

RICHARD M. BALGOWAN, PE, PP, CPM, CPWM, PWLF
President, RM Balgowan Forensic & Engineering Services, LLC

PROFESSIONAL EXPERIENCE

- 2018 to Present **RM Balgowan Forensic & Engineering Services, LLC**
President
Provide technical services to attorneys, insurance companies, public authorities, road and street owners, trucking and railroad companies, and contractors for: highway engineering and traffic safety and municipal engineering; civil engineering; design; construction engineering, claims and safety; roadway maintenance and operations.
- 2012 to 2018 **Robson Forensic, Inc.**
Associate
Provide technical services to attorneys, insurance companies, public authorities, road and street owners, trucking and railroad companies, and contractors for: highway engineering and traffic safety and municipal engineering; civil engineering; design; construction engineering, claims and safety; roadway maintenance and operations.
- 2011 to 2012 **Gannett Fleming, Inc., Mt. Laurel, New Jersey**
Construction Manager
Provided construction management services for New Jersey Turnpike Authority contracts for maintenance and reconstruction of bridges on the Garden State Parkway. Responsibilities included coordination of lane closings with traffic operations and supervision of staff for inspection of contractor's work. Work includes replacing concrete bridge deck panels; repairing deck spalls; repairing and reconstructing deck joints; repairing headers; removing asphalt surfacing; replacing bridge barrier parapets; placing new membrane waterproofing; resurfacing approach roadways and bridge decks; and performing substructure repairs, pavement markings, beam guide rail improvements and attachments, and related maintenance and protection of traffic. The project included extensive night work.
- 1990 to 2011 **R.M. Balgowan Engineering Associates, Inc., Hamilton, New Jersey**
President
Provided engineering services to public and privately owned dam owners. Work included dam inspections, analysis and preparation of engineering reports as required by the federal Environmental Protection Agency and State Department of Environmental Protection. Inspections were made to determine the structural stability of the dam, safety of the dam, operation and condition of the low level outlet, spillway, emergency spillway and earth embankment (dam) issues such as subsidence and seepage, etc. Also, performed hydrologic and hydraulic analysis of dams/spillways. Prepared plans and specifications for dam rehabilitation and provided oversight for repair work.
- 2004 to 2011 **Township of Hamilton, Mercer County, New Jersey**
Director of Public Works
Managed construction, operations and maintenance, permitting, facilities operations and maintenance, detention basins, dams, waste water treatment, solid waste

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management, parks and playgrounds within the Township's infrastructure. This included 625 miles of roads (paved and unpaved), 58 bridges and culverts, 62 building structures/facilities and 49 parks including playgrounds, and all snow/ice control and other winter maintenance activities. Managed a staff of 189 personnel. Responsible for budgeting, procurement, and supervision of design, construction, and construction management contracts. Personally supervised 12 staff in the inspection of multiple concurrent projects.

Projects included mill/resurfacing, concrete bridge deck repairs, traffic signal improvements, drainage improvements, and various concrete construction and repairs involving channelizing devices, curbs, sidewalks, retaining walls, roundabouts, etc. Created policies and procedures, resolutions, ordinances, etc. for dam safety (operations and maintenance plans, emergency action plans, etc.), incident management, implementing sustainable operating practices (energy conservation plan, alternative fuel policy, climate action plan, green fleet policy, recycling through township ecological facility, integrated pest management plan, anti-idling policy and sustainable building construction/rehabilitation plan using LEED rating system).

1997 to **New Jersey Department of Transportation**
2004 *Regional Maintenance Engineer, Division of Construction and Maintenance*
Managed the operations and maintenance of the state highway system in New Jersey Department of Transportation's South Region. This included seven counties containing approximately 4,000 lane miles of roads and bridges, as well as 27 facilities including crew maintenance facilities and rest areas. Work included the maintenance and reconstruction of state owned roadways (paved/unpaved), bridges, drainage structures, highway markings, shoulders and facilities, and snow/ice control and other winter roadway maintenance activities. Managed the Region's Construction, Engineering and Highway Permits Sections. Managed construction contracts for guiderail installation and repair, bridge painting with lead based paint removal, milling and paving and landscape mowing. Managed federalized maintenance projects approved through ISTEA and Transportation Trust Fund projects. These projects involved highway milling and paving, highway maintenance activities to extend the useful life of highways and highway appurtenances, etc.

1996 to **New Jersey Department of Transportation**
1997 *Program Manager, Capital Program Management*
Managed projects in the Capital Program from inception to final completion (cradle to grave). This involved monitoring projects through the scope development, design stages, bid/award and construction stages. Some of the projects included pavement widening and new flyovers (bridges), a tunnel project which included design and construction of a park above the tunnel, projects for construction of longitudinal rumble strips and bridge deck reconstruction. Was directly responsible for managing ten Project Managers and four Project Coordinators.

1994 to **New Jersey Department of Transportation**

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- 1996 *Regional Maintenance Engineer, Division of Construction and Maintenance*
Managed the operation and maintenance of the state highway system in Region IV. This included state owned roadways (paved/unpaved), bridges and appurtenant structures; responsible for administering and completing federalized maintenance projects and Transportation Trust Fund projects. These projects included highway resurfacing, drainage reconstruction, crack sealing of bituminous concrete pavements, concrete joint repair and bridge painting; prepared and reviewed design work for highway, bridge and drainage facilities; managed the maintenance of all NJDOT equipment in Region IV including relevant other agency equipment; managed Regional Permit Operations; managed snow/ice control and other winter roadway maintenance activities; managed Regional Maintenance Engineering Operations by increasing the utilization of standard engineering practices into its daily operations; developed and implemented a Maintenance Partnering Program with the various Counties and Municipalities in the Region.
- 1990 to 1994 **New Jersey Department of Transportation**
Project Engineer, Transportation
Responsible charge for the supervision of the engineering, permits and equipment sections within Region III; performed phase reviews of plans for construction projects scheduled for the Region; prepared design schemes for roadway, bridge and drainage facility improvements and repair; attended and authorized rejection or acceptance of work on corrective action, substantial completion, and final acceptance inspections for construction projects in the Region; initiated and implemented CADD and state of the art surveying methods in the engineering section; responsible charge of the Region's Emergency Control Center; investigated complaints and designed repair schemes; designed roadway, bridge, dam and drainage repair schemes, prepared work orders and plans for maintenance repairs and improvements to highways and structures.
- 1984 to 1990 **New Jersey Department of Transportation**
Principal Engineer, Transportation
Responsible charge for the supervision of the Bridge Engineering Unit, Bridge Maintenance Engineering Section, within the Bureau of Maintenance Engineering; supervised the development and administration of contracts and specifications for the repair of structures (e.g. bridges, dams, sign structures); prepared detail design schemes for maintenance repair work of bridges and dams; resident engineer on bridge maintenance contracts (Bridge Painting and Lead Based Paint Removal, Concrete Repair, Structural Steel Repair, Timber Repair. etc.); had the lead role in re-writing the NJDOT's standard specification for bridge painting and lead based paint removal, created the NJDOT's Dam Safety Section; supervised the engineering analysis of, inspection, permit acquisition and repair and development of Emergency Action Plans for all NJDOT dams; initiated and implemented CADD in the Bridge Engineering Unit and developed the five (5) year CADD/GIS plan for all of Construction and Maintenance; supervised the inspection and repair of all state owned bridges under twenty feet in length; worked on various special projects involving the application and research of Road Weather Information Systems and

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winter operations related technologies; supervised the operation of and developed the Bridge Maintenance Management System; supervised the operation of the NJDOT's Central Emergency Control Center that coordinates snow and ice control operations and other emergent events throughout the state.

1980 to **New Jersey Department of Transportation**

1984 *Senior Engineer, Transportation*

Responsible for the supervision of Operations Unit within the Maintenance Management Section, Bureau of Maintenance; prepared detailed engineering reports; performed cost benefit analysis; developed specifications and evaluated procedures for the repairing of roads, structures and all other appurtenant elements of a highway system; assisted in the preparation of the annual budget; developed performance standards for construction and maintenance work; consulted with data processing in issuing change orders, certifying final acceptance of new systems and on the interaction of the maintenance system with other systems such as Fleet Management, Materials, Construction and Data Processing; worked in the Central Emergency Control Center utilizing sophisticated weather monitoring equipment to track winter weather events; worked on various snow and ice control related special projects (e.g., constant density spreaders, pre-wetted salt, ice detection systems, Road Weather Information Systems).

1977 to **New Jersey Department of Transportation**

1980 *Assistant Engineer, Transportation*

Prepared detailed engineering reports concerning maintenance performance standards for roads (paved/unpaved), bridges and highway appurtenances; evaluated new equipment and materials for use in construction and maintenance work; performed field audits; developed systems for planning and scheduling of work functions within maintenance; performed roadway design (horizontal and vertical geometry for roadway design projects).

1975 to **Township of Hamilton, Hamilton, New Jersey**

1977 *Surveying Crew Member*

Worked in a surveying crew laying out township roadway reconstruction projects; performed property surveys of township owned properties; surveyed and laid out controls for new athletic field construction, etc.

PROFESSIONAL CREDENTIALS

Professional Engineer: NCEES, New Jersey, Delaware, Maryland, North Carolina, South Carolina, Pennsylvania, New Mexico, Texas, Colorado, New York, Connecticut, Washington

Professional Planner: New Jersey

Certified Public Works Manager: New Jersey

Certified Public Manager: New Jersey

Asphalt Paving Construction Technologist: New Jersey Society of Asphalt Technologists, Inc.

OSHA 10 Certified

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APWA- Public Works Leadership Fellow

EDUCATION

B.S. Civil Engineering, New Jersey Institute of Technology

Additional Training and Certifications

Bridge Inspection, Maintenance and Repair Module 1, PDH Direct, January 2018
Engineering and Design Evaluation and Repair of Concrete Structures Final Exam, PDH Direct, January 2018
Pennsylvania Laws, Rules and Ethics Final Exam, PDH Direct, January 2018
Soil Stabilization for Pavements Final Exam, PDH Direct, January 2018
Standards of Professional Conduct for Civil Engineers Final Exam, PDH Direct, January 2018
Unsurfaced Road Maintenance Management Final Exam, PDH Direct, January 2018
Causes of Distress and Deterioration of Concrete, PDH Direct, April 2017
Bridge Inspection, Maintenance and Repair, PDH Direct, April 2017
Construction Site Storm Water Runoff Control, PDH Direct, April 2017
Bearing Capacity of Soils, PDH Direct, November 2016
Pavement Distress Identification, PDH Direct, November 2016
2010 ADA Standards for Accessible Design, PDH Direct, October 2016
Unsurfaced Road Maintenance Management, PDH Direct, October 2016
Standard Practice for Sealing Joints and Cracks in Rigid and Flexible Pavements, PDH Direct, October 2016
Corrosion Theory, PDH Direct, October 2016
Cathodic Protection Systems for Civil Work Structures, PDH Direct, October 2016
Ethics for Texas Engineers, Professional Education Services, April 2016
Ethics NSPE Final Exam, PDH Direct, April 2016
Ethical Choices: Daily Decisions for Engineers, Rutgers University, October 2015
Guidelines for Guiderail and Median Barrier Design, Rutgers University, August 2015
APWA Combined Technical Committee's Conference, March, 2015
Transportation Research Board, 94th Annual Meeting, January 2015
W-Beam Guardrail Design
Pedestrian and Driver Behavioral Influences on Pedestrian Safety
Weather Effects on Roadways
Supply Chains and Policies
Evaluation of Innovative Pedestrian Crossing Treatments
Advances in Work Zone Safety
Pavement Distress: AASHTO Protocols and Structural Evaluation
Advances in Technology, Facilities, and Operations for Winter Maintenance
Performance Evaluation of Retroreflective Traffic Signs
Subsurface Flow/Gravel Wetlands, 2014
Analysis and Assessment of Roundabouts, 2014
Complying with the MUTCD: Traffic Signing for Horizontal Curves, 2014
Engineering Treatments and Design Development Strategies for Creating Safe Routes to Schools, 2014

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Transportation Research Board, 93rd Annual Meeting, January 2014
Work Zone Traffic Control for Safety and Mobility
Advances in Materials and Equipment for Winter Maintenance
Infrastructure Corrosion, Part 1
Safety and Weather in Surface Transportation
Infrastructure Corrosion, Part 2
Sustainability: 20 Years in the Past and 20 Years in the Future
Work Zone Traffic Control for Safety and Mobility
Vehicle Speeds in Work Zones
Motorcycle Crashes: Understanding and Controlling Contributing Factors and Injury Severity
Roundabouts from A to Z
Crack Sealing and Crack Filling of Asphalt Pavements
Roundabout Perception and Reality: Speed, Pedestrians, Capacity
APWA Winter Maintenance Supervisor Workshop, April 2013
Infrastructure Corrosion, January 2013
Weather Impacts on Surface Transportation, January 2013
Moisture Damage Characterization of Asphalt Mixtures, January 2013
Assessing Potential Impacts of Climate Change on Transportation Infrastructure, January 2013
Roundabout Research: Gaining Better Knowledge, January 2013
Roundabouts: Smarter Intersections, January 2013
Steel Bridge Coating Systems, Part 1, January, 2013
Steel Bridge Coating Systems, Part 2, January 2013
Evaluating Effectiveness of Sealing Portland Cement Concrete Joints, January, 2013
Pavement Maintenance Patching and Repair Practices, January 2013
Managing Snow and Ice Control Operations, University of Wisconsin, College of Engineering,
Dept. of Engineering Professional Development, October 2012
ADA Basics and Work Zone Considerations, American Public Works Association, New Jersey
Chapter, September 2012
Weather - The Next Step in Understanding, July 2012
Guidelines on the Use of Auxiliary through Lanes at Signalized Intersections, July 2012
Certificate in Supervisory Management, Rutgers University
Asphalt Technology Certificate (Asphalt Paving Construction Technologist)
OSHA 10HR Safety Training, 2012
Public Works Delegation to Russia, 2011
Personal Protective Equipment, 2011
Fall Protection, 2011
Work Zone Safety Awareness, 2011
Sustainability for Public Works Operations, 2011
USGBC- NJ LEED Green Associate Review, 2011
Alternatives for Snow and Ice Management, 2011
Recycling Incentives and Solid Waste Diversion, 2010
Traffic Sign Reflectivity and New Sign Requirements, 2010
Progressive Discipline, 2010
National Incident Management System- ICS-402 for Executives, 2010
Public Works Delegation to China, 2009
Preventing Sexual Harassment and Other Hostile Behaviors in the Workplace, 2009

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Communication and Conflict Management, 2009
Performance Measurement Benchmarking, 2009
Effect of Budget on Public Works as it Relates to Economy and Today, 2009
New Jersey Compost Operator Certification, 2009
Winter Roads Maintenance, 2007
Confined Space Awareness, 2006
Safe and Effective Winter Maintenance Products, 2006
System Security Awareness, 2004
Preparing for and Responding to Terrorism/Weapons of Mass Destruction, 2003
Using Recycled Materials in Road Construction and Maintenance, 1999
Needs Assessment Overview, 1999
Project Management, 1996
International Transportation Weather Workshop, 1995
Highway Program Financing, 1995
HEC 1- Hydrology, 1992
Bridge Painting Inspection, 1988
Meteorology and Weather Radar Training, 1986
Problem Solving and Decision Making, 1986
Culvert Inspection, 1986
Geotextile Engineering, 1985
Techniques for Pavement Rehabilitation, 1983
Grievance Handling for Supervisory Employees, 1982
HEC-2
TR-55, TR-20
Dambrk (Dam Break Analysis)
Engineering Ethics: The Professional Engineer's Challenge

PROFESSIONAL AFFILIATIONS

New Jersey Public Works Association
National Society of Professional Engineers
American Society of Civil Engineers

American Public Works Association
Executive Board, Secretary, New Jersey Chapter
Vice President, Southern Branch, New Jersey Chapter
Subcommittee Member, Winter Maintenance - National

Transportation Research Board
Committee Member, Winter Maintenance
Subcommittee Member, Sustainability
Subcommittee Member, Snow Chemicals
Committee Member, Surface Transportation Weather, AH010
Committee Member, Corrosion

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Hamilton Township Environmental Commission Administrative Liaison
Journal of Public Works and Infrastructure Editorial Board Member
Journal of Town and City Management Editorial Board Member: United States Green Building Council
ICLEI- Local Governments for Sustainability
Rutgers University, Coadjutant Instructor

Past memberships and affiliations include:

American Society of Dam Safety Officials (ASDSO)
American Society of Dam Safety Officials Technical Committee
Expert Task Group for Strategic Highway Research Program H-207 (Storm Monitoring and Communications)
NJDOT SHRP Subcommittee on Highway Operations & Maintenance (SHRP Implementation Committee)
NJDOT Construction & Maintenance CADD/GIS Implementation Committee
NJDOT Metrication Task Force
Steel Structures Painting Council (SSPC) Committees on Lead Based Paint Removal, Specifications Maintenance Repainting, Quality Assurance and Contractor certification
NJDOT Division of Construction/Maintenance computer committee
NJDOT Bridge Painting and Lead Based Paint Removal Task Force

AWARDS

Walter A. Schaffer Merit Award, New Jersey Chapter American Public Works Association, 2013
Leadership in Sustainability Award, ICLEI - Local Governments for Sustainability, 2010
Richard E. Rohrbach American Public Works Association Leader of the Year for New Jersey, 2009
Teamwork Partnership Achievement Award for the Route 70 Friendship Creek Bridge Collapse, 2005
Customer Service Excellence Award (Casino Garage Collapse Support Team) (2004)
Teamwork/Partnership Achievement Award, 2003
Teamwork Partnership Award for the Route 9 Bridge over the Forked River Failure/Replacement, 1991
Achievement Award for the development of a computerized pavement and atmospheric weather information system
Achievement Award for the efforts made in implementing SHRP developed technologies relative to Highway Operations and Maintenance into NJDOT practices

PUBLICATIONS

Multiple papers published in major industry journals, such as the Journal of Public Works and Infrastructure, Transportation Research News, Government Solutions, and APWA Reporter, among others:

Balgowan, Richard M. "Installation of Road Plates," APWA Reporter, August 2017.

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Balgowan, Richard M. "Pavement and Shoulder Edge Drop-Offs," APWA Reporter, August 2014.

Balgowan, Richard M. "The Proper Installation of Steel Road Plates," APWA Reporter, June 2014.

Balgowan, Richard M. "The Importance of Establishing Levels of Service for Winter Operations." APWA Reporter, Winter Maintenance Operations Issue, November 2010.

Balgowan, Richard M. "Pre-Storm Strategy and Post-Storm Assessment Meetings." APWA Reporter, Winter Maintenance Operations Issue, November 2010.

Balgowan, Richard M. "Getting the Most Out of Winter Weather Forecasting Services." Transportation Research News, Transportation Research Board of the National Academies, Anatomy of Change in Winter Maintenance Issue, No. 265, November-December 2009.

Balgowan, Richard M. "Winter Operations Management and Geographical Information Systems." Journal of Public Works and Infrastructure, Vol. 2, No. 1, August 2009.

PRESENTATIONS and SPEAKING ENGAGEMENTS

Numerous presentations and public speaking appearances for the Transportation Research Board, Strategic Highway Research Program, Federal Highway Administration, American Public Works Association, Rutgers, State University of New Jersey, University of Wisconsin, among others and State DOTs such as Maryland, Pennsylvania, Colorado, Connecticut and New Jersey, including:

- "Winter Operations – Snow and Ice Control for Managers and Supervisors," a six-hour presentation for the American Public Works Association.
- Litigation Summit, Philadelphia, September 10, 2015
- Rutgers University, June 2014
- Rutgers University, August 2013
- "Snow and Ice Control- Best Bad Practices," Public Works Association of New Jersey
- Atlantic City, NJ, March 18-19, 2015
- "Winter Maintenance Management," a two-hour presentation as part of a two-day course on Managing Snow and Ice Control Operations for University of Wisconsin, Dept. of Engineering Professional Development.
- Macungie, PA and Madison, WI, October 2013
- Allentown, PA and Madison, WI, October 2012
- "Roundabouts- Local Perspectives and Lessons Learned," Northeast U.S. Roundabouts Peer Exchange, FHWA Office of Safety
- Connecticut DOT, Newington, CT, July 7-8, 2010

MEDIA

Interviewed by Eric Rasmussen of FOX25 News regarding "Woman killed after manhole cover strikes car on Rt. 93." Boston, Massachusetts, February 12, 2016

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Numerous interviews with television channels 3, 4, 6, 10, NJ 12, NJ 25 and the Trenton Times, Trentonian and Star Ledger newspaper regarding snow and ice control and other highway maintenance topics. 1992-2004.

Interviewed by John Cichowski (The Road Warrior) and cited in the article “Trucker blames NJ DOT for concrete that fell from Teaneck bridge and pierced his skull”.

(<https://www.northjersey.com/story/news/columnists/john-cichowski/2018/04/08/trucker-blames-nj-dot-concrete-fell-teaneck-bridge-and-pierced-his-skull/491268002/>). April 8, 2018

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