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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 STEVEN M.  
WAIKAPU PROPERTIES, LLC; MTP ) PARABICOLI  
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). )

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DIRECT TESTIMONY OF STEVEN M. PARABICOLI

1 My name is Steven M. Parabolicoli.

2 I have been employed in the water and wastewater  
3 industry in Hawaii for thirty-eight years. The bulk of my  
4 experience has been on the island of Maui but I have also been  
5 involved in projects throughout the State of Hawaii. Most of my  
6 experience was with the County of Maui's Wastewater Reclamation  
7 Division. I have also worked part time in the private sector as  
8 a consultant and taught water and wastewater classes for the  
9 University of Hawaii.

10 I possess a Hawaii Grade IV Wastewater Operator  
11 certification. This is the highest level of operator  
12 certification issued by the Hawaii Department of Health's Board  
13 of Wastewater Operator Certification.

14 I am a past president of the Hawaii Water Environment  
15 Association; which is the local chapter of the international  
16 Water Environment Association. I currently serve on the Hawaii  
17 Water Environment Association's Water Reuse Committee.

18 I received a Bachelor of Science in Biology in 1978  
19 from Framingham State College (Massachusetts).

20 After graduating from college, I relocated to Maui.

21 I started my career in the water and wastewater  
22 industry in 1979 at the Pukalani Wastewater Treatment Plant as a  
23 wastewater treatment plant operator and laboratory technician.

1           I then worked for the Kapalua Water and Wastewater  
2 Treatment Company as a wastewater treatment plant operator,  
3 laboratory technician and water distribution operator from 1980  
4 to 1984. During this period, I passed the Hawaii Grades II and  
5 III Wastewater Operator examinations.

6           The County of Maui extended its west Maui wastewater  
7 collection system to the Kapalua area in 1984. As a result,  
8 Kapalua Water and Wastewater Treatment Company planned to shut  
9 down its wastewater treatment plants. Since I possessed a Grade  
10 3 Wastewater Operator license, I was hired by the County of  
11 Maui's Wastewater Reclamation Division as a wastewater treatment  
12 plant operator at the Wailuku-Kahului Wastewater Reclamation  
13 Facility in April 1984.

14           I was promoted to the facility's supervisor position  
15 in 1985. I remained in that position until 1993.

16           I obtained my Hawaii Grade IV Wastewater Operator  
17 license while in this position and have held it ever since.  
18 During this time period, the County of Maui established a goal  
19 to reduce its reliance on injection wells utilized to dispose of  
20 the treated effluent from its wastewater facilities. In 1993,  
21 the County created the position of Water Recycling Program  
22 Coordinator. I applied and was selected for this position and  
23 held it for twenty years.

1           While in this position, I was involved in all aspects  
2 of water recycling and reuse including troubleshooting plant  
3 operations, long range planning, writing reports, public  
4 education and outreach, budgeting, grant writing, project  
5 inspections, permitting and recycled water distribution system  
6 operation and maintenance. I also published a number of papers  
7 on water reuse and delivered numerous presentations on this  
8 topic at local and national conferences.

9           I was selected to fill the position of Wastewater  
10 Operations Program Superintendent in 2013. After two years in  
11 this position, I concluded my career with the County of Maui and  
12 retired at the end of 2014 with close to thirty-one years of  
13 service.

14           I also worked part time as a Project Manager for over  
15 thirteen years for the Limtiaco Consulting Group, a civil and  
16 environmental consulting firm from Honolulu. I worked on several  
17 projects in this capacity. These projects were related to  
18 wastewater treatment, water reuse and water conservation  
19 initiatives.

20           I am currently a part time lecturer for the University  
21 of Hawaii Maui College. I teach an entry level water and  
22 wastewater operator class for the Sustainable Living Institute  
23 of Maui.

1 I am also a part time instructor for the University of  
2 Hawaii's Water Resource Research Center. I teach short one to  
3 three-day classes to wastewater operators so that they can earn  
4 continuing education units required to maintain their respective  
5 Hawaii wastewater operator certifications.

6 A copy of my curriculum vitae is attached as Exhibit  
7 "29."

8 Since 2015, I have been a partner with Mana Water LLC.  
9 My title is Chief Technical Officer. Mana Water is based in  
10 Lahaina, Hawaii. Mana Water has teamed with select companies to  
11 provide local engineering and design support for our projects.  
12 Our goal is to bring sustainable wastewater reclamation and  
13 reuse to Hawaii by introducing the Organica Water wastewater  
14 treatment system to our State. Organica Water is based in  
15 Budapest, Hungary with offices in Princeton, New Jersey and was  
16 founded in 1998.

17 The Organica Water wastewater system utilizes attached  
18 microorganisms that grow on both plant roots and engineered  
19 media; the microorganisms, coupled with fine bubble aeration,  
20 break down the contaminants in wastewater and produce effluent  
21 that is suitable for water reuse applications.

22 Mana Water prepared a report concerning the use of the  
23 Organica Water wastewater system for the Waikapu Country Town

1 project. A copy of the report is attached as Appendix "K" to  
2 Exhibit "25" which is the Final Environmental Impact Statement.  
3 I was involved in the preparation of the report and the report  
4 accurately reflects the opinions of Mana Water on a recommended  
5 method of treating the wastewater that will be generated by the  
6 Waikapu Country Town project.

7 I would like to discuss the Organica Water wastewater  
8 system with you and how the system would be beneficial for both  
9 the project and for Maui.

10 I visited several Organica Water facilities in April  
11 2015.

12 I was very impressed by the operational aspects of  
13 these facilities. Each facility produced very clean effluent  
14 and was odor free. The plants utilized are tropical in nature  
15 and the root zones provide an ideal habitat for beneficial  
16 microorganisms to attach and grow. The tropical plants also  
17 provide a vastly improved aesthetic experience as compared to  
18 the industrial appearances of typical wastewater treatment  
19 plants. When touring an Organica Water facility, it feels as  
20 though you are walking through a botanical garden rather than a  
21 wastewater treatment plant.

22 Plant operators at these facilities stated that the  
23 Organica Water wastewater facilities were much easier to operate

1 and performed better than conventional activated sludge  
2 facilities.

3           Organica Water has over ninety facilities in operation  
4 worldwide in Europe, Asia and North America. Many of these  
5 facilities are in city or urban environments such as near busy  
6 intersections, or located very close to places frequented by  
7 people.

8           The Organica Water wastewater system utilizes a  
9 diverse biological system to improve efficiency. Food Chain  
10 Reactors that are comprised of tropical plants, engineered media  
11 and fine bubble aeration are used to intensify the wastewater  
12 treatment process. There is more than four times the number of  
13 microorganisms in an Organica Water facility than a conventional  
14 wastewater treatment plant.

15           This diversity and increased number of microorganisms  
16 result in a significant reduction in energy costs compared to  
17 those associated with a conventional wastewater treatment plant.  
18 A conventional wastewater treatment plant capable of treating  
19 about 650,000 gallons per day of wastewater would require about  
20 410,000 kWh of electrical power annually. The Organic Water  
21 facility for the Waikapu Town Project is estimated to require  
22 about 306,000 kWh of electrical power annually. The savings in  
23 terms of electrical power is estimated to be about 100,000 kWh

1 per year or about one-third of the estimated annual electrical  
2 usage.

3           Additionally, the geographical footprint of an  
4 Organica Water facility is significantly less than a  
5 conventional wastewater treatment plant, thereby reducing  
6 infrastructure costs. As a reference, the Kahului Wastewater  
7 Treatment Plant has a design capacity of 7.9 MGD and occupies  
8 about 14 acres of land. The Organica Water facility will have a  
9 design capacity of about 650,000 gallons per day and will occupy  
10 about 0.5 acres, including the R-1 storage area.

11           Finally, sludge production will be reduced. The  
12 Organica Water Facility's food chain reactor technology provides  
13 for a longer retention period during which wastewater is subject  
14 to treatment by the facility's microorganisms and aeration. The  
15 result is a reduction of sludge produced due to the more active  
16 treatment, which reduction may approach 30 %. The reduction of  
17 sludge provides the following benefits: reduced amount of  
18 trucking/off-hauling of the resultant sludge; reduced energy to  
19 aerate and dewater the resultant sludge; reduced chemical usage  
20 to condition the resultant sludge for dewatering; and reduced  
21 further treatment needs such as composting to render the  
22 dewatered sludge suitable for recycling.

23           I believe that the Organica Water wastewater system is

1 very suitable for Hawaii since land and energy costs are very  
2 expensive.

3           The Organica Water wastewater system will be followed  
4 by filtration and ultra-violet disinfection resulting in the  
5 production of R-1 recycled water.

6           R-1 water is the highest level of recycled water  
7 recognized by the State of Hawaii's Department of Health.

8 R-1 recycled water can be used for irrigation of food crops,  
9 landscapes, etc. with very few restrictions. Generally R-1  
10 water use is restricted to prevent overspray, to prevent run  
11 off, to prevent ponding, and to prevent the use of conventional  
12 hose bibs so that the R-1 recycled water cannot be used for  
13 potable purposes.

14           The use of R-1 recycled water will contribute to  
15 sustainability of the Waikapu Country Town project and reduce  
16 its reliance on other water sources; such as well and stream  
17 water, that are used for non-potable purposes. It is estimated  
18 that at full capacity and upon full buildout of the Organica  
19 Water wastewater system for the Waikapu Country Town project,  
20 about 650,000 gallons per day of treated R-1 recycled water will  
21 be available for reuse.

22           To summarize, the Waikapu Country Town project is  
23 proposing to utilize the Organica Water Wastewater System to

1 treat the wastewater from its development. This system will  
2 result in a lower overall operational cost and produce R-1  
3 recycled water that is suitable for non-potable reuse. The  
4 wastewater reclamation facility will blend into the natural  
5 environment and not only will help contribute to the  
6 sustainability of the Waikapu Country Town, but will be a source  
7 of community pride for years to come.

8 I thank you for the opportunity to address you.

9 DATED: Wailuku, Hawaii, October 31, 2017.

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Steven M. Parabolicoli  
STEVEN M. PARABICOLI