Robert E. Brydia, PMP

SENIOR RESEARCH SCIENTIST
PROGRAM MANAGER

YEARS OF QUALIFYING EXPERIENCE: 30

Mr. Brydia leads a program of research that works to provide advanced traveler information through sensing, analyzing, and presenting real-time information and travel advice to users of the surface transportation system. He has notable expertise in traveler information, traffic operations, traffic incident management, performance measurement, traffic management centers, and ITS communications. Mr. Brydia was the technical lead and work-flow designer for all Office of Operations CMF tools on the FHWA web site.

With a diverse background of project experience, encompassing 30 years of crosscutting research across both transportation operations and information technology, Mr. Brydia is an expert in developing highly functional and integrated systems for multiple deployment efforts, and for implementing cutting-edge technology innovations that lead to recognizable transportation improvements. Many of these efforts have utilized extensive and innovative field deployments and data collection efforts, as well as produced sophisticated analyses and case studies to understand and elevate common practices, implementations, and permanent infrastructure improvements for Texas. Throughout his career to date, Mr. Brydia has led more than $35 million in research for a variety of local, state, and federal sponsors and has participated as the technical lead in another $35 million of research.

In addition to authoring more than 100 technical reports, papers, publications and short courses, Mr. Brydia has led the design and development of dozens of field deployments, applications, networking systems, web sites, CD-ROM's, assessment tools, and information dissemination platforms across 30 years of innovative project leadership.

Education

- B.S., Civil Engineering, Clarkson University, 1987,
- M.S., Civil Engineering, Pennsylvania State University, 1991

Related Qualifications

- Designer of on-line assessment tools for FHWA Capability Maturity Frameworks, including user interface, functionality, algorithms, data files, data processing, and results presentations.
- Technical contributor to multiple Capability Maturity Frameworks.
- Design, implementation, and operational oversight of multiple successful field deployments
- Experienced in evaluating and summarizing operational and technology deployments, including all information technology elements.
- Wide-ranging experience with sponsors and stakeholders at the local, regional, state and federal level.

Relevant Project Experience

Workflow Designer, Linking Traffic Management and Travel Demand Management Capability Maturity Framework (FHWA). Working closely with the technical leads, Mr. Brydia led the development of the on-line assessment tool for this capability maturity framework which required a new, and highly flexible approach to the previously static requirements of dimensions and levels, but still conform to the established FHWA standards.

Technical Lead and Workflow Designer, Development of a Traffic Management Capability Maturity Framework (FHWA). Mr. Brydia led the development of the on-line assessment tools for the capability maturity framework for traffic management modeled after the capability maturity model developed as part of the SHRP2 program. The development process included multiple federal agency reviews for information technology, security, accessibility, and alternatives analysis. The TMCMF is intended for agencies or regions

to assess current capabilities with respect to traffic management. The framework looks at the agency's ability to monitor and control traffic and the road network including the centers that coordinate traffic information.

Technical Lead and Workflow Designer, Support for the Development of a Set of Agency Capability Frameworks for Key Business Processes That Address Non-Recurring Congestion (FHWA). The primary objective of this task order was developing an L06 framework for assessing an agency's capability and level of maturity to fully evolve in each of the five key business process areas presented in the L01 project: Incident Management, Work Zone Management, Planned Special Events, Road Weather Management, and Traffic Signal Operations. The five operational strategy capability frameworks were modeled after the AASHTO Systems Management and Operations Guidance and underlying Capability Maturity Model (CMM) which is the L06 project under SHRP 2. The primary deliverables for this project consisted of a set of five Capability and Maturity Assessment Tools for each of the five key business processes developed in this project. Mr. Brydia participated in this project as both a technical contributor and reviewer in multiple business process areas as well as the lead on the design and development of the resulting on-line assessment tool set.

Principal Investigator, Campus Transportation Technology Initiative (TAMU). Mr. Brydia is the principal investigator of an initiative funded by the Texas A&M University designed to bring private sector transportation innovation into the campus environment to improve mobility, safety, and quality of life for students, faculty, staff, and visitors. Key components of his work effort are the solicitation and evaluation of private sector innovations, facilitation of technology deployments, overseeing technology assessments, and engagement with the academic community for evaluation projects.

Principal Investigator, I-35 Traveler Information During Construction (TxDOT). Mr. Brydia is the principal investigator and technical lead on a one-of-a-kind integrated system that provides TxDOT with work zone monitoring and traveler information dissemination capabilities that are unmatched anywhere else in the US. The system collects and integrates planned lane closure schedules from the multiple contractors working on the I-35 corridor, automatically assesses the traffic queuing and delay potential associated with those planned closures and disseminates advance notification of the closures and potential impacts to various users in the corridor. The system has also been designed to assist TxDOT and contractors with deployment decisions of portable end-of-queue warning systems that have recently become available and integrates inputs from those systems with various other traffic monitoring technologies in the corridor to develop accurate delay forecasts for travelers in the corridor.

Work Experience

Dates	Position(s)	Organization
1996-Present	Senior Research Scientist, Research Scientist, Associate. Research Scientist, Assistant. Research Scientist	Texas A&M Transportation Institute
1987-1996	Research Assistant, Computer Support Specialist, Graduate Assistant Researcher.	Pennsylvania Transportation Institute