

Coatings/Corrosion Engineering

Consulting, Design, and
Inspection Services

bridges • tanks • facilities



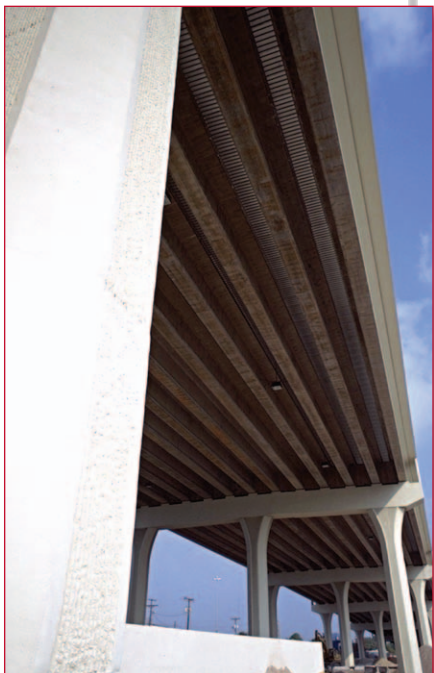
GREENHORNE & O'MARA

CONSULTING ENGINEERS

Inspired Solutions, Improving Lives

About Greenhorne & O'Mara

Greenhorne & O'Mara (G&O) is a full-service engineering consulting firm that provides solutions in the areas of civil, bridge coatings, transportation, environmental and water resources engineering, and hazard mitigation and security services to clients in the public and private sectors. With offices in seven states, G&O support projects located throughout the United States and overseas. Founded in 1950, G&O is an employee-owned firm that is consistently ranked by *Engineering News Record* among the top architectural/engineering design firms in the United States.



G&O Services

G&O is known for its expertise in coatings inspections — our inspectors are among the best in their fields and are trained by the National Association of Corrosion Engineers, the Society of Protective Coatings (SSPC), and other nationally recognized organizations. We provide Departments of Transportation and municipalities with the following services:

- Coatings inspection of bridges, tanks, and industrial facilities
- Coatings/Corrosion Survey Analyses, (failure analysis, cost-effective solutions)
- Training
- Lifecycle cost analyses to evaluate alternative coatings protection systems
- Preliminary and final design, including the preparation of specifications for coatings protection projects
- Transportation planning and design, traffic control, and structural analysis
- Review of containment plans, evaluation of existing containment systems, and recommendations for methods of obtaining compliance in accordance with SSPC Guide 6
- Review of containment installation, and loads and stresses on existing bridge structures
- Review of contractor's lead, health, and safety plan (industrial hygiene) in accordance with state, federal, EPA, and OSHA regulations (29 CFR 1926.62)
- Review of contractor's plan for collection, storage, and disposal, as applicable to SSPC Guide 7
- Provision of expert testimony

G&O Clients

G&O has a long history of providing Departments of Transportation and municipalities in numerous states with top-level proficiency in coatings and transportation-related services.

- Connecticut Department of Transportation
- Delaware Department of Transportation
- Florida Department of Transportation
- Maryland State Highway Administration
- Maryland Transportation Authority
- Pennsylvania Department of Transportation
- Pennsylvania Turnpike Commission
- Virginia Department of Transportation
- West Virginia Division of Highways

G&O Project Experience

Wilmington Viaduct — Delaware Department of Transportation, Wilmington, DE. Wilmington Viaduct, a 5,500-foot, 60-span dual bridge carrying Interstate 95 over Norfolk Southern rails, AMTRAK tracks, and city streets in downtown Wilmington.

G&O services:

- Coatings inspection and evaluation and recommendations for cleaning and painting structural steel
- In-depth structural inspection and preparation of reports, including NBIS and PONTIS forms
- Design, preparation of bridge rehabilitation plans and specifications, and construction inspection services

Work included: Replacement of more than 400 bronze bearings and seismic retrofit of the superstructure. The existing structure contained lead and required detailed specifications for removal, stringent specifications for remediation of the waste material, and design of a coating system. Environmental concerns during the removal of the lead-based paint were key issues to the commercial, residential, and park and recreational sites located under and around the bridge.



Longfellow Bridge | Massachusetts Department of Transportation — Boston, MA. The Longfellow Bridge is a steel and granite structure that was completed in 1908, and joins Cambridge Street in Boston with Main Street in Cambridge. It carries the Massachusetts Bay Transportation Authority (MBTA) Red Line and two-way vehicular traffic across the Charles River. The bridge presently carries 28,000 motor vehicles, 90,000 transit users, and significant numbers of pedestrians and bicyclists each day.

G&O services:

- Providing coatings inspection oversight during the removal of existing lead-based paint from the bridge, and repainting of the structure



Statewide Inspection Services for Bridge Cleaning and Painting — Maryland Department of Transportation, State Highway Administration
G&O has been responsible for bridge coatings consulting and inspection on this statewide contract since its inception in 1996.

G&O services:

- Arm's-length coatings inspection of bridges
- Coatings evaluations, recommendations, and specification production
- Environmental health and safety oversight
- Maintenance-of-traffic oversight
- Field inspector assignments and project scheduling

Work included: Providing coatings inspection assignments on various bridge projects on this statewide bridge coating inspection contract. In recent years, G&O has staffed coatings inspectors on more than 300 individual bridge painting projects. G&O also performs coatings consulting assignments and oversight of environmental compliance during staffing assignments.





Statewide Bridge Coatings Inspection Services — West Virginia Department of Transportation, Division of Highways

G&O services:

- Bridge coatings consulting and inspection (since 1999)
- Arm's-length coatings inspection of bridges
- Submittal review, comment, and approval
- Review of containment design including loads and stress on bridge structure
- Environmental health and safety review and oversight
- Maintenance-of-traffic oversight
- Project management, field inspector assignments, and project scheduling

Work included: Coatings consulting and inspection services on various bridge painting projects, including the 2007 coatings inspection oversight on the 36th St. Bridge in Charleston, WV. Involved in preconstruction phase through closeout phase. Insured compliance with West Virginia's specifications, and provided technical oversight of the project, along with maintenance-of-traffic oversight. Provided an oversight of hazardous waste handling, storage and disposal.



Quality Assurance Services for Lead Paint Removal on Maryland Bridges — Maryland State Highway Administration

G&O services:

- Monitor and evaluate the environment during lead paint removal operations for bridges under contract for cleaning and painting
- Review contractor submittals for containment, lead, and health and safety plan
- Expert advice



Structural Steel Services on the 17th Street Bridge — spans the Ohio River, West Virginia Department of Transportation, Huntington, WV

Protective Coatings Inspection services:

- Full-time, daily containment system inspection during the cleaning phase
- Observation during environmental monitoring
- Inspection of the blasted surface to ensure that it met specifications, and measurement of the surface profile
- Oversight of waste collection, storage, and disposal

Work included: Abrasive blast cleaning of the entire surface of the truss bridge to an SSPC-SP10, near white blast, with a Class 3A containment system per SSPC Guide 6. The multi-coat system being applied to the bridge consisted of an organic zinc rich epoxy primer, an acrylic intermediate coat, and an acrylic finish coat.



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