



Exponent[®]
Engineering & Scientific Consulting

Susan Bomba, P.E., PMP, CCM

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Professional Profile

Ms. Bomba has more than 20 years of experience in the management and design of construction projects. She specializes in program management for major infrastructure, electric, and gas utility project portfolios and has advised clients on a range of construction topics including project management, project controls, project scheduling, risk management, contract management, and construction dispute resolution.

Her advisory experience includes developing Project Management Office (PMO) organizations tailored to the specific program needs, defining the roles and responsibilities, developing the governance framework and controls, process and procedures, and the project management plan. Her ability to incorporate predictive and agile methodologies balanced with effective risk mitigation strategies results in successful project execution. She has led multi-disciplinary teams in adapting to changing client needs and evaluating multiple design options, while communicating project success, challenges, and risks to key stakeholders.

Ms. Bomba has supported clients with the development and implementation of new management systems and tools including data analytics frameworks, reporting frameworks, scheduling, and cost controls frameworks to accommodate weekly and monthly reporting cycles. She has developed varying levels of project- and portfolio-level key performance indicators to facilitate the evaluation of work progress, balancing of resources, identification of execution risks, development of mitigation strategies, and performance management.

Ms. Bomba's design experience includes acting as lead structural engineer providing design engineering and drafting support for major highway reconstruction projects.

Academic Credentials & Professional Honors

B.S., Civil Engineering, Rensselaer Polytechnic Institute, 2001

Licenses and Certifications

Professional Engineer Civil, California, #76255

Professional Engineer, Michigan, #6201053735

Certified Construction Manager (CCM)

NYU|Stern - Corporate Sustainability Executive Certificate Program

Project Management Professional (PMP)

Prior Experience

Project Manager, Senior Design Engineer, CH2M HILL, 2004–2013

Design Engineer, Earth Tech, 2001–2004

Construction Engineer, Washington Group International, 2001

Professional Affiliations

American Society of Civil Engineers

AACE International

Construction Management Association of America

Project Management Institute

Publications

Ayers A, Bomba S. Once upon a project: using data to tell the story (TCMA-3651). AACE International Conference and Expo, Virtual, 2021.

Bomba S, Ayers A, El Didi L. Adapting data management structures to improve performance in post-disaster scenarios (TCMA-3462). AACE International Conference and Expo, Virtual, 2020.

Bomba S, El Didi L, Ayers A. Data analytics to drive reporting and insights for timely decisions and improved business performance (TCMA-3054). AACE International Conference and Expo, New Orleans, LA, 2019.

Bomba S, El Didi L. Benchmarking and predictive analytics to improve estimates, forecasts, and performance measurement (EST-2881). AACE International Conference and Expo, San Diego, CA, 2018.

Presentations

Bomba S, Erkal E, Hua K. Corporate Sustainability in Construction, CMAA2023, Washington, DC, 2023.

Bomba S. Creating Project History, Women in Construction World Series, Virtual, 2020.

Bomba S, El Didi L, Athanasopoulou, K. Data analytics to drive reporting insights for timely decisions and improved business performance, AACE Western Winter Workshop, South Lake Tahoe, CA, 2019.

Bomba S, El Didi L, Otieno L. Tackling change implementation with a collaborative approach. CMAA National Conference and Trade Show, Las Vegas, NV, 2018

Bomba S, Hsu R. Lessons learned from submarine cable construction in the San Francisco Bay. CMAA National Conference and Trade Show, Washington, DC, 2017

Project Experience

Provided advisory services for a large utility company on appropriate metrics to track its construction project delivery. Support included the analysis of construction project schedules to determine appropriate durations for key activities, as well as determining critical path for non-standard projects.

Provided advisory services to an environmental remediation department of a large corporation to develop and implement enhanced project controls for its construction portfolio. Controls include improved cost and schedule controls to better align with industry best practices and corporate governance requirements.

Provided process development support for a program that performs engineering assessments for pipeline integrity.

Planned, scoped, and executed a large asset replacement program for an electric transmission provider, including coordinating with the asset owners to determine priority and funding requirements. Managed overall program budget and adjusted program execution and project priority to align with annual funding changes as well as incorporating accelerated replacements due to ongoing maintenance inspections. Total portfolio value exceeded \$2.0B with a target annual spend of \$150M.

Provided construction advisory services to a client after a large equipment failure damaged a portion of its building. Provided insight into costs for repair work and extent of repairs for insurance purposes.

Performed constructability reviews and project risk reviews evaluating the schedule, cost, and potential risks for a large portfolio of construction projects.

Planned and executed multiple programs of electric transmission projects, including system upgrades, relocations, and interconnections with a total portfolio value of \$475M. Developed quality control system across the programs to clearly show performance against key project management metrics. Developed reporting framework that included executive level briefings, portfolio level financial views, individual project dashboards, and targeted customer contract status updates.

Provided advisory services to an innovative transportation provider to assist with regulatory reviews of their vehicle system as well as risk assessments and prioritization for early planning phases of implementation of their system across multiple geographic areas.

Provided advisory services to a solar energy provider developing a project management manual to standardize its portfolio of commercial projects.

Collaborated with a software vendor to assist a utility client with system implementation of a PM software solution to a large organization. Acted as a liaison to translate the PM organization's needs and requirements to the software vendor. Developed online forms, workflows, and process steps for a single source of truth for a maintenance program.

Assessed the reporting framework for an electric transmission maintenance program to determine gaps and improve communication across all levels of the client organization. Improved upon existing reports by considering stakeholder communication priorities as well as making the reports automated and efficient to prepare on a regular basis.

Performed gap analysis on a program management office organizational and governance structure for an electric transmission maintenance program. Recommended an organization structure that met the strategic and execution goals of the program while improving efficiency across the functional groups.

Analyzed contractor's claim for delay on a stormwater system installation project.

Provided construction advisory services and cost estimate review for a bridge construction project after failure of existing bridge required immediate replacement.

Developed and managed a program to conduct direct assessments of in-service gas pipelines. Program combined assessment work from five different client organizations with resource and schedule coordination to manage for optimized work execution.

Developed and managed a region-wide program of hydrostatic testing projects for in-service gas pipelines, from scoping phase through construction and closeout. Projects were completed on an accelerated schedule as part of an overall pipeline safety program. The new Project Management Office (PMO) aligned multiple gas pipeline workstreams (strength testing, pipeline replacement, valve automation, and in-line inspections) under consistent schedule templates, cost management tools, and project management processes.

Managed a design project as the lead bridge engineer for the preliminary engineering phase of a 6.7-mile freeway widening project including the redesign of two major system interchanges. Prepared final design reports for the interchange and local overpass bridges along the length of the project, evaluating various conventional and innovative structure types.

Performed structural design services and construction support for the widening of a multi-span curved steel-beam viaduct in an urban environment as part of a major system interchange redesign project.

Performed preliminary roadway design services for a reconstruction of a historic bascule bridge crossing including reconfiguration of bridge approaches and intersections. Provided engineering support during construction.

Performed structural design services for various county highway bridges in New York State. Responsible for design and construction support for single-span steel girder and concrete box beam bridges.

Performed structural design services for a multi-span bridge replacement in Sri Lanka following the 2004 Indian Ocean earthquake and tsunami.

Performed 3D modeling and drafting using Revit, AutoCAD, and Microstation for various building rehabilitation projects.

Provided field engineering services for bridges constructed on a new 47-mile-long controlled-access toll road in a major metropolitan area.