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Attorneys for Petitioners

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition ) DOCKET NO. A15-798  
of: )  
) DIRECT TESTIMONY OF STACY A.  
WAIKAPU PROPERTIES, LLC; MTP ) OTOMO  
LAND PARTNERS, LLC; WILLIAM S. )  
FILIOS, Trustee of the William )  
S. Filios Separate Property )  
Trust dated APRIL 3, 2000; and )  
WAIALE 905 PARTNERS, LLC, )  
)  
To Amend the Agricultural Land )  
Use District Boundaries into )  
the Rural Land Use District for )  
certain lands situate at )  
Waikapu, District of Wailuku, )  
Island and County of Maui, )  
State of Hawaii, consisting of )  
92.394 acres and 57.454 acres, )  
bearing Tax Map Key No. (2) 3- )  
6-004:003 (por) and to Amend )  
the Agricultural Land Use )  
District Boundaries into the )  
Urban Land Use District for )  
certain lands situate at )  
Waikapu, District of Wailuku, )  
Island and County of Maui, )  
State of Hawaii, consisting of )  
236.326 acres, 53.775 acres, )  
and 45.054 acres, bearing Tax )  
Map Key No. (2) 3-6-002:003 )  
(por), (2) 3-6-004:006 and (2) )  
3-6-005:007 (por). )

DIRECT TESTIMONY OF STACY A. OTOMO

1 My name is Stacy A. Otomo and my business address is 305 S.  
2 High Street, Suite 102, Wailuku, Hawaii 96793.

3 I am the President of Otomo Engineering, Inc. and have been  
4 in business since 1991. I am a licensed civil engineer since  
5 1981, license number 5115-C.

6 I obtained a Bachelor of Science degree in Civil Engineering  
7 from the University of Hawaii at Manoa in 1977 and a Master of  
8 Science degree in Civil Engineering from the University of Hawaii  
9 at Manoa in 1979.

10 I am a member of the Hawaii Society of Professional  
11 Engineers, Maui Chapter (past Secretary, Treasurer, Vice-  
12 President, President and State Director). I previously served on  
13 the New Construction Committee of the Kaanapali Golf Estates and  
14 the Design Review Committee of the Wailuku Country Estates  
15 Subdivision. I am a past member of the Maui County Design Review  
16 Board, a past Chairman of the Central Maui Advancement Committee  
17 (Boy Scouts of America), a past President of the Iao School Band  
18 Boosters, and am a current Member of the Design Review Committee  
19 for the Kaanapali Operations Association, Inc.

20 I have testified as a civil engineer before the State Land  
21 Use Commission in the following matters: (1) Pulelehua; (2)  
22 Waikapu Gardens; (3) Kula Ridge Affordable Housing Project; (4)  
23 Consolidated Baseyard Subdivision; (5) Waiko Light Industrial

1 Subdivision; and (6) Puunene Heavy Industrial Subdivision.

2 Otomo Engineering, Inc. was retained by Waikapu Partners,  
3 LLC to prepare a Preliminary Engineering Report (PER) concerning  
4 the infrastructure requirements for a proposed residential and  
5 commercial development near the town of Waikapu which is in  
6 central Maui.

7 The purpose of the PER was to provide information on the  
8 existing infrastructure that will be serving the Project, and  
9 evaluate the adequacy of that infrastructure, and determine what  
10 improvements will be required to support the development of the  
11 Project.

12 To prepare the report, my firm met with the Department of  
13 Public Works for the County of Maui, the State Department of  
14 Transportation, the County of Maui Department of Environmental  
15 Management and the Department of Water Supply. In addition, we  
16 reviewed information that was provided by Waikapu Partners, LLC  
17 including well drilling and test pump data, and consulted with  
18 the traffic engineering firm that was hired by Waikapu Partners,  
19 LLC to receive information on roadways. The purpose of the  
20 meetings, review and consultation was to obtain the information  
21 that was available on the existing wastewater infrastructure  
22 that

23 Following the analysis of this information, my firm

1 prepared the study which is entitled "Preliminary Engineering  
2 Report for Waikapu Country Town" (PER). The study was revised  
3 in November, 2016 because of updated information received from  
4 the County of Maui concerning the treatment of wastewater that  
5 is expected to be generated by the project.

6 A copy of the PER is attached as Appendix "H" to the Final  
7 Environmental Impact Statement which is Exhibit "25."

8 I would like to highlight some of the information that is  
9 contained in the PER. First, I will discuss the existing  
10 conditions concerning Roadways, Drainage, Wastewater and Water.

11 Roadways

12 The primary regional access to the Waikapu area is  
13 provided by Honoapiilani Highway, which divides the Waikapu  
14 Country Town Project ("Project") into mauka and makai sections.  
15 The roadway is a two-lane undivided State Highway running in a  
16 north-south direction between Wailuku and Maalaea. A left turn  
17 lane exists at the intersection of the roadway with the entrance  
18 to the Maui Tropical Plantation (MTP).

19 Kuihelani Highway, which provides access from Kahului  
20 to Maalaea, is located east of the Project. The southern  
21 terminus of Kuihelani Highway is its intersection with  
22 Honoapiilani Highway. The northern terminus is the intersection  
23 of Kuihelani Highway with Puunene Avenue, where the Highway

1 turns into Dairy Road. A traffic signal exists at the  
2 intersection of Kuihelani Highway and Waiko Road.

3 Waiko Road, a two-lane County-owned collector roadway,  
4 runs in an east-west direction, connecting Honoapiilani Highway  
5 and Kuihelani Highway. Immediately east of its intersection  
6 with Honoapiilani Highway, Waiko Road provides access to a  
7 residential community. Further east, Waiko Road provides access  
8 to industrial properties and for livestock land uses.

9 Waiale Road, a two-lane road, whose southern terminus  
10 is at Waiko Road and whose northern terminus is near Kaahumanu  
11 Avenue in Wailuku where Waiale Road turns into Lower Main  
12 Street. The section of Waiale Road from Waiko Road north to  
13 Kuikahi Drive is privately owned; the remainder of Waiale Road  
14 from Kuikahi Drive to Lower Main Street is County owned and used  
15 as a collector road.

16 Kuikahi Drive is an east-west collector road. Lying  
17 about 1,000 feet east of Honoapiilani Highway, Kuikahi Drive  
18 intersects with Waiale Road. The eastern terminus of Kuikahi  
19 Drive is Maui Lani Parkway.

## 20 Drainage

21 The elevation on the mauka development site ranges  
22 from approximately 350 feet above mean sea level at its  
23 southeasterly corner to approximately 710 feet above mean sea

1 level at its northwesterly corner, with a slope averaging  
2 approximately 8 %. The elevation on the makai development site  
3 ranges from approximately 256 feet above mean sea level at a low  
4 point along the southerly border to approximately 408 feet above  
5 mean sea level at the northwesterly corner, with a slope  
6 averaging approximately 4 %. The land within the agriculture  
7 preserve areas will remain undeveloped.

8 According to the Flood Insurance Rate Maps, prepared  
9 by the United States Federal Emergency Management Agency, the  
10 project site is situated in Flood Zones X, XS, AE, and AEF.

11 The vast majority of the site is situated in Flood  
12 Zone X. Flood Zone X represents areas that are outside of the  
13 0.2% annual chance flood plain.

14 Flood Zones AE, AEF, and XS are located along the  
15 eastern boundary of both the mauka and makai sites, where the  
16 Waikapu Stream is located. No development is proposed in the  
17 areas with Flood Zones AE, AEF and XS.

18 The agricultural preserve and a park border Waikapu  
19 Stream on the mauka and makai sites, respectively.

20 Onsite runoff generally sheet flows in a west to east  
21 direction. Seven (7) diversion berms exist along the upper most  
22 portion of the mauka site which were designed to intercept  
23 surface runoff and direct the runoff into Waikapu Stream. The

1 diversion berms, constructed when the property was used for  
2 pineapple cultivation, is in an area that will not be developed,  
3 will remain in place and will function to direct runoff into  
4 detention basins. The berms are protected by various grasses  
5 and weeds, which help to maintain a low runoff velocity as well  
6 as to filter sediments that are carried by the runoff.

7           In determining the amount of storm water runoff that  
8 must be handled by a drainage system, the County of Maui  
9 requires that the waters generated by a 50-year 1-hour storm be  
10 used for the design of the drainage system. While there are  
11 different storm events that can be used for design standards,  
12 the County of Maui has designated the 50-year, 1-hour storm as  
13 the event by which a drainage system must be designed for areas  
14 of less than 100 acres that have a sump or tailwater effect.

15           Since the drainage area covered by the berms is less  
16 than 100 acres, using a 50-year, 1-hour storm event, the  
17 existing diversion berms intercept approximately 157.4 cubic  
18 feet per second (cfs), corresponding to a runoff volume of  
19 140,509 cubic feet. These diversion berms prevent runoff from  
20 sheet flowing into the proposed development areas.

21           Some of the existing runoff sheet flows into the  
22 Waihee Ditch, which traverses along the western boundary of  
23 T.M.K.: (2) 3-6-005:007. The ditch flows in a southerly

1 direction toward Maalaea and supplies water to existing  
2 agricultural reservoirs.

3           Runoff from the areas below the existing diversion  
4 berms generally sheet flows in a west to east direction toward  
5 Honoapiilani Highway. There are several small culverts that  
6 divert runoff under Honoapiilani Highway, discharging the runoff  
7 into the existing cane fields on the makai side of the highway.

8           A grass swale traverses across the Maui Tropical  
9 Plantation (MTP) site parallel to Honoapiilani Highway from the  
10 northeast corner of the project site. Runoff that sheet flows  
11 across the mauka side of the project site is captured by the  
12 grass swale and diverted in a southerly direction under  
13 Honoapiilani Highway through an existing 72-inch culvert located  
14 1,000 feet to the south of the MTP entrance. Runoff within the  
15 grass swale is conveyed across the MTP entrance by a 30-inch  
16 culvert.

17           For drainage areas of more than 100 acres, the County  
18 of Maui requires the system design to cover a 100-year, 24-hour  
19 storm event. As the drainage area for the Project is more than  
20 100-acres, the runoff generated from a 100-year, 24-hours storm  
21 event was used to determine the quantity of storm water that  
22 must be accommodated by the drainage system.



1           The runoff generated from a 100-year, 24-hour storm  
2 event on the existing lands in the project site that is mauka of  
3 Honoapiilani Highway is 452 cfs for Phase I of the project which  
4 corresponds to a runoff volume of 2,418,629 cubic feet.

5 Similarly, the runoff volume generated from a 100-year, 24-hour  
6 storm event for the lands of the project site that are makai of  
7 Honoapiilani Highway is 373 cfs which corresponds to a runoff  
8 volume of 2,133,808 cubic feet.

9           For Phase II of the project site that is mauka of  
10 Honoapiilani Highway, a 100-year, 24-hour storm event would  
11 generate a runoff of 447 cfs, corresponding to a runoff volume  
12 of 2,916,206 cubic feet. The portion of the project site being  
13 developed in Phase II that is makai of Honoapiilani Highway will  
14 generate a runoff of 361cfs, corresponding to a runoff volume of  
15 2,062,681 cubic feet.

16           Presently, onsite runoff sheet flows across the  
17 project site in a west to east direction, across Honoapiilani  
18 Highway and into the existing sugar cane fields towards  
19 Kuihelani Highway and eventually discharges into Kealia Pond in  
20 North Kihei.

21           Wastewater

22           There are County sewerlines on the north side of  
23 Waikapu Stream. The MTP is serviced by a private sewer system

1 which connects to the County's sewer system on Waiko Road near  
2 Waikapu Town.

3           The MTP sewer system consists of a 6-inch sewerline  
4 and manholes from the existing buildings, crossing Honoapiilani  
5 Highway to a sewer pump station located approximately 500 feet  
6 east of Honoapiilani Highway. A 4-inch forcemain conveys the  
7 wastewater from the sewer pump station through the cane fields,  
8 across Waikapu Stream, up on Waiko Road and connects to a sewer  
9 manhole on Waiko Road east of Waikapu town. There is an 8-inch  
10 gravity sewerline from the existing sewer manhole which connects  
11 to a County-owned sewer manhole east of Waikapu Town.

12           The MTP sewer system is maintained by the MTP. The  
13 County's sewer system traverses from the manhole on Waiko Road  
14 through the Waikapu Gardens Subdivision, through privately owned  
15 properties, onto Waiale Road, down Lower Main Street and  
16 discharges into the Wailuku Sewer Pump Station near the  
17 intersection of Kahului Beach Road, Lower Main Street and Waiehu  
18 Beach Road. Sewer collected at the Wailuku Sewer Pump Station  
19 is pumped to the Kahului Wastewater Reclamation Facility (KWRP)  
20 in Kanaha.

21           According to the Wastewater Reclamation Division,  
22 County of Maui, as of July 31, 2016, the KWRP has a capacity of  
23 7.9 million gallons per day (mgd). The average flow into the

1 KWRP is 5.2 mgd and the allocated capacity is 6.55 mgd. The  
2 remaining wastewater capacity at the KWRP is approximately 1.35  
3 mgd.

4 Water

5 Water service in the vicinity of the project site is  
6 provided by the County's water system consisting of a 12-inch  
7 waterline from the 300,000-gallon tank near the mauka terminus  
8 of Waiko Road. The storage tank is at an elevation of 764 feet.

9 A 12-inch waterline crosses Honoapiilani Highway and  
10 terminates to the east of Waikapu town in the vicinity of the  
11 industrial area. A 4-inch waterline connects to the 12-inch  
12 waterline on Honoapiilani Highway and traverses in a southerly  
13 direction and ends near the northerly boundary of the MTP. The  
14 MTP site is currently being serviced by two 5/8-inch water  
15 meters located at the northeast corner of the mauka property.

16 Fire protection for the MTP is presently provided by a  
17 private system consisting of a gravity fireline from the  
18 existing lagoon located immediately to the west of the MTP  
19 restaurant. Non-potable water from the lagoon is fed to fire  
20 pumps located on the exterior of the existing buildings which  
21 supplies water to the fire sprinkler systems in the buildings.  
22 There are also fire hydrants located on the grounds of the MTP.

1    However, the fire hydrants may not have adequate pressure and  
2    capacity.

3            Now I will discuss the proposed improvements for the  
4    project which include paved roadways, a private water system,  
5    landscaping, underground water, sewer and drainage systems. The  
6    infrastructure improvements will be described in the following  
7    subheadings: (i) roadways; (ii) drainage; (iii) sewer and (iv)  
8    water.

9            Roadways

10           Access for the project will be from the roadway  
11    connections on Honoapiilani Highway for both the mauka and makai  
12    development sites, as well as the future Waiale Road extension  
13    for the makai development.

14           The developers of WCT subdivided an 80-foot wide  
15    right-of-way for the future Waiale Road extension from Waiko  
16    Road to Honoapiilani Highway. The right-of-way has been  
17    dedicated to the County for the development of the Waiale Road  
18    extension.

19           The proposed improvements for the Waiale Road  
20    extension includes two (2) 12-foot travel lanes, 6-foot paved  
21    shoulders on both sides, 6-foot grassed swales on both sides,  
22    and a 10-foot wide bike/pedestrian path on one side.

1           The main onsite roadway from the Waiale Road Extension  
2 into the MTP will have a right-of-way of 80 feet (major  
3 arterial). The major collector road makai of and parallel to  
4 Honoapiilani Highway will have a right-of-way of 60 feet. All  
5 residential streets will have a right-of-way of 48 feet (minor  
6 urban street), and the roadways serving rural areas will have a  
7 40 feet right-of-way (minor rural street). All roadways will be  
8 improved to County standards. The cul-de-sacs will have an edge  
9 of pavement radius of 40 feet and a right-of-way radius of 50  
10 feet to accommodate the larger fire trucks in the Central Maui  
11 district.

12           A Transportation Impact Analysis Report (TIAR) was  
13 completed for the project on December 2014 by Fehr & Peers,  
14 which provided the following summary:

15           The TIAR recommended the following intersection  
16 mitigation measures for mid-term 2022: Intersection 1:  
17 Honoapiilani Highway & Kuikahi Drive - add separate left turn  
18 lane on south bound Honoapiilani Highway onto Kuikahi Drive and  
19 separate left turn and straight through lanes west bound on  
20 Kuikahi Drive. No mitigation was required at the intersection  
21 of Kuihelani Highway and Waiko Road and at the intersection of  
22 Honoapiilani Highway and Waiale Road.

1           The recommended intersection mitigation measures for  
2 buildout 2026 are: Create separate left and right turn lanes  
3 east bound on Waiko Road onto Kuihelani Highway.

4           After coordination with local and state agencies  
5 during the early preparation stages of the TIAR, it was assumed  
6 that the Waiale Bypass would be completed and used in the  
7 study's future analysis scenarios. However, during the Draft  
8 EIS public circulation period, comments were raised about the  
9 impacts on the project design and the study area's  
10 transportation facilities if the Waiale Bypass was not funded  
11 and constructed in time for the project. In response, Fehr &  
12 Peers developed and analyzed forecast traffic volumes in Year  
13 2026 without the Waiale Bypass in place, both before and after  
14 the addition of project traffic.

15           Fehr & Peers outlined the full range of improvements  
16 that address both project-related and/or cumulative traffic  
17 impacts in their October 17, 2016 Memorandum (without the Waiale  
18 Bypass). They concluded that three more study intersections  
19 would be significantly impacted under this scenario than in the  
20 "with Bypass" scenario analyzed in the TIAR, a level of service  
21 of D can be achieved at the locations with an expanded program  
22 of roadway improvements as mitigation.

1           The State Department of Transportation's (SDOT) 2035  
2 Transportation Plans for the Maui District includes the widening  
3 of Honoapiilani Highway fronting the project site. Two  
4 additional travel lanes are planned. In anticipation of the  
5 future widening of Honoapiilani Highway, the planned development  
6 on the mauka and makai sides of Honoapiilani will include a  
7 landscape buffer between the highway and the proposed  
8 development. The width of the landscape buffer will be  
9 coordinated with the SDOT to accommodate the future additional  
10 two lanes.

11           Drainage

12           In general, the drainage design criteria minimize the  
13 project's alteration to existing drainage patterns and volumes.

14           Since the project area is greater than 100 acres, the  
15 NRCS Method will be used to compute and design the storm water  
16 detention facilities. The Rational Method will be used to  
17 design the onsite drainage systems with drainage areas less than  
18 100 acres. For these onsite drainage systems, the 50-year, 1-  
19 hour storm frequency will be used.

20           It is estimated that the pre-development 100-year, 24-  
21 hour storm runoff from the Phase I project site mauka of  
22 Honoapiilani Highway is 452 cfs, corresponding to a runoff  
23 volume of 2,418,629 cubic feet and 373 cfs, corresponding to a

1 runoff volume of 2,133,808 cubic feet from the Phase I project  
2 site makai of Honoapiilani Highway. Similarly, it is estimated  
3 that the pre-development 100-year, 24-hour storm runoff from the  
4 Phase II project site mauka of Honoapiilani Highway is 447 cfs,  
5 corresponding to a runoff volume of 2,916,206 cubic feet and 361  
6 cfs, corresponding to a runoff volume of 2,062,681 cubic feet  
7 from the Phase II project site makai of Honoapiilani Highway.  
8 It is estimated that the post-development 100-year, 24-hour  
9 storm runoff from the Phase I project site mauka of Honoapiilani  
10 Highway is 497 cfs, corresponding to a runoff volume of  
11 2,567,545 cubic feet and 639 cfs, corresponding to a runoff  
12 volume of 2,905,771 cubic feet from the Phase I project site  
13 makai of Honoapiilani Highway. Similarly, it is estimated that  
14 the post-development 100-year, 24-hour storm runoff from the  
15 Phase II project site mauka of Honoapiilani Highway is 507 cfs,  
16 corresponding to a runoff volume of 3,131,436 cubic feet and 506  
17 cfs, corresponding to a runoff volume of 2,454,805 cubic feet  
18 from the Phase II project site makai of Honoapiilani Highway.

19           The project's drainage system will be designed in  
20 accordance with the County's "*Rules for the Design of Storm*  
21 *Drainage Facilities*" and Section 18.20.130 Post Construction  
22 Storm Water Quality Best Management Practices of the Maui County  
23 Code.



1           The proposed project contains a mix of residential,  
2 apartment, commercial, school and open space. Runoff will be  
3 collected by drainage systems within the roadways and grassed  
4 swales within the landscaped areas and routed to eight onsite  
5 detention basins.

6           The drainage system will be designed to accommodate  
7 the increase in surface runoff volume from a 100-year, 24-hour  
8 storm created by the project and the volume required to meet the  
9 post construction water quality standards.

10           The design of the detention basins will include an  
11 overflow pipe which will allow a minimal discharge during a  
12 storm event and fully drain the basin within 48 hours after each  
13 storm event.

14           The drainage design criteria will be to minimize any  
15 alterations to the drainage pattern of the existing onsite  
16 surface runoff. No additional runoff will be allowed to sheet  
17 flow toward Kealia Pond.

18           Sewer

19           The County Department of Environmental Management  
20 (DEM) has projected that wastewater flows from the Waikapu  
21 Growth Area may reach two million gallons per day. They have  
22 stated that the preferred method of wastewater treatment from  
23 this area would be by a wastewater treatment facility located in

1 the Waikapu area. This would eliminate the excessive energy  
2 consumption for pumping, reduce the use of shoreline injection  
3 wells for disposal and allow the reuse of treated water at the  
4 proposed regional park and other nearby sites.

5 In July 2013, the DEM reviewed the capacity situation  
6 of their wastewater system in the Wailuku area. Included in  
7 their review were the existing gravity sewer lines, pump station  
8 and the treatment facility. It was determined that there is  
9 limited capacity for additional units to connect to their  
10 wastewater system.

11 The policy of the DEM is that wastewater capacity  
12 cannot be reserved until a project is ready to receive building  
13 permits. If capacity at the KWRF is available at the time  
14 building permits are ready to be issued for the project, the  
15 project may consider a temporary connection to the County's  
16 sewer system and complete the required upgrades for the  
17 connection in the Phase I development.

18 The Waikapu Country Town development will need to  
19 construct a stand-alone private wastewater treatment facility or  
20 partner with other projects in the Waikapu area, such as A&B's  
21 Waiale project or the County of Maui to construct a regional  
22 wastewater treatment facility. The planning and design of a  
23 stand-alone or combined wastewater treatment facility will be

1 coordinated with the availability of capacity within the County  
2 system. If required, a private wastewater treatment facility  
3 will be designed, constructed and in operation upon completion  
4 of the first home.

5 In addition to any capacity that may be available in  
6 the County's sewer system, the developers are considering  
7 several private wastewater treatment facility alternatives. The  
8 first is a conventional wastewater treatment facility. The  
9 second and preferred wastewater treatment alternative is to  
10 utilize Food Chain Reactor technology.

11 The Waikapu Country Town development could construct a  
12 stand-alone private wastewater treatment plant. While the  
13 treatment plant will be needed in the near term, the developers  
14 will continue to work with the County and other projects within  
15 the Waikapu area on a collaborative wastewater treatment  
16 facility.

17 Water

18 Water and fire protection for the project will be  
19 provided from a private onsite water system. Five (5) wells  
20 have been drilled on the site. Three (3) wells have been  
21 designated for potable use and two (2) for non-potable purposes.  
22 All the wells are located within the Waikapu Aquifer.

1           According to the Commission on Water Resource  
2 Management, the sustainable yield of the Waikapu aquifer is 3.0  
3 million gallons per day. The three potable water wells have  
4 been approved by the State of Hawaii, Commission on Water  
5 Resource Management for a total pumping capacity of 2,300  
6 gallons per minute (gpm).

7           Water from the potable wells was tested by an approved  
8 lab, in accordance with the requirements of the Hawaii  
9 Department of Health for new potable water sources. The results  
10 indicate that all three potable wells are capable of producing  
11 potable water of excellent quality.

12           Water pumped from the non-potable wells will be  
13 discharged into the Waihee Ditch or lined onsite reservoirs and  
14 used for irrigation purposes for the residential lots,  
15 agricultural farming, parks and open areas.

16           Based on the water usage, the projected water  
17 projected average daily water demand for Phase I is 311,033  
18 gallons per day (gpd) and the maximum daily water demand is  
19 466,550 gpd. Based on the commercial uses, the maximum fire  
20 demand is 2,000 gpm. The projected average daily water demand  
21 for Phase II is 334,475 gpd and the maximum daily water demand  
22 501,713 gpd.

1           Water conservation measures such as low-flow toilets  
2 and shower heads will be considered for use in the project,  
3 which will decrease the water demand. Irrigation of the parks  
4 and open space will be from the non-potable water source, which  
5 will also decrease the water demand.

6           A 1.0-million-gallon reservoir is required to  
7 accommodate the two phases of the project. As an alternative,  
8 the developer can also construct two storage reservoirs, each  
9 with a storage volume of 0.50 million gallons. Each 0.50-  
10 million-gallon reservoir can be constructed at the beginning of  
11 each phase. The two reservoir option can allow the second  
12 reservoir to be constructed as the demand increases and allow  
13 for more flexibility during maintenance and repair should one of  
14 the reservoirs have to be taken out of service.

15           The 1.0 million gallons of water storage will be  
16 constructed mauka of Well No. 5 at an elevation of approximately  
17 800 feet MSL. This will allow for the entire project to be  
18 serviced by gravity flow from the reservoir(s).

19           Thank you for the opportunity to speak to you.

20           DATED: Wailuku, Hawaii, October 27, 2017.

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STACY A. OTOMO