legislation.

Gold Star Program (“Top Runner”)

Based on Japan’s “Top Runner” program, the program would set future fuel efficiency standards higher than the performance of the best product among those vehicles that are currently commercially available in the same product category.¹⁵ Manufacturers who have not achieved the standards by the set deadline are given technical advice, publicly announced, and/or fined.

¹⁴ Intermodal Surface Transportation Efficiency Act of 1991. <http://ntl.bts.gov/DOCS/ste.html>. For guidance documents, visit: United States Department of Transportation, Federal Highway Administration “Congestion Mitigation and Air Quality Improvement Program.” <http://www.fhwa.dot.gov/environment/cmaqpgs/>.

¹⁵ Japan Ministry of Economy, Trade, and Industry; Energy Conservation and Renewable Energy Department. 6 December 2006. “Energy Efficiency and Conservation Policy in Japan.”