

ENGINEERING SERVICES IN SUPPORT OF SHORE FACILITIES RESEARCH AND DEVELOPMENT PROGRAMS

N47408-03-D-8402 STATEMENT OF WORK

1.0 BACKGROUND AND SCOPE

The Navy possesses a wide variety of waterfront facilities at various bases in the United States and around the world. These facilities are vital to the navy's primary mission. The demands imposed by base closures will require adapting remaining facilities to accept a greater variety of vessels, environmental concerns which limit or deny use of traditional waterfront materials, and the requirement for lower life cycle cost solutions. Facilities planners and designers seek innovative solutions for waterfront design, construction, maintenance, and repair.

The contractor shall provide expert-level engineering, technical and logistical services, facilities, equipment and supplies to support research and development programs for the Naval Facilities Engineering Service Center (NFESC) and other Naval Facilities Engineering Command (NAVFAC) organizations. The effort includes the areas of high performance materials, the environment, buildings, and infrastructure design. The community throughout the United States and worldwide in order to quickly identify appropriate resources with the required expert-level civil engineering expertise, exemplified in Attachment (A) which is not all inclusive. Required work will be related to waterfront facilities engineering and other unique navy facilities requirements, such as submarine fendering systems, dry docks configured for naval combat ships, and remote portable waterfront facilities. The following types of work are representative of that which the contractor will be required to perform: (1) Perform research consistent with national civil research priorities. (2) Coordinate and leverage research through cooperative programs with established, state-of-the-art research and development organizations. (3) Verify state-of-the-art technology; advance and implement emerging technologies. (4) Integrate industry, academia, government agencies, and associations in conducting civil engineering research and development. (5) Design and implement civil engineering research and development considering global infrastructure requirements and technology approaches. (6) Identify and develop teams with civil engineering and related expertise using the best qualified organizations

2.0 TECHNICAL REQUIREMENTS

2.1 Provide expert-level peer reviews of proposed execution plan for technology development demonstration and validation programs (referred to as Research and Development).

2.2 Conduct expert-level peer reviews of test plans and protocols, and evaluation of test data from technology development, demonstration and validation program tests and analyses. Provide evaluation of advanced technology design and construction concepts and recommendations for the development of new design, construction, maintenance, or repair methods

2.3 Provide **constructability evaluations** of proposed advanced technology concepts along with recommendations for new construction methods development to enable the practical realization of advanced technology in real construction contexts.

2.4 Organize collaborative research projects in industry-related research and technology development and facilitate bringing other groups together with the Government to leverage limited resources and help minimize duplication of effort.

2.5 Develop detailed performance specifications for the acquisition of advance technology for new design and construction, rehabilitation/repair processes, and maintenance. Define QA/QC requirements for real time evaluation of construction projects for acceptance purposes.

2.6 Provide assessment of A&E information needs to enable incorporation of advanced technologies and material concepts into the design of real projects.

2.7 Explore the feasibility of a “test and evaluation” precursor to final design in “design-build” contracts as a means of reducing technical and financial risk. Propose a process for industry acceptance including controlled field trials. Essentially develop a “design-test, design-build” with industry-wide consensus.

2.8 Provide expert-level services in support of technical evaluation of innovative technologies.

2.9 Prepare reports, plans, and provide technical documentation in support of RDT&E projects.

2.10 Ability to access and provide civil engineer volunteers, from time to time, depending on the task and Navy’s needs, who may donate some of their time and expertise to work on projects. Volunteer engineers will do this because of their commitment to the advancement of the civil engineering profession and design and construction industry.

3.0 POTENTIAL TASKS

The following are examples of potential tasks, not all inclusive, that may be ordered under a delivery order issued against this contract.

3.1 Review the current concepts for advanced fendering system design including a review of current industry processes and results from CPAR efforts to select appropriate technology.

3.2 Set up and administer a “zero maintenance” waterfront evaluation panel to review concepts for funding based on technical merits, constructability, and risk.

3.3 Establish an evaluation panel of technical experts to review concepts for improved maintenance of Navy real property.

3.4 Identify technical information gaps (and poorly packaged information) of the environmental and energy conservation parameters needed to evaluate and optimize waterfront construction based on sustainable design principles. Define or determine the research necessary to acquire quantitative knowledge and present it in a form usable by planners, designers, and engineers in the sustainable design business.

3.5 Develop algorithms for computer-aided planning and decision-making processes, based on “green” sustainable design principles. Define or determine the research necessary to acquire quantitative knowledge and present it in a form usable by planners, designers, and engineers in a sustainable design business.

3.6 Evaluate design-build contracts executed by NAVFAC to date and interview government engineers and performing designers and builders to ascertain specific instances of advanced, innovative technology usage facilitated by the design-build contract. Establish particular lessons as guides for promoting design-build contracting instruments that enhance innovation.

3.7 Explore the market’s acceptability of a process for advanced technology demonstration “set-aside” in government construction and the administration and disposition of resulting “know-how,” i.e., property vs. Public domain. Evaluate against Federal acquisition regulations and other public policy documentation.