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Attorneys for Petitioners

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition	)	DOCKET NO. A15-798
of:	)	
	)	DIRECT TESTIMONY OF NETAI BASU
WAIKAPU PROPERTIES, LLC; MTP	)	
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 NETAI BASU

1           My name is Netai Basu. I am a transportation planner  
2 employed by Fehr & Peers, a transportation and traffic  
3 engineering consulting firm.

4           A transportation planner designs, evaluates and plans  
5 for the implementation of transportation infrastructure.  
6 Functions performed by a transportation planner that would apply  
7 to the work I performed for the Waikapu Country Town Project  
8 included designing and conducting transportation impact studies  
9 for a specific land development project, applying nationally and  
10 locally accepted methods and standards to analyze the impacts of  
11 the project on the traffic in the area of the project, and  
12 suggesting appropriate transportation infrastructure to address  
13 the impacts of the project.

14           In 1994 I obtained a Master's degree in Urban and  
15 Regional Planning from San José State University in San José,  
16 California. Prior to that I received a Bachelor of Arts degree  
17 in History from Oberlin College. I am a member of the  
18 Association of Environmental Professionals and have been a  
19 member of the American Planning Association (APA) for over two  
20 decades and became a member of the American Institute of  
21 Certified Planners (AICP #013655) in 1998. I received the  
22 advanced credential of Certified Transportation Planner in 2014  
23 which required me to have at least 8 years of experience in the

1 area of transportation planning and to pass an examination.  
2 There are about approximately 100 certified transportation  
3 planners in the United States.

4 I have been a practicing transportation planner for  
5 over 23 years. During that time, most of my professional work  
6 has been in California. Since 2001, however, I've also worked  
7 on projects in Hawaii. Among them have been transportation  
8 impact studies for projects on Maui, Oahu and the Big Island.  
9 Additionally, I was involved in the development of the Hawaii  
10 Statewide Traffic Plan for 2004 and the Travel Demand  
11 Forecasting Model for the County of Maui in 2007.

12 I testified before numerous City Councils and Planning  
13 Commissions, as well as other public bodies, on transportation  
14 planning issues. I provided testimony on traffic planning of a  
15 technical and specialized nature before commissions, boards and  
16 counsels, for over 15 years. A current copy of my resume is  
17 attached as Exhibit 28.

18 In 2013 Fehr & Peers was engaged to provide traffic  
19 planning advice for the Waikapu Country Town project. I have  
20 been acting as the lead person for Fehr & Peers on this project  
21 since we were first engaged. Our scope of work included  
22 preparation of trip generation estimates for the proposed  
23 development, review of the site plan from a circulation and

1 access perspective, collection of traffic data and information  
2 on planned land use developments and roadway improvements in the  
3 central Maui area, analysis of existing and projected traffic  
4 operating conditions, application of the County's preferred  
5 analysis methods, an assessment of conditions that could result  
6 from the combined effect of traffic generated by the proposed  
7 Waikapu Country Town Project in combination with existing  
8 traffic volumes plus what is expected from other planned  
9 projects in the area, and make recommendations on improvements  
10 to support the overall forecast level of activity.

11 To fulfil the scope of work, my firm performed the  
12 following actions. We obtained information on other  
13 developments that were planned for the region. This work  
14 consisted of compiling a list of development projects proposed  
15 for Central Maui. The list is found on Table 4 of our Traffic  
16 Impact Analysis Report ("TIAR") that is attached as Appendix I  
17 to the Final Environmental Impact Statement which is Exhibit  
18 "25". Additionally, we obtained copies of traffic impact  
19 analysis reports and/or environmental assessments/environmental  
20 impact statements for those projects which submitted the  
21 reports, assessments or statements to governmental agencies. We  
22 also obtained the current travel demand forecasting model for  
23 the County of Maui from the State of Hawaii, Department of

1 Transportation. Baseline traffic counts at selected  
2 intersections were performed, as well as field observations of  
3 roadways and intersections in the region. Additionally, I  
4 contacted the departments of the County of Maui involved with  
5 traffic and transportation, as well as the State of Hawaii  
6 Department of Transportation, to obtain input from those groups  
7 concerning existing and projected traffic conditions.

8           After the information was gathered, it was analyzed  
9 using a model to forecast traffic based on land uses. Our staff  
10 updated the island-wide travel demand model (originally prepared  
11 by HDOT for the Maui Long-Range Land Transportation Plan  
12 (LRLTP)) to include all of this planned growth and funded  
13 roadway improvements. This model is the best available planning  
14 tool for forecasting future traffic volumes over a relatively  
15 long period. Specifically, the model includes existing and  
16 projected land uses so that forecasting of the traffic that will  
17 result from the project will more closely match the trips made  
18 by the persons who will use the project, especially in a mixed-  
19 use project such as Waikapu Country Town.

20           In addition to the information gathering and analysis,  
21 Fehr & Peer reviewed concept plans for the project. Suggestions  
22 about the placement of intersections and design of internal  
23 roadways was provided to allow for the development of a project

1 that supported the variables that result in multi-modal  
2 transportation. Multi-modal transportation allows for the use  
3 of non-motor vehicle access to services and goods in a mixed-use  
4 project. In other words, walking and bicycling is encouraged by  
5 the placement of pathways and the location of goods and services  
6 in proximity to residential uses.

7           Following the analysis of the information, the impacts  
8 were determined and measures were reviewed to mitigate the  
9 impacts of the traffic that is expected to be generated by the  
10 project. I prepared the TIAR which is attached as Appendix I to  
11 the Final Environmental Impact Statement which is Exhibit "25."

12           Additionally, drafts of the TIAR were provided to  
13 governmental agencies for review and comment. Based on comments  
14 received, I also prepared a technical memorandum which analyzed  
15 the effect of the projected traffic from the Waikapu Country  
16 Town Project if the proposed Waiale Bypass were not built. The  
17 Waiale Bypass is planned as a southward extension of Waiale Road  
18 from its existing terminus at Waiko Road to a new intersection  
19 with Honoapi'ilani Highway about one mile south of the  
20 intersection of Waiko Road and Honoapi'ilani Highway. The  
21 technical memorandum is attached as Appendix J to the Final  
22 Environmental Impact Statement.

23           Although I am submitting both the TIAR and the

1 technical memorandum as a part of my testimony, I would like to  
2 discuss some aspects of both documents in greater detail.

3           The proposed Waikapu Country Town project is located  
4 on mostly undeveloped land south of Waiko Road in the Waikapu  
5 community of Central Maui. Honoapi'ilani Highway (Highway 30)  
6 runs through the project. Mixed-use neighborhoods will be built  
7 on both sides of Honoapi'ilani Highway in two phases over the  
8 coming decade.

9           The first phase includes a "Village Center" that is  
10 mauka of Honoapi'ilani Highway in the present location of the  
11 Maui Tropical Plantation. The Village Center will have about  
12 170,000 square feet of commercial (restaurant and retail) and  
13 employment (office, industrial, and governmental) space. The  
14 remainder of the first phase will have about 731 residential  
15 units, an elementary school and 27 acres of park and open space.

16           The project's second phase will include about 848  
17 additional residential units and approximately 6 acres of park  
18 and open space. Primary access to the project would be provided  
19 via Honoapi'ilani Highway and Waiale Road by way of the planned  
20 southward extension of Waiale Road known as the Waiale Bypass.  
21 Much of the right-of-way necessary to construct the Waiale  
22 Bypass lies within the Waikapu Country Town site.

23           The proposed development includes an extensive

1 internal roadway system which will support all travel modes for  
2 residents and visitors to access neighborhoods, employment  
3 centers, commercial areas, and institutional uses. The Project  
4 is designed to encourage pedestrian and bicycle trips while  
5 allowing for the use of motor vehicles.

6           The traffic impact analysis was conducted pursuant to  
7 guidelines established by the County of Maui and the State of  
8 Hawaii Department of Transportation-Highways Division-Planning  
9 Branch. Weekday a.m. and p.m. peak hour capacity analysis was  
10 conducted for fourteen intersections within or near the vicinity  
11 of the project. Of the fourteen intersections, eight presently  
12 exist and six are planned. Early in the study process I  
13 conducted pre-consultation, early outreach, to these agencies to  
14 present information on the proposed project, our planned  
15 approach to the study (including trip generation estimates,  
16 forecast scenarios, analysis methodologies and study locations),  
17 to obtain their comments on the same, and to obtain information  
18 on planned land developments and infrastructure improvements in  
19 the area.

20           The TIAR assessed existing conditions and then  
21 forecast traffic volumes without and with the development of the  
22 proposed project. Trip generation estimates are based on rates  
23 published in *Trip Generation 9<sup>th</sup> Edition* (Institute of



1 Transportation Engineers ("ITE"), 2012), which were developed  
2 through observations of stand-alone, single-use developments  
3 across the country.

4 Because the proposed Waikapu Country Town project  
5 includes a mix of uses (residential, commercial, recreational,  
6 and governmental), empirical data was used to estimate  
7 internalization and non-motorized trip reductions to apply to  
8 the ITE-based automobile trip generation for WCT. Stated  
9 another way, in addition to considering the impacts of traffic  
10 that left the project, the impacts of traffic within the project  
11 were considered.

12 The first phase of the project is estimated to  
13 generate approximately 700 trips during the weekday morning peak  
14 hour and 1,000 trips during the weekday afternoon peak hour. At  
15 the end of the second phase, the entire project would generate a  
16 total of approximately 1,200 trips in the weekday AM peak hour  
17 and 1,500 trips in the weekday PM peak hour.

18 Based on the study that I prepared, the future  
19 intersection operating conditions will be significantly affected  
20 by regional growth and development in the study area before  
21 project implementation. In other words, based on current and  
22 projected development in the Central Maui area, the operating  
23 conditions of the existing intersections will be impacted by

1 those developments. Among the neighboring projects are Waiale,  
2 Maui Lani Development, Kehalani Development, Pu'unani  
3 residences, as well as numerous smaller developments.

4           The County of Maui has identified level of service  
5 (LOS) D as a goal. LOS is a qualitative way to describe the  
6 operations of roadway facilities that is based on such factors  
7 as speed, travel time, delay, and freedom to maneuver. Six  
8 levels are defined from LOS A, with the least congested  
9 operating conditions, to LOS F, with the most congested  
10 operating conditions. LOS E represents "at-capacity" operations.  
11 Operations are designated as LOS F when volumes exceed capacity.

12           Future regional development will be accompanied by  
13 roadway network changes that will improve mobility options for  
14 residents and visitors, as well as expand roadway capacity at  
15 various locations within the study area. Nevertheless, with  
16 this growth, five of the 14 study intersections are projected to  
17 operate at an undesirable level of service (LOS E or LOS F)  
18 during one or both peak hours in the future even if the Waikapu  
19 Country Town project was not built.

20           The TIAR addresses completion of the first phase  
21 (2022) and the second phase (2026) of the Project separately.  
22 Upon development of both phases of the Project, six of the 14  
23 intersections studied are projected to operate at undesirable

1 levels of service during one or both peak hours. This means  
2 that the Project will result in only one additional intersection  
3 that will operate at an undesirable level of service.

4 Mitigation strategies were developed by my firm to  
5 identify specific improvements at these six intersections to  
6 fully mitigate the identified project-related and cumulative  
7 impacts by achieving LOS D or better for intersection  
8 operations.

9 Intersection 1: Honoapi`ilani Highway & Kuikahi Drive -  
10 Widen the westbound approach from a shared through/left-turn  
11 lane and right-turn lane to a left-turn lane, a through lane,  
12 and a right-turn lane, and widening the southbound approach from  
13 a left-turn lane, a through lane, and a right-turn lane to two  
14 left-turn lanes, a through lane, and a right-turn lane.  
15 Additionally, to complement the addition of a second southbound  
16 left-turn lane, the east leg would need to be widened to provide  
17 a second departure lane and the northbound and southbound left-  
18 turn phasing would need to be converted to protected left turns.

19 Intersection 2: Waiale Road & Kuikahi Drive: The pre-  
20 project improvement includes widening the eastbound and  
21 westbound approaches to provide a left-turn lane, two through  
22 lanes, and a right-turn lane. To complement the widening of the  
23 eastbound and westbound approaches, both the eastbound and

1 westbound departures would also need to be widened to each  
2 provide a second receiving lane. The additional improvement  
3 needed to achieve LOS D or better includes the pre-project  
4 improvements plus widening the northbound approach to provide a  
5 left-turn lane, a through lane, and a right-turn lane.

6 Intersection 3: S. Kamehameha Avenue/Maui Lani Parkway -  
7 The pre-project improvement is installing a traffic control  
8 signal with permitted phasing at all approaches. For LOS D or  
9 better operations, not only would the traffic signal need to be  
10 installed but the eastbound approach would need to provide a  
11 left-turn lane and a shared through/right-turn lane, the  
12 westbound approach would need to provide a left-turn lane, a  
13 through lane, and a right-turn lane, and the southbound would  
14 need to provide a left-turn lane, a through lane, and a right-  
15 turn lane.

16 Intersection 4: Kuihelani Highway & Maui Lani Parkway -  
17 Widen the eastbound approach to provide a left-turn lane, a  
18 shared through/left-turn lane, and a right-turn lane. In  
19 addition to this lane reconfiguration, the eastbound and  
20 westbound left-turn signal phasing would need to be modified to  
21 split phasing.

22 Intersection 7: S. Kamehameha Avenue/Waiko Road - Install a  
23 traffic signal with permitted phasing at all approaches.

1 Intersection 8: Kuihelani Highway/Waiko Road – Widen and  
2 restripe the eastbound approach to provide a left-turn lane and  
3 a right-turn lane.

4 Fair share calculations were made based on the  
5 relative portion of total traffic growth that is forecast to be  
6 related to the Waikapu Country Town project. To do this, the  
7 project-related growth in traffic at each impacted intersection  
8 was identified and divided by the total growth projected to  
9 calculate the project share as a percentage. This was done for  
10 both the AM and the PM peak hours, and the higher proportion was  
11 said to be the project share.

12 The project proposes to fully fund mitigation measures  
13 that would return operations to pre-project levels at  
14 Honoapi`ilani Highway and Kuikahi Drive (Intersection 1) and  
15 Kuihelani Highway and Waiko Road (Intersection 8).  
16 Additionally, although the intersection of Honoapi`ilani Highway  
17 and Waiale Road (Intersection 13) is not significantly impacted  
18 under Year 2026 with Project Conditions, the project would be  
19 responsible for funding intersection improvements at that  
20 intersection to provide access to the project site.

21 As I mentioned, we conducted additional analysis of a  
22 “No Waiale Bypass scenario” to assess cumulative and project-  
23 related impacts upon full build-out of the proposed project if

1 the planned Waiale Bypass were not constructed. If the Waiale  
2 Bypass were not built, the number of intersections significantly  
3 impacted would increase by three. An acceptable level of  
4 service for those three intersections can be achieved with an  
5 expanded program of roadway improvements as mitigation. The  
6 expanded program would include different and, in most cases,  
7 more extensive improvements than are described above for  
8 Intersections 1, 2, 3, 4, 7 and 8. In addition, mitigation  
9 measures would be needed at Intersections 5, 6 and 13, as  
10 follows:

11 Intersection 1: Honoapi'ilani Highway & Kuikahi Drive: In  
12 addition to the improvements described earlier, the addition of  
13 a second southbound left-turn lane and a second westbound left-  
14 turn lane would be needed and the east and south legs of the  
15 intersection would each need to be widened to provide a second  
16 departure lane. Signal modifications at this intersection would  
17 include protected phasing on all approaches and right-turn  
18 overlap phasing on the westbound and northbound approaches.

19 Intersection 2: Waiale Road & Kuikahi Drive: The impact at  
20 this intersection could be mitigated using a reduced version of  
21 the improvements proposed described above for this location. The  
22 improvements needed to mitigate the impacts identified under the  
23 no-bypass scenario include widening the eastbound and westbound

1 approaches to provide a left-turn lane, two through lanes, and a  
2 right-turn lane. To complement the widening of the eastbound and  
3 westbound approaches, both the eastbound and westbound  
4 departures would also need to be widened to each provide a  
5 second receiving lane.

6 Intersection 3: S. Kamehameha Avenue & Maui Lani Parkway:

7 The impact at this intersection could be mitigated by  
8 implementing the improvements described above. It should be  
9 noted, however, that the updated 2026 No Project Condition now  
10 assumes that the intersection would be configured as a single-  
11 lane roundabout.

12 Intersection 4: Kuihelani Highway & Maui Lani Parkway: The

13 impact at this intersection could be mitigated by implementing  
14 the improvements described above. In addition, the eastbound  
15 and westbound left-turn phasing would need to be modified to  
16 split phasing.

17 Intersection 5: Honoapi'ilani Highway & Waiko Road:

18 Improvements to this intersection would only be needed if the  
19 Waiale Bypass were not constructed. The impact at this  
20 intersection could be reduced by widening the northbound  
21 approach from a left-turn lane and a shared through/right-turn  
22 lane to provide a left-turn lane, a through lane, and a shared  
23 through/right-turn lane, and widening the eastbound and

1 westbound approaches to provide a left-turn lane and a shared  
2 through/right-turn lane. The northbound departure of the  
3 highway would also require widening to provide a second  
4 receiving lane, which would transition back into the existing  
5 single northbound lane.

6 Intersection 6: Waiale Road & Waiko Road: Improvements to  
7 this intersection would only be needed if the Waiale Bypass were  
8 not constructed. Installation of a traffic signal would be  
9 required. This was assumed to be in place in the Cumulative,  
10 pre-project condition that includes the Waiale Bypass.

11 Intersection 7: S. Kamehameha Avenue & Waiko Road; The  
12 impact at at this intersection could be mitigated by  
13 implementing the improvements described above.

14 Intersection 8: Kuihelani Highway & Waiko Road: The impact  
15 at this intersection could be mitigated by implementing the  
16 improvements described above.

17 Intersection 13: Honoapi'ilani Highway & Waiale Road:  
18 Improvements to this intersection would only be needed if the  
19 Waiale Bypass were not constructed. Installation of a traffic  
20 signal would be required. This was assumed to be in place in  
21 the Cumulative, pre-project condition that includes the Waiale  
22 Bypass.

23 In summary, while the Project will have an impact on



1 traffic, the impact can be mitigated by a program of roadway  
2 improvements as outlined in the TIAR.

3

4 Thank you for the opportunity to speak with you.

5 DATED: Los Angeles, California, November 1, 2017.

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NETAI BASU