Career Summary

**Years of Experience Environmental/Coastal**

14

**Highest Degree**

M.S., Water Resources and Environmental Engineering, Villanova University, Villanova, Pennsylvania, 2005

**Training/Certifications**

Certified Professional in Erosion and Sediment Control (CPESC), No. 4290

OSHA 40-Hour HAZWOPER Certified (OSHA 29 CFR 1910.120(e))

OSHA 10-Hour Construction Certified

CPR and First Aid Trained

**Technical/Functional Experience/Expertise**

* Climate adaptation and resiliency planning
* Urban stormwater management
* Surface water hydrology and hydraulic modeling
* NPDES compliance services

Andrea Braga is a Principal Water Resources Engineer with more than 14 years of professional experience focused on helping clients develop innovative solutions to their complex water quality, flooding and National Pollutant Discharge Elimination System (NPDES) compliance issues. She specializes in stormwater system design, modeling and analysis, from project planning and permitting, to whole life-cycle costing, construction oversight, monitoring and maintenance. Andrea’s practice focuses on innovative strategies for stormwater management using advanced green infrastructure (GI) and low impact development (LID) design technologies. Andrea’s practice also includes NPDES compliance and permit support; municipal stormwater program planning and implementation; water resource master planning; and climate changes adaptation and resiliency planning.

Names and Dates of Employment

Geosyntec Consultants, Inc., Brookline and Acton, Massachusetts, 2005-present

Relevant Project Experience

Resiliency Audits and Site Selection for Design of Floodproofing Systems

June 2016 | Ongoing

Ms. Braga is leading a project for the New York City Economic Development Corporation (NYC EDC) aimed at bringing innovative floodproofing technologies to small businesses in New York City through NYCEDC’s program known as Resiliency Innovations for a Stronger Economy, or RISE: NYC. As part of the project, “flood risk resiliency audits” will be conducted at 30 NYC small businesses affected by Superstorm Sandy. During the audits, the project team will collect site-specific information related to the businesses potential flood vulnerabilities. Findings from the audit, along with results of regional flood and storm surge modeling, will be included in a Flood Resiliency Audit Report which will be used to help improve businesses’ understanding of their potential risk of flooding and flood-induced damage and will help to identify measures which they could implement to mitigate their risk. Information gathered during the audit will also provide input into a ranking system used to select 3-5 small businesses to receive active floodproofing technology installations.

Municipal Climate Change and Natural Hazard Vulnerability Assessment

February 2018 | December 2018

Ms. Braga was the Project Director for a climate change and natural hazard vulnerability assessment for the Town of Stow, as part of the Municipal Vulnerability Preparedness (MVP) program and in accordance with the Community Resiliency Building (CRB) guide. This process included preparation for and facilitation of a community workshop to identify hazards, vulnerabilities, strengths, and priority actions for the Town.

Implementation of a Statewide, Web-based Watershed Planning Tool

March 2018 | Ongoing

As a follow-up to a previous project to develop an automated web-based watershed planning tool to help communities and local organizations apply for U.S. EPA grant funding, Ms. Braga served as Project Director to help 15 communities across the state complete their own watershed-based plan. She also helped develop methodologies to allow the MassDEP to evaluate and rank the resulting watershed-based plans and to provide feedback. She also provided public outreach support to promote the watershed-based plan tool and train municipal and watershed organizations in its use.

Urban Water Quality Project for Boston Water and Sewer Commission

December 2015 | February 2018

Ms. Braga is Project Manager for this project with the Boston Water and Sewer Commission (BWSC) to design and implement a special study using state-of-the-science forensic tools to identify pollutant sources, evaluate IDDE program effectiveness, identify new remedial measures, and potentially achieve regulatory off ramps if justified. The scope of work includes design of a hypothesis-driven study that will assess bacteria and nutrient sources to and within BWSC’s MS4, spatial/temporal patterns of these pollutants, the effectiveness of BWSC’s ongoing IDDE efforts, and the reliability of conventional IDDE indicators that will inform/guide future management actions.

Lake Cochituate Watershed Planning

March 2018 | October 2018

Ms. Braga recently completed a watershed planning project for the MA DCR and the Town of Natick. The purpose of the project was to prioritize and provide design concepts for stormwater retrofits within the lake watershed. Ms. Braga utilized the MA Watershed Based Planning tool, developed by Geosyntec in coordination with Massachusetts Department of Environmental Protection (DEP), to meet and exceed client project goals. Using the tool, the project team was able to efficiently map the watershed, calculate land use pollutant load, evaluate different options for retrofit BMPs to be installed in the watershed, calculate the load reduction and cost of those BMPs and develop a plan that can be shared with stakeholders for ongoing BMP implementation.

Stony Brook Flow Restoration Project

March 2018 | August 2018

Ms. Braga served as Project Director, alongside the towns of Westford and Littleton, on a state Water Management Act grant project to assess the opportunities for improvement of instream flow in Stony Brook downstream of a series of surface water impoundments through a coordinated Streamflow Restoration Plan (SRP). The project involved engaging project stakeholders in a quantitative goal setting process, developing a hydrologic and hydraulic model of the study area, and evaluating and scoring potential operational strategies. The team also developed a SRP and a decision-support dashboard to implement and track SRP recommendations. The project will enable informed and coordinated management of shared water resources within the Stony Brook watershed towards improvements in streamflow, water quality, habitat, and other objectives.

Evaluation of a Federal National Post-Construction Stormwater Standard

August 2010 | June 2015

Ms. Braga was Project Manager and Lead Engineer for research and analysis to help U.S. EPA evaluate a potential nationwide rule for the management of post-construction stormwater runoff. The most significant aspect of the project was to model the hydrology and water quality conditions under both the existing regulations and under the proposed rule conditions. The team developed a tool called “The Least Cost BMP Tool” to evaluate the improvements in pollutant loading reductions and the costs of alternative control strategies based on the application of GI and LID techniques on a nationwide basis. Ms. Braga also oversaw the second phase of the project which focused on analyzing the 400 million lines of results generated by the tool and generating a final report.