

Curriculum Vitae
David A. Smith, PhD, PE
Senior Coastal Engineer, Sea Engineering, Inc.
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WORK ADDRESS:

Sea Engineering, Inc.
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EDUCATION

PhD, Ocean Engineering, University of Hawaii (2003)
MS, Ocean Engineering, University of Hawaii (1994)
BS, Mathematics, University of Hawaii (1990)

WORK EXPERIENCE

2007-present Sea Engineering, Inc. *Senior Coastal Engineer*
2005-2007 OCEES International, Inc. *Ocean Engineer*
2004-2005 Sea Engineering, Inc. *Coastal Engineer*

LICENSES/CERTIFICATIONS

Professional Engineer, Civil Branch, State of Hawaii (C-11453)
Professional Engineer, Civil Branch, State of California (C-79459)
Professional Engineer, Civil Branch, Territory of Guam (CE-1698)

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers
Chair, Ocean and Energy Committee, ASCE Hawaii Chapter, 2014-present
American Shore and Beach Preservation Association
Director-at-Large, ASBPA Hawaii Chapter, 2014-2016

OCEAN AND RESOURCES ENGINEERING DEPARTMENT AFFILIATION

ORE 783 Capstone Class Mentor
2016 Kuhio Beach Park Shoreline Improvements
2014 Haleiwa Beach Park Shoreline Stabilization and Improvements
2012 Iroquois Point Housing Shoreline Stabilization

PROJECT AWARDS

“Waikiki Beach Maintenance,” Best Special Project, ASCE Hawaii Chapter (2012)
“Iroquois Point Beach Restoration,” ASBPA Best Restored Beach (2014)

PUBLICATIONS

Sullivan, S.P. and D.A. Smith (2014). “Waikiki Beach Gets a Facelift.” *Shore & Beach*, Vol 82(1).
Smith, D.A. and K.F. Cheung (2005). “Transport Rate of Calcareous Sand.” *Sedimentology*, 52(5), 1009-1020.
Smith, D.A. and K.F. Cheung (2004). “Initiation of Motion of Calcareous Sand.” *Journal of Hydraulic Engineering*, 130(5), 467-472.

- Smith, D.A. (2003). *Effect of Particle Shape on Grain Size, Hydraulic, and Transport Characteristics of Calcareous Sand*. Univ. of Hawaii Dept. of Ocean and Resources Engineering, Ph.D. Dissertation.
- Smith, D.A. and K.F. Cheung (2003). "Settling Characteristics of Calcareous Sand." *Journal of Hydraulic Engineering*, ASCE, 129(6), 479-483.
- Smith, D.A. and K.F. Cheung (2002). "Empirical Grain Size Relationships for Calcareous Sand, Oahu, Hawaii." *Journal of Coastal Research*, 18(1), 82-93.
- Cheung, K.F., A.C. Phadke, D.A. Smith, S.K. Lee, and L.H. Seidl. (2000). "Hydrodynamic Response of a Pneumatic Floating Platform." *Ocean Engineering*, 27(12), pp. 1405-1438 (SOEST Contribution No. 4864).
- Miller, J.N., P. Rappa, and D.A. Smith (1999). *Erosion Mitigation Study at KMCAS*. Univ. of Hawaii Environmental Center. Report for Ogden Environmental.
- Smith, D.A. (1994). *Hydraulic Model Investigation of the Proposed Improvement of Kuhio Beach*. Univ. of Hawaii Dept. of Ocean Engineering, Master's Plan B paper.

REPRESENTATIVE PROJECTS

Project Condition Survey, Federal Coastal Navigation Structure (CNS) Inspections – Hawaii, Guam, CNMI, American Samoa 2015 – 2016

Sea Engineering was contracted to perform inspections of 24 Federal coastal navigation structures (CNS) throughout Hawaii, Guam, Rota, and American Samoa operated and maintained by the U.S. Army Corps of Engineers (USACE), Pacific Ocean Division (POD), Honolulu District (POH). The inspections verified the current condition of the structures, located areas of concern on each structure, and identified and recommended future maintenance requirements.

Client: USACE, KAI Hawaii

Role: Project Manager, Senior Inspector

Repair Shoreline Revetment, Back of POL Farm – NSF Diego Garcia 2016

The ocean shoreline fronting the POL farm has experienced erosion, leaving the POL farm vulnerable to coastal flooding. SEI is responsible for producing a Basis of Design report, construction drawings, and specifications for a shoreline revetment to protect the POL farm.

Client: GHD, Inc.

Role: Coastal/Design Engineer, Engineer of Record

Shore Protection Analysis, Puerto Rico Dump Closure – Saipan, CNMI 2015 to present

The Puerto Rico dump is located along the shoreline adjacent to the Saipan Commercial Port. Work is underway to close the dump and rehabilitate the land into a 25 acre park. The 900 foot long shoreline requires stabilization to prevent erosion in the event of a tropical storm. SEI analyzed the shore protection design and recommended using tribar armor units, which were smaller than the required stone, and at a cost savings to the government. Working on a team that included GHD, Inc., SEI produced a Basis of Design report, construction plans and specifications, and engineering services during construction.

Client: Black Construction

Role: Coastal/Design Engineer, Engineer of Record

American Samoa Route 1 & 8 Tsunami Repairs and Revetment Shore Protection – American Samoa 2012 to present

The September 2009 tsunami generated near American Samoa caused inshore flooding and significant damage along the shoreline of the island of Tutuila. For the U.S. Army Corps of

Engineers, Sea Engineering, Inc. (SEI) performed field investigations and prepared Basis of Design reports, construction plans, and construction specifications for the shore protection projects.

Client: USACE, SEY Engineers

Role: Project Manager, Coastal/Design Engineer, Engineer of Record

Majuro Airport Runway Shore Protection Assessment – Marshall Islands **2014**

Large waves damaged segments of the wall protecting the international airport runway in Majuro. Sea Engineering conducted field investigations including a bathymetric survey and damage assessment. Numerical wave modeling was completed to determine design wave heights and water levels at the shoreline. A Basis of Design report and repair assessment were completed.

Client: AECOM

Role: Project Manager, Coastal/Design Engineer

Iroquois Point Beach Restoration Project – Oahu, Hawaii **2003 to 2013**

SEI produced an environmental assessment, final design, and construction drawings for a stabilized beach nourishment project. A numerical modeling analysis was completed to determine nearshore wave processes. Work also included performing engineering services during construction, including inspection of rock structures and verification of sand quantities.

Client: Ford Island Properties

Role: Coastal/Design Engineer, Engineer of Record

City Beach Parks Concept Design for Haleiwa, Hauula, and Punaluu Beach Parks – Oahu, Hawaii **2013 to present**

Sea Engineering, Inc. was contracted by the City & County of Honolulu to develop concept designs to address the priority erosion problems at Haleiwa, Punaluu, and Hauula Beach Parks. Work included: detailed field investigations; numerical modeling of nearshore waves and currents to assess sediment transport; offshore sand source investigations; analysis of shoreline erosion history; oceanographic design parameters that included wave height and water levels; structural assessments of failing seawalls; and the development of concept designs for preferred alternatives.

Client: City and County of Honolulu, Dept. of Design and Construction

Role: Project Manager, Coastal/Design Engineer

Waikiki Beach Maintenance – Oahu, Hawaii **2009 to 2012**

Planning, design, and permitting of a beach maintenance project for a 1,730-foot long shoreline. Work included production of a Basis of Design report, sand source investigations, beach fill design, engineering services during construction, and post-construction volume calculations.

Client: State of Hawaii, Dept. of Land and Natural Resources

Role: Coastal/Design Engineer, Engineer of Record

Waikiki War Memorial Natatorium Improvements – Oahu, Hawaii **2010 to present**

Oceanographic study and Basis of Design for the City's Natatorium Improvement Project. Work included offshore sand investigations, field data collection (waves, currents, circulation patterns), beach and stabilizing structure design, and extensive BOUSS-2D modeling of wave transformation across a reef and wave/structure interaction.

Client: WCP, Inc. and City and County of Honolulu, Dept. of Design and Construction

Role: Project Manager, Coastal/Design Engineer

Shore Protection Basis of Design, USCG Station Kauai, Hawaii **2011 to 2012**

Site investigation, wave forces, and design calculations, basis of design report, and construction drawings and specifications for a shore protection revetment.

Client: KAI Hawaii

Role: Coastal/Design Engineer

Lanikai Beach Restoration Pilot Project Design – Oahu, Hawaii **2010**

Design of a shoreline restoration pilot project including beach nourishment with stabilizing structures. Work included extensive BOUSS-2D modeling of wave transformation across a reef and between small islands for structure and beach design. The modeling was performed for prevailing and extreme (storm) wave and water level conditions.

Client: USACE

Role: Coastal/Design Engineer

Moana Kai Road Coastal Assessment & Revetment Basis of Design – Kauai, Hawaii **2010**

Preparation of a Basis of Design report and alternative shore protection designs to address damage to the Moana Kai Road revetment. Work included prevailing and extreme (storm) wave and water level analyses and revetment design.

Client: R.M. Towill Corp

Role: Coastal/Design Engineer

City Beach Parks Erosion Study – Oahu, Hawaii **2008 to 2009**

The City & County of Honolulu initiated a program to address erosion problems at City and County beach parks on Oahu. Sea Engineering conducted site investigations and assessed erosion problems at 62 beach parks on the North, East, and South shores of Oahu. Each beach park was assigned an erosion priority rating ranging from low to critical. A description of possible work plans to address the critical problems in follow on work were presented.

Client: City and County of Honolulu, Dept. of Design and Construction

Role: Project Manager, Coastal Engineer

Roi Namur Coastal Erosion Assessment – Kwajalein, Marshall Islands **2005**

SEI conducted a shoreline erosion assessment of the southwest shore of the island along the runway to determine the possible impacts of proposed improvements to the fuel pier. A numerical modeling analysis was completed to assess sediment transport patterns at the shoreline.

Client: EDAW, Inc.

Role: Coastal Engineer