THE EXPERTS
Robson Forensic

THOMAS M. LYDEN, P.E., PMP
Civil Engineer

PROFESSIONAL EXPERIENCE

2018 to present **Robson Forensic, Inc.**
Associate
Provide technical investigations, analysis, reports, and testimony toward the resolution of commercial and personal injury litigation involving the design, construction and maintenance of roadways, including paving, drainage, roadway safety, maintenance of traffic, snow and ice control, maintenance standards, traffic control devices, access management plans, safety studies, traffic impact studies, highway access permits and failure analysis.

1993 to 2018 **Ohio Department of Transportation**
Administrator – Maintenance Operations *2012-2018*
Oversaw all aspects of statewide maintenance operations and special hauling permit sections. Responsible for supporting and monitoring 12 district offices and 88 counties in carrying out routine maintenance activities. Supervised the development of 35 service and engineering material contracts including rock salt, PNS approved liquid deicers, guardrail end treatments, precast concrete catch basins, risers, and grates for highway maintenance use including developing specifications, evaluating products, and making recommendations for the approved products list. Monitored county and district work activities and labor, equipment, and material use, cost, and productivity. Evaluated maintenance performance and ensured adherence to construction standards. Provided liaison to 12 district highway management administrators. Responsible for the development of maintenance standards published as the Ohio Maintenance Operations Manual. Oversaw maintenance quality assurance performance program for routine maintenance activities including pavement condition, guardrail/barrier, signs, pavement markings, and pavement drop-offs. Provided guidance and evaluated maintenance of traffic work zones. Assessed the feasibility and soundness of designs, tests, and products including conducting field investigations and evaluating new products for statewide use including temporary portable rumble strips. Evaluated salt storage structures including capacity and compliance with MS4 storage standards. Provided guidance on environmental compliance including proper solid waste disposal methods for street sweeping operations and ditch spoils. Co-developed and provided training in the inventory, inspection, and maintenance of post-construction stormwater best management practices. Co-developed a general permit with the Ohio EPA authorizing discharges for the purposes of bridge cleaning operations. Provided support in emergency management operations including Toledo water emergency and various preparedness exercises. ODOT representative to the Ohio Utility Protection Service (Ohio811). Served as a technical liaison to research projects including GPS/AVL for snow and ice operations and salt procurement studies. Serve as research paper reviewer for the Transportation Research Board Standing Committee on Maintenance and Operations Management and Standing Committee on Winter Maintenance. Developed maintenance manager training in planning, safety, labor relations, leadership, and snow and ice control. Oversaw special hauling permits averaging 320,000 annual permits generating $35 million in annual revenue for overweight/oversize vehicles in accordance with the Ohio Revised Code chapters 5577 and 4513.

Provided technical expertise on maintenance methods and operations. Served as maintenance engineering expert and provided agency response to court of claims cases.

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Construction Cost Supervisor *2009-2012*
Responsible for the preparation of the Engineer's Estimates for all transportation construction projects ranging in complexity from $50,000 to $400 million. Construction program averaged 750 projects valued at $1.5 billion dollars/year. Applied design and construction engineering principles to interpret construction plans and identify plan errors that may be detrimental to the final project cost. Oversaw estimate reviews and identified and resolved issues with the construction plans, estimate, and bids. Analyzed contractor bids to identify mathematically and materially unbalanced bids, front-end loaded bids, bid rigging, price fixing, and plan error exploitation. Developed, implemented, monitored, and evaluated policies, procedures, and cost estimating methods. Involved in pre-award discussion with ODOT management, legal counsel, and ODOT districts, as well as pre-award conferences calls with bidders. Worked with the bid analysis and review team to analyze bid data. Conducted training with district offices in design estimates, construction cost estimates, and estimating processes.

Transportation Engineer/Project Manager *2008-2009*
Project manager for highway improvement projects related to the Rickenbacker Airport and Norfolk Southern Intermodal Facility including the expansion of I-270 from 4 to 6 lanes, Alum Creek & Groveport Road intersection improvements, Pickaway County East-West connector, and Alum Creek Drive extension projects. Reviewed, and managed the review of, preliminary engineering, design, maintenance of traffic, traffic control, and environmental documents. Assessed feasibility and soundness of proposed engineering designs. Planned and conducted public meetings. Coordinated activities with township, village, and county projects. Responsible for district-wide pedestrian and bicycle facilities and coordination with local park boards.

Highway Management Administrator *2001-2008*
Responsible for all construction and maintenance activities within an 8 county area in Central Ohio. Oversaw 400+ employees and $40 million dollar operating budget. Responsible for construction inspection and testing in accordance with ODOT specification standards. Ensured construction and maintenance performance standards and metrics were met. Served on the construction dispute resolution board. Responsible for equipment management, maintenance, repairs and replacement. Oversaw snow and ice control operations including monitoring weather forecasts, developing treatment strategies for anti-icing and de-icing operations, deployment of crews, and adjusting tactical operations based on changing weather patterns. Coordinated multi-county operations. Provided technical expertise in traffic control devices and maintenance of traffic work zones. Analyzed maintenance operations for the maintenance and repair of bridges, culverts, pavement, guardrail/barrier, drainage, vegetation obstructions, signs, pavement markings, and other roadway/roadside appurtenances and conditions in accordance with accepted engineering specifications. Provided support in emergency management operations and preparedness exercises. Administered division budget and served on budget review committee. Provided testimony for court of claims case.

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District Planning Engineer *1995-2001*
Supervised the planning office and managed the capital improvement process. Identified, studied, prioritized, and planned pavement, bridge, and safety capital improvement program for an 8 county area in Central Ohio. Analyzed pavement, bridge, traffic, and safety data to identify needed improvements. Initiated corridor safety and access management improvement projects on high volume arterial routes for various projects including US 36/37, US 40, US 42 and SR 95 . Performed highway safety studies at high accident intersections and highway sections by analyzing traffic crash reports, performing field investigations, examining geometric configurations and other roadway features, and documenting the findings for various projects including US 23 & SR 665/SR 317, US 40 & SR 142/Georgesville Road, and I-70/SR 142/High Free Pike. Recommended and implemented safety and access management countermeasures including intersection widening, roadway re-alignment, and adjustments in horizontal and vertical grade. Reviewed and approved traffic impact studies for proposed developments. Reviewed utility and highway access permit designs for safe and efficient ingress/egress in compliance with ODOT design standards. Reviewed preliminary engineering documents prior to final design. Obtained a Commercial Driver's License for Snow and Ice Control Operations. Interpreted and applied applicable sections of the Ohio Revised Code to planning engineering responsibilities. Provided testimony for court of claims case.

District Traffic Engineer *1993-1995*
Responsible for planning, designing, and maintaining all traffic signs, pavement markings, and traffic signals within an 8 county area in Central Ohio. Conducted field traffic counting studies and performed signal warrant analyses for various projects including SR 315 & SR 750 and US 33 & Ebright Road. Performed speed limit studies and provided supporting documentation for statutory adjustments. Performed highway safety studies at high accident intersections and highway sections by analyzing traffic crash reports, performing field investigations, examining geometric configurations and other roadway features, and documenting the findings for various projects including SR 257 & SR 750, US 40 & Georgesville/Philippi Road, and US 40. Recommended and installed safety countermeasures including traffic signals, signs, barriers, and pavement markings. Conducted horizontal curve studies for advisory warning signs. Interpreted and applied applicable sections of the Ohio Revised Code to traffic engineering responsibilities. Reviewed traffic impact studies and interchange modification studies for proposed developments. Reviewed highway access permit designs for safe and efficient ingress/egress in compliance with ODOT design standards. Reviewed preliminary engineering documents prior to final design.

1989 to 1993 **MS Consultants**
Traffic Studies Engineer
Studied, analyzed, and prepared technical documents for the traffic and operational impacts of proposed developments, signal systems and roadway improvements for state and local jurisdictions. Analyzed land development potential, land use patterns, land use potential, existing and proposed roadway capacity, and roadway geometric configurations. Applied ITE trip generation manual, highway capacity manual analysis, AASHTO Green Book design, Ohio Location and Design manual, and Ohio Manual of Uniform Traffic Control standards. Conducted traffic counting programs and prepared traffic signal warrant analyses.

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Projects included the preparation of an interchange justification study for the 1200 acre Easton project in central Ohio, traffic signal warrant and operational analyses for 78 intersections in the City of Youngstown, traffic impacts of the 1300 acre Polaris development in Central Ohio, and traffic operations analysis of complex five-leg intersection and supporting roadways in the City of Hermitage, Pennsylvania.

1981 to 1989 **Ohio Department of Transportation**

Traffic Research Engineer *1985-1989*

During the initial year, gained experience through the department's Engineer-in-Training program, performing duties in the many and various bureaus within ODOT's central and district offices. Designed and conducted research projects of proposed traffic control devices and systems. Determined staffing needs and established project schedule. Acted as lead worker supervising and training project personnel. Coordinated tasks among bureaus and districts. Recorded field performance, analyzed data and documented findings. Tested devices for adequate reflectivity, strength, and durability. Made oral and written recommendations. Wrote reports and specifications based on engineering analysis. Projects included analyzing the service life of sign sheeting material, positive protection of two-way opposing traffic for interstate construction temporary traffic control zones, and durability of temporary raised pavement markers for chip seal operations.

Engineering Co-op Student *1981-1984 Intermittent*

Designed and drafted plans for new road construction including drainage system, bridge relocation, and intersection improvements based on traffic safety analysis for proposed Trenton Bypass project. Performed traffic safety studies at high accident locations on high volume arterials including US 27 and SR 125 near Cincinnati, Ohio. Inspected and approved work performed by highway construction contractors including railroad bridge construction, asphalt paving, bridge surface replacement, signing, traffic signal, and highway lighting operations on projects along I-75, I-275, SR 32, and Forest Avenue in Cincinnati, Ohio. Analyzed construction work zone traffic patterns and made recommendations for changes based on the Ohio Manual of Uniform Traffic Control Devices.

PROFESSIONAL CREDENTIALS

Professional Engineer: Alabama, Arizona, Arkansas, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Montana, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, Washington, West Virginia, Wisconsin
Project Management Professional

EDUCATION

MBA, Business Administration, The Ohio State University, 1998
B.S., Civil Engineering, University of Cincinnati, 1985

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Continuing education:
Setting and Managing Speed Zones, 2026
Raised Crosswalk Implementation at Multilane Roundabouts, 2025
Eco-Luminance: Innovative Lighting for Roundabouts, 2025
Post-Construction Insights for Smarter Roundabout Design, 2025
Reasons for Drivers Failing to Yield at Multilane Roundabout Exits, 2025
The Science Behind Roundabout Design, 2025
Pedestrian Safety in Roundabouts, 2025
Reducing Roadway Departure Crashes 1, 2, and 3, 2025
Innovative Intersections and Interchanges, 2024
Designing and Operating Roads for the Aging Population, 2023
Combating Roadway Departures, 2023
Work Zone Design Course, 2022
Americans with Disabilities Act (ADA) in Work Zones, 2022
Introduction to Design of Erosion Control Measures Using Riprap, 2021
Construction Stormwater BMP's, 2021
Safety Edge Webinar, 2021
Designing for Pedestrian Safety, 2021
Anti-Icing Practice in Winter Maintenance Operations, 2020
Anti-Icing/RWIS Weather Basics, 2020
Anti-Icing/RWIS Winter Road Maintenance Management, 2020
Traffic Signal Design and Operation, 2020
Miss Dig 811 Safe Excavation Practices and Field Basics, 2020
Community Traffic Calming and Advocating for Active Transportation, 2019
OSHA 30-Hour Construction Hazard Recognition, 2019
Flagger Training, 2018
Guardrail Installation and Inspection of New Guardrails, 2018
Maintenance of Traffic for Supervisors, 2018
Roadside Vegetation Management, 2018
Pipe Installation, Inspection, and Quality, 2018
High-Tension Cable Barriers: Lessons Learned, 2017
Planning for Millennials: What Do They Want and How Do Agencies Prepare, 2017
Current Practices in Conducting Field Inspections for Maintenance Quality Assurance, 2016
Guardrail Series: Guardrail Basics, 2016
Guardrail Series: Maintenance and Repair, 2016
A Sampling of Winter Maintenance Best Practices in Europe, 2016
Using Winter Severity Indices for Winter Maintenance Performance Management, 2015
Maintenance Training and Certification Programs, 2015
The Vital Role of Operations and Maintenance in Supporting and Enhancing Sustainability, 2015
Economic and Ecological Effects of Roadside Mowing, 2015
Practical Techniques for Successfully Communicating Technical Topics, 2015

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Bicycle Facility Design, 2009
Spill Prevention, Control and Countermeasures (SPCC) Plan, 2009
Contract Administration, 2007
FEMA National Incident Management System (NIMS) – ICS-700, 2007
ICS for Single Resources and Initial Action Incidents, ICS-200, 2006
Highway Roadside, 2005
Workzone Maintenance of Traffic, 2005
Earthwork, 2004
Introduction to Incident Command System - ICS-100, 2004
Roadway Weather Information Systems (RWIS), 2003, 2004
Utility Relocation Process, 1999
Consultant Contract Administration, 1999

PROFESSIONAL MEMBERSHIPS

American Society of Civil Engineers – Member
American Society of Civil Engineers, Ohio Council – Past President
American Society of Civil Engineers, Central Ohio Section – Past President
Transportation Research Board Standing Committee on Maintenance and Operations Management – Past Member
American Association of State Highway and Transportation Officials Committee on Maintenance Roadway/Roadside Technical Working Group –Past Vice Chair
American Public Work Association, Central Ohio Branch - Past President
Highway Maintenance Engineering Career Pathways Initiative – Past Member
Ohio Partnership for Excellence - Past Examiner
City of Hilliard Planning & Zoning Commission – Past Chairperson
City of Hilliard Recreation & Parks Commission – Past Commission Member

PATENTS

Roadway maintenance condition detection and analysis, U.S. Patent #10410160 (2019)
Roadway maintenance condition detection and analysis, U.S. Patent #10936987 (2021)
Roadway maintenance condition detection and analysis, U.S. Patent #11544657 (2023)

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PUBLIC SPEAKING AND TRAINING

County Engineer's Association of Ohio, 2017, "ODOT System Preservation/Maintenance"
AASHTO Subcommittee on Maintenance 2016, "No Boundaries Pooled Fund Study"
Ohio Municipal League 2016, "Innovative Ideas for Road Maintenance"
Mayor's Association of Ohio 2016, "ODOT Grants and Innovative Ideas for Road Maintenance"
Maintenance Peer Network 2015, "Asset Management and Performance Measures"
Infrastructure Maintenance Symposium 2013 "Current Challenges in Asset Maintenance"
AASHTO Subcommittee on Maintenance 2013, "Maintenance Condition Rating"
American Public Works Association, North American Snow Conference 2013, "Ohio's Excellence in Snow & Ice Control Award"
American Public Works Association, International Public Works Congress and Exposition 2013, "Ohio's Snow & Ice Performance Evaluator"
Auditor of State, Local Government Officials' Conference, "ODOT Road Maintenance"
Ohio Transportation Engineer's Conference, "ODOT's Snow & Ice Critical Success Factor"
Former member of Hilliard Toastmasters and Worthington Toastmasters Clubs

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