



EDUCATION B.S., Civil Engineering Western Michigan University, 2014

P.E. REGISTRATIONS Michigan

Mark A. Dixon, P.E. Engineer II

Mark provides project management as well as condition assessments and design for new and existing structures. He performs service life analysis, develops and optimizes materials durability systems, develops thermal control plans for mass concrete structures, and conducts corrosion testing.

Mark's areas of expertise include materials engineering services, mass concrete engineering, specifications development, durability assessments, construction materials optimization, and forensic investigations of existing structures.

PROJECT EXPERIENCE

Gordie Howe International Bridge, Detroit, MI & Windsor, ON

Once completed, the Gordie Howe International Bridge will be the longest cablestayed bridge in North America and among the top five longest bridges in North America. TCG is the concrete and below-grade steel durability and materials experts on the entire project. Mark is TCG's project manager on this project in which service life modeling and engineering was completed to prepare multiple Durability Plans that included all durability requirements of the main bridge span, approach bridge spans, Michigan interchange ramp bridges, and the Canadian port of entry bridge. The overall holistic approach to ensure the 125-year service life emphasized design detailing, materials selection, construction quality, inspection, QA/QC of materials and construction, operations and maintenance, and repair. In addition to design, TCG is the testing laboratory for concrete and the expert consultant for any durability related changes or issues throughout construction. **Mystic Lake Casino Parking Garage**, *Prior Lake*, *MN*

Mark was the project manager and on-site engineer for TCG for the field investigation of the existing parking garage at Mystic Lake Casino constructed in 2002. A visual walk-through of the existing structure was completed in order to understand the current conditions of the steel and concrete. The investigation included visual observations with photographs, and hammer sound and chain dragging to identify delamination's on a representative percentage of the area. The project objective was to evaluate the existing conditions of the parking structure and to evaluate alternative conceptual rehabilitation/preservation approaches so that the structure achieves an additional 30 years of service life.

US 181 Harbor Bridge, Corpus Christi, TX

South Capitol Bridge, Washington, DC

I-395 Bridge, Miami, FL

Mark was the project manager for TCG on all three projects. Each project included different locations, exposure conditions, materials, and structural designs. However, each bridge project is similar in scope in which TCG represented the Owner as their durability and materials expert. The project Owners required a 100-year service life of these monumental bridge structures, therefore each durability or materials related submittal, including corrosion protection plans, concrete mix designs, construction related issues, etc., were reviewed to assure all durability and service life requirements were being adequately met. TCG worked closely and collaborated with the Owner and design-build teams to achieve realistic and technically sound solutions to achieve the extended service lives.