



**CHRIS  
HART**  
& PARTNERS, INC.

Landscape Architecture  
City & Regional Planning

June 13, 2017

Mr. David Taylor, Director  
County of Maui, Department of Water Supply  
200 South High Street  
Wailuku, HI 96793

Dear Mr. Taylor,

RE: Comments on the Draft Environmental Impact Statement (DEIS) for the Piilani Promenade, located in Kihei, Maui, Hawaii at TMK's: (2) 3-9-001:016,170-174.

Thank you for your letter of October 3, 2014. The responses to your comments are as follows.

*DWS Comment 1. According to DWS Guidelines, anticipated consumption for the project is projected to be 480,267 gpd: ([226 multi-family units] x [560 gpd]) + ([20 acres Light Industrial/Business/Commercial] x [140 gal/1,000 square feet]) + ([38 acres Business/Commercial] x [140 gal/1,000 square feet]).*

*Please include anticipated water consumption (i.e. potable and irrigation) in the section on Groundwater Resources Potential Impacts and Mitigation Measures (page 40), as well as the Water section's Potential Impacts and Mitigation Measures section (page 74).*

**Response 1.** In response to comments regarding water, the FEIS Section III. A. 11 (Groundwater Resources) has been revised to include the following language.

The Pi'ilani Promenade will consume on average of 252,000 gpd of water at full build-out, including 171,000 gpd of drinking water for domestic uses and 81,000 gpd of nondrinking water for irrigation. (See: Appendix L, "Preliminary Engineering Report dated December 2013, revised February 2, 2017")

As mentioned, the CWRM estimates that 0.421 MGD of groundwater can be allocated within the Iao Aquifer System. The Piilani Promenade drinking water demand is expected to withdraw 171,000 gpd and can be accommodated within the remaining 0.421 MGD of available groundwater. This limited amount of water is not anticipated to significantly impact the Iao Aquifer from recharging.

As mentioned, three 3-inch domestic water meters have been approved by the County DWS and are available for the project. The issuance of water meters for the project by the DWS carries the implicit approval by the DWS of Piilani Promenade's use of the Iao Aquifer System for drinking water.

The CWRM estimates that 11 MGD of groundwater can be developed within the Kamaole Aquifer System on a sustainable basis. (Water Resource Protection Plan, 2008). The irrigation well for landscaping is expected withdraw 81,000 gpd and this limited amount of water is not anticipated to significantly impact the Kamaole Aquifer from recharging. In the future, when the County reclaimed water line is extended north towards the Project site, the Applicant will connect to the R-1 water source for irrigation water eliminating the need for the brackish irrigation well.

In response to comments regarding water, the FEIS Section III. D. 3 (Water) has been revised to include the following language:

The Pi'ilani Promenade will consume on average of 252,000 gpd of water at full build-out, including 171,000 gpd of drinking water for domestic uses and 81,000 gpd of nondrinking water for irrigation. (See: Appendix L, "Preliminary Engineering Report dated December 2013, revised February 2, 2017")

As mentioned, the CWRM estimates that 0.421 MGD of groundwater can be allocated within the Iao Aquifer System. The Piilani Promenade drinking water demand is expected to withdraw 171,000 gpd and can be accommodated within the remaining 0.421 MGD of available groundwater. This limited amount of water is not anticipated to significantly impact the Iao Aquifer from recharging.

As mentioned, three 3-inch domestic water meters have been approved by the County DWS and are available for the project. The issuance of water meters for the project by the DWS carries the implicit approval by the DWS of Piilani Promenade's use of the Iao Aquifer System for drinking water.

The CWRM estimates that 11 MGD of groundwater can be developed within the Kamaole Aquifer System on a sustainable basis. (Water Resource Protection Plan, 2008). The irrigation well for landscaping is expected withdraw 81,000 gpd and this limited amount of water is not anticipated to significantly impact the Kamaole Aquifer from recharging. In the future, when the County reclaimed water line is extended north towards the Project site, the Applicant will

connect to the R-1 water source for irrigation water eliminating the need for the brackish irrigation well.

*DWS Comment 2. Page 2 10 of the DEIS states, "significant cumulative and/or secondary impacts are not anticipated to threaten the long-term sustainability of the County's water resources. This 1.0 MG water tank will provide substantially more drinking water source..."*

*Because the water tank is merely a storage device, not a source of water (e.g. a well), use of the term "source" for drinking water storage is misleading. The DEIS would benefit from language that more accurately reflects the situation.*

**Response 2.** In response to comments regarding water, the FEIS Section V. C (Cumulative and secondary impacts) has been revised to include the following language:

**Drinking Water Resources.** The development of the Pi'ilani Promenade, together with other area projects, will increase the demand for drinking water. The Applicant is constructing a 1.0 million gallon water tank and supporting infrastructure to provide water for the project and future south Maui water customers. The development of the 1.0 MG water tank will help support the drinking water needs for the future planned growth of South Maui. With these measures in place, significant cumulative and/or secondary impacts are not anticipated to threaten the long-term sustainability of the County's water resources. This 1.0 MG water tank will provide substantially more drinking water source storage than would be required both for the Pi'ilani Promenade Project, and for the Honua'ula affordable housing project, if that project is developed.

*DWS Comment 3. We were unable to locate the DEIS disclosure of: 1) the direct, indirect, and cumulative source water impacts of all known projects in the Kihei/Wailea area; and*

**Response 3:** In response to comments regarding water, the FEIS Section III. A. 11 (Groundwater Resources) has been revised to include the following language.

In response to comments on the DEIS, the FEIS has been updated in the ground water section, the water section, and the cumulative impacts section to include a matrix of the readily identifiable future developments in South Maui and their direct potential effect on water source and availability. Table No. 3 below provides an estimate of water use by future proposed developments in South Maui.

**Table No. 3 Estimated Water Use by Future Developments**

<u>Name of Project</u>	<u>Average Daily Drinking Water Use</u>	<u>Drinking Source</u>	<u>Average Non-drinking Water Use</u>	<u>Non Drinking Source</u>	<u>Type of System</u>	<u>Source Document</u>
<u>Maui Lu Resort</u>	<u>144,200 gpd (53,300 gpd existing; 86,300 gpd proposed)</u>	<u>CWS, existing meter</u>	<u>136,000 gpd</u>	<u>Existing well water (Kamaole Aquifer)</u>	<u>Private irrigation brackish water</u>	<u>Maui Lu FEA 2004</u>
<u>Noni Loa</u>	<u>21,840 gpd</u>	<u>CWS, Existing meter</u>	<u>None, will use drinking water until R-1 line is available</u>	<u>CWS</u>	<u>CWS</u>	<u>Noni Loa FEA December 8, 2015</u>
<u>Makena Resort</u>	<u>94,260 gpd</u>	<u>CWS, existing meter</u>	<u>129,075 gpd</u>	<u>Existing Well water (Kamaole aquifer)</u>	<u>Private irrigation brackish water</u>	<u>Makena Resort DEA January 8, 2016</u>
<u>MRTP</u>	<u>789,065 gpd</u>	<u>CWS, existing meters</u>	<u>373,329 gpd</u>	<u>R-1 Water line</u>	<u>Maui County R-1 Water line</u>	<u>MRTP FEIS March 23, 2013</u>
<u>Kenolio Apartments</u>	<u>104,160 gpd</u>	<u>Proposed connection to CWS</u>	<u>15,000 gpd</u>	<u>1 proposed brackish water well (Kamaole Aquifer)</u>	<u>* will connect to R-1 line once available to property</u>	<u>Kenolio Apartments FEA July 23, 2014</u>
<u>Kaiwahine Village</u>	<u>67,200 gpd</u>	<u>Proposed connection to CWS</u>	<u>None, will use drinking water until R-1 line is available</u>	<u>CWS</u>	<u>CWS</u>	<u>Kaiwahine Village 201H Application February 2011</u>
<u>Kihei High School</u>	<u>37,450 gpd</u>	<u>Proposed connection</u>	<u>185,000 gpd</u>	<u>2 proposed brackish water wells</u>	<u>Private brackish well</u>	<u>Kihei H.S. FEIS September 8, 2012</u>

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		on to CWS		(Kamaole Aquifer)		
<u>Honua'ula Affordable Housing Project</u>	210,000 gpd	Proposed connection to CWS	Unknown	Existing well water (Kamaole Aquifer)	Private brackish well	Calculated using County standards.
<u>Downtown Kihei</u>	48,500 – 143,600 gpd	Proposed connection to CWS	15,900 – 29,500 gpd	County R-1 Water	R-1 Water line from KWWRF	Downtown Kihei FEA April 8, 2013
<u>Honua'ula (Mauka of Makena Resort)</u>	340,000 gpd	Proposed Well water (Kamaole aquifer)	810,000 gpd for irrigation, 717,000 gpd for golf course	Well water (Kamaole aquifer) * will connect to R-1 line once available to property	Private brackish well	Honua'ula FEIS August 8, 2012
<u>Kihei Residential</u>	530,000 gpd	Connect to CWS or Well water (from Kahului or Paia aquifers)	None	Connect to County Water system or Well water (from Kahului or Paia aquifers)	Private brackish well, *Applicant would prefer to connect with the Maui County R-1 Water line	Kihei Residential FEIS June 8, 2008
<u>Estimated Totals</u>	2,481,775 gpd of estimated drinking water usage 2,394,904 gpd of estimated non-drinking water usage					

Table No. 3 above provides the direct impacts related to each project and in total the estimated cumulative impact for drinking water systems is a total of 2,481,775 gpd of estimated drinking water usage, and 2,394,904 gpd of estimated non-drinking water usage.

In regards to the drinking water, the Applicant will cooperate with the CWRM to determine available water use in the Iao Aquifer and underlying Kamaole Aquifer as the Water Resources Protection Plan is updated. It is the Applicant's understanding that the CWRM judges use of the aquifers relative to its sustainable yield by the 12-month moving average of pumpage, not by the cumulative capacity of pump installations permits; therefore the proposed use of the Iao and Kamaole a\ Aquifers, will not exceed the sustainable yields.

In response to comments regarding water, the FEIS Section V. C (Cumulative and secondary impacts) has been revised to include the following language:

This section identifies secondary and cumulative impacts that may result from the phased development of the Pi'ilani Promenade and surrounding development projects.

Existing and future development projects that were considered likely to be constructed in the central Kihei region were the basis for analyzing potential cumulative and secondary impacts. It is noted that most projects are not yet constructed. The developments listed below are the same as those identified in the TIAR update and includes the Maui Research and Technology Park (MRTP). (See: Table No. 16)

**Table No. 16 Other Potential Projects**

<u>Development</u>	<u>Land Use</u>	<u>Number of Units/ Development Area</u>
<u>Kaiwahine Village</u>	<u>Multi-Family Residential</u>	<u>120 affordable units</u>
<u>Maui Lu Resort</u>	<u>Hotel</u>	<u>788 hotel rooms &amp; 154 affordable units</u>
	<u>Existing Hotel (Demolished)</u>	<u>174 rooms</u>
<u>Kihei High School</u>	<u>School</u>	<u>215,000 Square Feet</u>
<u>Kenolio Apartments</u>	<u>Multi-Family Residential</u>	<u>186 units</u>
<u>Kihei Residential</u>	<u>Single Family Residential</u>	<u>400 units</u>
	<u>Multi-Family Residential</u>	<u>200 units</u>
	<u>Commercial</u>	<u>7,000 Square Feet</u>
<u>Downtown Kihei</u>	<u>Commercial</u>	<u>258,000 Square Feet</u>
	<u>Hotel</u>	<u>150 rooms</u>

<u>Maui Research and Technology Park</u>	<u>Multi-Family Residential</u>	<u>500 units</u>
	<u>Single Family Residential</u>	<u>750 units</u>
	<u>Knowledge Industry/ Commercial /Business</u>	<u>2 million Square Feet</u>
	<u>Hotel</u>	<u>500 rooms</u>
<u>Honua'ula Affordable Housing Development</u>	<u>Multi-Family Residential</u>	<u>250 units</u>

Other proposed projects will be required to meet the requirements of the Department of Water Supply including but not limited to project specific improvements to the water transmission and storage systems.

Table No. 16b Other Potential Projects: Water

<u>Development</u>	<u>Drinking water Demand (gallons per day)</u>
<u>Kaiwahine Village</u>	<u>67,200</u>
<u>Maui Lu Resort</u>	<u>148,800</u>
<u>Kihei High School</u>	<u>185,000</u>
<u>Kenolio Apartments</u>	<u>104,160</u>
<u>Kihei Residential</u>	<u>790,000</u>
<u>Downtown Kihei</u>	<u>48,500</u>
<u>Maui Research and Technology Park</u>	<u>798,065</u>
<u>Honua'ula Affordable Housing Development</u>	<u>210,000</u>
<u>Total</u>	<u>2,351,725 gallons per day</u>

It is estimated that the total drinking water demand for the projects listed in Table No. 16b is 2,351,725 gallons per day. As noted in the FEIS, 0.421 MGD of groundwater can be allocated from the Iao Aquifer System, therefore all proposed projects in Table No. 16b will not be able to utilize drinking water from the Iao Aquifer System. It is noted that only the Kihei Residential project has begun construction of those listed in Table No. 16b and as development occurs each individual project will need to provide a viable water source. Alternatives considered by the projects in Table No. 16b include but are not limited to drilling wells within the Kamaole Aquifer as a new water source.

*DWS Comment 3.2. The proposed project's brackish source water development impacts upon the salinity of surrounding areas. This information should have been disclosed in the DEIS because the consultant committed to do so in their June 23, 2014 EISPN response communication to the Kihei Community Association's October 23, 2014 letter.*

**Response 3.2.** In response to comments regarding impacts on salinity, the FEIS Section III. A. 11 (Groundwater Resources) has been revised to include the following language.

Groundwater beneath the Project site occurs as a brackish basal lens overlying saline groundwater at depth and in hydraulic contact with seawater shore. This groundwater body has been named as the Kamaole Aquifer by the CWRM. The most reliable estimate of the Kamaole Aquifer's rate of recharge and resulting groundwater flow rate is in the CWRM Water Resource Protection Plan 2008. This plan has estimated the groundwater recharge from rainfall in the Kamaole Aquifer system to be 25 MGD. Of the estimated 25 MGD of groundwater recharge, the CWRM estimates that 11 MGD of groundwater can be developed within the Kamaole Aquifer System on a sustainable basis. (Water Resource Protection Plan, 2008). The Water Resource Protection Plan is currently being updated and a draft plan is expected in late 2017.

Existing water use within the Kamaole Aquifer System amounted to 1.859 MGD (Water Resource Protection Plan, 2008). This water use is primarily for golf course and landscape irrigation purposes from existing brackish wells.

A subsurface investigation conducted in 2011 by a reputable geotechnical engineering firm performed 27 soil borings across portions of the Project site to depths ranging from 10 to 40 feet below the ground surface. No groundwater was encountered at any of the boring locations. (See: Appendix Q "Soil Investigation Reports")

In regards to the non-drinking water, which will be drawn from the irrigation well, Waimea Water Services prepared an assessment of potential impacts from the pumping of the approved irrigation well. (See: Appendix R, "Waimea Water Services Report") (Note: Waimea Water Services applied for and supervised the well drilling for the approved irrigation well described above). The assessment found that no probable impact to the aquifer will occur from using the well for irrigation purposes.

Due to the proposed pumping rate of the newly constructed irrigation well, known as the Kaonoulu Irrigation Well, a 24-hour long term pump test was required by the State. The test results suggest that the water quality and quantity were stable at the 175gpm pumping rate and prolonged pumping at this rate would not be likely to adversely affect the aquifer at this



location. The present estimate is that the sustained pumping rate of the well should not exceed 175 gpm, but it must be noted that this is only a best estimate based on available data.

Waimea Water Services recently performed a pump test and monitoring program in the Kihei area, and the results are pertinent to this discussion due to the proximity to the Kaonoulu Irrigation Well and because of the similar hydro-geological setting. In summary, no recorded influences from the 96-hour pump test were observed in the surrounding monitoring wells. Tidal influences were expected and documented in all three surrounding monitoring wells in the form of water level changes related to the local tide. The data collected from the three monitoring wells also suggests that there are no subsurface geological barriers that would potentially impede water flow.

In an effort to further understand the hydrogeology of the area surrounding the Kaonoulu Irrigation Well, Waimea Water Services performed an investigation into the available CWRM well data of the Kihei area. Twelve irrigation wells are located within 6,300 feet of the Kaonoulu Irrigation Well, three of which are located downstream of the subject well. All three of these wells are located greater than 3,000 feet away from the subject well and it is the opinion of Waimea Water Services, based upon its field experience in this location, that adverse impacts would be highly unlikely to be detected in these wells as long as the Kaonoulu Irrigation Well does not exceed the proposed 175 gpm or 100,000 gpd.

The data gathered thus far occurs over a very limited time span. Data over the long term operation of the wells in the Kihei area is needed for a true determination of the long term performance or impacts of the Kaonoulu Irrigation Well. It is absolutely essential that the water levels and the total chlorides in these wells be monitored on a regular basis to provide a real indication of what this aquifer can reliably produce on a sustainable basis. (See: Appendix R, "Waimea Water Services Report")

A condition imposed during the County re-zoning process for the Project site was the requirement that the landowner provide a future connection to the County reclaimed water system. In the future, connecting the Project to the reclaimed water system will eliminate the need for the brackish irrigation well.

*DWS Comment 4: How might the implementation of the proposed project impact the potential for brackish water desalinization in the area, for: 1) present users; 2) future users; 3) public uses; and 4) private uses?*

**Response 4:** In response to comments regarding impacts on salinity, the FEIS Section III. A. 11 (Groundwater Resources) has been revised to include the following language.

Existing water use within the Kamaole Aquifer System amounted to 1.859 MGD (Water Resource Protection Plan, 2008). This water use is primarily for golf course and landscape irrigation purposes from existing brackish wells.

A subsurface investigation conducted in 2011 by a reputable geotechnical engineering firm performed 27 soil borings across portions of the Project site to depths ranging from 10 to 40 feet below the ground surface. No groundwater was encountered at any of the boring locations. (See: Appendix Q “Soil Investigation Reports”)

In regards to the non-drinking water, which will be drawn from the irrigation well, Waimea Water Services prepared an assessment of potential impacts from the pumping of the approved irrigation well. (See: Appendix R, “Waimea Water Services Report”) (Note: Waimea Water Services applied for and supervised the well drilling for the approved irrigation well described above). The assessment found that no probable impact to the aquifer will occur from using the well for irrigation purposes.

Due to the proposed pumping rate of the newly constructed irrigation well, known as the Kaonoulu Irrigation Well, a 24-hour long term pump test was required by the State. The test results suggest that the water quality and quantity were stable at the 175gpm pumping rate and prolonged pumping at this rate would not be likely to adversely affect the aquifer at this location. The present estimate is that the sustained pumping rate of the well should not exceed 175 gpm, but it must be noted that this is only a best estimate based on available data.

Waimea Water Services recently performed a pump test and monitoring program in the Kihei area, and the results are pertinent to this discussion due to the proximity to the Kaonoulu Irrigation Well and because of the similar hydro-geological setting. In summary, no recorded influences from the 96-hour pump test were observed in the surrounding monitoring wells. Tidal influences were expected and documented in all three surrounding monitoring wells in the form of water level changes related to the local tide. The data collected from the three monitoring wells also suggests that there are no subsurface geological barriers that would potentially impede water flow.

In an effort to further understand the hydrogeology of the area surrounding the Kaonoulu Irrigation Well, Waimea Water Services performed an investigation into the available CWRM well data of the Kihei area. Twelve irrigation wells are located within 6,300 feet of the

Kaonoulu Irrigation Well, three of which are located downstream of the subject well. All three of these wells are located greater than 3,000 feet away from the subject well and it is the opinion of Waimea Water Services, based upon its field experience in this location, that adverse impacts would be highly unlikely to be detected in these wells as long as the Kaonoulu Irrigation Well does not exceed the proposed 175 gpm or 100,000 gpd.

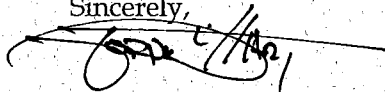
The data gathered thus far occurs over a very limited time span. Data over the long term operation of the wells in the Kihei area is needed for a true determination of the long term performance or impacts of the Kaonoulu Irrigation Well. It is absolutely essential that the water levels and the total chlorides in these wells be monitored on a regular basis to provide a real indication of what this aquifer can reliably produce on a sustainable basis. (See: Appendix R, "Waimea Water Services Report")

A condition imposed during the County re-zoning process for the Project site was the requirement that the landowner provide a future connection to the County reclaimed water system. In the future, connecting the Project to the reclaimed water system will eliminate the need for the brackish irrigation well.

Based on the information provided the proposed mixed use project is not anticipated to impact the potential for brackish water desalinization in the area for present and future users nor public and private uses.

Thank you for participating in the environmental review process. Please feel free to call me or Mr. Brett Davis at (808) 242-1955 or email Brett at [bdavis@chpmaui.com](mailto:bdavis@chpmaui.com) should you have any questions.

Sincerely,



Jordan E. Hart, President

CC: Mr. Charlie Jencks, Owners Representative  
Mr. Daniel E. Orodener, Executive Officer, LUC  
Project File 13-029

