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\* E I S N E W S L E T T E R \*  
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June 28, 1974  
II-28

*Persons interested in obtaining additional information should contact this Office at 550 Halekauwila Street, Tani Office Building, Room 301, Honolulu, Hawaii, 96813 or call 548-6915.*

ANTICIPATED EIS

Kaneohe Civic Center (site selection), Maintenance of Harbors (dredging), Inter-Island Ferry System, Kohakohau Dam (South Kohala), Solid Waste Bales, Oyster Propagation in Kaneohe Bay.

EIS NEWSLETTER  
(II-28)

OFFICE OF ENVIRONMENTAL QUALITY CONTROL

REQUEST FOR DRAFT ENVIRONMENTAL IMPACT  
STATEMENTS AND NEGATIVE DECLARATIONS

Sent to: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contact: \_\_\_\_\_ Phone No. \_\_\_\_\_

Request a copy of the following:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

Date : \_\_\_\_\_

Return to: OFFICE OF ENVIRONMENTAL QUALITY CONTROL  
Office of the Governor  
550 Halekauwila Street, Room 301  
Honolulu, Hawaii 96813

EIS REGISTER

The following Environmental Impact Statements are always available for public review at these depositories: Office of Environmental Quality Control; The State Main Library; State Archives; DPED Library; Bishop Museum Library; Legislative Reference Bureau Library; Kaimuki, Kaneohe, Pearl City, Hilo, Wailuku and the Lihue Regional Libraries. In addition to the libraries listed above, distribution of the statements are frequently extended to include other nearby libraries (indicated with the project description).

This Office hopes that this notice regarding the availability of impact statements will result in more participation by the public. Due to very limited requests, Negative Declarations will remain to be available only at this Office.

FINAL ENVIRONMENTAL STATEMENTS

<u>Project Name, Location, Responsible Agency</u>	<u>Description</u>	<u>Suspense date For</u> <u>Comments</u>
1. Puukapu Flood Control Project, Waimea, Hawaii - Department of Land and Natural Resources	Previously reported in EIS Newsletter (To be distributed)	Currently Being Processed by this Office
2. Eleele-Hanapepe Wastewater Management System, Eleele and Hanapepe, Kauai - Department of Public Works, County of Kauai	Previously reported in EIS Newsletter (Also available at Waimea and Hanapepe Libraries.)	Currently Being Processed by this Office
3. Houselet Subdivision, North Kona, Hawaii - Department of Land and Natural Resources	Previously reported in EIS Newsletter (Also available at the Kailua-Kona Library.)	Currently Being Processed by this Office
4. Sand Island Parkway and Utilities Master Plan, Honolulu, Oahu - Department of Land and Natural Resources	The proposed Sand Island Parkway will commence at the existing bridge abutment extend south-easterly parallel to the west shoreline for approximately .5 miles, then continue easterly for about 1.0 miles, then merge with the existing road at the Sand Island Fishery Station. In addition to the Parkway, the project will	Currently Being Processed Office

also include a utilities master plan to provide support facilities, to satisfy the needs of the projected land uses on Sand Island. The construction of the parkway and necessary utilities to support the development of Sand Island will occur in three (3) increments due to limited available funds. (To be distributed)

The proposed Kapiolani Interchange on-ramp will be located approximately 700 feet east of the existing King Street on-ramp on Interstate Route H-1. The two (2) laned facility will total approximately 1200 feet (0.23 miles). The proposed on-ramp will start from Kapiolani Blvd, in the vicinity of Waiaka Road and will terminate at the existing stub of Interstate Route H-1 approximately 700 feet east of the existing King Street on-ramp. (To be distributed)

- 5. Interstate Route H-1, Kapiolani Interchange on-ramp, Honolulu, Oahu- Department of Transportation & U.S. Federal Highway Administration

DRAFT ENVIRONMENTAL IMPACT STATEMENTS

- 1. Mahele Hospital Sewerage System, Kapaa, Kauai - Department of Accounting & General Services July 8  
Previously reported in EIS Newsletter. (Also available at the Kapaa Library)
- 2. Corporation Yard, Honolulu, Oahu- Building Department, City & County of Honolulu July 8  
Previously reported in EIS Newsletter. (Also available at the Kalihi-Palama, & the Aiea Libraries)
- 3. Fire and Police Training Facilities, Waipahu, Oahu- Building Department, City & County of Honolulu July 8  
Previously reported in EIS Newsletter. (Also available at the Waipahu Library)
- 4. New Baseball Diamond and Appurtenances for University of Hawaii's Manoa Campus, Honolulu, Oahu - Department of Accounting & General Services July 12  
Previously reported in EIS Newsletter. (Also available at the Manoa & McCully-Moiliili Libraries)

July 19

5. Master Plan of Kona Flood Control Project, Kona, Hawaii- Department of Public Works, County of Hawaii

The absence of adequate flood control measures in the Holualoa area has caused flood damages almost annually and has deterred the safe and orderly growth of the area. In an attempt to alleviate or eliminate these flood hazard problems, the following system is proposed:  
1. Acquisition of about 26 acres of land for right-of-way along the general alignment of the existing streams  
2. Deepening of the existing shallow streams to increase the run-off carrying capacities.  
3. The construction of wider bridges or culverts at all highway crossings to carry increased flows.  
4. The construction of highway shoulder ditches, small culverts, and diversion systems to eliminate uncontrolled sheet flows across highways and private properties.  
5. Construction of a siltation and debris basin.  
(Also available at Kailua-Kona, Kealahou, Hohealoa, and Hilo Campus Libraries)

July 20

6. New Piilani Highway Project, Route 31/37, Kihei to Makana Road/Kula Highway, Maui - Department of Transportation & Federal Highways Administration

Plans for the New Piilani Highway proposes a 12.6 mile highway for the Kihei-Makana area on the island of Maui. The new highway alignment is extended between the Mokuale Highway-Kihei Road intersection and the Makana Road merger with Kula Highway. The proposed facility will be an undivided, two lane highway which represents the final segment of a paved, all points connector highway system linking Kahului, Puunene, Pukalani, Kula, Waipalakua, Wailea and Kihei.  
(Also available at Lahaina, Kahului, and Makawaa Libraries)

July 29

7. Zone of Mixing for the Hawaii-Kai Sewer Outfall, Hawaii-Kai, Oahu- Department of Health

The purpose of the zone of mixing study was to establish a zone of mixing area within class A waters which should be adequate to handle the future effluent discharge from the Hawaii-Kai Sewer Outfall while still meeting the health related class A water quality standards set forth by the State of Hawaii. Results of the study indicate that the present method of handling the wastewater for Hawaii Kai is the most desirable and will inflict only minimal negative effects on the surrounding environment.

8. Realignment & Widening of Olohena Road Kapaa Homesteads, Kawaihau, Kauai- County of Kauai

The proposed project involves the construction of a July 29 new segment of road for a length of 2,300 lineal feet to replace a section of Olohena Road at Twin Reservoirs that does not conform to County road standards. The project will occur on parcels identified by the tax map key as: Zone 4, section 3, plat 03, parcels 2 and 3. The project site is on lands owned by the Lihue Plantation company, Ltd., and Amfac subsidiary. (Also available at the Hanapepe, Kapaa and Waimea Libraries)

NEGATIVE DECLARATIONS

1. Submarine Cable Landing at Makaha Beach Park, Makaha, Oahu- Department of Land & Natural Resources

Under this project, the Hawaiian Telephone Company proposes to land two (2) ocean cables at the Makaha Beach Park on Oahu. The two cables will connect the existing Hawaiian Telephone Company cable terminal station at Makaha to San Luis Obispo, California and to the Territory of Guam. The Hawaiian Telephone Company presently has four (4) existing trans-pacific submarine cables in the Makaha Beach Park which were placed in January, 1964.

2. Palani Road Improvement (Between Kuakini Highway & Kailua-Kawaihae Highway), Kailua-Kona, Hawaii- Department of Public Works, County of Hawaii

The proposed road improvement project is located in Kailua-Kona and is the main north access to Kailua Village. The length of the improvement is approximately 1,800 lineal feet and will involve work with curbs, gutters, sidewalks, street light, underground utilities, landscaping, drainage system and traffic signs and markings.

3. Kamehameha Bridge Over Kahaluu Stream, Kahaluu, Oahu- Department of Public Works, City & County of Honolulu

The proposed bridge over Kahaluu Stream is a part of the proposed Kahaluu Watershed Project. Design calls for construction of a two-lane highway which shall be located within the existing right-of-way width. A temporary detour will provide one lane of traffic in each direction. The bridge structure is seen as a means to fulfill the present and future transportation and development requirements. Construction will be limited to normal working hours.

4. Wailuku State Office Building, Renovation of 1st, 2nd, & 3rd Floors, Wailuku, Maui -

The proposed work consists of interior relocation of partitions, cf plumbing, air conditioning and lightening on the first, second & third floors of the existing Wailuku

Department of Accounting & General Services

State Office Building.

5. Pauoa Elementary School  
Special Classrooms, Phase I  
Demolition of Buildings "F",  
"G" and "H", Honolulu, Oahu -  
Department of Accounting &  
General Services

The proposed project involves the demolition of an existing library (F), classroom (G), and storage (H) buildings (+ 3,600 s.f.). The buildings (of wood construction) are badly deteriorated and are a potential fire hazard. They are presently unoccupied due to a decrease in enrollment.

6. Kamamalu Building, Altef-  
nation of First Floor,  
Phase I & II, Honolulu,  
Oahu - Department of Account-  
ing & General Services

Phase I - Relocating a portion of the existing cashier's counter & installing metal partitions to provide security for two cashiers & valuables being stored in an existing vault.

Phase II - Relocating the remaining counters.

7. Kamamalu Building, Renovation  
of Basement for Commissioner  
of Motor Vehicle Insurance,  
Honolulu, Oahu - Department  
of Accounting & General  
Services

The basement space is presently partitioned for the Fire Marshall and Insurance Division of the Department of Regulatory Agencies. The proposed project involves the repartitioning of the existing space to also accommodate the new Commission of Motor Vehicle Insurance and its staff.

8. Development in Hana, Maui -  
General Lease #5-4378, Hana,  
Maui - Department of Land

The proposed project involves the exploratory clearing of a parcel of land in Hana, identified as TMK: 1-3-04:12. It is anticipated that approximately 100 acres will be cultivated for the production of papayas.

9. Hanapepe Locker Room Building,  
Hanapepe, Kauai - Department  
of Public Works, County of  
Kauai

This project involves the construction of a locker room building within the Hanapepe Stadium Complex. The proposed one story structure is approximately 2944 square feet with locker, toilet and shower facilities for two teams.

10. Makawao Water Project,  
Phase VI, Makawao, Maui -  
Department of Water Supply,  
County of Maui

The proposed project is Phase VI of the Makawao Water project originally initiated by the County of Maui in 1965. In this phase, water will be tapped from the Waioaloa Ditch and pumped Mauka to supplement the existing water supply systems for the Makawao, Pukalani and Kula areas. Initially, there will be two 2 mgd pumps and one 3 mgd pumps to convey the water into the main 24 inch waterline. The general alignment of the transmission line will follow road-right-of

way.

11. Kepaniwai Well Development, Wailuku, Maui - Department of Land & Natural Resources

A test well was recently drilled at Kepaniwai to determine the availability of high level ground water. The results of the pump tests indicated that ground water in the amount of one million gallons per day could safely be tapped from the well. The proposed project involves the development of the existing well. Pumps and controls will be installed, also a structure to house the electrical starter, **controls** and measuring devices, electrical works, and other appurtenant facilities.

12. Lahaina Courthouse, Renovation of Second Floor for District Court, Lahaina, Maui - Department of Accounting & General Services

In order to increase the floor area of the existing courtroom, two offices will be removed and its personnel relocated to the General Office area of the District Court. Other work items include: removal of a wall partition, painting and construction of an office counter.

13. Kahuku High and Elementary School, Demolition of Building "K" and Carport, DAGS

The proposed project involves the demolition of two (+ 2,700 s.f.) wooden structures from the project site. The area at the demolished building will be top-soiled and grassed and the site of the demolished carport will be coral filled and oiled.

14. 150 Finished Lots in Lualualei Valley, Waianae, Oahu - Hawaii Housing Authority

This proposed project involves the purchase of the completed lots with intention to build 150 single family residential units. Approximately two-thirds will be three bedroom, and the other third to be four bedroom. The utilities, roadways, sewer lines, and grading of the lots have been completed and accepted by the City & County of Honolulu.

Rationale - the situation is for the purchase of completed lots which has been accepted by the C & C of Honolulu.

15. Kona Gardens, Kona, Hawaii - Hawaii Housing Authority

The Authority is considering making an interim loan to Dynasty Builders and Developers to construct 128 two-bedroom units ~~is~~ being considered. The Authority would loan up to \$3.5 million to the developers and repayment would be made through the sale of the units. The Authority has committed itself to the purchase of 64 of the units. The property is located on Kuakini Highway about 0.6 miles from Keauhou, North Kona.

Rationale - the situation is for an interim loan, and purchase of 64 units which will be sold to low income families.

ENERGY FROM WASTE  
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A Presentation to the Workshop on  
the Energy Crisis and the Environment  
By Richard E. Marland  
May 23, 1974  
Surfrider Hotel, Honolulu, Hawaii

Mr. Chairman, ladies and gentlemen, thank you for this opportunity to discuss the potential benefits to our energy problems which can accrue from an improved system of recycling our society's waste products.

To most environmentalists, the shortage of petroleum which came last fall, was not a rude awakening, but rather, a public recognition of what many thoughtful conservationists have known for sometime.

Some talk of new sources of oil: Alaska, Colorado shale, sea bottom drilling, more recovery from old wells. Others say the need is for more refinery capacity. We also hear that the shortage is an artificial one, brought about by a monopolistic industry to increase their profits.

Regardless of the merits of any of these arguments, one fact does stand out clearly. The United States must modify its energy policies. Sources of energy, other than petroleum, must be developed and utilized. Dependence on petroleum and natural gas must be replaced as rapidly as possible. The new energy policy should diversify the base to include many sources, including coal, nuclear power, geothermal, tidal, solar, wind and wastes.

This morning I would like to emphasize the opportunities available to us to capture wasted energy. For wasted energy is a pollution to our environment. It is also an extravagance we can no longer afford.

There is a saying -- admittedly a cliché -- but none the less true. It goes, "Pollution is a wasted resource, a resource in the wrong place, the wrong amount, the wrong time and possibly in the wrong form, but still, it is a resource."

The energy crisis is helping us prove the truthfulness of that saying. This is reflected in many ways, and each one is based on energy.

A first category for consideration comes under the rubric of efficiency. Professor Branch ably covered this subject in his presentation yesterday. My emphasis on this will be brief, but hopefully will open up new areas of potential benefit.

We all have heard of the inefficiency of steam generation of electricity. Much of the waste is in the form of hot water. Most of this water is now being discharged into our environment, a stream, a lake or an ocean. The result is thermal pollution -- a condition which changes that environment so that desirable plant and animal species cannot survive.

This is an expensive pollution -- not only in the harm done to our environment, but also because this heat has been bought and paid for by utility rate-payers. This double cost is getting higher every day.



The technique of recycling this heat may be difficult to establish. A few cases exist where the water has been used for cold weather irrigation, or for heating buildings. Most is utterly wasted as a pollutant. Electric utilities fail to recognize the resource qualities of that which they discard. Pollution control authorities propose to abate or diffuse the waste heat with engineering devices. True enough, these devices require energy either for construction or operation. But just how high does the cost of this energy have to get before our scientists and engineers begin to deal with it as a resource?

An even more wasteful, yet more difficult problem for recyclers is the energy waste associated with transportation. Again, efficiency is poor, the losses are in the form of heat and other air pollutants. Heat from vehicles help account for the 6 to 10 degree higher temperatures found in our large cities as compared with nearby suburban areas.

Recycling this heat energy into a useful purpose is less feasible than techniques which prevent the problem. Here the practices of conservation are a better approach: the use of more efficient vehicles, including mass transit.

There are other examples where wasted energy, mostly in the form of heat, tend to prove our adage -- that it is both a pollution and a resource -- but an unused resource.

That pollutant which is most widely recognized as an energy resource is solid waste -- those residues from societal activity which we collect, then dump on land, at sea or we burn or bury. The potential energy in these wastes is now becoming widely recognized -- thanks to the combined effects of a petroleum energy shortage and the efforts of environmentalists -- some of them from the ranks of the old Public Health Service. The direct conversion of solid waste to useful energy is not new, but its broad application -- as in a public utility is now being seen as technically and economically feasible. This, of course, is the recycling of paper and metals whereby the energy demand is only a small fraction of that which is needed to produce new materials from virgin ores and trees. These considerable energy benefits can be optimized only when we consider the entire solid waste stream.

The major emphasis will be placed on the "indirect" recycling of wastes -- whereby the recovery is only energy, not the original material.

Our best examples lie in our agricultural wastes. Nationally these wastes amount to more than 2½ billion tons per year as compared with only 360 million tons of combined residential, commercial, institutional and industrial collections. (Less than 10% of the solid waste is from these latter sources.) The heat (or energy) value of any waste is a function of its composition. The sugar industry in Hawaii has been recovering heat energy from bagasse for years. This material is that portion of the cane stalk which remains following the extraction of the juice. It is a fine, fibrous material, not unlike sawdust in physical appearance. Its make up is:

- 48.5% moisture
  - 2.5% ash
  - 2.5% sucrose
  - 47.0% fiber
- with 96.8% of dryweight in form of carbon, oxygen and hydrogen.

Bagasse contains 4066 BTU per pound, on a wet bases. When burned in reasonably efficient boilers, one ton of this bagasse has the heat equivalent of just over one barrel of bunker C fuel oil. If boiler efficiencies were maximized throughout the industry, the potential heat energy from Hawaii's bagasse would not only provide self-sufficiency for the sugar mills themselves, but would provide up to an estimated 35% surplus in the form of electrical power. The State produces some 3,000,000 tons of bagasse per year. The energy equivalent of just over 3 million barrels of oil.

The Hilo Coast Processing Company at Pepeekeo on the Big Island is installing a new system of milling which will maximize the recycling of its plant wastes. They will not only burn all their bagasse, they will also burn their field trash (the leafy waste portion of the plant). They are seeking to augment these fuels by including the community solid wastes, from which non-combustibles have been removed. The capability to burn fuel oil will be maintained so that electric generating functions can continue during times when the mill is not operating. If all of Hawaii's leafy trash were recycled, it would amount to more than 6,000,000 tons per year. At 3870 BTU per pound, the energy equivalent of this is estimated at between 4 and 5 million barrels of oil per year.

The power generated at this facility will in the order of 20 megawatts, twelve of which will be sold to the public utility. The balance will run the entire milling operation.

That system at Pepeekeo is the most advanced example of agricultural waste recycling for energy that we have in Hawaii. As the economic costs of fuel oil continue to rise, other sugar mills may find similar economic benefits through more efficient recycling of their wastes.

The Oahu Sugar Company, an Amfac subsidiary is studying the feasibility of generating electric power from a combination of its sugar wastes and the municipal collections from the City and County of Honolulu.

The analysis of Honolulu's municipal solid wastes shows the following: combustible wastes (paper, cardboard, yard trimming, rags and wood) about 74%, non-combustible wastes (metals, glass, ceramics, ash and dirt) about 20%, and garbage about 6%. The energy equivalent of the combustible portion is not known, but a reasonable estimate is that it would approximate 3,600 BTU/lb. On this basis it has nearly the same energy value as mixed sugar bagasse and trash.

Complete utilization of Honolulu's 1,500 daily tons of combustible solid wastes would have the energy equivalent of nearly 1,500 barrels of fuel oil. Boiler efficiency would affect this figure a great deal.

These energy benefits are significant, and we are delighted that they are being examined by industry, the utilities and by government.

If Honolulu moves in this direction, it can benefit from the experiences of Nashville, Tennessee and St. Louis, Missouri, where municipal wastes are already being incinerated in systems where the heat energy is recovered. These cities find that efficient recovery will provide about 5% of the electric energy demand of the city -- and this is only municipally-collected waste source -- some 10% of the Nation's total solid wastes.

But, back to agricultural wastes, where Hawaii's potential for energy recovery is even greater.

In addition to Hawaii's sugar wastes and their potential total energy equivalent of 8,000,000 barrels of oil per year, we have significant amounts of field waste from Oahu's pineapple industry. These field wastes are now being burned. There are some 250,000 tons of this per year, only 50,000 of which is being recycled. These 50,000 tons are converted to animal feed -- another valuable form of energy conversion. The remaining 200,000 tons are burned in the fields with concomitant air pollution as one result. Although I do not have data showing the BTU content of these wastes, they can be conservatively estimated to be the same as sugar cane trash, about 3800 BTU per pound.

Recovery of this energy by direct burning as in the case of sugar mills may not be an efficient process because of the cost of hauling the wastes. But there are other ways of recovering this energy. The U.S. Bureau of Mines has developed a process for converting waste cellulose to oil. By use of this process, if pineapple field wastes have the same conversion rate as other, similar products, there is a potential yield of 2 barrels of oil per ton of waste to be obtained from this process. This could theoretically provide some 400,000 barrels of oil (low sulfur) whose worth today in the world market is about \$5.5 million (\$14.00 per barrel). The total state's pineapple wastes would add significantly to this figure.

Pineapple waste is not the only agricultural product which would allow the economic production of oil. Animal wastes, primarily those in our stockyards are even a much larger source, and use the same process. Even the sewage sludge from municipal sewage treatment plants can be used as a source of such oil.

Another exciting use of agricultural waste is being planned at Kohala, Big Island. In this case the Kohala Task Force, chaired by Lt. Governor George Ariyoshi has developed a cluster of diversified agricultural operations to stimulate the economic base of that area -- possibly to replace the Kohala Sugar Company which may go out of production.

One of the activities will be the use of animal wastes for the production of methane -- and its use to produce electric power.

Another fuel, methanol - or wood alcohol - can be produced from plant or animal wastes. Conversion to methanol can be made with 70% efficiency.

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May 23, 1974

Although, as you can see, Hawaii is moving to recover the energy now discarded in our solid wastes, we still have a long way to go. An estimated 13 million tons per year of agricultural wastes are generated in Hawaii. Nine million of these are from sugar, two and one-half million are from animals, with pineapple and minor crops making up the balance.

If efficient conversion were made from all these wastes, a conservative estimate would show that we could produce the energy equivalent of about 15 million barrels of oil per year. The current useage of fuel by the Hawaiian Electric Company for all of Oahu is about 7.5 million barrels a year.

Is it conceivable that technology can show us how to recover this energy in an efficient manner, and at a cost which competes with that of hauling petroleum half way around the world, refining and pumping it to the utilities?

The economics are a major factor, and at this moment are seen as a deterrent. It is an illustration of the old law of time and place utility.

But as we calculate the cost of converting these wastes to energy, we must include that cost which may be easily overlooked. That is the cost of disposing of the wastes by current practices plus the cost to the environment of these wastes as a form of pollution.

Currently, we estimate that the cost of incinerating one ton of Honolulu's municipal solid waste is nearly \$10.00. The operating costs of landfill operations here are about \$3.00 per ton. This latter figure does not include the cost of land, nor capital costs of equipment, and thereby is an unrealistically low figure.

The cost of current disposal methods for field wastes in pineapple and sugar must include the cost of burning (plus air pollution damage) and the cost of the extra nitrogen which must be added to the soil to help decompose the residual.

If full evaluation of all the costs and benefits were made of the energy extraction from our state's solid wastes, we might find a more favorable economic basis than now predicted. The steadily diminishing supplies of crude oil -- and its increasing cost -- are giving the needed urgency for such an evaluation. As the oil costs go up, our State's economic alternatives look better.

Finally, I hope we now see more clearly the truth to our adage, that "Pollution is a resource, in the wrong place, the wrong amount, the wrong time, and possibly in the wrong form -- but none-the-less-it is a resource." We now realize that one of these pollutions - solid waste - can help avert our energy crisis and still provide a double benefit to our environment.

Further, it is in keeping with the American way and American industry to tackle such new challenges and succeed. Private industry should be the leader in this work -- not government. In industry, waste is the enemy of profit. An aggressive industry, in competition can make a profit from these wastes.

Thank you.