

**SUCCESSOR PETITIONER KAMEHAMEHA SCHOOLS – MOTION FOR
MODIFICATION AND TIME EXTENSION LUC DOCKET NO. A87-610**

WRITTEN DIRECT TESTIMONY OF SOHRAB RASHID, TE

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

Sohrab Rashid
Fehr & Peers
555 West Beach Street, Suite 302
San Diego, CA 92101

2. **What is your current occupation?**

I am a traffic engineer and principal with Fehr & Peers. I am also the Office Leader for our Honolulu and San Diego markets.

3. **How long have you specialized in transportation planning and traffic engineering?**

Over 31 years. My first experience was doing a four-year internship with the Santa Clara Valley Transportation Authority. After that, I spent seven years as a consultant with Barton-Aschman Associates (subsequently absorbed by the Parsons Corporation) working in San Jose, California, Honolulu, Hawai'i, and Sacramento, California. The remainder of my professional career has been as an employee and now part-owner of Fehr & Peers.

4. **Did you provide a copy of your resume for these proceedings?**

Yes, my resume was provided as Successor Petitioner Kamehameha Schools ("KS") Exhibit 41.

5. **Please briefly describe your educational background.**

I have a Bachelor of Science in Mechanical Engineering from San Jose State University. I am also a Licensed Traffic Engineer in California.

6. **Do you specialize in any particular areas?**

I have a wide range of experience in traffic engineering and transportation planning. Several key specialty areas include site planning and design, traffic operations, multimodal planning and design, and parking.

7. **To what professional organizations do you belong?**

I am a member of the Institute of Transportation Engineers (ITE), the American Planning Association (APA), and the Women's Transportation Seminar (WTS).

8. **Have you even been qualified as an expert witness in traffic engineering and traffic management before the Land Use Commission?**

Yes, in 2010 I was an expert witness before the State Land Use Commission in traffic

planning and traffic engineering for a large, mixed-use project in Kona. In that context, after the Land Use Commission approval, I also prepared the final Traffic Impact Assessment Report ("TIAR") that was accepted by the Hawaii State Department of Transportation ("DOT").

9. **Are you familiar with the solar farm project currently proposed within a portion of the Petition Area?**

Yes. The solar farm project consists of a 36 megawatt/144 megawatt-hour battery energy storage solar farm with related electrical improvements and overhead utility tie-ins ("Project"). The Project is proposed to be installed within an approximately 200-acre area in the eastern-central portion of the 1,395-acre KS property that is within the State Urban District Property at Waiawa, Ewa, O'ahu ("KS Property" or "Petition Area"), with the utility tie-in, or gen-tie, route running from the Project site west and within the Petition Area, across the gulch near the Ka Uka Boulevard exit of the H-2 Freeway, to reach the point of interconnection on the existing HECO 46kV Waiau-Mililani line.

10. **Please identify the studies you prepared for the Project.**

Fehr & Peers prepared a *Construction Traffic Assessment for the Proposed Waiawa Solar Farm (Oahu, HI)* ("Traffic Assessment"), dated July 19, 2019, which was submitted as KS Exhibit 15.

11. **Please describe the scope of your study?**

We analyzed how construction and operation of the Project would impact local and regional traffic near the Petition Area.

12. **Are the methodologies that Fehr & Peers used consistent with generally accepted industry standards?**

Yes. We considered existing (2019) baseline conditions, year 2020 construction traffic plus projected existing traffic, and compared year 2021 traffic under a no-Project versus a with-Project scenario. We analyzed the roadway operations based upon procedures presented in the Highway Capacity Manual (HCM) published by the Transportation Research Board (TRB). We used SYNCHRO 10 traffic analysis software to analyze intersection operations.

13. **How did you conduct your review?**

The Traffic Assessment evaluated the traffic operations at four intersections and also considered potential impacts to KS Property access roads, i.e., Mililani Cemetery Road and Waiawa Prison Road, during peak traffic hours.

The four intersections analyzed are: (1) Ka Uka Boulevard/H-2 south-bound Off-Ramp; (2) Ka Uka Boulevard/ H-2 south-bound On-Ramp; (3) Ka Uka Boulevard/H-2 north-bound Off-Ramp; and (4) Kamehameha Highway/Waihona Street. However, the intersection of Kamehameha Hwy/Waihona Street was later excluded as a construction access point, therefore no construction-related traffic was assigned to that intersection.

The operations of the study intersections were evaluated during the busiest peak (one) hour in the morning (between 7:00 and 9:00 AM) and in the afternoon (between 4:00 and 6:00 PM). The peak hour for each intersection was determined by existing traffic count data.

We considered the Project-related traffic to be generated during the construction period and during typical Project operations.

The construction year (2020) traffic was evaluated by increasing the 2019 traffic volumes by an average growth factor of one percent and rounded to the nearest tenth. Given the limited existing traffic mauka of the H2 freeway, this approach to forecasting 2020 volumes is considered extremely conservative.

For the Project operational period, projected to start in 2021, 2019 traffic volumes were increased by an average growth factor of one percent per year and rounded to the nearest tenth. This methodology is consistent with other traffic studies completed for local and regional projects on Oahu, and this approach to forecasting 2021 volumes is considered extremely conservative.

During the 12-month construction period, traffic to the Project site is anticipated from private vehicles driven by construction workers plus trips made by trucks delivering materials, hauling earth and debris, and providing other services. In the Traffic Assessment we assumed that up to 100 construction worker vehicles would make one inbound trip and one outbound trip for a total of two daily trips. The 100 vehicle estimate is based upon a maximum of 175 workers on-site during the peak of construction. That figure is expected to fall to an average of 100 workers or less on-site during the remainder of the construction period. In addition, we assumed up to 100 daily trips by construction delivery vehicles, and we applied a Passenger Car Equivalent (PCE) factor of 2.5 vehicle trips per construction or work truck to account for the larger impact and slower speeds of construction vehicles on the roadway network.

Once operational, the Project is anticipated to have a maximum of five (5) employees on site at any given time. As a result, the employee trips generated by the Project during the operational period are nominal.

14. **What are the conclusions under the Traffic Assessment?**

The Project will not have a significant adverse effect to either local or regional traffic near the Petition Area.

During the construction period, the Level of Service (“LOS”) the four study intersections (Ka Uka Boulevard/H-2 south-bound Off-Ramp, Ka Uka Boulevard/ H-2 south-bound On-Ramp, Ka Uka Boulevard/H-2 north-bound Off-Ramp, and Kamehameha Highway/Waihona Street) is largely projected to remain the same with a couple of exceptions.

The Ka Uka Boulevard/ H-2 south-bound On-Ramp will go from LOS A to LOS B (and it will return to LOS A during Project operations). The Ka Uka Boulevard/H-2 south-bound Off-Ramp intersection is projected to go from the current LOS D to LOS E (and return to LOS D during Project operations). (Page 11 of the Traffic Assessment mistakenly refers to the Ka Uka Boulevard/H-2 *north*-bound Off-Ramp intersection. The correct reference is the Ka Uka Boulevard/H-2 *south*-bound Off-Ramp intersection). However, the forecasted delay is projected to be only 0.2 seconds above the LOS D threshold during the PM peak hour during the construction timeframe.

In regard to the access roads (Mililani Cemetery Road and Waiawa Prison Road), construction vehicle traffic is not anticipated to result in any operational or safety issues on Mililani Cemetery Road. However, Waiawa Prison Road is narrower (approximately 20 feet wide) and the roadway is curved, which could cause large construction trucks to conflict with opposing traffic (although Waiawa Prison Road is not heavily used).

15. **Are any traffic mitigation measures recommend?**

Fehr & Peers recommends that the solar farm developer prepare a construction traffic management plan that minimizes traffic during the peak commute hours to the extent possible (i.e., by implementing one of the following: a slight adjustment to work schedule shifts so that worker trips are reduced during the PM peak hour, encourage more carpooling, and/or implement an employee shuttle service to bring workers to/from an off-site location). The construction traffic management plan should also include measures that ensure adequate sight distance at the driveway access point, informs other drivers on Waiawa Prison Road of construction activities and heavy vehicle traffic, and manages traffic through manual traffic control as needed. These measures should be sufficient to address the short-term traffic impacts anticipated during Project construction. No traffic mitigation measures are recommended for the Project operations period.

16. **In your professional opinion, will the Project adversely impact regional traffic near the KS Property?**

No. Neither Project construction nor Project operations will adversely impact traffic conditions in the vicinity of the KS Property to a significant level. Additionally, the Project site has adequate access and will not require the construction of any new access roads.

During the height of the estimated one-year construction period there will be nominal impacts to the Ka Uka Boulevard/H-2 south-bound Off Ramp based upon the most conservative traffic projections. From a driver perspective, the intersection is expected to continue to operate similarly to the existing LOS D operations, and the change in travel time will be imperceptible. No other intersections will experience significant changes during Project construction. Project operations are projected to have a negligible impact

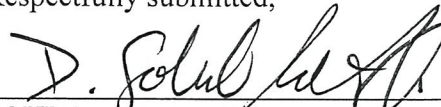
on area traffic.

There could be some short-term impacts to Waiawa Prison Road during the construction period. To address that potential it is recommended that the solar farm developer's contractor prepare a construction management plan that includes the following:

- Signage between the Ka Uka Boulevard interchange and the KS Property driveway on Waiawa Prison Road that trucks are traveling and entering/exiting the roadway.
- Ensure that adequate sight distance is provided for drivers on Waiawa Prison Road approaching and departing the KS Property driveway. Measures may include traffic control signage (ex. stop or yield signs) and removal of vegetation that impede standard approach, departure, and height sight distances.
- If needed, coordinate with the City to remove vegetation in the public right of way that might impede large construction vehicles on both Mililani Cemetery Road and Waiawa Prison Road.
- Manual traffic control on Waiawa Prison Road to manage construction and prison traffic and to minimize conflicts. This could include the use of radios, flag persons, and/or temporary signals and lighting to assist with the control of vehicles and the provision of adequate sight distance (as needed).
- Maintain access to the Waiawa Correctional Facility.

DATED: San Diego, California, November 1, 2019.

Respectfully submitted,


SOHRAB RASHID

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