Analyzing U.S. Coast Guard Facilities for Operational Resiliency

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Project Objective

The United States Coast Guard, through work at the US Coast Guard Academy and in collaboration with the National Homeland Security Research Program at the US Environmental Protection Agency's Office of Research and Development, is working to build capabilities to predict water–driven biological contaminant movement in a wide area environment.

Background

Of the many statutory missions of the U.S. Coast Guard, the focal mission for this project is the service's responsibility for public safety and environmental protection. While the Coast Guard continuously strives to be a champion for environmental preservation, it is relatively unknown how well equipped the service is to respond and prevent the spread of a biological contaminant.

Drain Seal

Portable Spill Berms

Adsorbent Oil Mats

Granular Adsorbents

Protective Equipment

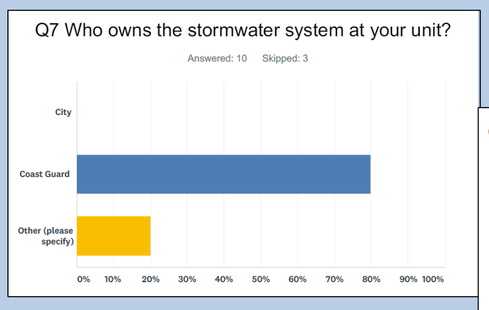
Weirs and Skimmers

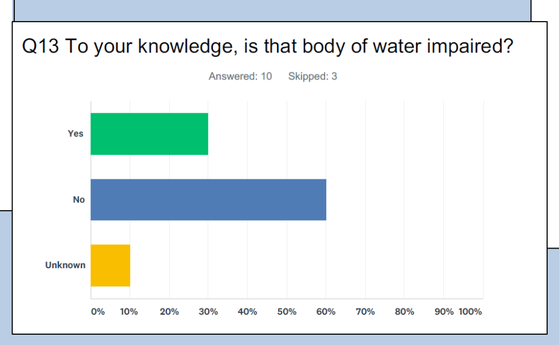
Progress to date…

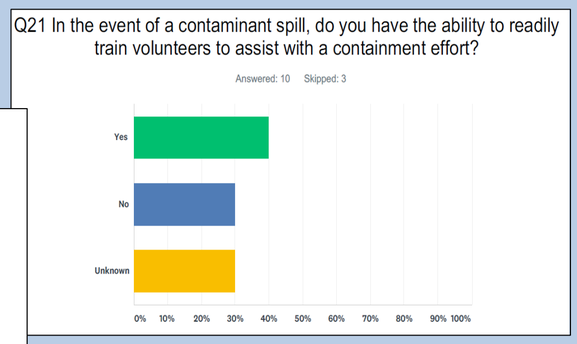
An assessment of available resources across the organization was conducted using a survey deployed to Facilities Engineers (FE) at major Coast Guard bases. The data collected via the survey provided an understanding of the current capabilities of USCG facilities in terms of controlling stormwater and mitigating pollutant dispersion by informing the project of available preventative resources, such as adsorbents and spill berms, and the abilities of USCG units related to environmental response.

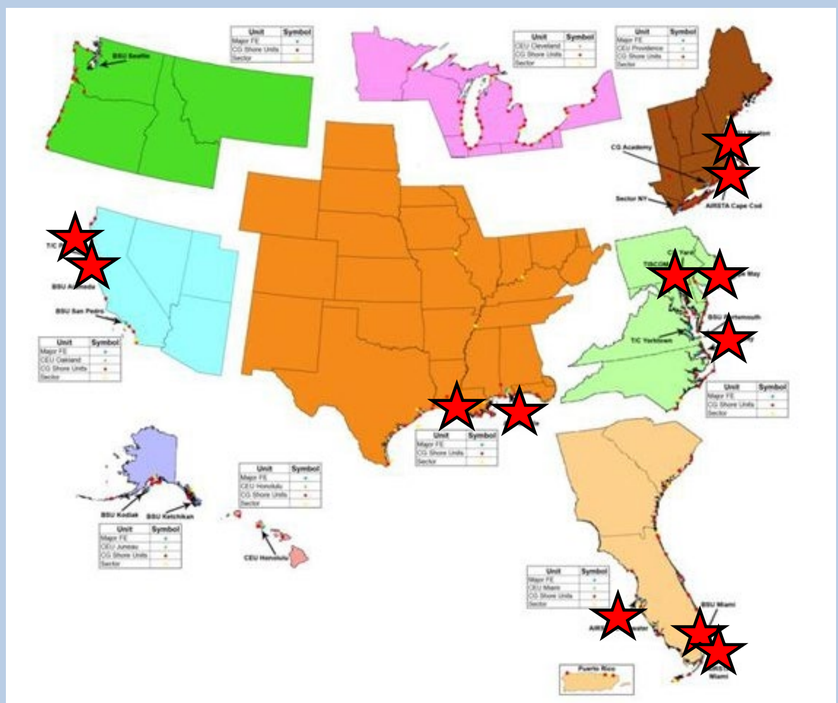
- Survey was deployed July 2019 to 23 USCG Facility Engineers (FEs).
- The 40 question survey inquired about stormwater regulations, monitoring, infrastructure, maintenance, and contamination response capabilities.
- 12 of 23 FE's responded to the survey.
- 54% of surveyed bases said they could and would use a stormwater infrastructure model if one was provided.

Examples of survey results









Locations of CG bases that responded to the survey

Future work

The project team will coordinate with the EPA's Homeland Security Research Program to simulate the spread of a biological contaminant on a selected Coast Guard facility followed by a field study with a physical deployment of a benign biological spore simulant of *Bacillus anthracis (Ba)* to verify the model results. While some gaps and needed capabilities may be specific for the USCG, in general, these largely align with gaps and needs for response and recovery to any wide-area biological contamination incident in an urban environment. The information obtained will provide an informed recommendation as to what stormwater modeling tools and containment strategies could be rapidly deployed during an incident for the remediation of USCG assets, as well as a wide-area urban scenario.