BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of:

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

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

A transportation planner designs, evaluates and plans for the implementation of transportation infrastructure.

Functions performed by a transportation planner that would apply to the work I performed for the Waikapu Country Town Project included designing and conducting transportation impact studies for a specific land development project, applying nationally and locally accepted methods and standards to analyze the impacts of the project on the traffic in the area of the project, and suggesting appropriate transportation infrastructure to address the impacts of the project.

In 1994 I obtained a Master’s degree in Urban and Regional Planning from San José State University in San José, California. Prior to that I received a Bachelor of Arts degree in History from Oberlin College. I am a member of the Association of Environmental Professionals and have been a member of the American Planning Association (APA) for over two decades and became a member of the American Institute of Certified Planners (AICP #013655) in 1998. I received the advanced credential of Certified Transportation Planner in 2014 which required me to have at least 8 years of experience in the
area of transportation planning and to pass an examination. 
There are about approximately 100 certified transportation 
planners in the United States.  
I have been a practicing transportation planner for 
over 23 years. During that time, most of my professional work 
has been in California. Since 2001, however, I’ve also worked 
on projects in Hawaii. Among them have been transportation 
impact studies for projects on Maui, Oahu and the Big Island. 
Additionally, I was involved in the development of the Hawaii 
Statewide Traffic Plan for 2004 and the Travel Demand 
Forecasting Model for the County of Maui in 2007. 
I testified before numerous City Councils and Planning 
Commissions, as well as other public bodies, on transportation 
planning issues. I provided testimony on traffic planning of a 
technical and specialized nature before commissions, boards and 
counsels, for over 15 years. A current copy of my resume is 
attached as Exhibit 28. 
In 2013 Fehr & Peers was engaged to provide traffic 
planning advice for the Waikapu Country Town project. I have 
been acting as the lead person for Fehr & Peers on this project 
since we were first engaged. Our scope of work included 
preparation of trip generation estimates for the proposed 
development, review of the site plan from a circulation and
access perspective, collection of traffic data and information on planned land use developments and roadway improvements in the central Maui area, analysis of existing and projected traffic operating conditions, application of the County’s preferred analysis methods, an assessment of conditions that could result from the combined effect of traffic generated by the proposed Waikapu Country Town Project in combination with existing traffic volumes plus what is expected from other planned projects in the area, and make recommendations on improvements to support the overall forecast level of activity.

To fulfil the scope of work, my firm performed the following actions. We obtained information on other developments that were planned for the region. This work consisted of compiling a list of development projects proposed for Central Maui. The list is found on Table 4 of our Traffic Impact Analysis Report ("TIAR") that is attached as Appendix I to the Final Environmental Impact Statement which is Exhibit “25". Additionally, we obtained copies of traffic impact analysis reports and/or environmental assessments/environmental impact statements for those projects which submitted the reports, assessments or statements to governmental agencies. We also obtained the current travel demand forecasting model for the County of Maui from the State of Hawaii, Department of
Transportation. Baseline traffic counts at selected
intersections were performed, as well as field observations of
roadways and intersections in the region. Additionally, I
contacted the departments of the County of Maui involved with
traffic and transportation, as well as the State of Hawaii
Department of Transportation, to obtain input from those groups
concerning existing and projected traffic conditions.

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

In addition to the information gathering and analysis,
Fehr & Peer reviewed concept plans for the project. Suggestions
about the placement of intersections and design of internal
roadways was provided to allow for the development of a project
that supported the variables that result in multi-modal transportation. Multi-modal transportation allows for the use of non-motor vehicle access to services and goods in a mixed-use project. In other words, walking and bicycling is encouraged by the placement of pathways and the location of goods and services in proximity to residential uses.

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

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

Although I am submitting both the TIAR and the
technical memorandum as a part of my testimony, I would like to discuss some aspects of both documents in greater detail.

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

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

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

The proposed development includes an extensive
internal roadway system which will support all travel modes for residents and visitors to access neighborhoods, employment centers, commercial areas, and institutional uses. The Project is designed to encourage pedestrian and bicycle trips while allowing for the use of motor vehicles.

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

The TIAR assessed existing conditions and then forecast traffic volumes without and with the development of the proposed project. Trip generation estimates are based on rates published in *Trip Generation 9th Edition* (Institute of
Transportation Engineers ("ITE"), 2012), which were developed through observations of stand-alone, single-use developments across the country.

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

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

Based on the study that I prepared, the future intersection operating conditions will be significantly affected by regional growth and development in the study area before project implementation. In other words, based on current and projected development in the Central Maui area, the operating conditions of the existing intersections will be impacted by
those developments. Among the neighboring projects are Waiale, Maui Lani Development, Kehalani Development, Pu’unani residences, as well as numerous smaller developments.

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

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

The TIAR addresses completion of the first phase (2022) and the second phase (2026) of the Project separately. Upon development of both phases of the Project, six of the 14 intersections studied are projected to operate at undesirable
levels of service during one or both peak hours. This means that the Project will result in only one additional intersection that will operate at an undesirable level of service.

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

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

Intersection 2: Waiale Road & Kuikahi Drive: The pre-project improvement includes widening the eastbound and westbound approaches to provide a left-turn lane, two through lanes, and a right-turn lane. To complement the widening of the eastbound and westbound approaches, both the eastbound and
westbound departures would also need to be widened to each provide a second receiving lane. The additional improvement needed to achieve LOS D or better includes the pre-project improvements plus widening the northbound approach to provide a left-turn lane, a through lane, and a right-turn lane.

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

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

Intersection 7: S. Kamehameha Avenue/Waiko Road - Install a traffic signal with permitted phasing at all approaches.
Intersection 8: Kuihelani Highway/Waiko Road – Widen and restripe the eastbound approach to provide a left-turn lane and a right-turn lane.

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

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

As I mentioned, we conducted additional analysis of a “No Waiale Bypass scenario” to assess cumulative and project-related impacts upon full build-out of the proposed project if
the planned Waiale Bypass were not constructed. If the Waiale Bypass were not built, the number of intersections significantly impacted would increase by three. An acceptable level of service for those three intersections can be achieved with an expanded program of roadway improvements as mitigation. The expanded program would include different and, in most cases, more extensive improvements than are described above for Intersections 1, 2, 3, 4, 7 and 8. In addition, mitigation measures would be needed at Intersections 5, 6 and 13, as follows:

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

Intersection 2: Waiale Road & Kuikahi Drive: The impact at this intersection could be mitigated using a reduced version of the improvements proposed described above for this location. The improvements needed to mitigate the impacts identified under the no-bypass scenario include widening the eastbound and westbound
approaches to provide a left-turn lane, two through lanes, and a right-turn lane. To complement the widening of the eastbound and westbound approaches, both the eastbound and westbound departures would also need to be widened to each provide a second receiving lane.

Intersection 3: S. Kamehameha Avenue & Maui Lani Parkway: The impact at this intersection could be mitigated by implementing the improvements described above. It should be noted, however, that the updated 2026 No Project Condition now assumes that the intersection would be configured as a single-lane roundabout.

Intersection 4: Kuihelani Highway & Maui Lani Parkway: The impact at this intersection could be mitigated by implementing the improvements described above. In addition, the eastbound and westbound left-turn phasing would need to be modified to split phasing.

Intersection 5: Honoapi‘ilani Highway & Waiko Road: Improvements to this intersection would only be needed if the Waiale Bypass were not constructed. The impact at this intersection could be reduced by widening the northbound approach from a left-turn lane and a shared through/right-turn lane to provide a left-turn lane, a through lane, and a shared through/right-turn lane, and widening the eastbound and
westbound approaches to provide a left-turn lane and a shared through/right-turn lane. The northbound departure of the highway would also require widening to provide a second receiving lane, which would transition back into the existing single northbound lane.

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

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

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

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

In summary, while the Project will have an impact on
traffic, the impact can be mitigated by a program of roadway improvements as outlined in the TIAR.

Thank you for the opportunity to speak with you.

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

NETAI BASU