Pauline Fiene
PO. Box 627, Kihei, HI 96753

April 21, 2012

To: State Land Use Commission
PO Box 2359
Honolulu, HI 96804
Attention: Dan Davidson

Re: Comments regarding the DEIS for Proposed Olowalu Town Master Plan, TMK (2) 4-8-003: 84, 98-118, and 124 Olowalu, Maui Hawaii

Aloha Land Use Commission Members and Staff:

I am writing to provide comments on the DEIS for the Olowalu Town Project. I am a diver and biologist with over 8,000 dives in Maui waters since 1987. I mainly study a group of shell-less mollusks called Opisthobranchs, but I also have broad interests in coral reef ecology.

My comments are in regard to Appendix D - The Assessment of Marine Water Chemistry and Biotic Community Structure in the Vicinity of the Olowalu Town Master Plan.

The study surveyors spent just 4 days surveying an area of over 450 acres. The study correctly characterizes the sediment problem on the Olowalu reefs, but fails to correctly assess the species composition, caliber and uniqueness of the reef itself. This is understandable given the extreme minimum of time spent there surveying. As a result, this study downplays this reef's diversity and one-of-kind status, its value and importance to Maui, and its place in the entire state.

1. The study notes that the offshore reef at Olowalu is unusual in that it is an actively accreting aggregate reef. This is true, but it fails to say just how unusual. I've attached a map made by NOAA's National Centers for Coastal Ocean Science in 2007.

The dark red areas with purple lines are living aggregate coral reef structure. This is not coral colonies growing on lava; this is high structure, coral skeleton that has been growing for hundreds of years, 5-40 feet thick. Coral reef provides many more places for reef fish and other animals to live than do isolated colonies of coral growing on rock. It is a complicated network of channels that is home to millions of other animals.

The first thing that jumps out from this map is just how little living aggregate coral reef we have on Maui, compared to how much coastline there is. I don't think

most people realize what a precious and limited natural feature this is. The second striking thing is just how close the Olowalu reef is to shore and to human impacts.

As you can see on this map, extensive areas containing living aggregate coral reef are limited to only **THREE** areas on the whole island. There are some narrow bands along the west side but they are not extensive. Of these 3, only **TWO**. Kihei and Olowalu, have over 50-90% live coral coverage and only **ONE** of those grows very close to the shoreline. Kihei's reef is offshore in 50-80 feet of water, a relatively safe distance from land pollutants, but also inaccessible to anyone without a boat/kayak. The single extensive aggregate coral reef on the whole island with over 50-90% live coral coverage that grows in accessible water is the Olowalu reef. That makes it unique, not unusual.

2. The study found a total of 12 species of corals, but there are actually twice that many. Expert marine invertebrate biologist, Cory Pittman, who has studied the Olowalu reef for the past 34 years, has recorded 24 species of corals (personal communication). This area is home to several species of rare corals and it also has the highest diversity of *Porites* species and growth forms in the entire island chain, with three particularly rare species (*P. duerdeni, P. solida, P. cf. annae*). Dr. Zac Forsman of the Hawaii Institute of Marine Biology told me that "one of the most amazing things about the site is that Cory was able to find nearly every species of rare coral in Hawaii at this one site!"

3. The study noted the coral micro-atolls on the inner reef flat, but it failed to correctly identify the 3 species (not one) of corals growing as micro-atolls, and there is no mention of this area's unique status in the state of Hawaii. There are a few individual micro-atolls in Kaneohe Bay, some in NWHI lagoons, and some off Lahaina, but Olowalu has by far the best-developed, most extensive micro-atoll area in all the islands. To me, this area is literally an outdoor museum of rare coral species and growth forms.

4. The study notes some large ("up to several meters") *Porites lobata* colonies offshore but it didn't note that one colony is over 23 feet (7 meters) in diameter and is estimated by Cory Pittman to be around 500 years old. There are numerous other century colonies here as well. Dr. Zac Forsman of HIMB said to me "I've seen large *Porites* colonies, but there are some ancient giants there."

5. The study makes mention of "numerous small black-tip reef sharks" but doesn't say that this area has been a nursery area for them for decades and that it is one of the few in the entire state. Pregnant females know to come specifically to this area generation after generation to give birth due to its calm, shallow, protected water.

6. Although the surveyors spent only 4 days onsite it was obvious enough to them to note several times throughout their report that sediment was the major

factor affecting this reef.

> "In the case of Olowalu, the predominant controlling factor appears to be effects from sediment, originating both from terrestrial runoff and resuspension of naturally occurring marine sediment (note that the lack of wave energy may also result in less removal of sediment from coral surfaces than in areas of higher water velocity). Sediment is the main stressor in this area due to limited water circulation."

If this area were designated urban and if construction were allowed to occur upslope, does anyone believe the proposed project "will not have any significant negative effects" on this this reef as claimed? Especially with the "limited water circulation" referenced in the study.

It is stated that grading and drainage improvements will meet or exceed County standards, but County standards haven't proven effective at preventing degradation of reefs in the past. We all know from the many developments built in our lifetime that major deposits of soil have occurred no matter what "mitigations" the developers plan. Chocolate brown water has poured into the ocean during construction of the Grand Wailea, Four Seasons, Makena Landing properties, the Maui Ocean Center, North Kihei, the new Kapalua Hotel, etc. And these developments were on relatively level ground! Once in the ocean this dirt doesn't just go away. It gets resuspended every time there is even small surf in the area, blocking sunlight critical to coral growth. There is no doubt in my mind that the same would occur with a project the size of Olowalu, especially considering the much greater slope of the land here.

In addition, the small amount of low-lying, relatively level land at Olowalu, which in the past has functioned as a partial run-off filtration area during storm events, is, in the proposed master plan, covered with residences and impervious surfaces – as well as a wastewater treatment facility?

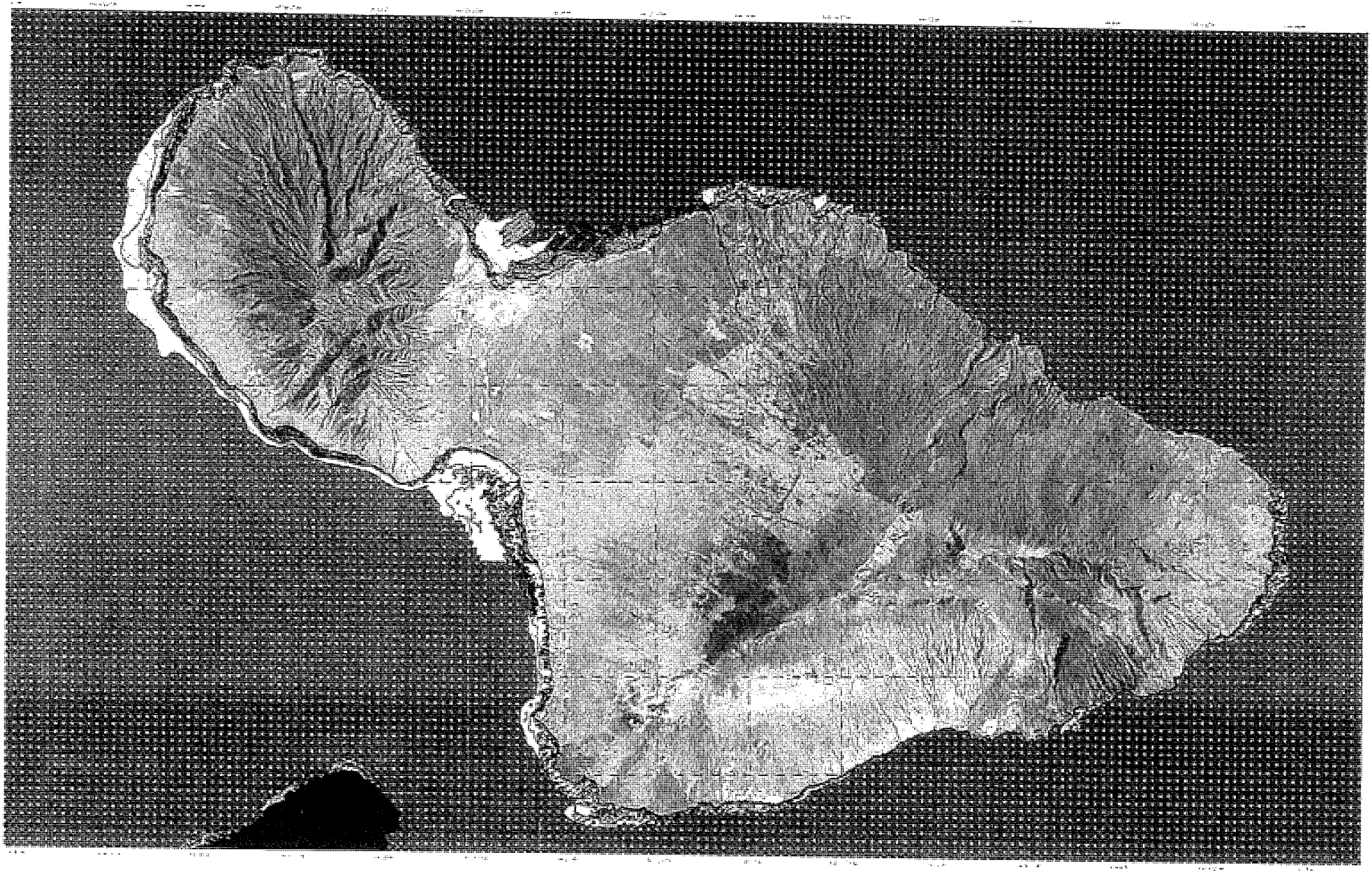
Why would we take this chance? There is simply no compelling reason for a major development here. It doesn't even fit most of the criteria for urban designation, being that it is so isolated from services and other developments. I am baffled why urbanization is even being considered.

We don't get to decide where our special natural places are on Maui. Nature decides that. All we can decide is where our development is going to be. And if there were a reef on the whole island that cries out for respite and exemption from urban development above it, it would be Olowalu. It has developed over centuries and there is literally nothing to replace it.

Mahalo for this opportunity to comment.

Pauline Fiene

Main 8 Hawaiian Islands (Maui) : Shallow-water Benthic Habitats



10 0 15 km

Map prepared by the National Ocean Service, Biogeography Branch,
in cooperation with Analytical Laboratories of Hawaii, 2007
For more information: http://ccma.nos.noaa.gov/ecosystems/coralreef/main8hi_mapping.html

Olowalu Town
BY MAUI, FOR MAUI
2035 MAIN STREET WAILUKU HAWAI'I 96793
OFFICE: 808-249-2224 / FAX: 249-2333

October 26, 2015

Pauline Fiene
P.O. Box 627
Kihei, Hawaii 96753

SUBJECT: Draft Environmental Impact Statement for the Proposed Olowalu Town Master Plan at Olowalu, Hawaii

Dear Ms. Fiene:

We thank you for your letter of April 21, 2012 providing comments on the Draft Environmental Impact Statement (EIS) for the Olowalu Town Master Plan (OTMP). We offer the following information in response to the comments noted in your letter.

Comment:

My comments are in regard to Appendix D - The Assessment of Marine Water Chemistry and Biotic Community Structure in the Vicinity of the Olowalu Town Master Plan.

The study surveyors spent just 4 days surveying an area of over 450 acres. The study correctly characterizes the sediment problem on the Olowalu reefs, but fails to correctly assess the species composition, caliber and uniqueness of the reef itself. This is understandable given the extreme minimum of time spent there surveying. As a result, this study downplays this reef's diversity and one-of-kind status, its value and importance to Maui, and its place in the entire state.

1. The study notes that the offshore reef at Olowalu is unusual in that it is an actively accreting aggregate reef. This is true, but it fails to say just how unusual. I've attached a map made by NOAA's National Centers for Coastal Ocean Science in 2007.

The dark red areas with purple lines are living aggregate coral reef structure. This is not coral colonies growing on lava; this is high structure, coral skeleton that has been

growing for hundreds of years, 5-40 feet thick. Coral reef provides many more places for reef fish and other animals to live than do isolated colonies of coral growing on rock. It is a complicated network of channels that is home to millions of other animals.

The first thing that jumps out from this map is just how little living aggregate coral reef we have on Maui, compared to how much coastline there is. I don't think most people realize what a precious and limited natural feature this is. The second striking thing is just how close the Olowalu reef is to shore and to human impacts.

As you can see on this map, extensive areas containing living aggregate coral reef are limited to only THREE areas on the whole island. There are some narrow bands along the west side but they are not extensive. Of these 3, only TWO. Kihei and Olowalu, have over 50-90% live coral coverage and only ONE of those grows very close to the shoreline. Kihei's reef is offshore in 50-80 feet of water, a relatively safe distance from land pollutants, but also inaccessible to anyone without a boat/kayak. The single extensive aggregate coral reef on the whole island with over 50-90% live coral coverage that grows in accessible water is the Olowalu reef. That makes it unique, not unusual.

Response:

We note that the study surveyors spent four (4) days to survey over 450 acres utilizing methods employed by the National Oceanic and Atmospheric Administration (NOAA) to delineate habitats by visually interpreting geo-referenced imagery, such as aerial photographs, satellite imagery, and side scan sonar. This methodology is deemed to be an appropriate scientific method to survey such a large area. The four (4) survey days were used to define the overall structure and function of the area in order to predict the effects of the proposed changes in land use.

We appreciate the additional information that you have provided from the NOAA relating to the uniqueness of the Olowalu reef. As noted, this "uniqueness" is recognized and speaks to the need to protect the reef as a valuable natural resource. The EIS has also been revised to include a section on marine resources and additional information from the Shallow-Water Benthic Habitats on the Main Hawaiian Islands 2007 study. See **Exhibit "1"**.

Comment:

2. The study found a total of 12 species of corals, but there are actually twice that many. Expert marine invertebrate biologist, Cory Pittman, who has studied the Olowalu reef for the past 34 years, has recorded 24 species of corals (personal communication). This area is home to several species of rare corals and it also has the highest diversity of Porites species and growth forms in the entire island chain, with three particularly rare species (P. duerdeni, P. solida, P. cf. annae). Dr. Zac Forsman of the Hawaii Institute of

Marine Biology told me that "one of the most amazing things about the site is that Cory was able to find nearly every species of rare coral in Hawaii at this one site!"

Response:

Thank you for the information on coral species in the Olowalu reef. We agree that the Olowalu reef is an important marine resource that requires protection. As noted in the Draft EIS, sedimentation from stormwater runoff currently impacts the reef. The OTMP proposes to incorporate Low Impact Development (LID) measures that mimic the way nature processes water, which is advocated by the West Maui Ridge to Reef Project and the Maui Nui Marine Resources Council. (Appendix B-1 in the Draft EIS.)

Comment:

3. The study noted the coral micro-atolls on the inner reef flat, but it failed to correctly identify the 3 species (not one) of corals growing as micro-atolls, and there is no mention of this area's unique status in the state of Hawaii. There are a few individual micro-atolls in Kaneohe Bay, some in NWHI lagoons, and some off Lahaina, but Olowalu has by far the best-developed, most extensive micro-atoll area in all the islands. To me, this area is literally an outdoor museum of rare coral species and growth forms.

Response:

As noted previously, we agree that the Olowalu reef, including the micro-atolls, is an important marine resource. Also, as stated, the study was to define the overall structure and function of the area in order to predict the effects of the proposed changes in land use for the Draft EIS. It is not an extensive research project, as conducted by the marine experts cited. Such extensive research is also relied upon by our consultant. Mitigation measures intended to protect marine resources are addressed in the EIS document.

Comment:

4. The study notes some large ("up to several meters") Porites lobata colonies offshore but it didn't note that one colony is over 23 feet (7 meters) in diameter and is estimated by Cory Pittman to be around 500 years old. There are numerous other century colonies here as well. Dr. Zac Forsman of HIMB said to me "I've seen large Porites colonies, but there are some ancient giants there."

Response:

We recognize that there may be other colonies in the area, including the colony noted in your comments. As an important marine resource, the OTMP proposes to implement LID measures to reduce the impacts on the Olowalu reef from sedimentation from stormwater runoff.

Comment:

5. The study makes mention of "numerous small black-tip reef sharks" but doesn't say that this area has been a nursery area for them for decades and that it is one of the few in the entire state. Pregnant females know to come specifically to this area generation after generation to give birth due to its calm, shallow, protected water.

Response:

Thank you for the information on the black-tip reef sharks in Olowalu and their use of the area as a nursery. The information has been included in the EIS. Refer to **Exhibit "1"**.

Comment:

6. Although the surveyors spent only 4 days onsite it was obvious enough to them to note several times throughout their report that sediment was the major factor affecting this reef.

"In the case of Olowalu, the predominant controlling factor appears to be effects from sediment, originating both from terrestrial runoff and resuspension of naturally occurring marine sediment (note that the lack of wave energy may also result in less removal of sediment from coral surfaces than in areas of higher water velocity). Sediment is the main stressor in this area due to limited water circulation."

If this area were designated urban and if construction were allowed to occur upslope, does anyone believe the proposed project "will not have any significant negative effects" on this this reef as claimed? Especially with the "limited water circulation" referenced in the study.

It is stated that grading and drainage improvements will meet or exceed County standards, but County standards haven't proven effective at preventing degradation of reefs in the past. We all know from the many developments built in our lifetime that major deposits of soil have occurred no matter what "mitigations" the developers plan. Chocolate brown water has poured into the ocean during construction of the Grand Wailea, Four Seasons, Makena Landing properties, the Maui Ocean Center, North

Kihei, the new Kapalua Hotel, etc. And these developments were on relatively level ground! Once in the ocean this dirt doesn't just go away. It gets resuspended every time there is even small surf in the area, blocking sunlight critical to coral growth. There is no doubt in my mind that the same would occur with a project the size of Olowalu, especially considering the much greater slope of the land here.

Response:

An Assessment of Marine Water Chemistry and Biotic Community Structure Report prepared by Marine Research Consultants, Inc. was included in the Draft EIS as Appendix "D". Effects on the marine communities is mainly from the deposition of sediments entering the ocean primarily from Olowalu Stream. Sediment loads of streamwater into the ocean occurs during high intensity rainfall or storm events. The Hawaiian land management system of ahupuaa which manages resources from the mountains to the ocean was reviewed in developing the Stormwater Quality Enhancement Study. LID or nontraditional measures are proposed to improve the method in which stormwater runoff is handled. Natural solutions such as green space, bio-retention gardens, vegetated swales, etc. are proposed in conjunction with traditional retention systems.

Recognizing the sensitivity of the existing marine communities, the Applicants sought stormwater solutions utilized successfully in other environmentally sensitive areas within the United States. The Stormwater Quality Enhancement Study in "Appendix B-1" of the Draft EIS is a compilation of these measures which are available for use at Olowalu.

In the context of the foregoing comprehensive stormwater management program, adverse stormwater quality impacts are anticipated to be minimized.

Comment:

7. In addition, the small amount of low-lying, relatively level land at Olowalu, which in the past has functioned as a partial run-off filtration area during storm events, is, in the proposed master plan, covered with residences and impervious surfaces – as well as a wastewater treatment facility?

Why would we take this chance? There is simply no compelling reason for a major development here. It doesn't even fit most of the criteria for urban designation, being that it is so isolated from services and other developments. I am baffled why urbanization is even being considered.

We don't get to decide where our special natural places are on Maui. Nature decides that. All we can decide is where our development is going to be. And if there were a reef on the whole island that cries out for respite and exemption from urban development

above it, it would be Olowalu. It has developed over centuries and there is literally nothing to replace it.

Response:

As represented in Figure 4 of the Draft EIS, roughly 50 percent of the low-lying area makai of Honoapiilani Highway is proposed to remain as part of the Olowalu Cultural Reserve (OCR) along Olowalu Stream, and a system of open space and parks. The proposed wastewater reclamation facility is proposed to be located mauka of the highway at a higher elevation and outside of the potential tsunami and flood inundation zones.

The OTMP is an opportunity to create a sustainable community in which liveable neighborhoods co-exists with nature. The OTMP will include a network of transportation options (i.e. pedestrian, bicycle and transit), agriculture, residential and employment opportunities, archaeological and cultural protection associated with the OCR and provisions for public services, recreation and open space. As a comprehensively developed community, with innovative technologies and Best Management Practices, OTMP provides an ideal opportunity to meet quality of life needs for Maui residents.

Thank you again for your comments. A copy of your letter and this response letter will be included in the Final EIS. Should you wish to receive a copy of the Final EIS document, or portion thereof, please submit your request in writing to Munekiyo Hiraga, 305 High Street, Suite 104, Wailuku, Hawaii 96793 (Attention: Colleen Suyama).

Very truly yours,

William Frampton
Olowalu Town, LLC

David Ward
Olowalu Town, LLC

WF:DW
Enclosures
cc: Peter Martin, Olowalu Ekolu, LLC
Steven Dollar, Marine Research Consultants, Inc.
Jennifer Lim, Carlsmith Ball, LLP
Colleen Suyama, Munekiyo Hiraga

developed within the 150 ft. shoreline setback for the project. Work within the shoreline setback will be limited to landscaping and public access to and along the shoreline. As such, structures will be set back from the shoreline at a minimum of 150 ft., with a substantial portion of areas envisioned for town centers located several hundred feet beyond the 150 ft. setback. Refer to **Figure 4**. In Alternative 2, no development will occur makai of Honoapi`ilani Highway. The existing uses will be maintained. Refer to **Figure 5**.

In general, designs for outdoor lighting will consider the need to respect the night sky and its impacts to wildlife.

With the implementation of the aforementioned mitigation measures, ~~the proposed project is~~Alternatives 1 and 2 are not expected to have a significant ~~negative~~adverse impact on botanical ~~or~~, fauna, or aquatic resources in this part of West Maui.

The OCR is currently restoring taro fields (lo`i) in its restoration of native Hawaiian plants and agricultural practices which will be enhanced by the Master Plan for Alternatives 1 and 2. Portions of the land adjacent to Olowalu Stream are included in the OCR. A goal of the OCR is to eventually restore stream flow to the ocean. Once stream flow to the ocean is restored, a riparian restoration program for Olowalu Stream can be developed with the approval of the OCR.

8. Marine Resources

a. Existing Conditions

NOAA's National Centers for Coastal Ocean Science initiated a coral reef research program in 1999 to map, assess, inventory, and monitor U.S. coral reef ecosystems. The Shallow-Water Benthic Habitats on the Main Hawaiian Islands 2007 study mapped the eight (8) main Hawaiian Islands, including Maui. The study found that on the Island of Maui the coral reef habitat can generally be characterized as described in **Table 20**:

Table 20. Coral Reef Structure for Maui Island

Coral Reef Structure Type	Major and Detailed Habitat Area (km²)
Pavement	32.529
Spur and Groove	4.201
Individual Patch Reef	0.127
Aggregated Patch Reef	0.462
Aggregated Reef	18.360
Rock/Boulder	46.169
Pavement with Sand Channels	0.595
Rubble	0.110
Scattered Coral/Rock	0.148
Total Coral Reef and Hard Bottom	**102.702**
Sand	98.996
Mud	0.657
Pavement with Sand Channels	**99.623**
Rubble	0.200
Scattered Coral/Rock	**0.200**
Total Coral Reef and Hard Bottom	**202.525**
Source: NOAA, 2007	

Map 71 of the study covers the Olowalu area and identifies the benthic habitats offshore. The classification scheme defines benthic habitats on the basis of large geographic "zones" which are comprised of smaller geomorphological structure and biological cover of the reef system. Biological cover indicates the predominate biological component colonizing the surface of the feature. Geomorphological structure indicates the physical structural composition of the feature (NOAA, 2007).

Zones identified in Olowalu by the 2007 NOAA Study from land to open water included lagoon, fore reef, and bank shelf, while the geomorphological structure types were pavement, aggregate reef, spur and grove, and sand.

The Assessment of Marine Water Chemistry and Biotic Community Structure surveyed approximately 454 acres of the nearshore waters in Olowalu. Refer to **Appendix "E"**. As noted in **Appendix "E"**, the aggregate reef structure is located mostly south of Olowalu Point. The overall coral cover in the

survey area was about 37 percent of bottom cover, while macroalgae accounted for about 8 percent of bottom cover; 21 percent of the bottom was covered with sand and 33 percent of the bottom consisted of mud and sediment bound in algal turf.

The reefs at Olowalu are considered somewhat unique in that sediment deposition (or lack thereof), rather than wave forces, appears to be the major determinant of physical and biotic reef structure. Along the northern side of Olowalu Point, deposition of terrigenous sediment emanating from Olowalu Stream creates a habitat where coral communities are limited to species and growth forms that can withstand the sub-optimal conditions created by high rates of sediment deposition. South of Olowalu Point, a shallow, wide, triangular-shaped reef flat, formed from deposition of alluvial material from Olowalu Stream, terminates in a fore reef composed of actively accreting coral assemblages that show little or no effect of sediment stress. The outer reefs consist of extensive actively accreting coral formations where growth and community composition are not controlled by wave forces, as is the typical situation on most Hawaiian open coastal areas. Also, reefs at the southeastern end of the project site (near 14-Mile Marker) showed distinct indications of sediment stress, although no major streams discharge regularly in this area. Refer to **Appendix "E"**.

Populations of reef fish in the area are typical of Hawai`i reefs, although numbers of larger fish were very low, likely as a result of fishing pressure. The most abundant families consisted of wrasses, damselfish and surgeonfish. The highest abundance of fish was on the outer fore reef with the rarest in the areas with the heaviest deposition of mud. Reef communities on the outer reef flat and fore reef represent essentially pristine ecological settings unaffected by most human activities, with the exception of fishing.

Numerous sharks were also observed on the inner reef flat. Marine biologist Pauline Feine states in her comments on the Draft EIS that the Olowalu area is a nursery for black-tip sharks.

Information received from the NOAA, National Marine Fisheries Service (NMFS) identified three (3) marine species protected under the Endangered Species Act that frequent the area and may potentially be affected by the proposed project. The three (3) marine species identified include the

threatened green sea turtle (*Chelonia mydas*), the endangered hawksbill sea turtle (*Eretmochelys imbricate*), and the endangered Hawaiian monk seal (*Monachus schauinslandi*). Maui hosts a nesting population of hawksbill sea turtles on the southern shore of the island. Green sea turtles also occur offshore of the area and may bask onshore. Several green sea turtles were observed during the course of fieldwork for the *Assessment of Marine Water Chemistry and Biotic Community Structure in the Vicinity of the Olowalu Town Master Plan.* Refer to **Appendix "E"**. According to NOAA, the Olowalu area may provide a suitable shoreline habitat to support sea turtle nesting. Hawaiian monk seals are also known to occur in the area and have been frequently sighted hauled out on beaches.

In addition, nine (9) species of corals found in Hawai`i were petitioned for listing under the Endangered Species Act. One of these coral species, *Montipora patula*, was found to occur in the nearshore waters off of the project area. In 2014, NOAA listed 20 corals as threatened but the list did not include the nine (9) candidate species that are found in Hawai`i (Garden Island, 2014). Refer to **Appendix "E"**.

Since the preparation of the *Assessment of Marine Water Chemistry and Biotic Community Structure in the Vicinity of the Olowalu Town Master Plan* new circumstances have occurred that have altered the results of my previous surveys. Recent elevated ocean temperatures around the State of Hawai`i have resulted in bleaching of corals in at least some nearshore settings. Visual inspection of the reef at Olowalu conducted on September 24, 2015 indicated that such bleaching has occurred at the Olowalu study sites, resulting in a reduction of live corals. See **Appendix "E-1"**.

b. <u>Potential Impacts and Mitigation Measures</u>

The change in character of the Olowalu reef observed in 2015 by natural phenomenon is not directly related to activities on land. There is no reason to suggest the possibility of different or likely increased environmental impacts not previously dealt with in the 2011 report. Rather, decreasing sediment delivery to the ocean over the existing situation will likely provide an enhancement to recover the reef that survives the bleaching event. Refer to **Appendix "E-1"**.

From:	Robin Newbold
To:	luc@dbedt.hawaii.gov; oeqc@doh.hawaii.gov
Subject:	Comments on DEIS for Proposed Olowalu Town Master Plan from MNMRC
Date:	04/23/2012 05:04 PM
Attachments:	Microsoft Word - MNMRC Olowalu.doc.pdf

Thank you for accepting and taking into consideration testimony from Maui Nui Marine Resource Council

Mahalo

MAUI NUI MARINE RESOURCE COUNCIL

April 22, 2012

State Land Use Commission
PO Box 2359
Honolulu, HI 96804
Contact: Dan Davidson

Re: Recommend Against development at Olowaul
Comments on DEIS for Proposed Olowalu Town Master Plan
TMK (2) 4-8-003: 84, 98-118 and 124

Aloha Land Use Commissioners and Staff:

Maui Nui Marine Resource Council (MNMRC) consists of 28 voting members and non-voting advisors. Voting members represent a broad spectrum of the community including commercial, recreational and subsistence fishers, ocean tourism businesses, scientists, educators and cultural practitioners from Maui County.

MNMRC has convened a Coral Reef Recovery Team and is in the process of completing a Coral Reef Recovery Plan for Maui, with support from National Fish & Wildlife Foundation. The purpose of the Maui Coral Reef Recovery Plan is to use both scientific and place-based, traditional knowledge of coral reef ecosystems to develop technical and policy related remedies to address reef decline.

MNMRC appreciates the opportunity to offer comments on the DEIS for the Proposed Olowalu Town Master Plan. After reviewing the portions of the DEIS relating to the project and its potential impacts on natural resources we offer the following comments:

1. MNMRC asks the LUC to consider this DEIS inadequate and unacceptable. The characterization of the Olowalu reef system in Appendix D (Marine Water Quality , etc) is both inadequate and misleading. Scientists who have researched this reef system for a number of years were very disappointed to read the descriptions and conclusions brought forth in Dr. Dollar's report in the Olowalu DEIS.

2. Using the limited and inaccurate information and conclusions found in the Marine Water Quality report and other parts of the Olowalu Town DEIS to guide decision-making, will not result in sound policy decisions.

Background:

MNMRC members and advisors have been engaged in reef monitoring and enhancement projects throughout West Maui for many years. Their perspective has informed our opinion that the Ukumehame / Olowalu nearshore reef complex is the last intact large coastal reef flat along the leeward side of Maui. We are not alone in this view. The statewide Coral Reef Working Group

convened by the DLNR Aquatic Resources Division chose Olowalu as one of the 10 most important reef sites state wide in the 2009 strategic plan. Noted coral researcher, Dr. Eric Brown described this reef as "the best leeward reef in Maui and probably within the whole state" in his 2003 assessment of the area[1]. Olowalu Reefs have been the subject of various monitoring and research programs over the past two decades, due to their rich biodiversity and relative lack of human impacts.

In 2010, Hawaii's Department of Aquatic Resources published a report[2] describing the alarming trend of coral decline around Maui. Reefs adjacent to shoreline development experienced 25% - 90% loss of coral over the past decade alone.

Dr. Brown, and many other marine scientists have concluded that any large-scale development in Olowalu would likely negatively impact the adjacent reef. MNMRC believes that it makes sense to take extra precautions to keep Olowalu reefs healthy.

Unfortunately, the preservation/ mitigation strategies offered in the Olowalu Town DEIS, Appendix D, and summarized in the body of the DEIS, are the same ones that have been applied to development after development in West Maui. If County grading regulations, Best Management Practices and retention basins were the answer to preventing degradation of our reefs, we would not have had such extensive degradation to our reefs.

We wish to call the attention of the Commission to specific assumptions in the DEIS that are presented as proven facts, but actually are not supported by reliable research or data:

1. **Groundwater intrusion does not travel beyond shoreline "mix-zone" and therefore it will have no impact on reefs.**

Groundwater from upslope does travel seaward beyond the inshore waters. Wind and waves mix this surface water into the water column where, if loaded with nutrients, it can damage the reef ecosystem.

Meghan Dailer's research provided evidence of this mixing at Kahekili Reef (Ka'anapali Maui), which indicated, increased amounts of human-generated nitrogen (N15) in the reef area.

2. **Thousands of square feet of new commercial and housing units in Olowalu will not generate runoff and impact reefs due to mitigations like rain-gardens and bio-swales.**

Rain-gardens, bio-swales and other urban watershed remediation are reasonable strategies for reducing flooding in an already degraded, flood-prone urban area. They are unlikely to be effective on 375,000 sq ft of new commercial roof space, and 1500 new housing units just uphill from West Maui's last stable, relatively pristine reef system. There is also no guarantee such mitigations will be widely adopted and properly maintained. The proper mitigation for resources of the caliber of Olowalu reefs is avoidance of impacts.

The DEIS Marine consultant proposes retention basins and underground storage areas as the solution to the millions of gallons of storm-water that can naturally pass through the project area in a heavy rain. The Reality: West Maui retention basins are notorious for becoming choked with silt and carrying not only storm water but concentrated silt towards the ocean when overwhelmed by storm flows.

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[1] 1. Brown, E. (2003). Status of Maui's Coral Reefs? Report

[2] Williams, I., Sparks, R., and Smith, C. (2010). Status of Maui's Coral Reefs. Hawaii Department of Aquatic Resources & Hawaii Coral Reef Initiative Report.

3. **Olowalu marine resource consultant's professional opinion: "as long as BMPs are utilized and retention basins maximize sediment trapping, there is no rationale to indicate potential changes that could be considered negative impacts to the marine environment"**

The DEIS mentions that flows which exceed the basin capacity will continue naturally down the existing drainage channel towards the ocean. Since there is no plan in the DEIS showing where the proposed retention basins will be located, it is difficult to access how effective they may be for preventing non-point discharges into the ocean and reefs, as the consultant claims.

The DEIS acknowledges the proposed project will boost storm water flows by around 73 ac ft. (24 mil gal) each major storm event, and send the water down the same channels it now travels in. The main difference being that there will be more water and it will be concentrated into the retention basins until their capacity is exceeded, then head towards the ocean with possibly greater force. The DEIS should make clear that there is no example of this being an effective long term strategy for reef protection in West Maui.

4. **Urbanization with the addition of retention basins could actually create less run-off than pre-development conditions.**

While the DEIS estimates figures for pre-development and post development storm flows, it does not evaluate the valuable biological services already provided by the naturally low elevation areas mauka of and makai of Honoapiilani Highway. These areas currently hold, filter and absorb a great deal of storm runoff. The DEIS fails to evaluate and compare this existing capacity with the expensive engineering solutions proposed. It is estimated by water quality researchers that undeveloped areas absorb up to 16 times more water than the same area post-development. Given this, it is likely the supposed "improvement" would be mathematical rather than actual.

5. **The DEIS claims that 85% of the surface runoff from the existing site reaching the ocean does so through the Olowalu stream channel.**

If this is accurate, and no data was provided to determine that, riparian restorations and improvements along the stream should be discussed in the DEIS, but they are not.
We also are not provided any information about how much storm run off is currently being successfully absorbed on site and must ask: what amount of the over 1000 cfs 100 year storm flow actually reaches the ocean now?

6. **A 6% reduction in existing groundwater discharge to nearshore waters will have no effect on marine ecosystems, since the consultant concluded that "at present, groundwater is so restricted in distribution that there is no effect on marine community structure."**

The Olowalu DEIS gives no proof that groundwater is "restricted in distribution" or has "no effect on marine community structure." Freshwater intrusion has long played a role in marine ecosystems on the leeward shore of Maui. Freshwater discharges were noted in a 2007 Submarine Groundwater Discharge (SGD) study (J.H. Street et al) that included West Maui, as the only significant continuous source of nutrients for the ocean in leeward areas. The study tracked fresh water inputs through long and short-lived radium isotopes.

Cultural practitioners inform us that freshwater seepage into the ocean is necessary for the survival of beneficial *limu*, which many fish species depend upon. Fishing families are aware of areas where groundwater flows enter the ocean.

A USGS study in the 1990's noted that land-based pumping of groundwater wells on the leeward coast of Hawaii Island reduced measured groundwater inputs to nearshore waters by around 3%, and this was considered significant.

The 6% per cent reduction predicted for Olowalu should be discussed in relationship to the USGS's new computer based groundwater model for West Maui. It is very likely that the combination of a reduction in fresh water discharge due to proposed heavy pumping increases in the Olowalu aquifer (pumping is currently a maximum of 90,000 gpd and could go to as much as 1 mgd or more at peak demand with Olowalu buildout) and a substitution of seepage from storm runoff (redirected by newly impervious surfaces) and effluent used for nearshore irrigation could substantially alter nearshore water chemistry.

As discussed earlier, the DEIS also assumes with no data, that there is no presence of groundwater beyond the nearshore "mixing zone," which is disputed by recent research in the West Maui area.

The most recent USGS study of West Maui Groundwater (Gingerich and Engott, 2012) notes that freshwater (groundwater) discharge along most West Maui shorelines (including Olowalu) has been declining. **The DEIS should look at a broad range of data that may be available, not sidestep the issue with unsupported assumptions**

7. Substituting treated effluent irrigation water for stream water on 100 acres of the project site will have no influence on marine ecosystems.

The impacts of nutrient rich irrigation water or reclaimed wastewater discharging into the nearshore waters and reef ecosystems is dismissed as a non-issue in the DEIS and the Water Quality report. Yet, it is very likely that some of the treated effluent will travel through the ground and into the ocean.

The DEIS Fig 18 map shows three green "recycled water" lines going to the shoreline areas in the north, south and middle of the subject property. The DEIS should discuss the expected volumes of effluent to be discharged at these locations and test the background nutrient levels already existing in the nearshore waters.

The assumption that the background levels of Nitrogen and Phosphorus in shoreline waters are higher that the levels in the effluent seepage begs the question of cumulative impacts to reefs due to even subtle changes in nutrient loads. It is mentioned in the DEIS that areas where effluent is used for irrigation will not require any additional application of nitrogen or phosphorus based fertilization.This would lead to the conclusion that the WTF will not attempt to produce effluent with low levels of these nutrients.

If effluent is regularly used, how much will be absorbed by plants and how much will continue into the groundwater stream? Has actual testing been done using Olowalu soil types? The DEIS predicts that overall ground water discharge to the coastal waters will decline, but does not make it clear if that is ground water originating from aquifer sources, storm run off or irrigation?

If, for example, high level ground water, with its typical low salinity, is diminished or replaced by effluent seepage with its typically higher salinity and the effluent seeps into nearshore waters in locations that may are not adapted to this type of groundwater discharge, marine ecosystems can be affected. **This important question is neither posed nor researched by the Olowalu marine consultant in the DEIS.**

8. The DEIS and Water Quality Report assumes that the proposed Olowalu sewage treatment plant would always function perfectly and not pose any impacts to land or ocean,

No wastewater facilities currently exist in this area, therefore the plant should be regarded as an unknown entity, with potential impacts. The plant location appears to be in a tsunami zone, a high fire risk zone, adjacent to a high risk flood zone and in close proximity to the ocean. As such, there are potential impacts. Since the project's maps are rather vague in the DEIS, the distance from the WTF to the ocean is not known.

If a large storm event caused flooding beyond the capacity of the facility's proposed wetland overflow area (no capacity is given for the wetlands other than it will span 2 acres and lead to a 4.7 ac leachfield); or power outages interfered with pumping of effluent from the WTF, raw, or partially treated, sewage mixed with storm water could be released into a popular recreation area. Most private wastewater facilities are required to install injection wells, even if they plan to recycle the waste water. The DEIS does not make it clear if the wetland/leach field is approved as a substitution for the injection wells. This detail may be buried somewhere in the DEIS, but it certainly is not made apparent.

In the event of fire, plant operations may be impaired, but this is not discussed. We are not informed what size tsunami wave would have an effect on the plant at it's proposed location. None of these risk factors are mentioned in the DEIS, its Preliminary Engineering or Water Quality Analyses Reports in Appendix B or D. **Our environment laws require all potential impacts to be discussed, not just dismissed by unsupported assumptions that there will be no impacts.**

9. **The nature, density and diversity of marine biota found in the Olowalu reef area has been misrepresented or under represented in the DEIS Appendix D study, downplaying the very unique biological value of the reef and its resources.**

It appears from the Dollar report (Appendix D, Olowalu Town DEIS) that the entire marine survey area (over 450 acres) was surveyed in just four days. It is not surprising that important features were overlooked.

The fact that the majority of studies Dr. Dollar references in his report are over 20 years old, and are not specific to any of the tremendous amount of past research work done on the Olowalu reefs and nearshore environment, may contribute to many oversights. This selective approach to reference materials appears to have led to selective conclusions. In the interests of sound scientific decision making, we list a few conclusions that are based on incomplete or erroneous information:

a) Twelve species of coral noted on Olowalu reefs.
Actually, twice that many species have been recorded in recent years in studies done by well known marine invertebrate researcher, Cory Pittman, who has investigated Olowalu reefs since the 1970's.

Previous research at Olowalu reefs has been extensive and has shown that Olowalu has the highest diversity of Porites species and growth forms in the entire island chain, with three particularly rare species (P. duerdeni, P. solida, P. cf. annae).

While the presence of some large Porites lobata coral colonies offshore is mentioned, the fact that one colony is estimated to have been in place for half a millennium, and spans 23 feet in diameter is not noted. Perhaps it was not even observed.

Olowalu's reefs hold a unique status in Hawaii due to the presence of three species of rare coral microatolls in the inner reef flat, but this is not acknowledged in the Dollar report, and only one of the three species present is noted.

Olowalu has the best-developed, most extensive micro-atoll area in all the islands. According to one researcher: the Olowalu reef "is literally an outdoor museum of rare coral species and growth forms." This fact would not be known or recognized from the Dollar study.

Researchers, such as Dr. Zac Forsman of the Hawai'i Institute of Marine Biology (HIMB), have commented that nearly every species of rare coral in Hawaii can be found at the Olowalu reef site, but that fact is not reflected in the marine resources report in Appendix D of the DEIS.

b) Dollar observed low numbers of large fish on the Olowalu reef.

Recent DAR research indicated high incident of fish biomass in Olowalu, equivalent to that found in most of Maui's marine protected areas. Large parrotfish are commonly observed, but the Olowalu study noted only small parrotfish. While the Dollar study noted a low number of fish valued as food, and attributed this to fishing pressures, **there was no discussion of what impacts adding 4,000 plus residents to the immediate Olowalu area would have on existing Olowalu fish stocks.**

c) The Dollar Marine Biota report failed to mention Olowalu's remarkable Manta Ray feeding station.

Three scientific publications[3],[4],[5] and a doctoral dissertation[6] [4] completed by Dr. Mark Deakos describe in detail a Maui County resident population of over 300 manta rays that utilize the Olowalu reef for the removal of unwanted parasites (cleaning stations) and for social and reproductive behaviors. This unique manta ray aggregation area is one of only a few known in the world.

Dr. Deakos submitted testimony during the Maui Island Plan review to GPAC and the Planning Commission advising against development at Olowalu due to the likelihood that development would compromise the reef and the critical habitat being used by the manta rays. The manta rays off Kona, Hawaii, support a multi-million dollar industry for this small community alone.

d) Olowalu's Marine Biota study notes "numerous small black-tip reef sharks" with no mention of their significance to the area.

The Olowalu area has been known as a nursery area for the black tip sharks for decades, one of the few in the entire state. This important biological function is not included in the Marine Biota

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[3] Deakos, M. H. (2010). Paired-laser photogrammetry as a simple and accurate system for measuring the body size of free-ranging manta rays Manta alfredi. Aquatic Biology, 10(1), 1-10.

[4] Deakos, M. (2010). The ecology and social behavior of a resident manta ray (Manta alfredi) population off Maui, Hawaii. Ph.D. Doctoral, University of Hawaii, Honolulu, Hawaii.

[5] Deakos, M. H. (2011). The reproductive ecology of resident manta rays (Manta alfredi) off Maui, Hawaii, with an emphasis on body size. Environmental Biology of Fishes.

[6] Deakos, M. (2010). The ecology and social behavior of a resident manta ray (Manta alfredi) population off Maui, Hawaii. Ph.D. Doctoral, University of Hawaii, Honolulu, Hawaii.

study, which appears to concentrate on listing organisms but not offering much context of their biological importance.

IN CONCLUSION:

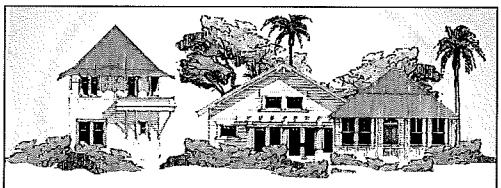
The economic and social benefits coral reefs provide the people of Hawaii are rarely considered when estimating the true cost of a development. This has been the number one flaw in our accounting system, and is responsible for the demise of our natural systems and the quality of life of the people who depend on them for food, for protection from storm surges, for recreation, and for work. Our children and grandchildren pay the true cost of poor long-term planning.

Hawaii's coral reefs are the cornerstone of Hawaii's culture and economy, attracting millions of tourists to our islands each year and providing millions of dollars in revenue for our communities. We have options to build a small town elsewhere but there is no option to move the reef. Once the reef is gone, as the Ma'alaea reef is, we cannot bring it back.

MNMRC urges all concerned, developers, regulatory agencies and decision making panels such as the Land Use Commission to consider an alternative location for this development so that we may protect Maui's last remaining healthy reef.

Mahalo for this opportunity to share our comments

Robin Newbold, Chair
Maui Nui Marine Resources Council



Olowalu Town
BY MAUI, FOR MAUI

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OFFICE: 808-249-2224 / FAX: 249-2333

October 26, 2015

Robin Newbold, Chair
Maui Nui Marine Resource Council
P.O. Box 532533
Kihei, Hawaii 96753

SUBJECT: Draft Environmental Impact Statement for the Proposed Olowalu Town Master Plan at Olowalu, Hawaii

Dear Ms. Newbold:

We thank you for your letter of April 22, 2012 responding to our request for comments on the Draft Environmental Impact Statement (EIS) for the proposed Olowalu Town Master Plan. We offer the following information in response to the comments noted in your letter.

Comment

1. *MNMRC asks the LUC to consider this DEIS inadequate and unacceptable. The characterization of the Olowalu reef system in Appendix D (Marine Water Quality, etc) is both inadequate and misleading. Scientists who have researched this reef system for a number of years were very disappointed to read the descriptions and conclusions brought forth in Dr. Dollar's report in the Olowalu DEIS.*
2. *Using the limited and inaccurate information and conclusions found in the Marine Water Quality report and other parts of the Olowalu Town DEIS to guide decision-making, will not result in sound policy decisions.*

Background:

MNMRC members and advisors have been engaged in reef monitoring and enhancement projects throughout West Maui for many years. Their perspective has informed our opinion that the Ukumehame/Olowalu nearshore reef complex is the last intact large coastal reef flat along the leeward side of Maui. We are not alone in this

view. The statewide Coral Reef Working Group convened by the DLNR Aquatic Resources Division chose Olowalu as one of the 10 most important reef sites state wide in the 2009 strategic plan. Noted coral researcher, Dr. Eric Brown described this reef as "the best leeward reef in Maui and probably within the whole state" in his 2003 assessment of the area. Olowalu Reefs have been the subject of various monitoring and research programs over the past two decades, due to their rich biodiversity and relative lack of human impacts.

In 2010, Hawaii's Department of Aquatic Resources published a report describing the alarming trend of coral decline around Maui. Reefs adjacent to shoreline development experienced 25% -90% loss of coral over the past decade alone.

Dr. Brown, and many other marine scientists have concluded that any large-scale development in Olowalu would likely negatively impact the adjacent reef. MNMRC believes that it makes sense to take extra precautions to keep Olowalu reefs healthy.

Unfortunately, the preservation/mitigation strategies offered in the Olowalu Town DEIS, Appendix D, and summarized in the body of the DEIS, are the same ones that have been applied to development after development in West Maui. If County grading regulations, Best Management Practices and retention basins were the answer to preventing degradation of our reefs, we would not have had such extensive degradation to our reefs.

Response:

Olowalu Town, LLC and Olowalu Ekolu, LLC acknowledge that the Olowalu nearshore reef complex is an important statewide reef site and commend the efforts of the statewide Coral Reef Working Group and the Department of Land and Natural Resources Aquatic Division in protecting our coral reefs. As the Applicants, we share similar concerns regarding the declining coral reefs near areas of shoreline development.

The State of Hawaii Department of Land and Natural Resources, Commission on Water Resource Management (CWRM) has published "A Handbook for Stormwater Reclamation and Reuse Best Management Practices in Hawaii" (December 2008) with the expressed intention of "encouraging the management of stormwater as a resource rather than as a nuisance to be discharged to our streams and coastal waters". The publication outlines alternative stormwater measures that have been used to mitigate stormwater impacts in environmentally-sensitive communities in the United States, such as the Puget Sound area of Washington State. The State of Hawaii's handbook was used to identify a menu of best management practices that are appropriate for implementation at Olowalu Town. The Olowalu Town Stormwater Quality Enhancements Study (Appendix "B-1" of the Draft EIS), prepared by Brown and

Caldwell, proposes Best Management Practices (BMPs) that go well beyond the current County of Maui Rules for the Design of Storm Drainage Facilities adopted in 1995 and the Rules for the Design of Storm Water Treatment Best Management Practices adopted on November 9, 2012, which encourages Low Impact Developments (LID). By implementing the BMPs in conjunction with the County's standards, as the Applicants, we will be providing a level of environmental protection that goes well beyond what has been provided at existing Maui developments.

The goals of the BMPs proposed are 1) to increase the volume of stormwater that infiltrates into the soil, 2) reuse stormwater where feasible, and 3) improve the quality of stormwater that does run off. As noted in Table 10, Proposed Stormwater BMPs for Olowalu Town Master Plan (OTMP), on page 70 of the Draft EIS, the following measures in the stormwater management plan are recommended in the Master Plan: (Refer to Appendix "B-1" of the Draft EIS)

- Bio-retention rain gardens (landscaped depressions) to collect and treat runoff from impervious surfaces
- Rain barrels and rain tanks to collect rainfall to be used for irrigation
- Subsurface tanks to store stormwater for reuse or to allow infiltration into the ground
- Permeable paving allowing infiltration of stormwater through the pavement
- Subsurface chamber stormwater management systems that act as detention, retention, infiltration and/or first-flush storage
- Hydrodynamic devices that utilize the energy and velocity of stormwater to remove sediments, debris, floatables and oil to improve stormwater quality
- Reinforced turf surfaces to increase stormwater percolation rates
- Infiltration trenches that allow stormwater to percolate into the ground

As noted in Appendix "D" of the Draft EIS, these measures are expected to be designed to keep post-development peak rates and volumes of runoff at the same or less than existing conditions for a 100-year, 24-hour design storm. The installed retention volumes for this design storm will have a more substantial impact on the more frequent smaller rainfall events, in which 100 percent of the runoff will be contained resulting in less surface runoff than under the existing, undeveloped condition. It is expected that there will be no increase in surface runoff discharge along the shoreline.

Comment:

We wish to call the attention of the Commission to specific assumptions in the DEIS that are presented as proven facts, but actually are not supported by reliable research or data:

1. *Groundwater intrusion does not travel beyond shoreline "mix-zone" and therefore it will have no impact on reefs.*

Groundwater from upslope does travel seaward beyond the inshore waters. Wind and waves mix this surface water into the water column where, if loaded with nutrients, it can damage the reef ecosystem.

Meghan Dailer's research provided evidence of this mixing at Kahekili Reef (Ka`anapali Maui), which indicated, increased amounts of human-generated nitrogen (N15) in the reef area.

Response:

Although Meghan Dailer's research at Kahekili Reef in Kaanapali found evidence of mixing with increased human-generated nitrogen, it is noted that the geological conditions in Kaanapali and other areas of West Maui differ from Olowalu. In Olowalu there is a sedimentary wedge that forms a confining caprock which limits the mixing of groundwater with the nearshore waters. Measurements taken along the shoreline did not find any evidence of mixing occurring along the shoreline. If mixing is occurring it is so small that it is quickly diluted to background levels.

Comment:

2. *Thousands of square feet of new commercial and housing units in Olowalu will not generate runoff and impact reefs due to mitigations like rain-gardens and bio-swales.*

Rain-gardens, bio-swales and other urban watershed remediation are reasonable strategies for reducing flooding in an already degraded, flood-prone urban area. They are unlikely to be effective on 375,000 sq. ft. of new commercial roof space, and 1500 new housing units just uphill from West Maui's last stable, relatively pristine reef system. There is also no guarantee such mitigations will be widely adopted and properly maintained. The proper mitigation for resources of the caliber of Olowalu reefs is avoidance of impacts.

The DEIS Marine consultant proposes retention basins and underground storage areas as the solution to the millions of gallons of storm-water that can naturally pass through the project area in a heavy rain. The Reality: West Maui retention basins are notorious for becoming choked with silt and carrying not only storm water but concentrated silt towards the ocean when overwhelmed by storm flows.

Response:

Olowalu Town, LLC and Olowalu Ekolu, LLC appreciate your comment that the best mitigation for Olowalu and its reefs is avoidance of impacts. In keeping with LID

principles and to avoid impacts to the nearshore waters as the Applicants we propose to implement a comprehensive plan of BMPs identified in Table 10 of the Draft EIS to 1) capture, store and reuse stormwater for irrigation purposes or to allow runoff to percolate into the ground and 2) to improve water quality of stormwater that does runoff. These measures through proper maintenance have been shown to be effective in other environmentally sensitive areas. As such, as the Applicants we commit to implementing an operations and maintenance plan to ensure these measures remain effective.

Comment:

3. *Olowalu marine resource consultant's professional opinion: "as long as BMPs are utilized and retention basins maximize sediment trapping, there is no rationale to indicate potential changes that could be considered negative impacts to the marine environment"*

The DEIS mentions that flows which exceed the basin capacity will continue naturally down the existing drainage channel towards the ocean. Since there is no plan in the DEIS showing where the proposed retention basins will be located, it is difficult to assess how effective they may be for preventing non-point discharges into the ocean and reefs, as the consultant claims.

The DEIS acknowledges the proposed project will boost storm water flows by around 73 ac ft. (24 mil gal) each major storm event, and send the water down the same channels it now travels in. The main difference being that there will be more water and it will be concentrated into the retention basins until their capacity is exceeded, then head towards the ocean with possibly greater force. The DEIS should make clear that there is no example of this being an effective long term strategy for reef protection in West Maui.

Response:

Olowalu Town, LLC and Olowalu Ekolu, LLC understand the MNMRC's concern that use of retention basins alone may not be an effective long term strategy for reef protection. As previously noted, the Olowalu Town Stormwater Quality Enhancements Study (Appendix "B-1" of the Draft EIS) includes BMPs (refer to Table 10 of the Draft EIS) beyond the practice of utilizing retention basins. It is a comprehensive plan to capture rainfall from the smallest sources, such as residential rooftops and driveways, and much larger sources of runoff, such as onsite stormwater that currently flow through the former sugarcane lands. Implementation of these measures will capture stormwater runoff to be stored and recycled for irrigation purposes or to allow percolation into the ground which is expected to reduce runoff to the ocean as well as improve water quality by removing sediments.

These measures are expected to be designed to keep post-development peak rates and volumes of runoff at the same or less than existing conditions for a 100-year, 24-hour design storm. The installed retention volumes for this design storm will have a more substantial impact on the more frequent smaller rainfall events in which 100 percent of the runoff will be contained resulting in less surface runoff than under the existing, undeveloped condition. It is expected that there will be no increase in surface runoff discharge along the shoreline, as well as improved water quality of runoff.

The project will require several land entitlements and permits which will be reviewed by the State of Hawaii Land Use Commission, County of Maui Council, Maui Planning Commission and Maui Planning Department. As the project continues through the entitlement and permitting process, greater design specificity on drainage and BMPs will be provided in accordance with the applicants' objectives 1) to increase the volume of stormwater that infiltrates into the ground, 2) reuse stormwater where feasible, and 3) improve the quality of stormwater that does run off.

Comment:

4. *Urbanization with the addition of retention basins could actually create less run-off than pre-development conditions.*

While the DEIS estimates figures for pre-development and post development storm flows, it does not evaluate the valuable biological services already provided by the naturally low elevation areas mauka of and makai of Honoapiilani Highway. These areas currently hold, filter and absorb a great deal of storm runoff. The DEIS fails to evaluate and compare this existing capacity with the expensive engineering solutions proposed. It is estimated by water quality researchers that undeveloped areas absorb up to 16 times more water than the same area post-development. Given this, it is likely the supposed "improvement" would be mathematical rather than actual.

Response:

As noted in the Draft EIS there are no existing drainage improvements within the project site, however, Olowalu stream as well as several unnamed drainageways traverse the site in the northeast to northwest direction, and surface runoff is directed towards Honoapiilani Highway. The highway acts as a berm retaining or trapping a majority of the runoff mauka of the highway. Although the lands mauka of the highway currently serves as a natural filter there is limited retention on the makai lands. The mauka runoff primarily from Olowalu Stream and the unnamed drainageways that is not retained by the existing highway is currently conveyed to the ocean through culverts under the highway and bridge over Olowalu Stream.

As the Applicants our objectives are to 1) increase the volume of stormwater that infiltrates into the soil, 2) reuse stormwater where feasible, and 3) improve the quality of stormwater that does run off is expected to reduce impacts on the reefs from stormwater runoff. As noted previously, as the project continues through the entitlement and permitting process greater design specificity on drainage will be provided.

Comment:

5. *The DEIS claims that 85% of the surface runoff from the existing site reaching the ocean does so through the Olowalu stream channel.*

If this is accurate, and no data was provided to determine that, riparian restorations and improvements along the stream should be discussed in the DEIS, but they are not. We also are not provided any information about how much storm run off is currently being successfully absorbed on site and must ask: what amount of the over 1000 cfs 100 year storm flow actually reaches the ocean now?

Response:

In response to your comment regarding surface runoff data, according to the water resources consultant, the approximate 5000+ acres in the Olowalu area lack specific data. The nearest United States Geological Survey (USGS) gauge is downstream of the existing diversion in Olowalu Stream. The consultant estimated that 85 percent of the surface runoff measured from the USGS gauge actually reaches and discharges into the ocean.

A goal of the non-profit organization, Olowalu Cultural Reserve (OCR), is to eventually restore stream flow to the ocean. Riparian restoration and improvements along Olowalu Stream were initiated with formation of the OCR who has a 99-year lease. The OCR continues to work towards riparian restoration including the planting of native plants within the OCR. The applicants will continue to work with the OCR to further the efforts of the OCR within the OTMP.

Stormwater runoff in the Preliminary Engineering Report (Appendix "B" in the Draft EIS) estimated the pre- and post-development runoff in the Olowalu area. The existing runoff is estimated as 1,010 cubic feet per second (cfs) and approximately 322 acre-ft of runoff volume. Estimated runoff with the OTMP will be 1,710 cfs and approximately 395 acre-feet of runoff volume, an increase in runoff of 700 cfs and 73 acre-feet of runoff volume.

The existing berms along Olowalu Stream and higher elevation of Honoapiilani Highway keep much of the surface runoff mauka of the highway. Most of the runoff into the ocean is at Olowalu Stream or the unnamed drainageways.

As noted previously, as the project continues through the entitlement and permitting process greater design specificity on drainage and BMPs will be provided in accordance with the objectives 1) to increase the volume of stormwater that infiltrates into the ground, 2) reuse stormwater where feasible, and 3) improve the quality of stormwater that does run off.

Comment:

6. *A 6% reduction in existing groundwater discharge to nearshore waters will have no effect on marine ecosystems, since the consultant concluded that "at present, groundwater is so restricted in distribution that there is no effect on marine community structure."*

The Olowalu DEIS gives no proof that groundwater is "restricted in distribution" or has "no effect on marine community structure." Freshwater intrusion has long played a role in marine ecosystems on the leeward shore of Maui. Freshwater discharges were noted in a 2007 Submarine Groundwater Discharge (SGD) study J.H. Street et al) that included West Maui, as the only significant continuous source of nutrients for the ocean in leeward areas. The study tracked fresh water inputs through long and short-lived radium isotopes.

Response:

Thank you for your comments regarding freshwater intrusion studied in 2007. Since 2007, the United States Geological Survey (USGS) released the 2012 Groundwater Availability in the Lahaina District study which indicated that coastal groundwater discharge is lower in the Launiupoko, Olowalu, and Ukumehame aquifer systems. According to the USGS study, the low permeability sedimentary material stretching from south of Ukumehame Stream to north of Kahoma Stream acts as a confining unit that impedes fresh groundwater discharge to the coast. The caprock extends offshore, beyond the seaward extent of the freshwater lens. Beneath the caprock, groundwater flow is confined. The findings of the USGS study supports the Impact on Water Resources Study that the geological conditions in Olowalu differ from areas north of Kahoma, especially in the Kaanapali area where the County's Wastewater Reclamation Facility is located.

Groundwater in Olowalu exists in the unweathered volcanics. Along the Olowalu shoreline and extending inland, over most of the project area is a thick wedge of alluvium which covers the volcanics. The alluvium is poorly permeable particularly in comparison to the volcanics, but the older deposits at depth and in contact with the volcanics below are consolidated and essentially impermeable. As such, they function as a caprock, confining the groundwater in the volcanics at depth and forcing this

groundwater's discharge a substantial distance offshore where it is quickly mixed to background salinities and is essentially undetectable.

This hydro-geologic circumstance is why the only brackish water discharge which is detectable along the shoreline is due to intermittent surface runoff and very modest amounts of seepage from the poorly permeable alluvial caprock.

Calculations of the impact on groundwater discharge in the "Impact on Water Resources of the Olowalu Town Project" show a net decrease of approximately 6% of groundwater discharge into the marine environment. This decrease will be to the discharge that is occurring from the volcanics into the marine environment offshore and at depth. Due to the project's activities, there will actually be a slight increase in the modest discharge from the alluvial caprock along the shoreline. Those amounts are tabulated in Table 3 of the report as "Returns to Groundwater". In this regard, the analysis and conclusions of the Impact on Water Resources Study are considered appropriate and reliable.

Comment:

Cultural practitioners inform us that freshwater seepage into the ocean is necessary for the survival of beneficial limu, which many fish species depend upon. Fishing families are aware of areas where groundwater flows enter the ocean.

Response:

In the Cultural Impact Assessment prepared for the project, cultural informants did not indicate any freshwater seepage into the ocean in Olowalu. However, they did voice concerns regarding protection of the ocean. In particular, the group Polanui Ahupua`a Community Managed Marine Area (Polanui Hiu) recommended formation of the Olowalu Community Marine Management Group as a community group that could function as a shoreline monitoring entity both during construction and periodically post-construction. As the Applicants, we strongly agree that education and community group involvement are critical to the long-term protection of the reef and environment. As the Applicants, we are willing to continue to work with community groups, such as Polanui Hiu.

Comment:

A USGS study in the 1990's noted that land-based pumping of groundwater wells on the leeward coast of Hawaii Island reduced measured groundwater inputs to nearshore waters by around 3%, and this was considered significant.

The 6% percent reduction predicted for Olowalu should be discussed in relationship to the USGS's new computer based groundwater model for West Maui. It is very likely that the combination of a reduction in fresh water discharge due to proposed heavy pumping increases in the Olowalu aquifer (pumping is currently a maximum of 90,000 gpd and could go to as much as 1 mgd or more at peak demand with Olowalu buildout) and a substitution of seepage from storm runoff (redirected by newly impervious surfaces) and effluent used for nearshore irrigation could substantially alter nearshore water chemistry.

As discussed earlier, the DEIS also assumes with no data, that there is no presence of groundwater beyond the nearshore "mixing zone," which is disputed by recent research in the West Maui area.

The most recent USGS study of West Maui Groundwater (Gingerich and Engott, 2012) notes that freshwater (groundwater) discharge along most West Maui shorelines (including Olowalu) has been declining. The DEIS should look at a broad range of data that may be available, not sidestep the issue with unsupported assumptions.

Response:

The Impact on Water Resources Study was conducted prior to the release of the 2012 USGS Study. However, the Impact on Water Resources Study was prepared in consultation with the USGS. Our water consultant's review of the 2012 USGS Study finds it to be consistent with the analysis and conclusions of the Impact on Water Resources Study. The 2012 USGS Study and its computer model provides a general analysis of groundwater resources in the West Maui region. However, it does not analyze all aspects that may impact groundwater resources in the project area. The Impact on Water Resources Study analyzed area specific conditions in Olowalu and the specific details of the Master Plan that may influence groundwater discharge to determine the approximate 6 percent reduction in groundwater discharge.

As noted previously, because water chemistry data reveals that input of groundwater at the shoreline is negligible, and mixing of groundwater and ocean water at the nearshore zone is rapid, the estimated 6 percent reduction of groundwater resulting from the project will have minimal and localized effects on water quality on a magnitude that will not alter marine biota presently inhabiting the reef environments off Olowalu.

Comment:

7. *Substituting treated effluent irrigation water for stream water on 100 acres of the project site will have no influence on marine ecosystems.*

The impacts of nutrient rich irrigation water or reclaimed wastewater discharging into the nearshore waters and reef ecosystems is dismissed as a non-issue in the DEIS and the Water Quality report. Yet, it is very likely that some of the treated effluent will travel through the ground and into the ocean.

The DEIS Fig 18 map shows three green "recycled water" lines going to the shoreline areas in the north, south and middle of the subject property. The DEIS should discuss the expected volumes of effluent to be discharged at these locations and test the background nutrient levels already existing in the nearshore waters.

Response:

Although the OTMP proposes to utilize recycled water from the wastewater treatment facility (WTF), the recycled water will not be discharged at point locations near the shoreline. The park and open space areas inland of the shoreline will receive the majority of the "recycled water" for irrigation purposes. It is also anticipated that the controlled release of recycled water used for irrigation purposes will be quickly absorbed in the plant root zone and used by landscape vegetation. According to the Water Resources Study (Appendix "C" in Draft EIS), for all landscape irrigation regardless of source, approximately 10 percent of the applied water passes below the plant root zone to groundwater below. It carries with it approximately 10 percent of the applied nitrogen and approximately five (5) percent of the applied phosphorus. It is estimated that approximately 0.205 million gallons per day (MGD) of irrigation and recycled water will be returned to groundwater. This includes any excess recycled water not used for irrigation purposes that will be directed to the constructed wetlands and disposed of at a leach field inland of the project. Nutrient load from recycled water is expected to be less than the nutrient uptake of the vegetation that will be grown. The net impact of recycled water is expected to be equal or less than the impact of irrigation from other water sources.

Comment:

The assumption that the background levels of Nitrogen and Phosphorus in shoreline waters are higher that the levels in the effluent seepage begs the question of cumulative impacts to reefs due to even subtle changes in nutrient loads. It is mentioned in the DEIS that areas where effluent is used for irrigation will not require any additional application of nitrogen or phosphorus based fertilization. This would lead to the conclusion that the WTF will not attempt to produce effluent with low levels of these nutrients.

If effluent is regularly used, how much will be absorbed by plants and how much will continue into the-groundwater stream? Has actual testing been done using Olowalu soil types? The DEIS predicts that overall ground water discharge to the coastal waters will

decline, but does not make it clear if that is ground water originating from aquifer sources, storm run off or irrigation?

If, for example, high level ground water, with its typical low salinity, is diminished or replaced by effluent seepage with its typically higher salinity and the effluent seeps into nearshore waters in locations that may are not adapted to this type of groundwater discharge, marine ecosystems can be affected. This important question is neither posed nor researched by the Olowalu marine consultant in the DEIS.

Response:

Review of the consultant reports indicate that there will be very low levels of nitrogen and phosphorus in groundwater discharging into shoreline waters. Table 3 of the Water Resources Report quantified the existing and anticipated discharge of nitrogen and phosphorus into the groundwater. According to the Table, the total increase for nitrogen is approximately 10 percent and for phosphorus it decreases by approximately one (1) percent. The treated R-1 effluent is expected to have a total nitrogen (TN) concentration of 10 milligram/liter (mg/l) or less and total phosphorus (TP) of 5 mg/l or less.

Natural processes are expected to reduce the nutrient loading for all uses of water for which a portion is ultimately returned to groundwater. These processes take place during the downward passage through the unsaturated zone and lateral movement in groundwater to the shoreline. Nitrogen removal, primarily by denitrification, is expected to be 75 percent while phosphorus removal, primarily by absorption, is expected to be 90 percent. It is estimated there will be a reduction of approximately six (6) percent of the existing groundwater flowrate discharged into the marine environment. Salinity in groundwater is not expected to affect the marine environment.

In summary, from existing conditions, Table 3 of the Water Resources Report indicates a reduction of approximately six (6) percent of the groundwater flowrate discharged into the marine environment, a 10 percent increase in the amount of nitrogen, and a one (1) percent decrease in phosphorus.

The water quality report indicated that nutrient concentrations from effects from land can only be detected in the sub-tidal zone near the shoreline and in selected locations. The effects do not reach the offshore areas with viable reef habitats and biotic communities. In addition, nutrient subsidies from land are contained within a thin surface layer that does not come into contact with the reef surface. On both horizontal and vertical scales, there is little contact between groundwater and biotic communities.

The wastewater treatment process will incorporate biological nutrient removal to reduce nutrient levels in the recycled water. The use of R-1 quality recycled water in golf

courses for irrigation has demonstrated that after treatment there is sufficient nutrient content so additional fertilization is not necessary. As such, the use of recycled water is expected to eliminate the need for fertilizers to be applied on the ground surface. The potential for dissolved fertilizers in stormwater runoff in areas along the shoreline will be reduced and prevented from entering the nearshore waters.

Comment:

8. *The DEIS and Water Quality Report assumes that the proposed Olowalu sewage treatment plant would always function perfectly and not pose any impacts to land or ocean,*

No wastewater facilities currently exist in this area, therefore the plant should be regarded as an unknown entity, with potential impacts. The plant location appears to be in a tsunami zone, a high fire risk zone, adjacent to a high risk flood zone and in close proximity to the ocean. As such, there are potential impacts. Since the project's maps are rather vague in the DEIS, the distance from the WTF to the ocean is not known.

Response:

The proposed WTF has been sited mauka of the existing Honoapiilani Highway (approximately 400 feet inland). The proposed site is in Zone X, an area of minimal flood hazard, and outside of any flood hazard zone including the tsunami inundation zone as identified as Zone VE on the Flood Insurance Rate Maps (FIRM) in Figure 13 of the Draft EIS. The recently adopted FIRM map for Olowalu dated September 19, 2012 did not change the flood hazard zone for the WTF site. As such, the plant site is not located within a high hazard flood zone.

Fires in the Olowalu area are attributed to the dry climate and vegetation on the existing vacant agricultural lands, as well as surrounding undeveloped State lands. Future implementation of the OTMP will include parks, greenways and open space areas which are expected to diminish the risk of fires in the area and provide an irrigated buffer from the undeveloped State-owned lands which may be susceptible to wildfires.

Comment:

If a large storm event caused flooding beyond the capacity of the facility's proposed wetland overflow area (no capacity is given for the wetlands other than it will span 2 acres and lead to a 4.7 ac leachfield); or power outages interfered with pumping of effluent from the WTF, raw, or partially treated, sewage mixed with storm water could be released into a popular recreation area. Most private wastewater facilities are required to install injection wells, even if they plan to recycle the waste water. The DEIS does not make it clear if the wetland/leach field is approved as a substitution for the injection

wells. This detail may be buried somewhere in the DEIS, but it certainly is not made apparent.

Response:

The wetlands and soil aquifer treatment system will be designed to accommodate peak wet weather flow to ensure that discharge to surface water will not occur. In the event of a power outage there will be emergency generators at the facility and pump stations to ensure the wastewater system continues to operate. Injection wells will not be required at the WTF. As the Applicants we have been in discussion with the Department of Health (DOH) to ensure that appropriate contingency measures are in place for emergency conditions. As the project continues through the implementation process more specificity will be provided to DOH to ensure the system meets their requirements.

Comment:

In the event of fire, plant operations may be impaired, but this is not discussed. We are not informed what size tsunami wave would have an effect on the plant at it's proposed location. None of these risk factors are mentioned in the DEIS, its Preliminary Engineering or Water Quality Analyses Reports in Appendix B or D. Our environment laws require all potential impacts to be discussed, not just dismissed by unsupported assumptions that there will be no impacts.

Response:

The WTF itself will be constructed of non-combustible materials and will include appropriate fire suppression measures. However, in the event of a major fire in the area which may pose a threat to the WTF, operations will be temporarily suspended and the facility secured to prevent any spills until the threat is over and it is safe to resume operations. In coordination with the County of Maui Civil Defense and Department of Fire and Public Safety, customers will be notified of the temporary suspension of service and to take precautionary action. As noted previously, the proposed location of the facility is outside of the tsunami inundation zone, as such tsunami waves should not pose a threat.

Comment:

9. *The nature, density and diversity of marine biota found in the Olowalu reef area has been misrepresented or under represented in the DEIS Appendix D study, down playing the very unique biological value of the reef and its resources.*

It appears from the Dollar report (Appendix D, Olowalu Town DEIS) that the entire marine survey area (over 450 acres) was surveyed in just four days. It is not surprising that important features were overlooked.

The fact that the majority of studies Dr. Dollar references in his report are over 20 years old, and are not specific to any of the tremendous amount of past research work done on the Olowalu reefs and nearshore environment, may contribute to many oversights. This selective approach to reference materials appears to have led to selective conclusions. In the interests of sound scientific decision making, we list a few conclusions that are based on incomplete or erroneous information:

Response:

The studies referenced by Marine Research Consultants, Inc. are peer-reviewed scientific literature and are referenced with respect to coral reef structure and function in Hawaii which has proceeded for a period far longer than 20 years. The work referenced in these publications is relevant to the evaluation of the status of the reefs at Olowalu.

In response to your comments that due to the short survey period important features were overlooked, new technology enabled the field work to be completed within four (4) days but the study data took longer than four (4) days to complete. State-of-the art methods using satellite imagery and data from 200 points examined in the field were used to map the entire reef which covered about 1.8 million square meters (454 acres).

We note that the Marine Research Consultants' 2011 study area identified the impact from the land on the marine environment is primarily from sediments conveyed through Olowalu Stream. If the proposed changes in land use include reducing sediment delivery to the ocean, the result of the project is expected to be positive.

Comment:

a) Twelve species of coral noted on Olowalu reefs.

Actually, twice that many species have been recorded in recent years in studies done by well - known marine invertebrate researcher, Cory Pittman, who has investigated Olowalu reefs since the 1970's.

Previous research at Olowalu reefs has been extensive and has shown that Olowalu has the highest diversity of Porites species and growth forms in the entire island chain, with three particularly rare species (P. duerdeni, P. solida, P. cf. annae).

While the presence of some large Porites lobata coral colonies offshore is mentioned, the fact that one colony is estimated to have been in place for half a millennium, and spans 23 feet in diameter is not noted. Perhaps it was not even observed.

Olowalu's reefs hold a unique status in Hawaii due to the presence of three species of rare coral microatolls in the inner reef flat, but this is not acknowledged in the Dollar report, and only one of the three species present is noted.

Olowalu has the best-developed, most extensive micro-atoll area in all the islands. According to one researcher: the Olowalu reef "is literally an outdoor museum of rare coral species and growth forms." This fact would not be known or recognized from the Dollar study.

Researchers, such as Dr. Zac Forsman of the Hawai'i Institute of Marine Biology (HIMB), have commented that nearly every species of rare coral in Hawaii can be found at the Olowalu reefsite, but that fact is not reflected in the marine resources report in Appendix D of the DEIS.

Response:

Many of the rare species noted *(Porites duerdeni, P. solida, P. annae)* are not easily distinguishable in the field from two of the most common Hawaiian corals *(Porites lobata, P. compressa)*, as gradation between these species is often difficult or impossible to distinguish. Hence, these rare species are included as part of the common species or genera. This is particularly noteworthy in that the quantitative methodology used to create coral habitat maps is not dependent on the identification of single coral colonies. Unless there is quantitative data that these "rare" species have some specifically different physiological level of susceptibility to environmental stress as the common species of the same genera, then their occurrence will have no specific bearing of the results and conclusions of the study relating to impacts from changes of land uses.

The comments regarding the "micro-atolls" in shallow regions of the Olowalu reef flats are discussed in detail, and photo-documented in the assessment report (Appendix "D" in the Draft EIS).

Comment:

b) Dollar observed low numbers of large fish on the Olowalu reef.

Recent DAR research indicated high incident of fish biomass in Olowalu, equivalent to that found in most of Maui's marine protected areas. Large parrotfish are commonly observed, but the Olowalu study noted only small parrotfish. While the Dollar study

noted a low number of fish valued as food, and attributed this to fishing pressures, there was no discussion of what impacts adding 4,000 plus residents to the immediate Olowalu area would have on existing Olowalu fish stocks.

Response:

The marine assessment provided a census of fish populations at the time of the survey. Survey results may vary during different times of the year and under different ocean conditions. Populations of reef fish in the area were typical of Hawaii reefs, although numbers of larger fish were low, likely as a result of fishing pressure. The most abundant families consist of wrasses, damselfish and surgeonfish. As is generally the case, density of fish was the highest abundance on the outer fore-reef. Reef fish were rarest in the areas with heaviest deposition of mud.

It is possible to measure fish stocks in an area over time and determine factors that may influence the number of fish, such as increased fishing or destruction of habitat. The potential impact of Olowalu's future residents on fish populations will depend upon management protocols implemented over the course of time. As the Applicants we are open to working with governmental agencies to ensure that appropriate land-side mitigation measures are identified and utilized as part of a comprehensive marine resource management regime.

Comment:

c) The Dollar Marine Biota report failed to mention Olowalu's remarkable Manta Ray feeding station.

Three scientific publications 3,4,5 and a doctoral dissertation 6 4 completed by Dr. Mark Deakos describe in detail a Maui County resident population of over 300 manta rays that utilize the Olowalu reef for the removal of unwanted parasites (cleaning stations) and for social and reproductive behaviors. This unique manta ray aggregation area is one of only a few known in the world.

Dr. Deakos submitted testimony during the Maui Island Plan review to GPAC and the Planning Commission advising against development at Olowalu due to the likelihood that development would compromise the reef and the critical habitat being used by the manta rays. The manta rays off Kona, Hawaii, support a multi-million dollar industry for this small community alone.

Response:

Regarding the "Manta Ray feeding station," review of the listed publications by Dr. Mark Deakos reveal that while the exact location of the sites where he studied the manta rays

were "withheld to avoid the potential for commercial exploitation", the area is generally located a minimum of 450 meters (m) or ~1,500 feet from shore. This area was chosen because of "high reliability of encountering manta rays, thereby maximizing encounter rates." As no manta rays were observed during the fieldwork for the 2011 marine assessment, and there is no specificity of the location of the manta aggregation site in the Deakos studies, it cannot be determined if the area of high density of manta rays was indeed located in the area of Olowalu fronting the OTMP.

We note that results of analyses of the effects of marine water chemistry indicate that chemical effects from land are restricted to generally less than 100 meters from shore, which is likely not within the aggregating area. It is also concluded in the marine assessment that the reduction in surface water flow to the nearshore reef environment as a result of increased drainage detention/retention structures would result in the potential to increase water quality, and hence increase suitability for coral reef growth. None of these factors associated with the proposed development present the potential to "compromise the reef and the critical habitat being used by manta rays."

Review of the Deakos papers by Dr. Dollar indicates that the only cited threats to manta rays attributable to human activities are entanglement with monofilament fishing lines and unregulated swim-with-manta programs. Neither of these potential threats are directly related to the proposed changes in land uses for Olowalu.

Comment:

d) Olowalu's Marine Biota study notes "numerous small black-tip reef sharks" with no mention of their significance to the area.

The Olowalu area has been known as a nursery area for the black tip sharks for decades, one of the few in the entire state. This important biological function is not included in the Marine Biota study, which appears to concentrate on listing organisms but not offering much context of their biological importance.

Response:

Cultural informants indicated the waters of Olowalu along Hekili Point are well-known as a nursery for the Black Tip Shark and are often frequented by tiger sharks just off of the fringing reef. The marine assessment noted there were numerous small sharks observed on the inner reef flat south of Olowalu Point. According to the assessment the proposed project does not present a potential to alter the habitat that exists for Black Tip Shark behavior.

Comment:

The economic and social benefits coral reefs provide the people of Hawaii are rarely considered when estimating the true cost of a development. This has been the number one flaw in our accounting system, and is responsible for the demise of our natural systems and the quality of life of the people who depend on them for food, for protection from storm surges, for recreation, and for work. Our children and grandchildren pay the true cost of poor long-term planning.

Hawaii's coral reefs are the cornerstone of Hawaii's culture and economy, attracting millions of tourists to our islands each year and providing millions of dollars in revenue for our communities. We have options to build a small town elsewhere but there is no option to move the reef. Once the reef is gone, as the Ma'alaea reef is, we cannot bring it back.

MNMRC urges all concerned, developers, regulatory agencies and decision making panels such as the Land Use Commission to consider an alternative location for this development so that we may protect Maui's last remaining healthy reef.

Response:

Olowalu Town, LLC and Olowalu Ekolu, LLC, in recognition of the benefits of our coral reefs seek to develop OTMP in a sustainable manner following the land and resource management system of ahupuaa. The eight (8) principles of the ahupuaa land management concepts are incorporated into the OTMP for the preservation of and respect for culture, people, and the natural resources that sustain a community over time.

Thank you again for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter and this response letter will be included in the Final EIS. Should you wish a copy of the Final EIS document or portion thereof, please submit your request in writing to Munekiyo Hiraga at 305 High Street, Suite 104, Wailuku, Hawaii 96793 (Attention: Colleen Suyama).

Very truly yours,

William Frampton
Olowalu Town, LLC

David Ward
Olowalu Town, LLC

CS:tn
cc: Peter Martin, Olowalu Ekolu, LLC
Steven Dollar, Marine Research Consultants, Inc.
Tanya Lee-Greig, Cultural Surveys Hawaii
Craig Lekven, Brown & Caldwell
Stacy Otomo, Otomo Engineering, Inc.
Tom Nance, Water Resource Engineer
Jennifer Lim, Carlsmith Ball, LLP
Colleen Suyama, Munekiyo Hiraga
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