

**Testimony of  
Barry D. Neal  
B.D. Neal & Associates  
SLUC Docket No. A10-787 Maui R&T Partners, LLC.**

In the Matter of the Petition of Maui R&T Partners, LLC. to Amend the State Land Use District  
Boundary of Lands Situated at Kihei, Island of Maui, State of Hawaii, Consisting of 253.05 Acres  
from the Agricultural District to the Urban District,  
Tax Map Key Nos. (2) 2-2-024: 016 and 017, and (2) 2-2-002: 054 (por.)

My name is Barry Neal and I am a certified consulting meteorologist and owner of B.D. Neal & Associates, a meteorological consulting firm. I prepared the *Air Quality Study for the Maui Research and Technology Park* (May 2012) (Included as Appendix L in the Final Environmental Impact Statement). I have worked with B.D. Neal & Associates providing air quality and meteorological services in Hawaii for over 20 years and have more than 30 years experience. A copy of my resume is attached.

The purpose of the study was to describe existing air quality in the project area and to assess the potential short- and long-term direct and indirect air quality impacts that could result from construction and use of the proposed facilities as planned. Traffic forecasts for 2034 were used in the analysis. Measures to mitigate potential project impacts were suggested where possible and appropriate. I will briefly summarize the findings of my report.

**Affected Environment**

Regional and local climate together with the amount and type of human activity generally dictate the air quality of a given location. The climate of the project area is very much affected by its elevation near sea level and by nearby mountains. Haleakala shelters the area from the northeast trade winds, and local winds (such as land/sea breezes and upslope/downslope winds) affect the wind flow in the area much of the time. Temperatures in the project area are generally very consistent and warm with average daily temperatures ranging from about 63 degrees F to 86 degrees F. Rain fall in the project area is minimal with an average of only about 12 inches per year. Except for periodic impacts from volcanic emissions (vog) and possibly occasional localized impacts from traffic congestion and local agricultural sources, the present air quality of the project area is believed to be relatively good. There is very little air quality monitoring data from the Department of Health for the project area, but the limited data that are available suggest that concentrations are generally well within state and national air quality standards.

### **Probable Impacts and Mitigation**

Short- and/or long-term impacts on air quality will occur either directly or indirectly as a consequence of project construction and use. Short-term impacts from fugitive dust will likely occur during the project construction phases. To a lesser extent, exhaust emissions from stationary and mobile construction equipment, from the disruption of traffic, and from workers' vehicles may also affect air quality during the period of construction. State air pollution control regulations require that there be no visible fugitive dust emissions at the property line. Hence, an effective dust control plan must be implemented to ensure compliance with state regulations.

Paving and landscaping of project areas early in the construction schedule will also reduce dust emissions. Monitoring dust at the project boundary during the period of construction could be considered as a means to evaluate the effectiveness of the project dust control program. Exhaust emissions can be mitigated by moving construction equipment and workers to and from the project site during off-peak traffic hours. During development, adequate dust control measures, in compliance with HAR, Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33, Fugitive Dust should be implemented to control dust during all phases of construction.

After construction, motor vehicles coming to and from the proposed development will result in a long-term increase in air pollution emissions in the project area. To assess the impact of emissions from these vehicles, a computer modeling study was undertaken to estimate current ambient concentrations of carbon monoxide at intersections in the project vicinity and to predict future levels both with and without the proposed project. During worst-case conditions, model results indicated that present 1-hour and 8-hour carbon monoxide concentrations are well within both the state and the national ambient air quality standards.

In the year 2034 without the project, carbon monoxide concentrations were predicted to decrease (improve) somewhat in the project area despite an increase in traffic volumes, and worst-case concentrations should remain well within air quality standards. This is primarily due to the assumed retirement of older motor vehicles with less efficient emission control equipment with the passage of time. With the project in the year 2034 after full build-out and with the mauka collector road, carbon monoxide concentrations compared to the without-project case were projected to be slightly lower (better), and worst-case concentrations should remain well within air quality standards. With or without the project, carbon monoxide concentrations in the project area during the next 20 years will likely decrease (improve) somewhat compared to existing concentrations. Implementing mitigation measures for traffic-related air quality impacts is probably unnecessary and unwarranted.

I have reviewed the revised Traffic Impact Analysis Report (TIAR) dated February 2013 for the subject project and compared this to the TIAR prepared previously in February 2012. The February 2012 TIAR was the basis for the analysis of traffic related air quality impacts that we prepared for this project in May 2012. Although the revised TIAR includes additional roadway intersections and additional future scenarios, the expected future traffic volumes with or without the project have not changed significantly. Hence, although the air quality study for this project has not been revised to specifically reflect the revised TIAR, based on the relatively small differences in the expected traffic volumes, it is unlikely that the air quality results and conclusions would change significantly. That is, we would expect that carbon monoxide concentrations along roadways in the project area will remain well within state and federal ambient air quality standards with or without the project at least through the year 2034.

Depending on the demand levels, long-term impacts on air quality are also possible due to indirect emissions associated with a development's electrical power and solid waste disposal requirements. The peak electrical demand of the project when fully developed is expected to reach about 24 megawatts. Assuming the average demand is approximately one-half the peak demand, the annual electrical demand of the project will reach approximately 105 million kilowatt-hours. Quantitative estimates of these potential impacts were not made, but based on the estimated demand level and assuming that power continues to be derived mostly from fuel oil, sulfur dioxide emissions from Maui Electric power generating facilities could increase by about 275 tons per year and nitrogen oxides emissions could increase by about 93 tons per year.

Renewable energy sources, if developed, could reduce these emissions substantially. Incorporating energy conservation design features and promoting energy conservation programs within the proposed development could also serve to reduce any associated emissions. Presently, all solid waste on Maui is landfilled, and any associated air pollution emissions are relatively negligible. Nevertheless, promoting conservation and recycling programs within the proposed development could serve to further reduce any associated impacts.

**BARRY D. NEAL**  
CERTIFIED CONSULTING METEOROLOGIST

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**WORK EXPERIENCE**

CURRENT, since 1988: CONSULTING METEOROLOGIST, B.D. Neal & Associates, Hawaii. Provide consulting services in air quality and applied meteorology to government, industry, engineering firms and architect/planning organizations. Prepare air quality studies for environmental impact statements and for air pollution permit applications. Conduct air quality modeling and monitoring studies. Specialize in assessing air quality impacts from mobile sources. Provide expertise in remote sensing (sodar) systems for obtaining vertical profiles of wind speed and direction. Perform system and performance audits of air quality and meteorological monitoring systems. Provide expert testimony pertaining to air quality and meteorology.

1983 - 1987: SENIOR METEOROLOGIST/AIR QUALITY SPECIALIST, Amartech, Ltd, Saudi Arabia. Provided air quality and meteorological consulting services to clients in industry and government. Major assignments included managing an environmental study for a new oil-fired power plant and operating a network of nine meteorological/air quality monitoring stations surrounding a new industrial center. Other duties included supplying expertise in the use of meteorological data for engineering design, providing advice on air pollution emissions and emissions control, and performing atmospheric dispersion assessments.

1977 - 1983: METEOROLOGIST, Bechtel Group, Inc., San Francisco, California. Provided expertise in many areas of industrial and applied meteorology for projects located around the U.S. and the world. Areas of expertise provided included: air quality modeling, air quality and meteorological monitoring, air pollution emissions and emissions control equipment, engineering design, and environmental regulations and permit applications. Specific projects included: Jubail Industrial City Project, Saudi Arabia; EPRI Fugitive Emissions Study; White River Shale Oil Project, Utah; ETSI Coal Slurry Pipeline Project, Wyoming; and Nuclear Waste Isolation Pilot Project, Utah.

**EDUCATION**

1977: Graduate Studies, Department of Meteorology, San Jose State University, San Jose, California.

1976: B.S. Meteorology, San Jose State University, San Jose, California.

**PROFESSIONAL DATA**

Certified Consulting Meteorologist (CCM) designation, American Meteorological Society. Member of the Air and Waste Management Association.

**Testimony of  
Bruce S. Plasch, Ph.D.  
Decision Analysts Hawaii, Inc.  
SLUC Docket No. A10-787 Maui R&T Partners, LLC.**

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My name is Bruce Plasch and I prepared the *Maui Research & Technology Park Master Plan Update: Impacts on Agriculture* (May 2011) (included as Appendix J in the Final Environmental Impact Statement). I have been a Hawaii-based economic and financial consultant since 1971 and President of Decision Analysts Hawaii, Inc. since 1979. A copy of my resume is attached.

The agricultural impact report addresses the impacts on agriculture of developing the proposed Maui Research and Technology Park Master Plan Update (the "Project"). I will summarize the findings of my report.

**Land Re-designations**

The Project will require the State to redistrict about 253 acres from Agricultural to Urban, and the County to re-designate about 39 acres from "Public/Quasi-Public" to "Project District 6."

**Existing Agronomic Conditions**

The Project site has high solar radiation, which accelerates the growth of many crops. But the poor soils and lack of irrigation water indicate that the property is poorly suited for growing commercial field crops.

The poor quality of the soils is indicted by the low soil ratings. The Land Capability Classification (LCC) for the Project site is VII<sub>s</sub>. Class VII soils have very severe limitations that make them unsuitable for cultivation and restrict their use largely to pasture or range, woodland, or wildlife habitat. The subclassification "s" indicates that the soils have an unfavorable texture, or are extremely rocky or stony. The Agricultural Lands of Importance to the State of Hawaii (ALISH) rating for the Project site is "Unclassified". "Unclassified" lands do not meet the criteria for being rated "Prime", "Unique" or "Other", and are not considered to be agricultural lands of importance to the State of Hawaii. The University of Hawaii, Land Study Bureau (LSB) rating for the for the Project site is "E", which is the lowest rating.