

Climate Resilience in the Built Environment

Mitch Owens, P.E., ENV SP (Haley & Aldrich, Inc., New York, NY, USA)

Daniele Spirandelli, Ph.D., Allison Pynch, PE, GE, and Kayla Ahrens, P.E. (Haley & Aldrich, Inc., Portland, OR, USA)

Hannah Sawyer (Haley & Aldrich, Inc., San Diego, CA, USA)

Background/Objectives. Climate risk analysis and resilience planning of buildings and infrastructure systems require detailed assessments of assets that go beyond evaluating the physical exposures to hazards. Decision-makers require information that helps them to understand relative risks, prioritize improvements, and incorporate those into capital improvement and emergency planning.

Approach/Activities. Managing risks associated with climate change and integrating resilience into buildings and infrastructure involves a systematic and collaborative process. In this presentation, we present Haley & Aldrich's approach to working with clients to identify and detail physical and operational vulnerabilities of structures and infrastructure, prioritize adaptation strategies, and integrate resilience measures into planning. We discuss how we have incorporated resilience into emergency operations, future design guidelines and capital improvement planning. We present critical decision points throughout the assessment and implementation process, including developing resilience goals, a vulnerability rating system, and approach used to prioritize improvement strategies.

Results/Lessons Learned. We draw on case studies from both the private and public sector to illustrate how this approach can be leveraged to integrate resilience into the built environment.