

**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM**

LINDA LINGLE
GOVERNOR
THEODORE E. LIU
DIRECTOR
MARK K. ANDERSON
DEPUTY DIRECTOR

No. 1 Capitol District Building, 250 South Hotel Street, 5th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804
Web site: www.hawaii.gov/dbedt

Telephone: (808) 586-2355
Fax: (808) 586-2377

Statement of
THEODORE E. LIU
Director
Department of Business, Economic Development, and Tourism
before the
**HOUSE COMMITTEE ON
ECONOMIC DEVELOPMENT AND BUSINESS CONCERNS**
Friday, April 4, 2008
9:30 a.m.
State Capitol, Conference Room 325

in consideration of
HCR193-HR162
**REQUESTING STATE DEPARTMENTS AND AGENCIES TO VOLUNTARILY
UTILIZE BIODEGRADABLE OR RECYCLABLE NON-POLY-STYRENE FOAM
FOOD SERVICE-WARE.**

Chair Yamashita, Vice Chair Wakai, and Members of the Committee.

Department of Business, Economic Development, and Tourism (DBEDT) agrees that since the environmental and health-related impacts of expanded polystyrene foam can pose a significant threat to the marine environment and wildlife in and around the State of Hawaii, State departments and agencies should voluntarily promote the procurement and use of more environmentally friendly, biodegradable, compostable, or recyclable alternatives to expanded polystyrene foam. While DBEDT supports the general intent of the resolution, explicitly limiting contracting requirements for disposable food service-ware to non-polystyrene foam, biodegradable, compostable, or recyclable expanded polystyrene foam alternative products as called for in the resolution, may be contradicting the State of Hawaii's procurement policy and system. Educating the agencies on the environmental benefits and availability of the products could be accomplished. However, creating incentives for outside vendors who do business with

the State to utilize environmentally friendly, biodegradable or recyclable food service-ware products may be a more challenging and not feasible at this point in time. Therefore, we respectfully request that vendors be encouraged to educate the agencies that purchase disposable service-ware products and test the products themselves to assess the performance and environmental and economic benefits as well as the availability and supply of these products in the State of Hawaii.

Thank you for the opportunity to offer these comments.



MEMORANDUM – April 2, 2008

To: The Honorable Kyle T. Yamashita, Chair
House Economic Development & Business Concerns Committee

From: Tim Shestek
Director, State Affairs & Grassroots
American Chemistry Council

Re: **HCR 193 and HR 162 - OPPOSE**

The American Chemistry Council (ACC) must respectfully oppose HCR 193 and HR 162, resolutions requesting state departments and agencies to voluntarily utilize biodegradable or recyclable non-polystyrene foam food service ware. The following information is meant to clarify several misstatements and inaccuracies contained in the WHEREAS sections of both resolutions.

Unfortunately, these resolutions fail to consider the resource conserving benefits of polystyrene foam products and make the false assumption that replacement products are somehow manufactured in a vacuum without the use of any raw materials, energy, or water, or fuel to deliver the product. Polystyrene foam foodservice products, when compared to other food service containers, are very efficient in terms of minimizing air emissions, energy used in the manufacturing process and in reducing the amount of waterborne waste generated during the manufacturing process.

STYRENE IN CONTEXT

Polystyrene is made from the chemical styrene. Modern man has known about styrene for centuries. A naturally occurring substance, styrene is present in many foods and beverages, including wheat, beef, strawberries, peanuts and coffee beans. Also found in the spice cinnamon, its chemical structure is similar to cinnamic aldehyde, the chemical component that elicits cinnamon's flavor. It is naturally present to flavor foods, and is used as a flavoring additive to such food as baked goods, frozen dairy products, soft candy, and gelatins and puddings, with permission from the U.S. Food and Drug Administration (FDA). Styrene is not harmful in the very small amounts we sometimes may encounter in air or food.

Most people are exposed to styrene every day in tiny amounts that may be present in the air, or that occur in food (see 1st paragraph.) These generally are trace amounts, which were difficult to detect until recent technological advances occurred. Some people confuse styrene, which is a liquid, with polystyrene, which is a solid plastic made from polymerized styrene. Styrene and polystyrene are fundamentally different. Polystyrene is inert and has no smell of styrene. As a

polymerized form of styrene, polystyrene is not chemically the same substance as styrene. Also, any residual styrene present in a polystyrene foodservice container is so small that it does not cause negative health effects.

CLARIFYING MIS-STATEMENTS ABOUT POLYSTYRENE

From a health perspective, there is absolutely no “contamination” of food in polystyrene packaging. Polystyrene foodservice disposables meet stringent U.S. Food and Drug Administration (FDA) standards for use in food-contact packaging and have been in use for over 50 years with a proven safety record. FDA, which regulates plastics used in food contact applications, the National Academy of Sciences (NAS), and other highly regarded federal authorities rely not on opinions, but on the weight of validated scientific evidence. The weight of scientific evidence overwhelmingly supports the safe use of polystyrene in food contact applications.

After an exhaustive assessment of styrene’s possible health and environmental effects, an important decision was made in 1994 by the government agencies Health Canada and Environment Canada. These agencies concluded that styrene is "non-toxic" for regulatory purposes. **Health Canada found that styrene "does not constitute a danger to human life and health" and "does not constitute a danger to the environment on which human life depends."**

Moreover, according to the Harvard Center for Risk Analysis (HCRA) report "A Comprehensive Evaluation of the Potential Health Risks Associated with Occupational and Environmental Exposure to Styrene," which was published in the Journal of Toxicology and Environmental Health, Volume 5, Number 1-2 (Part B: Critical Reviews), January-June 2002, **"The margins of exposure estimated for oral exposure to styrene from food, whether naturally occurring or as a result of migration from food packaging or other food contact items, indicate that risks are quite low and of no concern. The comparison dose used to derive the margins of exposure was obtained from a study using newborn rats, so those margins of exposure are expected to be protective of children as well as adults."**

ENVIRONMENTAL BENEFITS OF POLYSTYRENE

All foodservice products – regardless of the material from which they are made – require the use of various natural resources (i.e. energy, water, etc.) across their product life cycle in the manufacturing process. A 2006 Life Cycle Inventory (LCI) study by Franklin and Associates showed that polystyrene foam foodservice products, when compared to other food service containers, are very efficient in terms of minimizing air emissions, energy used in the manufacturing process and in reducing the amount of waterborne waste generated during the manufacturing process. Calls to ban one material type without examining or considering the life-cycle impacts of polystyrene manufacturing and makes the false assumption that those products that would replace polystyrene are somehow manufactured in a vacuum without the use of any raw materials, energy, or water, or fuel to deliver the product.

ECONOMIC BENEFITS OF POLYSTYRENE PRODUCTS

Polystyrene foodservice products are generally more economical to use than other disposable foodservice products and reusable food service items. The wholesale price of single-use polystyrene foodservice products is often approximately two to three times less than other single-

use containers, and four to five times less than a comparable reusable foodservice item when the costs of equipment, labor, water, electricity, and detergent costs are included. This allows schools, hospitals and other institutions to make better use of their limited budgets.

FACTS ABOUT DEGRADABLE CONTAINERS & MARINE DEBRIS

When considering policies to reduce litter and marine debris, some have suggested that “biobased” or “degradable containers” may be an answer. *However, bio-based containers only “degrade” in a controlled composting environment – essentially a large industrial facility where temperatures can exceed 140 degrees for several days. These containers do not degrade if littered along side the road, deposited into a trash can, nor will they degrade if they make their way into a storm drain or other water body.*

Furthermore, some recyclers and end-users of recycled plastic material have raised concerns over how bio-based containers pose a real and significant threat to the current plastics recycling stream.

An article written by Elizabeth Royte and published in the Smithsonian Magazine (August, 2006) raised many of these environmental issues associated with using biodegradable packaging. Royte writes “But PLA has considerable drawbacks that haven’t been publicized...it turns out that there’s no free lunch after all, regardless of what its container is made of...” Royte also writes “the cultivation of corn uses more nitrogen fertilizer, more herbicides and more insecticides than any other U.S. crop; those practices contribute to soil erosion and water pollution when nitrogen runs off fields into streams and rivers.” **One must acknowledge the environmental trade-offs associated with the use of any packaging material and whether a mandate to use one particular type of container or product will have the desired result of reducing litter and/or marine debris.**

WORKING TOGETHER TO ADDRESS MARINE DEBRIS AND LITTER

Though we oppose bans on polystyrene food service products, ACC believes that all stakeholders, including our industry, grocers, retailers, and government agencies can and should play an active role in reducing litter and marine debris. Specific activities that can be undertaken include:

- Continue and expand litter cleanups organized by organizations like Keep America Beautiful.
- Increase the availability of trash, recycling and cigarette butt receptacles at public places, schools, and commercial establishments statewide.
- Promote environmental education and outreach on the impacts of marine debris and litter prevention.
- Direct all state agencies to implement a coordinated and robust statewide anti-litter campaign.

All of these activities must include the active participation of industry stakeholders, packaging manufacturers, retailers, restaurants, and the public sector if we are to be successful in reducing litter and marine debris.

Thank you for the opportunity to provide these comments. Should you have any questions or comments please contact our in-state representatives Red Morris and John Radcliffe at 808-531-4551 or you may contact me at 916-448-2581.



HAWAII FOOD INDUSTRY ASSOCIATION

820 Millilani St., Suite 810, Honolulu, Hawaii 96813
Phone (808) 533-1292 - Fax (808) 599-2606 - Email LISHawaii@aol.com
Direct (808) 479-7966



April 4, 2008

To: House Committee on Economic Development & Business Concerns
Rep. Kyle T. Yamashita, Chair / Rep. Glenn Wakai, Vice Chair

By: Lauren Zirbel, Government Relations / Richard C. Botti, President

Re: HCR 193 and HR 162 RELATING TO STATE DEPARTMENTS AND AGENCIES TO VOLUNTARILY UTILIZE BIODEGRADABLE OR RECYCLABLE NON-POLYSTYRENE FOAM FOOD SERVICE-WARE

Chairs & Committee Members:

This resolution ignores the fact that despite burdening state departments and agencies with a 30% increase in cost, these biodegradable products, under our current system of waste disposal will meet the same end as polystyrene. Since both incinerate and neither will biodegrade in modern landfills which are designed to protect the environment from the liquids and gases produced by reducing the exposure of garbage to air, water and sunlight – conditions essential for degradation. Without an investment in commercial composting facilities, this increased cost for government agencies and consumers will result in negligible environmental benefits.

HFIA supported a measure for the DOE to implement a small scale composting program for wet food waste at schools because firstly, we believe that the large amount of compostable material currently going to the landfill to be mummified and take up precious real estate is a tragedy; secondly, we recognize that biodegradable products will become a more commercially viable solution if there is actually a place for them to be easily separated and taken to, which is simply not the case right now. The DOE testified in opposition to this bill based on lack of funds. Is it realistic for the legislature to expect them to pay 30% more for biodegradable option to be put into a waste disposal system which disallows them to biodegrade if they are not incinerated at HPower?

Most of the trash debris seen on beaches is the result of haphazard disposal of waste from all over the world and on the seas, which are brought here thanks to currents. A ban or a resolution condemning one product will not change this, as many products do not biodegrade which is why waste management is such a huge and important issue.

Large scale recycling of polystyrene is feasible in Honolulu. However, there is little chance of any venture providing the necessary investment to build such a facility with threats of outright banning. Hundreds of Kalihi jobs may be eliminated if the Legislature continues to threaten this locally produced, favorably priced, FDA approved product.

The market is creating it's own commercially viable and money generating solutions to the

problem, solutions which don't put people out of work or force the market to act in premature ways, but instead generate jobs and profit for government and private enterprise. These solutions are especially promising given the need for energy sustainability, especially in Hawaii, and given the rising cost of fuel. Technology is now available and widely used in Japan to turn plastics into high grade Diesel oil. A resolution in the legislature this year is looking to investigate how such a system can be implemented in Hawaii. After talking to the Marketing Director of TSphere Energy, which recently opened an office in Honolulu, she told me that the over 70 plants are operational in Japan and the technology is encouraged through government partnerships with private industry. The average break even point is 8-10 years depending on how small or large the unit is, at which point the plant becomes a source of revenue. This program should be looked at as an investment in our future, which will generate funds and energy sustainability.

We have major concerns with the inaccuracies or wrong assumptions with each WHEREAS in this resolution.

To highlight a few:

The first WHEREAS is not an accurate statement of fact. While polystyrene is a petroleum by-product, it is also a renewable resource. It is currently being recycled here in Kalihi on a small scale, and is becoming a major recyclable resource in schools on the Mainland. In fact, more than 57 million pounds of packaging were recycled in 2004. Also, in accordance with EPA priorities, polystyrene manufacturers have placed precedence on source reduction and reuse as well as recycling, locally here in Hawaii as well as nationally. Looking at this from a resource conservation prospective source reduction is much more effective than recycling. According to Franklin Associates, in order for polystyrene packaging and disposables' recycling efforts to save as much energy as the 408 million pounds source reduced in 1997, a recycling rate of 51% would have to be achieved. On a side note, we invite all of the legislators to come visit KYD's recycling facility in Kalihi to see how they source reduce and streamlining production by reusing leftover production materials.

The third WHEREAS ignores the fact that there are very real concerns associated with the manufacturing of biodegradable packaging, as the 2006 Smithsonian Magazine put forth, stating that biodegradable alternatives have considerable drawbacks that haven't been publicized... such as that the cultivation of corn uses more nitrogen fertilizer, more herbicides and more insecticides than any other U.S. crop; those practices contribute to soil erosion and water pollution when nitrogen runs off fields into streams and rivers. One must acknowledge the environmental trade-offs associated with the use of any packaging material and whether a mandate to use one particular type of container or product will have the desired result of reducing litter and/or marine debris.

All foodservice products – regardless of the material from which they are made – require the use of various natural resources i.e. energy, water, etc. A 2006 Life Cycle Inventory study by Franklin and Associates showed that polystyrene when compared to other food service containers, is very efficient in terms of minimizing air emissions and energy used in the manufacturing process and in reducing the amount of waterborne waste generated during the manufacturing process.

This resolution makes the false assumption that products that would replace polystyrene are somehow manufactured in a vacuum without the use of any raw materials, energy, or water, or fuel to deliver the product.

This is especially important considering many bio-degradable options are produced in China where labor, quality and environmental standards are known to be well below the labor, quality and environmental standards practiced in plants which produce polystyrene here on the island of Oahu. Not to mention the carbon footprint shipping supplies from China creates when we have a more economically viable product produced right here in Hawaii providing a 100 jobs during a time of economic upheaval.

The fourth WHEREAS is likewise misleading and ignores the fact that landfills are sealed to prevent leakage. Liquid from the landfill, called Leachate, is pumped out and processed at Waianae Wastewater Plant, a facility that has been the recipient of the national Platinum award by the association of metropolitan sewage agencies, for five consecutive years of perfect compliance with the requirements of its federal pollution permit.

The fifth WHEREAS which refers to black irritating smoke, is misleading and is referring to an open burn, which has been illegal in the United States for some time now. The technology used at HPOWER is anything but an open burn, in fact their emission standards are well below what is required and thanks to advanced technologies; such as, continuous emissions monitoring systems, electrostatic precipitators and air scrubbers, incinerator generated power is translated into clear emissions.

The sixth WHEREAS, is an unsubstantiated claim. If you don't trust the FDA, Health Canada and Environment Canada also concluded after extensive studies that styrene is "non-toxic" and that styrene "does not constitute a danger to human life and health" and "does not constitute a danger to the environment on which human life depends."

For all of these reasons we would ask that this resolution either be re-worded or held. Thank you so much for your time.



SUSTAINABLE
ISLAND PRODUCTS

Testimony before the:

Committee on Economic Development and Business Concerns (EDB)
Chair Yamashita, Vice Chair Wakai and members of the committee
April 4th, 2008 9:30am, conference room 325

Re: HCR 193 Requesting State government to use biodegradable alternatives to Styrofoam

Aloha Chair Yamashita, Vice-Chair Wakai and Members of the Committee:

As the founder of Sustainable Island Products, a distribution company that exclusively sells biodegradable food & drink to-go supplies in Hawaii, I submit that there is a prevailing shift in the market for single use disposables.

Serving Hawaii County and other islands, and with a growth rate of over 20% per quarter, we have a customer base that is committed to transitioning away from products that are toxic to humans, creatures and the environment.

The public not only wants safer products (as seen by their adoption of them) but is willing to invest extra capital to support the cause of Sustainability for our islands.

Single use disposables are used more per capita in the State of Hawaii than in any other state. The import or manufacture of these products will inevitably continue.

Hawaii has a HUGE opportunity to lead

- Hawaii's promotion of biodegradable alternatives to petroleum products can:
 - **Inspire local manufacturers** to convert to annually renewable materials to create these products IN HAWAII.
 - **Inspire local agricultural interests** to grow the crops necessary to make these products thereby employing local populations and keeping financial flows IN HAWAII.
 - Save on SIGNIFICANT **health related costs** incurred by the import, manufacture, use & disposal of petroleum based products currently in use.
 - Place Hawaii in the lead as a **progressive government** who's not only talking 2030 & 2050 but actually taking real steps towards those goals.
- **The State saves money in waste handling by:**
 - Decreased & cleaner emissions from incineration of plant-based vs. petroleum-based trash
 - No ground water contamination & less roadside litter by use of biodegradables
 - Opportunity to turn **this "waste" stream into soil at composting facilities.**
 - Long-term cost savings by use of annually renewable based products vs. petroleum.

I am writing in strong support of HCR193 , Requesting State government to use biodegradable alternatives to Styrofoam

Sincerely,
Jesse Law , President

HOUSE COMMITTEE ON ECONOMIC DEVELOPMENT & BUSINESS CONCERNS

Friday, April 4, 2008 - 9:30 A.M. – State Capitol Room 325

Re: Strong support for HCR193/HR162 – REQUESTING STATE DEPARTMENTS AND AGENCIES TO VOLUNTARILY UTILIZE BIODEGRADABLE OR RECYCLABLE NON-POLYSTYRENE FOAM FOOD SERVICE-WARE.

Aloha Chair Yamashita, Vice-Chair Wakai, and Members of the Committee:

My name is George White, a second year-law student at the University of Hawaii, and creator of stopstyrofoamhawaii.org. I am writing in strong support of HCR193/HR162, which urges our State Government to set the example and voluntarily utilize styrofoam alternative products in their procurement, contracting and day-to-day operations.

The resolutions before you represents the product of months of research, discussion and debate, and the beginning of a conversation here in Hawaii, that has been happening in municipalities and states across the Country, and around World, for the last two decades.

The harmful effects of one-time use styrofoam products is incontrovertible stretching from the petroleum it takes to produce it, the health issues it raises for the consumer, to the detrimental impact and threat it poses to Hawaii's environment and ecosystems.

There are readily available and affordable alternatives to styrofoam food-service products and businesses and vendors around the State are already engaged in efforts to be more environmentally conscious, offering Hawaii's consumers eco-friendly alternatives to styrofoam.

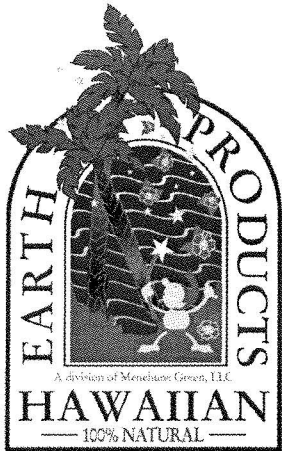
Our State Government is the largest employer and consumer in the State. Its actions and policies can make dramatic shifts on whether we achieve a sustainable and more eco-conscious future. I commend this august body for taking the initiative and making the effort to set the example in encouraging its own departments and agencies to voluntarily utilize styrofoam alternative products.

HCR193/HR162 is definitely a step in the right direction towards a more environmentally conscious and sustainable Hawaii. These Resolutions are directly in line with one of the immediate recommendations of the 2050 Sustainability Report, which encourages all government agencies to adopt sustainable practices, including buying biodegradable products.

As a supplement to this testimony, I will provide to this Committee at the hearing, a petition signed by over 700 individuals, in a span of just 4 days, urging this Legislature to support and adopt the Resolutions before you today. With efforts such as those urged in this resolution, and by working together, we can make a huge difference for our Hawaii, for today, and for all of our tomorrows. Thank you for this opportunity to provide testimony and for your support of this important issue.

Mahalo nui loa –

George White



www.menehunemagichawaii.com

A division of Menehune Green LLC

Attn. Committee on Economic Development and Business Concerns(EDB) Chair Yamashita, Vice Chair Wakai and members of the committee

April 4th, 2008 9:30am, Conference Room 325

RE: HCR 193

Hawaiian Earth Products, the State's largest commercial composting facility, is in support of the proposed resolutions HCR 193.

There are biodegradable and compostable alternatives to both plastic bags and styrofoam, which if used, would support composting of foodwaste throughout the islands. These alternatives could significantly improve the efficiency of a composting facility if implemented correctly and proper guidelines are followed. The crucial element is education and enforceable guidelines to eliminate cross contamination of non-biodegradeable materials while sorted and collected.

Hawaiian Earth Products currently processes Greenwaste, Clean Woodwaste (Untreated-Unpainted) and Pre-Consumer Fruit and Vegetable waste. While this has significantly reduced landfill volumes, the shift to include Post-Consumer Foodwaste and compostable food service packaging would have the greatest impact on landfill diversion. In addition, these wastes have a high nitrogen component, an excellent amendment to our existing compost and for agricultural use of finished organic compost. Greenwaste and Organics recycling is crucial to meeting the states goals, as it has the largest impact on reducing material going to the landfill, is the most cost effective, and offers farmers reduced operational costs and improved crops. Compost further reduces water consumption, petroleum-based fertilizers, and herbicides. This will reduce run-off and ocean pollution protecting the environment in a sustainable practice preserving natural resources.

In the composting operation, our biggest concern is contaminants, which do not biodegrade. Plastics such as bags and styrofoam are such contaminants – difficult and expensive to remove. Please support these resolutions as a positive direction in meeting the recycling goals of Hawaii and preserving sustainable resources.

If you require additional information please contact me at 808-682-5895.

Mahalo,

Ron Westmoreland
Menehune Green LLC
Dba Hawaiian Earth Products
91-400 Malakole Street
Kapolei, HI 96707
Office 808-682-5895
Fax 808-682-0762

91-400 Malakole St. * Kapolei, HI 96707 * Phone 682-5895 Fax 682-0762

wakai1-Karen

From: Shannon Wood [swood@hoku.com]
Sent: Thursday, April 03, 2008 1:07 PM
To: EDBtestimony
Subject: HCR193/HR162 - Styrofoam

SUBMITTED BY:

Windward Ahupua`a Alliance

P.O. Box 6366

Kane`ohe, HI 96744

Phone: 808/247-6366; Cellular: 808/223-4481 or 224-4496

E-Mail: info@waa-hawaii.org

Website: <http://www.waa-hawaii.org>

COMMITTEE ON ECONOMIC DEVELOPMENT AND BUSINESS CONCERS

Rep. Kyle Yamashita, Chair

Rep. Glenn Wakai, Vice Chair

PUBLIC HEARING

9:30 am

Friday, April 4, 2008

Conference Room 325

**HCR193/HCR162 - REQUESTING STATE DEPARTMENTS AND AGENCIES TO
VOLUNTARILY UTILIZE BIODEGRADABLE OR RECYCLABLE NON-POLYSTYRENE
FOAM FOOD SERVICEWARE**

OPPOSE

My name is Shannon Wood, *Interim President* of the *Windward Ahupua`a Alliance*, a **501c3** Hawai`i non-profit corporation, which was established in July, 2002. *WAA's* organizational foci includes waste-to-energy, the **Four Rs**, landfills, shipping trash, illegal dumping, and other solid waste management issues.

We oppose **HCR193/HCR162** because the answer is not a soft resolution which does nothing to reduce solid waste. Supporting it a waste of time as well as human energy & effort.

However, by passing **HCR193/HR162**, it certainly makes it look as if the *Legislature* is doing something.

I want to emphasize that *WAA* strongly supports legislation which **requires all state agencies - especially educational institutions, prisons and health facilities** to do away with polystyrene (styrofoam) and other non-biodegradable containers.

We must **REDUCE** as well as **RE-USE, RECYCLE** and **RECLAIM** - and that will only happen

when these products are no longer available.

Unfortunately, both the *House* and the *Senate* deferred further action on bills mandating a ban prior to *Crossover*.

There are other options such as paper plates and cardboard trays or even "real" plates. When I was a student, our meals were served that way. I can even remember real plates as recently as graduate school in the 1980s.

In closing, if you feel compelled to pass out **HCR193/HCR162**, please print the resolutions on recycled paper so more trees don't have to die needlessly.

Mahalo for the opportunity to testify in opposition.

The Windward Ahupua`a Alliance works to educate & inform residents, visitors, businesses, policymakers, and the media about using Smart Growth planning principles which promote sustainability. These include: Designing long-term waste management systems; improving illegal dumping/derelict vehicle legislation & enforcement; developing & implementing comprehensive curbside recycling programs; providing research & support on public access issues; establishing both state & county-level "legacy lands" funds to support affordable workforce housing initiatives and critical land purchases to protect against inappropriate development; creating alternative energy systems to reduce Hawai`i's dependency on fossil fuels & to mitigate the impacts of global warming; and, setting long-term watershed protection policies based upon ahupua`a concepts & principles.