



Testimony of  
David B. Bills, P.E.  
Bills Engineering Inc.  
Keauhou Lane – Lot A-1-1 and Lot A-1-2  
Hawaii Community Development Authority

My name is David B. Bills and I am a Licensed Professional Civil Engineer for the State of Hawaii and the President of Bills Engineering Inc. I prepared the Infrastructure Synopsis for the Keauhou Lane (Block A) HCDA Development Requirements document. I have been directly involved in the management of engineering projects in Hawaii for over 30 years and have been the President of Bills Engineering Inc. since 2003. A copy of my resume is attached.

The Infrastructure Synopsis for Keauhou Lane (Block A) is an assessment of domestic water (both domestic and fire requirements), sewer and drainage for the complete block (including Block A2). I will briefly summarize the main discussion and findings for the subjects of water, sewer, drainage and flood hazard as explained in the report.

### WATER

The Honolulu Board of Water Supply (BWS) provides domestic water and fire protection for the City and County of Honolulu. BWS has a minimum of 8-inch mains on all streets surrounding the property. These streets are South Street, Halekauwila Street, Keawe Street and Pohukaina Street. BWS has been contacted regarding the availability of water for the subject project. The BWS request as well as their response is contained in Appendix A. Appendix A also has an exhibit showing the BWS mains in adjacent streets.

BWS has confirmed that water is available for both domestic and fire protection. As a part of standard BWS policy the Board reserves final decision on the availability until such time as Building Permits are applied for and issued. BWS has also requested that the existing 8-inch line on Halekauwila Street and existing line on Keawe Street be replaced due age and breaks that have occurred. The BWS approval letter in Appendix A also asks for water improvements on Queen Street, but it has been confirmed by BWS as well as HCDA that this Queen Street improvement is "Kakaako Regional Improvement" and not a Block A specific improvement.

Coordination on fire protection has been deferred to the Fire Department. Fire Department coordination involves fire hydrant spacing, fire access lanes and wet and dry standpipe requirements. The Fire Department requires the rear of any building to be within 450 feet of a fire hydrant and have a 20 foot paved access route with turn-a-round at the fire hydrant. The 450 foot requirement is based on "sprinkled" buildings. Preliminary meetings have been conducted with the Fire Prevention Bureau staff and the staff has confirmed the existing fire hydrant spacing on the surrounding streets is adequate and no new hydrants



are required for the project. The staff has also confirmed that with sprinkled buildings the project complies with the 450-foot requirement and no on-site lanes are required.

## **SEWER**

A Sewer Connection Application (SCA) has been made for the property (see Appendix B). The project has received an approval and a projected Wastewater Service Facility Charge (WSFC) has been identified. The SCA approval is for 633 units and 37,350 square feet of commercial space. The WSFC is estimated at \$2,682,970.50.

The SCA is good for a period of two years from issuance and is renewable upon re-application before the expiration date has been reached.

The Sewer Connection Application process confirms capacity. That means the pipe system, pumping system and treatment system components delivering all wastewater to and through the Sand Island Wastewater Treatment plant are adequate in capacity to serve the project.

Operational activities are quite different than capacity issues. Portions of the Kakaako area and specifically below the project (Pohukaina to Ala Moana Boulevard) are sometimes prone to odor issues. One reason for odor to occur is that sewage is passing too slow through an area. Slow moving wastewater can allow solids to deposit out and stagnate, or cause sewage to reside for a longer period time. The almost universally acknowledged sewage flow rate is 2 foot/second. Flow rates in portions of Kakaako are less.

Informal discussions with City ENV and DDC personnel have identified an ongoing evaluation process to see if the residence time of sewage in the sewer in this area can be sped up by increasing the Ala Moana Wastewater Pumps Station pumping rate among other operational solutions.

## **DRAINAGE**

The project site is completely developed with hardscapes. Redevelopment will not produce additional hardscape surfaces and drainage runoff resulting from redevelopment will be equal to or slightly less than under current development conditions. Slightly less runoff will occur due to redevelopment landscaping requirements providing a “greener” site. In addition the project will be required to retain the on-site Water Quality Flow on property and dispose of using subsurface techniques. The Water Quality Flow is a recent requirement of the newly adopted City and County of Honolulu Drainage Standards.

No off-site drainage improvements are anticipated. Drain connection applications (processed with the City and County) are anticipated to allow onsite runoff to connect to the City drainage systems in Kapiolani Boulevard, South Street and Kawaihao Streets. A Drainage exhibit is appended (See Appendix C). On-site runoff will be generated by the



building roof systems, paved areas and hardscape areas.

### **FLOOD HAZARD**

Current Flood Insurance Rate Mapping (FIRM) for the project site shows that the property is in Zone X which is defined as areas outside the 0.2% annual chance floodplain. Therefore, the property has no extraordinary flood insurance requirements. It should be noted that the current FIRM became effective January 19, 2011. A current FIRM is contained in Appendix D.



## **RESUME**

### **David B. Bills, P.E.**

#### **PROFESSIONAL REGISTRATION:**

Civil Engineer - State of Hawai'i, 1978 (License No. 4516)

Civil Engineer - Guam, 2004 (License No. 1251)

#### **EDUCATION:**

M.S., Civil Engineering/Sanitary, University of Hawai'i at Mānoa, 1976

B.S., Civil Engineering, Purdue University, 1974

#### **PROFESSIONAL EXPERIENCE:**

**Bills Engineering Inc.**  
President

**Honolulu, Hawai'i**  
2003 -

Principal-in-charge of all operations including civil site design, planning and permitting, environmental documentation (EIS, EA, SMA, DA, etc.) and environmental engineering (wastewater and water treatment design). Recently served as Chief Engineer for Guam Waterworks Authority for 1½ years (2004 - 2005).

##### **Major Projects:**

- New Youth Center, MCBH
- Improve Safety Bougainville Drive
- Child Development Center at Schofield Barracks
- Makakilo Interceptor Replacement Sewer
- Kohanaiki Wastewater Treatment Plant Facilities
- Mehana at Kapolei, Phases 1, 2 & 3
- Ho'opili
- Emergency Grading at Castle Junction
- Ka'elepulu Pond Caretaker's Residence
- The Woods at 'Āhuimanu

**Gray, Hong, Bills, Nojima & Associates, Inc.**  
Senior Vice President

**Honolulu, Hawai'i**  
1978 - 2003

Responsible for all planning and environmental services. Directed engineers and planners engaged in project feasibility studies, environmental impact statements, and site and master planning. Project Engineer engaged in wastewater treatment plant design, regulatory/permitting assistance, and hydrologic and drainage studies.

##### **Major Projects:**

- Wai'anae Coast Emergency Alternate Route (WCEAR)
- Kahului Airport East Ramp Sewer System
- Sunset Heights Sewer Micro-tunneling Project
- MCON P-438/P-439 BEQ (320-Unit Bachelor Enlisted Quarters)
- Camp Smith Physical Fitness Center Utility Analysis
- Waihuna Village Master-Planned Housing Development



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**Trust Territory of the Pacific Islands**

Project Engineer

**Saipan, North Mariana Islands**

1977

Engaged in performing sanitary system surveys of rural water systems, hydrologic studies and water quality monitoring in populated areas outside the District Centers in Palau, Yap, Saipan, Truk, Pohnpei, Kosrae, and Majuro and Ebeye, Marshall Islands.

**Hawai'i Institute of Geophysics, Water Research Center**

Staff Engineer

**Puna, Hawai'i**

1976 - 1977

Investigated stream sources for a geothermal project in Puna, Hawai'i. Engaged in hydrologic evaluation and water quality monitoring.

**University of Hawai'i, Environmental Center**

Staff Engineer

**Honolulu, Hawai'i**

1976

Involved in the field investigation, hydraulic analysis, and water quality investigation of the Ala Wai Canal, Waikiki.

**PROFESSIONAL AFFILIATIONS:**

- American Society of Civil Engineers, Hawai'i Section
- American Council of Engineering Companies (*Fellow, Elected 2009; PAC Champion, 2007- Present*)
- American Council of Engineering Companies of Hawai'i (*President, 1998-'99; National Director, 2000-'01*)
- American Water Works Association, Hawai'i Section
- Hawai'i Developers' Council
- Hawai'i Water Environment Association (*President, 1984; National Director, 1985*)
- National Society of Professional Engineers, Hawai'i Section
- Water Environment Federation (*National Executive Committee Member, 1988*)
- Instructor - Professional Engineering Examination Refresher Course (*Sanitary Engineering-1987, 1989, 1991*)