

WRITTEN DIRECT TESTIMONY OF STACY OTOMO

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1. Please state your name and business address for the record.

Stacy A. Otomo
Otomo Engineering, Inc.
305 South High Street, Suite 102
Wailuku, HI 96793

2. What is your current occupation?

I am the principal engineer of Otomo Engineering, Inc. specializing in civil engineering.

3. How long have you been specializing in civil engineering?

Otomo Engineering, Inc has been in business since 1991. However, I have been a Hawaii registered civil engineer since 1981. Some of the projects that I have been involved in over the years include:

- Route 2100 – South Kihei Road Drainage Improvements in Kihei, Maui
- Kihei Drainage Master Plan in Kihei, Maui
- South Kihei Road Improvements-Phase III in Kihei, Hawaii
- Waikapu Affordable Housing Project in Waikapu, Maui
- Ohana Kai Village in Maalaea, Maui
- Ka'ono'ulu Estates – Phase IV in Kihei, Maui
- The Villages a Ka'ono'ulu in Kihei, Maui
- Olowalu Country Town in Olowalu, Maui
- Waikapu Country Town in Waikapu, Maui
- Waluku/Kahului Force Main Replacement in Kahului, Maui

4. Is Petitioner's Exhibit 28 a true and correct copy of your resume?

Yes.

5. Please briefly describe your educational background.

I obtained a Bachelor of Science degree in Civil Engineering from the University of Hawaii in 1977. I obtained a Masters of Science degree in Civil Engineering from the University of Hawaii in 1979.

1 6. What other qualifications do you have?

2 Registered Civil Engineer Hawaii, 1981, No. 5115

3 7. To what professional organizations do you belong?

4 Hawaii Society of Professional Engineers, Maui Chapter (past President; past State
5 Director)

6 Maui County Urban Design Review Board (past Member)

7 Kaanapali Golf Estates (past Member New Construction Committee)

8 Wailuku Country Estates (past Member Design Review Committee)

9 8. Have you ever been qualified as an expert witness in civil engineering before the
10 Land Use Commission?

11 I have testified before the Land Use Commission in the following matters: (1) Pulelehua;
12 (2) Waikapu Gardens; (3) Kula Ridge Affordable Housing Project; (4) Consolidated Baseyard
13 Subdivision; and (5) Waiko Light Industrial Project.

14 9. Are you familiar with the Project?

15 Yes. The Petition Area is approximately 86.030 acres located at TMK No. (2) 3-8-008:
16 019. The Project is proposed as a heavy industrial subdivision to be known as the Pu'unene
17 Heavy Industrial Subdivision to consist of approximately 28 heavy industrial lots that will range
18 in size from 0.5 acre to 20 acres. Related infrastructure improvements to support the Project
19 include the construction of internal roadways, drainage retention systems, grading work,
20 landscaping and utilities (e.g., water, telephone, cable, electric, private water system, individual
21 wastewater systems, etc.). The developable lots within the Project will encompass approximately
22 66 acre, and the interior roadways and drainage retention area will encompass approximately 20
23 acres.

24 10. How did you familiarize yourself with the Project?

25 Otomo Engineering, Inc. was retained by Petitioners CMBY 2011 Investment, LLC to
26 prepare a study titled "Preliminary Engineering Report for Puunene Heavy Industrial Subdivision,
27 Puunene, Maui, Hawaii" dated February, 2012 ("PER"). A copy of the PER was included as
28

1 Appendix P of Petitioner's Exhibit 1 (the Environmental Assessment prepared by Chris Hart &
2 Partners for the Project).

3 11. **Please summarize the scope of the PER.**

4 The purpose of the PER was to provide information on the existing infrastructure that will
5 be serving the Project, and evaluate the adequacy of that infrastructure, and determine what
6 improvements will be required in order to support the development of the Project.

7 12. **Please briefly describe the existing infrastructure.**

8 I will do so in the following subheadings: (i) roadways; (ii) drainage; (iii) sewer; (iv)
9 water; and (v) electric and telephone.

10 Roadways

11 Access to the Petition Area is at the northern tip of the property via Lower Kihei
12 Road/South Firebreak Road through to the Mokulele Highway-Kama'aina Road-Mehameha Loop
13 intersection.

14 The intersection of Mokulele Highway at Kama'aina Road and Mehameha Loop is four-
15 legged and signalized. Mokulele Highway is a four-lane divided highway with a north-south
16 orientation connecting Kahului to the north, and Kihei to the south. The posted speed limit is 45
17 miles per hour. A bike path runs along the east side of the Highway. Mokulele Highway is under
18 the jurisdiction of the State Department of Transportation ("DOT").

19 Mokulele Highway has one lane approaches from Kama'aina Road at the east approach
20 and Mehameha Loop at the west approach and has a speed limit of 45 miles per hour in the
21 vicinity of Kama'aina Road. Kama'aina Road has a 24-foot wide concrete pavement for
22 approximately 1,500 feet from Mokulele Highway and transitions to an asphalt pavement up to its
23 intersection with South Firebreak Road, which provides access to the Project by a 24-foot wide
24 asphalt pavement.

25 Drainage

26 The Petition Area slopes down in the east to west direction ranging in elevation from
27 approximately 140 feet to 120 feet above mean sea level, with an average slope of approximately
28 1.8%. The existing 50-year storm runoff from the project site is estimated at 75.2 cfs and 135,400

1 cf of runoff volume. Presently, onsite runoff sheet flows across the project site in an east to west
2 direction into the downstream parcels and towards Mokulele Highway.

3 According to the "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State
4 of Hawaii" (August, 1972), prepared by the U.S. Department of Agriculture Soil Conservation
5 Service, a majority of the soil within the project site is classified as Waiakoa extremely stony silty
6 clay loam, which is characterized as having medium runoff, and a severe erosion hazard. A
7 portion of the soils within the southern end of the Petition Area is classified as Alae Sandy Loam
8 Alae sandy loam, which is characterized as having slow runoff with a slight erosion hazard.

9 According to Panel Number 1500030580E of the Flood Insurance Rate Map, dated
10 September 25, 2009, prepared by the U.S. Federal Emergency Management Agency, the project
11 site is situated in Flood Zone X, which represents areas outside of the 0.2% annual chance flood
12 plain.

13 Sewer

14 There are no County sewer facilities within or adjacent to the Petition Area. The nearest
15 County sewerline is approximately 10,000 feet to the south of the project site in Kihei.

16 Water

17 There is no County water system currently servicing the Petition Area. An 8" water line
18 from the County water system extending up Kamaaina Road services some of the surrounding
19 properties from the Mokuhaui wells located in Happy Valley. The 36-inch Central Maui
20 transmission line runs along Mokulele Highway from Wailuku to service the Kihei area. This
21 system is at or near capacity and may be inadequate to provide source and storage for the Project.

22 Electric and Telephone

23 There is an existing electrical transmission system located within an easement granted to
24 Maui Electric Company, Ltd. that traverses along Kaimana Road and South Firebreak Road to the
25 north end of the Petition Area and provides service to the surrounding area.

26 13. **Please briefly describe the infrastructure improvements needed to support the**
27 **Project.**

1 Proposed improvements for the Project include paved private roadways, private water
2 system, landscaping, underground water, sewer, drainage, electrical, and telephone systems. I
3 will describe the infrastructure improvements in the following subheadings: (i) roadways; (ii)
4 drainage; (iii) sewer; (iv) water; and (v) electric and telephone.

5 Roadways

6 Access to the proposed subdivision will be from Kamaaina Road, South Firebreak Road,
7 and Lower Kihei Road. Petitioner CMBY 2011 Investment, LLC has obtained approval from the
8 State of Hawaii Department of Land and Natural Resources for a 56 foot wide access and utility
9 easement connecting South Firebreak Road to the northern tip of the Petition Area.

10 The Project's interior subdivision streets will have 56 foot right-of-ways and will be
11 improved with two 18 foot wide travel lanes and 10 foot wide shoulders on each side. Flexible
12 design standards will be utilized in the design of the subdivision's roadway system as provided
13 for by Section 18.32.030 of the Maui County Code pertaining to General Criteria for Flexible
14 Design Standards. Appropriate striping and signage will be installed in accordance with the
15 Department of Public Works.

16 A Traffic Impact Analysis Report ("**TIAR**"), dated January 24, 2012 was prepared by
17 Phillip Rowell and Associates, which provided that no mitigation is required for 2015 background
18 conditions for the Intersection of Mokulele Highway at Kamaaina Road and Mehameha Loop.
19 To mitigate the background plus the project deficiencies, the TIAR recommended the following
20 measures: "1. Modify westbound approach to provide a separate right turn lane. 2. Provide
21 acceleration lane for westbound to northbound right turns. 3. Lengthen southbound left turn
22 deceleration lane from 60 feet to 350 feet."

23 In addition, the TIAR recommended that: (1) the areas adjacent to Kamaaina Road, South
24 Firebreak Road and Lower Kihei Road should be monitored often to insure that the sugar cane
25 growth impedes sight distances and visibility of traffic control devices are maintained; and (2)
26 that Kamaaina Road, South Firebreak Road and Lower Kihei Road should be striped and signed
27 per County of Maui Standards to account for increased traffic volumes, with design
28 considerations for the high proportion of traffic that will be heavy vehicles.

1 Drainage

2 A master drainage system will be designed within the roadways, including catch basins,
3 manholes, drainlines and a drain stubout to each lot. Each lot will be required to install an onsite
4 drainage system to collect runoff and provide a drainline connection to the drain stubout.
5 Roadside runoff will be conveyed to a series of retention basins constructed as part of the
6 subdivision improvements along the western portion of the Petition Area, which will have
7 capacity to accommodate the estimated increase of surface runoff from the fully developed
8 Project of approximately 253.3 cfs of runoff and 278,500 cf of runoff volume.

9 There will be no increase in runoff sheet flowing from the Petition Area after completion
10 of the development and the drainage design will also be to minimize any alterations to the natural
11 pattern of the existing onsite surface runoff. This is in accordance with Chapter 4, Rules for the
12 Design of Storm Drainage Facilities in the County of Maui.

13 Sewer

14 Individual wastewater systems ("IWS") will be installed by individual lot owners. Each
15 IWS will include an aerobic treatment unit and an individual leach field. Each lot owner will be
16 required to submit their IWS plans to the State Department of Health for review and approval
17 prior to obtaining any building permits. Some of the restrictions of an IWS are that it has to be at
18 least 5 feet away from the wall line of any structure, 9 feet from a property line, 50 feet from a
19 stream, 10 feet from a large tree, and 1,000 feet from a potable drinking water well (if cesspools
20 are used).

21 Water

22 Based on the Domestic Consumption Guidelines set forth by the Department of Water
23 Supply and dual water system guidelines that recommend a 30/70, potable/non-potable split for
24 industrial lands, the potable water demand for Project is approximately 118,620 GPD, the non-
25 potable water requirement is approximately 305,030 GPD, and the fire flow demand for a heavy
26 industrial development is 2,500 gallons per minute for a 2-hour duration. A dual water system
27 will be constructed to provide the recommended potable water from reverse osmosis treatment,
28 non-potable water from groundwater supplied by onsite wells, and adequate fire flow.

1 A Groundwater Resource and Water System Assessment Report, prepared by Tom Nance
2 Water Resource Engineering, provided the following summary of recommended improvements
3 for the proposed dual water system, and the "Well Infrastructure Site Plan" was filed as
4 Petitioner's Exhibit 42.

- 5 1. Three 300 gpm wells, one providing standby capacity.
- 6 2. Three 75 gpm reverse osmosis (RO) treatment trains, one providing standby capacity.
- 7 3. A 0.25 million gallon (MG) storage reservoir for potable use
- 8 4. A 0.40 million gallon (MG) storage reservoir for non-potable use.
- 9 5. The potable and non-potable water system will each require a booster pump with a
10 backup generator power for the non-potable pump station to ensure fire protection during a power
11 outage.

12 Electric and Telephone

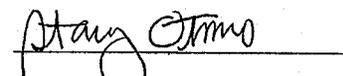
13 The proposed electrical and telephone distribution systems for the Project will be installed
14 from the existing overhead facilities located along the north side of the project site. Within the
15 project site, the electric and telephone systems will be installed underground in accordance with
16 the utility companies rules and regulations. Street lights will be installed along the streets at
17 intervals to be determined by the electrical engineer.

18 14. **In your professional opinion are there any infrastructure challenges that will**
19 **preclude development of the Project?**

20 No. The proposed infrastructure improvements are sufficient to meet the needs of the
21 Project. Therefore, in my professional opinion, it is unlikely that there will be any infrastructure
22 challenges that will preclude development of the Project.

23 DATED: Wailuku, Hawaii, August 14, 2013.

24 Respectfully submitted,

25 
26 STACY OTOMO

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