



## **FRED HEERY, PE**

### **STATE TSM&O PROGRAM ENGINEER**

#### **Academic Background**

M.S., Civil Engineering, Villanova University  
B.S., Civil Engineering, Drexel University

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#### **Professional Affiliations**

Member of Institute of Transportation Engineers  
Member of ITS America

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#### **Licenses**

Florida Professional Engineer #51003  
New Jersey Professional Engineer #35614  
Pennsylvania Professional Engineer #40584-E

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Fred Heery has more than 30 years of experience in traffic and transportation engineering. His experience includes state DOT construction and maintenance experience, being the City Traffic Engineer for local agency, being a Traffic/ITS consultant, and currently in the FDOT Traffic Engineering and Operations Office as Deputy State Traffic Engineer. Mr. Heery manages the TSM&O Program comprising freeway management and arterial management from a statewide policy and leadership perspective.

As the Systems Manager, Fred has overseen the installation, integration, and commissioning of four countywide advanced ITS/traffic signal systems, three of which were traffic adaptive signal control systems. Fred currently manages Department staff and program areas, oversees the statewide ITS Telecommunications contract and the TSM&O General Consultant contract as part of the overall TSM&O Program.



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## Fred Heery, PE

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**February 2009 - August 2015**

**Florida Department of Transportation, Tallahassee, Florida**

**State Transportation Systems Management and Operations Program Engineer** - Provide leadership and guidance on statewide TSM&O program activities. Provide leadership on freeway and arterial management operations in seven Districts and the Florida Turnpike Enterprise. Oversee the statewide SunGuide Software contract, 511, contracts, Statewide microwave tower contracts, and Arterial Management contracts.

**February 2009 - August 2015**

**Florida Department of Transportation, Tallahassee, Florida**

**Deputy State Traffic Operations Engineer** - Manage statewide signing, traffic studies, traffic signal standards and operational procedures and assist district traffic signal engineers and district studies engineers with traffic operation and safety issues and process improvements.

**November 2005 - February 2009**

**Florida Department of Transportation, Tallahassee, Florida**

**Traffic Systems Studies Engineer** - Serve as the State Studies Engineer and perform related studies of traffic operational issues as required. Perform investigations into means and methods to improve traffic signal system design, construction, operation, and maintenance. Perform speed studies, truck lane restriction studies and other operational type traffic studies. Analyze operational problems and propose solutions. Perform safety analyses.

**February 2004 - November 2005**

**TransCore, Tampa, Florida**

**Program Manager** - Served as Systems Manager and managed the \$10M Pinellas Countywide ATMS project for FDOT District 7, a System Manager style contract for ITS deployment. Managed multiple tasks including P, S & E design, Procurement, System Manager CEI, and Manage staff, project budgets, workloads and clients. Served as System Manager on \$8.5M Pasco County ATMS project, a System Manager contract for FDOT for Stage I. Manage design and integration of the traffic adaptive ATMS project.

**January 2001 - February 2004**

**TransCore ITS, Orlando, Florida**

**Senior ITS Engineer** - Perform project management and traffic and ITS design duties on Florida DOT projects. Performed project scope definition and cost estimating tasks. Prepared specifications for traffic, ITS, and telecommunications equipment. Performed design management tasks on large-scale Intelligent Transportation System (ITS) projects, including components such as traffic signal control, dynamic message



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## **Fred Heery, PE**

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signs, CCTV, vehicle detections stations, and highway advisory radio. Supervised and oversaw team of designers, sub consultants and contractors on transportation projects.

**May 2000 - January 2001**

**Traffic Engineering Division, City of Tallahassee, Florida**

**City Traffic Engineer** - Division Director. Managed and oversaw the functions of the 52 member Traffic Engineering Division of the Public Works Department. Project Manager for the Advanced Transportation Management System project. Responsible for all development review activities for compliance of land development regulations and traffic impact analyses. Maintain striping and signage programs and oversee the traffic signalization operations for countywide traffic control system. Manage intersection safety improvement program corridor flow bottleneck improvements. Established accident database for crash reporting system. Managed all personnel, operating budgets, and capital budgets for the division.

**May 1997 - May 2000**

**Traffic Engineering Division, City of Tallahassee, Florida**

**Assistant City Traffic Engineer** - The Assistant Division Director of the 52 member Traffic Engineering Division. Managed all signalization operations and traffic control devices within the capitol county of Florida. Managed the 300+ signalized intersections, school flashers and flashing beacons throughout the county. Managed 26 signalization employees and supervisors. Oversaw signal design, construction and maintenance.





## **RAJ PONNALURI, PHD, PE, PTOE**

### **FDOT STATE ARTERIAL MANAGEMENT SYSTEMS ENGINEER**

#### **Academic Background**

Ph.D., Transportation Engineering, BIT Pilani, 2013  
M.B.A., Engineering Management, University of Central Florida, 2001  
M.S., Transportation Engineering, Duke University, 1995  
B.S., Civil Engineering, Jawaharlal Nehru Technological University, 1992

#### **Professional Affiliations**

Institute of Transportation Engineers (ITE) - Member  
American Society of Civil Engineers (ASCE) - Member  
Clark County Leadership Forum - Graduate Member

#### **Licenses**

Florida Professional Engineer #54634  
Nevada Professional Engineer #016963  
Professional Traffic Operations Engineer

Currently serving as the State Arterial Management Systems Engineer at the TSM&O Section of the State Traffic Engineering & Operations Office of the Florida Department of Transportation. Earlier, served as a Principal Civil Engineer at the Regional Transportation Commission of Southern Nevada, County Engineer of Polk County in Florida, Senior Traffic Engineer at the Florida's Turnpike, Project Manager at TEI Engineers & Planners and a Senior ITS Engineer at TransCore. More than twenty one years of experience in areas of roads and highway safety; bus rapid transit systems (BRTS) - from conceptual frameworks through detailed project report preparation through construction, implementation and project management consulting (PMC); proposals preparation, work solicitation, contract management, and project management; research and training, project and tasks execution, formal presentations, and speaking engagements; managing technical projects, preparing reports, work plans, contracts, scopes of services, maintaining project budgets, and training staff on work performance. Served on management, engineering, and technical committees.



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## **Raj Ponnaluri, PhD, PE, PTOE**

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### **June 2014 - Present**

#### **Florida Department of Transportation, Tallahassee, Florida**

##### **State Arterial Management Systems Engineer**

- Responsible for Developing guidance on the many arterial programs in the state
- Developing guidance on Arterial Signal Control Technology deployments
- Developing dashboards for deploying state of the art performance-oriented systems
- Manage the development of a statewide Truck Parking Activity System
- Completed a statewide Wrong Way Study that resulted in various design and policy changes
- Extending the freeway Wrong Way efforts to arterials for comprehensive evaluation
- Developed performance-oriented Traffic Signal Maintenance and Compensation Agreement

### **April 2013 - May 2014**

#### **Florida Department of Transportation, Tallahassee, Florida**

##### **Traffic Systems Studies Engineer**

- Pre-Emption of Traffic Signal at a Railroad Crossing: Reviewed a request for not pre-empting a traffic signal at a railroad crossing near Briarcliff Road and Metro Parkway Boulevard in Fort Myers. Recommendation: Section 8C.09 of the 2009 MUTCD calls for a 'should' condition for pre-emption if the distance between the traffic signal and RR crossing is less than 200'. Therefore, the District was advised to use pre-emption. May 2013.
- Revision to Section 3.8 of TEM on Mid-Block Crosswalks: Section 3.8 of the TEM titled, "Mid-Block Pedestrian Crosswalks" was revised and updated significantly to include the lessons and national best practices on mid-block crosswalks. The revision was reviewed by FDOT Professional Engineers from several departments. All comments were addressed after detailed discussions and the final version of the Chapter was adopted after a series of reviews by senior management and legal counsel.
- New Chapter on Removing Traffic Control Signals: Many Districts in Florida are faced with the concern of previously installed traffic signals which may need revalidation due to reduced traffic volumes and other signal warranting factors. A new chapter providing guidance on removing traffic control signals was developed and placed in the Traffic Engineering Manual. MUTCD and national best practices were used in developing the guidance.
- Study of a Request for Variation from the TEM Section 3.8: Studied a request for variation from Traffic Engineering Manual (TEM)'s Section 3.8 on Mid-Block Crosswalks. TEM's Chapter 1 allows for variation from complying with TEM. The request from District 6 included a variation for conducting pedestrian counts due to "ongoing construction activity". TEM requires at least 20 pedestrians during peak hour and 60 during any four hours of the day. The request sought the installation of RRFBs (Rectangular Rapid Flashing Beacons) at three proposed crosswalks. Recommendation: The variation is not justified since the basis



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## **Raj Ponnaluri, PhD, PE, PTOE**

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for mid-block crosswalks is pedestrian volume. Also, the locations did not have continuous sidewalks for pedestrian traffic flow. District 6 noted that, due to the area's historic nature, ROW for sidewalks is not available. May-June 2013.

### **2003 - 2004**

#### **TEI Engineers and Planners, Orlando, Florida**

##### **Project Manager**

- Served on Orlando International Airport runway design team
- Developed two Advanced Traffic Management System Master Plans
- Managed projects and contracts including the preparation of RFPs, preparing project budgets and schedules, and project management

### **1996 - 2002**

#### **TransCore / General Consultant to Florida's Turnpike, Orlando, Florida**

##### **ITS Engineer and Traffic Engineering Manager**

- Served on the Florida Turnpike and other Toll Systems in the United States.
- Developed the design specifications for the location and installation of Dynamic Message Signs, Highway Advisory Radios, and Closed Circuit Television cameras.
- Developed an Advanced Transportation Management System (ATMS) Master Plan for their inclusion on the Florida Turnpike System.
- Developed the Advanced Traveler Information System for the Florida Turnpike.
- Have been a part of deploying the SunPass Electronic Toll Collection System which included the evaluation and determination of toll collection technologies.
- Developed system-level plans for developing brand-new toll systems on both planned and operational corridors. Have been a part of the Open Road Tolling System development in the United States.

### **1995 - 1996**

#### **McMahon & Associates, Boynton Beach, Florida**

##### **Transportation Engineer**

- Served as a Transportation Engineer
- Used HCS and other traffic engineering software for operational and planning analyses.
- Conducted numerous traffic impact analyses.
- Assisted the President of the company with ITE publication on Saturation Flow Rate Study.





## **W. RUSSELL ALLEN, PE**

### **ITS PROGRAM DEVELOPMENT ENGINEER**

#### **Academic Background**

B.S., Electrical Engineering, Florida State University

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#### **Professional Affiliations**

ITS Florida Member Ex-Officio Officer

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#### **Licenses**

Florida Professional Engineer #62938

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#### **Designations or National Committee Appointments**

I-95 Corridor Coalition's Traveler Information Program Track

National 511 Coalition

FHWA Road Weather Management Program

Intelligent Transportation Society of America

Intelligent Transportation Society of Florida

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Russell Allen joined FDOT in October 2014 as the Intelligent Transportation Systems (ITS) Program Development Engineer. His current duties include managing the statewide ITS Deployment program and budget, including funds allocations for District and Central Office ITS projects, operations, maintenance and equipment replacement; developing and updating ITS specifications and standards; managing Florida's Advanced Traveler Information System (FL511) and all associated marketing/outreach efforts; managing Florida's Data Integration and Video Aggregation System (DIVAS); administrating the General Consultant contract; providing technical expertise related to ITS infrastructure; and technical review of contract scope documentation.

Russell also represents FDOT as a member of the I-95 Corridor Coalition's Traveler Information Program Track, National 511 Coalition, and FHWA's Road Weather Management Stakeholder Meeting.

Prior to this assignment, Russell spent 15 years with RCC Consultants, Inc. (formerly, Omnicom, Inc.) as an in-house consultant to FDOT providing professional wireless and telecommunications and engineering services in the public safety, transportation, and ITS sectors. Russell's broad technical experience spans areas of facilities planning, design, management, telecommunications product and systems analysis, system design and integration, procurement specification, bid analysis, performance acceptance testing, facilities use agreements, property and insurance documentation and staff management.



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## W. Russell Allen, PE

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1999 - 2014

### Florida Department of Transportation, Tallahassee, Florida

**Telecommunications General Consultant** - Provided project management and staff professional engineering services to FDOT. Responsibilities included facilities design and management, developing procurement specifications for new communications sites, grounding and lightning protection upgrades, emergency power generator systems installation, wireless system design and integration, construction engineering and inspection, developing facilities use agreements, providing technical assistance to both Central Office and District engineers and administrators, develop/assist/review of Department specifications and standards, liaison for national stakeholder meetings, and directly interfacing with executive management.

**Lodestar Towers Lease and Operating Agreement** - Providing technical support and assisting with engineering review and analysis of all proposed commercial tower collocation applications, resulting in \$1.3 million annual rental revenue. Assisted in a statewide audit of all collocations thus recovering over \$100K lost rental revenue and recovering approximately \$2,000 rent per month from an undocumented tenant.

**Road Weather Information System (RWIS) Pilot Project** - Assisted with the design, installation, testing, and acceptance of FDOT's first research project pilot RWIS deployment in 2001. This system consisted of fourteen RWIS stations installed on microwave tower sites in strategic locations. The RWIS data was collected by the University of North Florida and disseminated to the National Weather Service. The second phase of this project consisted of installing three wireless antenna systems that communicated with RWIS sensors on key bridges along the east coast of Florida.

**Statewide ITS Telecommunications Network Maintenance** - Provided project support of the Statewide Telecommunications Network Maintenance contract for operations and maintenance of FDOT's statewide ITS telecommunications network. Developed technical specifications for task work orders to improve and enhance the statewide telecommunications facilities resulting in increased reliability and cost savings to FDOT.

1999 - 2004

### Florida Department of Transportation, Tallahassee, Florida

**Statewide Microwave System Upgrade, Engineer** - Functioned as engineer and technical support for this project - researched available technologies to support the Department's requirements for voice, video, weather, and traffic data. Upgrade of the segmented 300-channel analog and DS-3 digital microwave system into a continuous DS-3 digital microwave system that included a statewide network management system, a statewide data network system, timing and synchronization, and full re-channelization with the necessary flexibility and expandability to accommodate the Department's ITS applications and needs. The project also involved design modifications to accommodate the Florida Highway Patrol (FHP) dispatch consolidations as related to the Department's Motorist Aid Call Box System.





## **DEREK VOLLMER, PE**

### **SYSTEMS DEVELOPMENT LEAD**

#### **Academic Background**

M.S., Electrical Engineering, Florida State University

B.S., Electrical Engineering, University of Louisiana at Lafayette

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#### **Licenses**

Florida Professional Engineer #62938

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#### **Designations or National Committee Appointments**

National Transportation Communication for ITS Protocol (NTCIP)

Dynamic Message Sign Committee Voting Member

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Derek Vollmer has more than seven years of experience working with ITS devices and managing SunGuide software implementation. Derek has developed ITS device test procedures, performed ITS device testing, and developed ITS device specifications as part of Florida Department of Transportation's (FDOT) TERL. He manages the development of SunGuide software, coordinating with the FDOT's seven Districts, Florida's Turnpike Enterprise, and other participating agencies as part of the CMB. Derek manages the development of FDOT's data warehouse, which is part of the RITIS and its interface to SunGuide software. He has worked on various aspects of the NTCIP, including dynamic message signs and actuated signal controllers.



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## Derek Vollmer, PE

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### Florida Department of Transportation, Tallahassee, Florida

**SunGuide Software, Project Manager** - Manages changes to Florida's SunGuide software; develops ConOps, high-level software system requirements, validation plans, and software test procedures; manages SunGuide software release cycles.

### Florida Department of Transportation, Tallahassee, Florida

**RITIS Data Warehouse, Project Manager** - FDOT has a contract with the UMD to archive data collected by SunGuide software. Works with UMD to resolve issues reported by system users; coordinates with stakeholders on enhancements or changes needed with FDOT's RITIS experience.

### Florida Department of Transportation, Tallahassee, Florida

**Statewide ITS Architecture, Project Manager** - Managing the update for Florida's Statewide ITS Architecture (SITSA), including meetings with Districts and stakeholder to determine changes in user needs and to ensure that Florida's SITSA conforms to the current national ITS architecture.

### Florida Department of Transportation, Tallahassee, Florida

**FDOT Systems Engineering Plan, Project Manager** - Managing an update of FDOT's Systems Engineering Plan, including stakeholder meetings. Working with other FDOT departments to include systems engineering references in their procedures and documents. Updates FDOT's systems engineering document templates.

### Florida Department of Transportation, Tallahassee, Florida

**TERL Testing, Product Evaluation Specialist** - Tested ITS devices for listing on Florida's Approved Products List, including testing dynamic message signs (DMS) and closed-circuit television (CCTV) cameras for NTCIP compliance; tested switches, video wall controllers, and vehicle detectors for compliance with FDOT's Standard Specifications for Road and Bridge Construction; developed detailed test procedures for testing ITS devices, helped edit and rewrite FDOT ITS specifications; created required NTCIP object lists for DMS and CCTV cameras.





## **ELIZABETH BIRRIEL, PE**

### **CONCEPT DEVELOPMENT LEAD**

#### **Academic Background**

M.S., Transportation Engineering, University of South Florida

B.S., Electrical Engineering, University of Puerto Rico - Mayaguez Campus

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#### **Professional Affiliations**

Institute of Transportation Engineers

Intelligent Transportation Society of America

Intelligent Transportation Society of Florida

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#### **Licenses**

Florida Professional Engineer #54652

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#### **Designations or National Committee Appointments**

American Association of State Highway and Transportation Officials Working  
Group for Connected Vehicle

Dynamic Message Sign Committee Voting Member

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Elizabeth Birriel serves the Florida Department of Transportation (FDOT) as the Deputy State Traffic Operations Engineer and the statewide ITS Program Manager. She has 21 years of engineering experience with FDOT and has contributed to ITS Program areas such as connected vehicles (CV), transportation systems management and operations, 511 traveler information, SunGuide software and performance measures.



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## **Elizabeth Birriel, PE**

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### **Florida Department of Transportation, Tallahassee, Florida**

State Traffic Operations Central Office, Deputy State Traffic Operations Engineer and ITS Program Manager  
Directs statewide ITS Program areas including ITS program management/deployment, telecommunications program management, ITS software and architecture, and connected vehicle.

### **Florida Department of Transportation, Tallahassee, Florida**

**State Traffic Operations Central Office - Systems Section, Deputy State Traffic Operations Engineer**  
Directs the statewide traffic control device equipment certification program along with research efforts of the Traffic Engineering and Operations Office.

### **Florida Department of Transportation, Midway, Florida**

**Midway Operations, Assistant Operations Engineer** - Managed a \$33 million asset management contract covering five rural counties in District 3. Supervised, directed, and monitored operations of the contracts department responsible for \$5 million of maintenance contracts.

### **Florida Department of Transportation, Tallahassee, Florida**

**State Maintenance Central Office, Maintenance Systems Engineer** - Wrote procedures, user handbooks, and computer programs for maintenance management systems (MMS) personnel. Coordinated and conducted annual MMS and roadway characteristics inventory training.





## **PETER VEGA, PE**

### **STATE TSM&O PROGRAM ENGINEER**

#### **Academic Background**

MBA, University of North Florida

B.S., Mechanical Engineering, University of South Florida

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#### **Professional Affiliations**

Board Member of ITS Florida (2004 - 2006)

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#### **Licenses**

Florida Professional Engineer #52790

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Peter Vega has more than 26 years of engineering experience with 23 of them spent in the transportation industry, intelligent transportation systems (ITS) and transportation systems management and operations (TSM&O). His experience includes department of transportation roadway maintenance experience as the Area Engineer for Jacksonville and State Signs & Structures Engineer for the Florida Department of Transportation (FDOT) Central Office. Peter joined the Traffic Operations department as the FDOT District 2 ITS Engineer in 2002 and transitioned to the FDOT District 2 TSM&O Program Manager in 2011. Peter manages the FDOT District 2 TSM&O program that includes freeway management, arterial management, express lanes development, freight tracking, transit operations and seaport enhancement. While in Traffic Operations Peter has been responsible for the oversight of over 350 miles of ITS design, construction, maintenance and operations on the District 2 limited access corridors, over 100 miles of arterial deployments. Pete currently oversees staff that provide TSM&O planning, design, construction, maintenance and operations for all corridors in the District 2 region.



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## Peter Vega, PE

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### 2002 - Present

#### Florida Department of Transportation, Jacksonville, FL

**TSM&O Program Manager** - Responsible for the District's Transportation Systems Management & Operations program (TSM&O). Manager over the District's Intelligent Transportation System (ITS) program. Oversaw nearly \$100 million in ITS projects and contracts.

### 1999 - 2002

#### Florida Department of Transportation, Tallahassee, Florida

Central Office Signs and Structural Manufacturing Engineer - Managed a staff of 25 personnel that manufactured static roadway signs for maintenance and construction projects. Managed a staff of 10 personnel that manufactured large aluminum and steel roadway structures for maintenance and construction projects. Office also maintained and repaired temporary bridge structures for construction projects. Assisted individual Districts with troubleshooting and repair of deficient structures throughout the Department.

### 1996 - 1999

#### Florida Department of Transportation, St. Augustine, Florida

**St. Augustine Maintenance Area Engineer** - Managed the Maintenance Management program for the office that tracked performance. Responsible for data input and quality assurance for region's roadway characteristic inventory. Analyzed and tracked the office budget and staffing levels.

### 1993 - 1996

#### Florida Department of Transportation, Jacksonville, Florida

**Jacksonville Maintenance Area Engineer** - Managed a staff of 120 performing field operation tasks. Managed contracts that supplemented field operation needs. Performed evaluation and provided recommendations for roadway repair/improvements.



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## **JEREMY DILMORE, PE**

### **DISTRICT 5 TSM&O ENGINEER - FREEWAYS**

#### **Academic Background**

M.S., Civil Engineering, University of Central Florida  
B.S., Mechanical Engineering, University of Central Florida

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#### **Licenses**

Florida Professional Engineer #67510

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Jeremy Dilmore has more than 11 years of experience working at FDOT District 5. He is currently the District's TSM&O Engineer-Freeways. In this position he oversees the development, operations, and maintenance of District 5's Intelligent Transportation System (ITS). He also serves as the Operations Lead for the Ultimate I-4 and Beyond the Ultimate I-4 project. He has previously overseen the District Minor Design Program. He has a background in simulation modeling based on graduate work at the University of Central Florida.



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## Jeremy Dilmore, PE

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### Florida Department of Transportation, DeLand, Florida

**I-4 Ultimate, District 5 Operations Lead and ITS Lead** – The project is a 21-mile reconstruction of I-4 through the Downtown Orlando. It includes the application of managed lanes and ramp meters in addition to maintaining the existing ITS, including service patrol, DMS, MVDS, and CCTV. The project is a P3 and is currently in acquisition. Served as the Department's Operations Lead during development overseeing the development of the simulation modeling including validation, calibration, and use, development of the traffic and revenue report. Currently serves as the ITS Lead overseeing systems engineering, service patrol, ITS operations, ITS design, and ITS inspection.

### Florida Department of Transportation, DeLand, Florida

**Beyond I-4 Ultimate, District 5 Operations Lead** – The project is more than 40 miles of reconstruction of I-4 through the attractions area and residential areas east and west of Downtown Orlando. It includes the application of managed lanes in addition to maintaining the existing ITS, including service patrol, DMS, MVDS, and CCTV. The project is currently in PD&E. Serves as the Department's Operations Lead overseeing the development of design traffic, development of the simulation modeling including validation, calibration, and use.

### Florida Department of Transportation, DeLand, Florida

**Daytona Area Smart Highways III, Project Manager** – The project included 90 miles of mainline Interstate ITS including DMS, MVDS, and CCTV, along with ADMS and CCTV along detour routes. Served as the Department's Project Manager overseeing the final stages of construction, integration, and final acceptance.

### Florida Department of Transportation, DeLand, Florida

**Daytona Area Smart Highways IV, Project Manager** – The project included 25 miles of mainline Interstate ITS including DMS, MVDS, and CCTV. Served as the Department's Project Manager who developed the ConOps, SEMP, RTVM, and RFP. Reviewed plans, oversaw all of construction, integration and final acceptance.

### Florida Department of Transportation, DeLand, Florida

**Polk County Expansion, Project Manager** – The project included 4.5 miles of mainline Interstate ITS including DMS, MVDS, and CCTV. Served as the Department's Project Manager who developed the ConOps, SEMP, RTVM and RFP. Reviewed plans.





## **JIM BARBARESSO**

### **SENIOR TECHNICAL ADVISOR**

#### **Academic Background**

M.S., Transportation Planning, University of Iowa, 1978

B.S., Sociology, University of Iowa, 1975

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#### **Professional Affiliations**

Board of Directors and Past Chair, ITS World Congress (2011-present)

Board of Directors and Past President, Intelligent Transportation Society of Michigan (1996-present)

Board of Directors, Traffic Improvement Association of Michigan (2004-present)

Executive Committee, Traffic Improvement Association of Michigan (2004-present)

Past-Chair, 2014 ITS World Congress Organizing Committee (2010-2014)

Past-Chair, ITS World Congress Board of Directors (Oct. 2013-Sep. 2014)

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#### **Designations or National Committee Appointments**

ITS America

Associate, Transportation Research Board

Institute of Transportation Engineers

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Jim Barbaresso has more than 37 years of experience in transportation planning, operations, and ITS. He has successfully planned, implemented and managed numerous projects varying from small ITS feasibility studies to some of the largest and most visible ITS programs in the United States. In recognition of Jim's career achievements in ITS and his outstanding technical and management abilities, ITS America selected Jim to chair the 2014 ITS World Congress. As a result, he has established working relationships with global industry and government leaders in connected and automated vehicle technology. These relationships can be leveraged to support Florida Department of Transportation (FDOT) emerging mobility strategies.

Jim's diverse career includes work in both the public and private sectors, giving him a unique perspective on transportation issues and creative ways to resolve them. Throughout his career, Jim has demonstrated national leadership in the deployment of emerging technologies, transportation planning, transportation safety, ITS deployment, energy and the environment, and new concepts in transportation financing.



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## Jim Barbaresso

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### **FDOT Automated Vehicle Program Support, FL**

Deputy project manager and senior technical advisor for FDOT's statewide program for research, development and deployment of emerging transportation technologies. This three-year contract includes technical support to define how emerging technologies will impact DOT operations and planning. HNTB will provide planning and oversight of pilot deployments involving connected and automated vehicle technologies, policy guidance and support, stakeholder outreach, communications and marketing. HNTB will also support FDOT in planning and execution of an annual Automated Vehicle Summit.

### **Tampa-Hillsborough Expressway Authority (THEA) General Engineering Consulting Contract, Tampa, FL**

Senior technical advisor to THEA for their connected and automated vehicle program. THEA has established a test environment for emerging transportation technologies. HNTB is supporting THEA in stakeholder engagement, concept development and applications support.

### **Miami-Dade Expressway (MDX) Authority General Engineering Contract, Miami, FL**

Senior technical adviser and subject matter expert for ITS technologies and strategies. HNTB provided general engineering services, including ITS planning and design services, to MDX. Helped develop an ITS and Toll Technology Master Plan for MDX. This master plan is the basis for the MDX technology deployment program over the next decade.

### **AASHTO Near-Term Vehicle-to-Infrastructure Transition and Phasing Analysis**

Program manager for subcontractor services to support analysis of vehicle-to-infrastructure (V2I) applications, infrastructure, technologies, and systems to facilitate planning and investment decisions by state and local agencies. HNTB will be responsible for the development of a cost model and planning tool that will support application and infrastructure deployment prioritization.

### **U.S. DOT Safety Pilot Connected Vehicle Model Deployment**

HNTB project manager and program outreach task lead for the U.S. DOT Connected Vehicle program, a large-scale model deployment of Connected Vehicle technology in Ann Arbor, MI. More than 2,800 vehicles will be equipped with Connected Vehicle technology to collect data in support of a regulatory decision in 2013. Arterials and freeways in the Ann Arbor area will be equipped with dedicated short range communications beacons that will communicate with equipped vehicles to provide applications and data backhaul. Responsible for the design and implementation of roadside equipment on area freeways. As the program outreach task leader, responsible for the development of outreach and showcase plans, and Safety Pilot outreach materials, design of the Safety Pilot exhibit at the 2011 ITS World Congress in Orlando, design of a showcase facility at the University of Michigan Transportation Research Institute, and other outreach activities.



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## **Jim Barbaresso**

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### **Ann Arbor Connected Vehicle Test Environment, Ann Arbor, MI**

HNTB project manager for the maintenance and operations phase of the Ann Arbor Connected Vehicle program, initially established as a Safety Pilot. The number of equipped vehicles will be increased as well as roadside devices under this contract. HNTB will support outreach activities during the program and will support the University of Michigan Transportation Research Institute with the development of training materials and a knowledge resource for public agencies.

### **FDOT District 2 Transportation System Management and Operations (TSM&O) On-Call Services**

Senior adviser and QA/QC officer for this project where HNTB is developing TSM&O solutions for FDOT District 2. The work entails technical analysis and assistance to FDOT for the planning, design and deployment of low-cost, high-impact solutions to solve mobility challenges throughout the district.

### **2014 World Congress on Intelligent Transport Systems, Detroit, MI**

Chairperson of the 2014 ITS World Congress responsible for planning, development and delivery of the largest transportation technology event in the world. The three primary pillars of the World Congress included the technical program with more than 1,000 presentations, an exposition with more than 300 exhibits, and more than 30 demonstrations of the world's most advanced transportation technologies. With its focus on connected and automated vehicle technologies, the theme of the World Congress was "Reinventing Transportation in our Connected World." Delivered the most successful World Congress to be held in the Americas in the 21-year history of the event, with more than 9,100 registered attendees and unprecedented media representation. Established working relationships with global industry and government leaders in connected and automated vehicle technology.

### **U.S. DOT ITS Technical Support Services**

Senior engineer for ITS technical support services to various modal administrations within the U.S. DOT. Support services include Connected Vehicle technology and application development, oversight of Connected Vehicle work by other contractors, development of emerging ITS concepts, evaluation of alternative transportation revenue scenarios, multi-modal integration, and assistance on national highway safety program initiatives. Assisted with the update of the U.S. DOT's ITS Strategic Plan.





## **STEVE BAHLER, PE**

### **PROJECT MANAGEMENT**

#### **Academic Background**

B.S., Civil Engineering, St. Martin's College, 1969  
Graduate Courses, Northwestern University, 1977

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#### **Professional Certifications**

Advanced Traffic Incident Management Workshop for Mid-Level Managers  
National ITS Architecture  
Turbo Architecture  
NTCIP Wizard  
Freeway Operations and Management  
Incident Management  
Strategic Planning, Problem Solving and Change  
Project Management Principles  
Human Factors Design  
Urban Travel Demand Forecasting  
Safety Program Development and Evaluation

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#### **Licenses**

Florida Professional Engineer #64575

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Steve Bahler is an intelligent transportation systems (ITS) department manager and a senior ITS project manager. His experience encompasses a broad range project delivery and management for ITS planning, implementation plans, architecture, systems engineering, design, implementation oversight, operations and maintenance. In the past 25 years, he has worked on ITS, express lanes, and Transportation System Management and Operation (TSM&O) projects throughout Florida and in Georgia, Minnesota, Kansas, Missouri, Michigan, Arizona, Nebraska, and Virginia.

Steve's introduction to traffic management and ITS began during his 26 years with the Federal Highway Administration (FHWA) where he guided ITS program development, formation of FHWA Rule 940, and pilot projects in Minnesota. He later worked with Minnesota DOT as the deputy ITS Department Manager and managed two of the nation's first integrated corridor projects and one of first multi-partner AV/CV pilot projects.

Steve has supervised a department of 10 direct reports and approximately 30 other project personnel in five locations from southwest to northwest Florida. His supervisory style focuses on team work, mentoring, and accountability for quality services, on schedule and within budget to the client's satisfaction.



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## Steve Bahler, PE

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### **Statewide Traffic Incident Management/Commercial Vehicle Operations (TIM/CVO) Support Services, Florida Department of Transportation (FDOT) Central Office, Tallahassee, FL**

Senior Project Manager supporting the FDOT TIM program, TIM training, TIM and CVO program outreach, pilot projects, road ranger service patrol support, and commercial vehicle information system network programs and projects. Assist FDOT with development of task work orders (TWO), manage TWOs including work accomplished by home office staff and four subconsultants, provide weekly and monthly progress reports, and provide quality reviews of TWO deliverables.

### **District ITS/Advanced Traffic Management System (ATMS) and Traffic Engineering Services, FDOT District 3, Chipley, FL**

Senior Project Manager for the District 3 TSM&O contract. Roles include development of TWO scopes and fees, overseeing home office staff and subconsultants providing services ranging from traffic signal timing and trouble-shooting, to TSM&O strategic plan development, to development of a TIM strategic plan, TIM team support and training, and development of a signal retiming program including performance measure and criteria for retiming priority.

### **Regional Traffic Management Center (RTMC) Operations Support Services, and FDOT District 7, Tampa, FL and FDOT District 1 Ft. Myers and Bradenton, FL**

Senior Project Manager for two five-year RTMC operations contracts that provide services 24 hours per day/ seven days per week/365 days per year. Staffing includes the RTMC Manager, RTMC Assistant Manager, several RTMC Supervisors, RTMC Operators, administrative support personnel. Responsible for ensuring staffing levels are met and services are performed in accordance with standard operating procedures (SOP) and that SOP are up to date. Oversaw work of subconsultant providing RTMC IT support services. Ensured successful transition for operations at the Ft Myers RTMC and for startup of the Bradenton Satellite TMC. Focused on continual operator improvement through training, testing and recertification programs.

### **ATMS Program General Consultant, Hillsborough County, Tampa, FL**

Senior Project Manager for support of the county's ATMS program delivery. Updated corridor priorities, updated cost estimates, schedules, programming and budgeting. Managed work of design consultants, integration consultant/system manager, traffic signal timing consultant, and geotech consultant. Managed vendor contracts for county-furnished materials. Coordinated with county departments who provided utility coordination, right-of-way and permitting services. Developed RFP for push-button type construction contract and developed construction work orders and coordinated with the County's construction manager. Oversaw work of consultant performing before and after studies.

### **I-75 South and I-75 Northwest Corridor Managed Lanes, Georgia Department of Transportation (GDOT), Atlanta, GA**

Developed ITS and reversible lane control portions of the design-build RFP for both the I-75 express lanes project south of Atlanta and the I-75 Northwest Corridor project north of Atlanta. Both projects will include



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## Steve Bahler, PE

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variable tolls, reversible lanes with gate control and extensive ITS for surveillance and verification. Worked closely with the GDOT Traffic Management Center (TMC), the tolling manager, and the Georgia State Road Toll Authority to coordinate ITS, tolling and access control requirements. Reviewed design submittals for agreement with the RFP. Responded to RFI from the designer and contractor and resolved conflicts. Developed the reversible access control Concept of Operations and assisted the TMC manager with development of operations scenarios and requirements leading to software development. Work with GDOT to ensure access control software protocols was consistent with the SOP and requirements.

### **ATMS/ITS Traffic Support Services, Pinellas County, Clearwater, FL**

Senior ITS Engineer and Project Manager for design of several ITS/ATMS corridors within the County, including corridors on Alternate US 19 and Park Blvd (SR/CR 694). The projects included fiber optic communication, CCTV, arterial DMS, system detection and intersection detection. A key component of the projects was preparation of the corridors for adaptive signal control. Also Senior Project Manager for development of the County TMC called the Primary Control Center (PCC). In this role, was responsible for developing the PCC ConOps, designing the PCC control room, video wall, equipment room, overseeing construction of the facility and finally for integration of the PCC. The final roles was overseeing transfer of legacy systems from the old TMC to the PCC in one weekend.

### **General Engineering Consultant (GEC), FDOT District 3, Chipley, FL**

ITS Project Manager for the following projects under this GEC contract:

- **SR 8 (I-10) Freeway Management System and RTMC** – Project Manager who assisted the District by developing the functional requirements for the new Districtwide RTMC. Provided technical oversight of RTMC design and implementation. Wrote concept of operations and maintenance and wrote scope for services for RTMC operations and maintenance. Wrote RTMC standard operating procedures.
- **Escambia County/Santa Rosa County ATMS Phase I** – Wrote technical requirements for City and County Traffic Operation Centers including interconnectivity between the City, County and State centers. Worked with stakeholders to confirm requirements and ensure requirements were implemented by the contractor.

### **Connected Vehicles (CV) Pilot, Tampa Hillsborough County Expressway Authority (THEA), Tampa, FL**

Senior ITS Engineer overseeing development of User Needs, Systems Needs and the Concept Operations.





## **RAKESH SHARMA, PE, PTOE**

### **TASK 2 LEAD - PROJECT RFP AND PROCUREMENT, SYSTEM CONCEPT DESIGN AND REQUIREMENTS**

#### **Academic Background**

M.S., Civil Engineering, University of Cincinnati, 2005

B.S., Civil Engineering, National Institute of Technology, Trichy, TN, India, 2001

ITS Project Management, CITE, University of Maryland, 2011

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#### **Professional Certifications**

ITS Deployment Analysis Systems (IDAS)

ITS Systems Engineering

ITS Architecture

Signal System Coordination (with preemption)

FDOT Rapid Incident Scene Clearance (RISC)

National Incident Management System (NIMS)

National Traffic Incident Management Network

Maintenance of Traffic

Traffic Safety Studies

Interchange Modification and Justification Study

New Approaches of Highway Safety

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#### **Licenses**

Florida Professional Engineer #70902

Ohio Professional Engineer #72324

Professional Traffic Operations Engineer

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Rakesh Sharma has 13 years of experience in both public and private sectors in Transportation System Management and Operation (TSM&O) and intelligent transportation system (ITS). Rakesh is a task leader for the traffic operations and ITS projects with HNTB for the Florida Department of Transportation (FDOT) Central Office, District 2, District 3, District 5, Florida's Turnpike Enterprise (FTE), Central Florida Expressway Authority, and Reedy Creek Improvement District (RCID). Rakesh specializes in project and task work order development, supervision, man hour estimate development, and budget tracking. His experience includes operational analysis, hard shoulder running, adaptive signals, ramp metering, traffic safety analysis, transportation planning, signal design, signal retiming and interconnect design, signing and pavement marking design, systems planning, toll design, ITS design, freight operation, specification development, device testing plan development, software module specifications and traffic incident management. Rakesh previously worked for FTE as the Senior Traffic Service Specialist helping to manage and operate the Central and West Florida region toll roads for traffic engineering and safety related issues and was involved in Regional Traffic Management Center (RTMC) operation. His traffic operations experience includes designing corridors and signals using microsimulation software such as CORSIM, SYNCHRO, VISSIM and HCS+. He is very familiar with Federal Rule 940, MUTCD, FDOT APL/TERL process and standards and specifications.



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## **Rakesh Sharma, PE, PTOE**

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### **TSM&O, FDOT District 2**

Project Manager in this task work order-based contract. Some of the projects worked under this contract are ramp metering, hard shoulder running, adaptive signal system, truck parking, Philips Highway Retiming, integrated corridor management as well as performing system level analysis Port Authority traffic operations, rail-road grade crossing notification system, etc.

### **District 5 Operations General Engineering Consultant (GEC), FDOT District 5**

Task Lead for several ITS design and TSM&O-related tasks in this task work order-based contract. The work includes feasibility report and criteria development for hard shoulder running for the 15-mile-long I-4 corridor from US 192 to Kirkman Road as well as the northern corridor from US 17-92 to Dirksen Road. Other project includes ITS design, I-4 SAMR operational analysis for Ultimate configuration, reversible lane analysis, etc.

### **Traffic Incident Management/Commercial Vehicle Operations (TIM/CVO), FDOT Central Office**

Assistant Project Manager on this task work order based contract. The work includes freight operation analysis, truck parking pilot project development, traffic incident management, road ranger operation analysis, and high-level freight traffic analysis of the statewide corridors.

### **Districtwide ITS GEC, FDOT District 3**

Assistant Project Manager on this task work order-based contract. The work includes providing operations and maintenance cost estimates for RTMC, Road Ranger deployment cost estimates and coverage analysis, ITS design, RTMC dynamic message sign (DMS) operation, advanced traffic management systems design, request for proposal preparation and plans review.

### **Lake Buena Vista Drive, ITS and Signing Design, RCID, Lake Buena Vista, FL**

Task Lead and Engineer of Record for ITS, signing and pavement marking and signal interconnect design for the nine-mile-long corridor on Lake Buena Vista Drive and Epcot Center Drive. Project involved 12 full-color DMS, closed-circuit television, signal detectors, and SCOOT signal system design. Prepared ITS specifications and test plans for the system and subsystem deployment along these corridors. Participated in contractor and vendor bidding and selection process.

### **I-95 Design-Build, FDOT District 5, Brevard and Volusia Counties, FL**

Task Lead and Engineer of Record for the ITS and signing and pavement marking design for this project. The ITS task involved designing and retrofitting ITS infrastructure with additional microwave vehicle detection stations installed every half-mile within the 30-mile-long corridor. The task involved minimum service outages with service continuously maintained during construction.

### **Task Lead ICM, US 1 and I-95 Detour Plan and Signal Retiming, North Florida Transportation Planning**



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## **Rakesh Sharma, PE, PTOE**

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### **Organization, North FL**

Developed and implemented retiming plans along US 1 for 24 signalized intersections along with 18 cross street intersections. Project involved transit signal priority and BlueTOAD® analysis.

### **Dynamic Detour System**

Developed concept of operation, concept plans and cost estimates for dynamic detour system for I-95 from St. Johns County to Downtown Jacksonville.

### **Road Weather Information System**

Developed concept of operations, project cost, deployment plans and decision support matrix for high-speed wind sensors on District 2 Bridges. The study involved coordination with regional stakeholders, identification of priority locations, and developing program cost using bridge and traffic characteristics.

### **Regional ITS Master Plan and ITS Architecture Update**

Updated the regional ITS Master plan for the northeast Florida in accordance with Federal Highway Administration Rule 940. The study involved updating the current ITS architecture, identifying the list of ITS projects, coordination with regional stakeholders, and developing program costs.

### **Florida Turnpike Enterprise (FTE), Ocoee, FL**

Served as a regional lead the north and west Florida region traffic engineering division of FTE. The work involved deployment in the Turnpike's Traffic Management Center to address traffic operations and ITS related issues on the turnpike roadways, which include SR 91 (Florida's Turnpike), SR 528, SR 429, SR 417, SR 570, SR 568 and SR 589. Participated in various ITS project reviews and actively participated in the incident management on the turnpike roadways.





## **GREG KRUEGER, PE**

### **CV AND INDUSTRY PARTNERSHIPS**

#### **Academic Background**

M.S., Civil Engineering, Texas A&M University, 1995

B.S., Civil Engineering, Colorado State University, 1993

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#### **Professional Affiliations**

Member of Demonstrations Committee of the ITS World Congress, 2008 & 2014

TRB Freeway Operations Committee Member

Member of Oakland County Connected Vehicle Task Force

Member of IEEE SSC42 on Transportation Standards

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#### **Licenses**

Michigan Professional Engineer #6201047061

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#### **Designations or National Committee Appointments**

TRB ITS Committee Member & incoming Co-Chair

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Greg Krueger has 22 years of experience managing large and innovative transportation engineering and intelligent transportation systems (ITS) design and implementation programs and is nationally and internationally recognized as an expert in connected vehicle (CV) technologies. Greg was a Fellow with the U.S. Department of Transportation (USDOT) Research and Innovative Technology Administration (RITA) from 2010 to 2011. Prior to joining HNTB, Greg was with the Michigan Department of Transportation (MDOT) as the Region Traffic and Safety Engineer for the Metro Detroit Region and the statewide ITS Program Manager.

Greg is currently the Operations Manager for the USDOT CV Core Systems program, and is providing support to other USDOT programs, including the Safety Pilot Model Deployment, Smart Roadside initiative and the Transportation Operations Laboratory. Greg is supporting AASHTO in the development of the deployment requirements documentation and is supporting the Michigan Department of Transportation on a variety of connected and automated vehicle projects. He chaired the Transportation Research Board (TRB) ITS Committee Summer Meeting in 2010 on the needs of the public sector for CV implementation and is currently a member of both the TRB ITS and Freeway Operations Committees and is the incoming Co-Chair of the ITS Committee.



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## **Greg Krueger, PE**

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### **CV Core System (CVCS) Operations**

Program Manager. Project Manager for the USDOT CVCS program which includes the operations of all of the back-end systems associated with the CV program, including data collection, storage and distribution. This is the follow-on work for the USDOT CV Test Bed program, and it includes supporting developers of hardware and software with technical training, access to systems and providing outreach to the entire user community.

### **CV Vehicle to Vehicle (V2V) and Vehicle to Infrastructure (V2I) Test Bed**

Operations Manager. Project Manager for the USDOT CV test bed, overseeing all technical, operational and promotional/outreach aspects of the test bed, including field infrastructure, back-end systems and in-vehicle on board equipment. This test bed has formed the core of the USDOT CV program, originally deployed to prove the concept CV technologies and now as the core field laboratory for the USDOT and the industry to develop and test hardware and applications.

### **Implementation of the CV Security Credential Management System**

SAIC Project Manager for this project, which implemented a security credential management system for the USDOT Safety Pilot Model Deployment. Directed the SAIC team's completion of the design and implementation of the SCMS and successful delivery of certificates for all aspects of the Safety Pilot Model Deployment. The SCMS is currently being used as an asset by the Test Bed program and is being shared with Test Bed users around the country.

### **Safety Pilot Model Deployment, Ann Arbor, MI**

Task Manager. Currently managing SAIC's role in support of the CV Safety Pilot Model Deployment in Ann Arbor. Supporting the roles of Interoperability Testing and Security System Operations. Directed the SAIC team, which has completed three rounds of interoperability testing and multiple additional stand-alone tests that have been used to document the operations of the deployed system. Additionally, directed the SAIC team that provided the Model Deployment conductor with the certificates in support of the Security Credential Management System for all of the devices in the system.

### **CV Deployment Guidance, Washington, D.C.**

Task Manager supporting the development of the CV Deployment Guidance in support of AASHTO. Working on documenting issues associated with deployment of different applications and is working to develop field requirements for the deployment of those applications.

### **Michigan CV Support, Lansing, MI**

Project Engineer. Part of a team of experts that was selected in 2011 to support the Michigan Department of Transportation CV Program. Efforts to date include an update of the MDOT CV strategic plan, development of a gap analysis for Autonomous Vehicles and ongoing outreach for various CV and automated vehicle activities.



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## **Greg Krueger, PE**

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### **Research Needs for Public Sector Agencies for CVs**

2010 TRB ITS Committee Summer Meeting - Meeting Chairman. As a member of the TRB ITS Committee, chaired the 2010 Committee Meeting on research needs associated with public sector deployment of CV technologies. The two-day workshop focused on six major topics associated with the deployment of CVs and resulted in multiple research statements.

### **Michigan VII/IntelliDrive/CV Program**

Program Manager As the Michigan Department of Transportation Program Manager for Intelligent Transportation Systems, Greg led the overall MDOT CV program from 2005 through 2011. This effort included the development of concepts of operation for a variety of deployments, procurement, operations and maintenance of deployments, and coordination with local agencies, automakers, suppliers and a variety of governmental entities.

### **Michigan 511 Program**

Program Manager. Greg led the Michigan program to develop the Michigan 511 Traveler Information System program. This effort included an evaluation of the needs of traveler information users across the state, including transportation department, transit systems and tourism boards. Evaluation included the technical and cost components of the system and a recommendation to State of Michigan DOT management on procurement options and decisions.

### **Michigan Statewide Traveler Information System**

Program Manager. Greg led an effort at MDOT to procure a statewide real-time travel information system that included travel times and speeds across links throughout the state. The effort included identifying key corridors. Effort included the successful procurement of a five-year services contract for the real-time data, integration of that data with MDOT web services and the statewide ATMS program, and the use of the data in work zone applications to reduce cost impacts of the FHWA work zone mobility programs.





## STEVE JOHNSON

### TASK 1 LEAD - CONCEPT OF OPERATIONS AND PROJECT SYSTEMS ENGINEERING AND MANAGEMENT PLAN

#### Academic Background

Communications Security, U.S. Army Signal School, 1987  
B.S., Business Administration, Central Texas College, 1985

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#### Professional Registrations

Traffic Engineering and Operations, University of Maryland  
Building Construction Trades, James Rumsey Vocational Center  
DOD/MILSPEC Communications Installer  
Intelligent Traffic Systems, National Architecture Consortium for ITS Training  
and Education (CITE)  
Advanced Maintenance of Traffic, FDOT  
IMSA Traffic Signal Level I Certification  
IMSA Traffic Signal Level II Certification

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Steve Johnson brings 30 years of experience as a specialist in information technology and telecommunications with an emphasis on intelligent transportation systems (ITS)/advanced traffic management systems (ATMS). His expertise includes project management, resource management, change management, quality control, and service-level agreements. His technical skills include ITS/ATMS, network engineering, systems integration, outside plant cable construction, premise wiring, traffic signal design and operation, and wireless networks, including over 300 miles of Fiber Optic Network design/integration, design/integration/CEI of over 200 signalized intersections, ITS/ATMS project experience in every Florida Department of Transportation (FDOT) District and Florida's Turnpike Enterprise (FTE).



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## Steve Johnson

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### **Connected Vehicles (CV) Pilot, Tampa Hillsborough County Expressway Authority (THEA), Tampa, FL**

Project Champion and primary author for THEAs application for Federal Grant funds to participate in the CV Pilot. More than 60 agencies competed nationally for three selections and client THEA was ranked highest. Is now the Program Management Lead for this awarded \$17 million project, which consists of three phases. Phase 1, system development is now underway and provides the system engineering for the project that will include CV applications from V2V, V2I and V2X suites. The selected applications—Curve Speed Warning, Emergency Electronic Brake Lights, Forward Collision Warning, Intelligent Traffic Signal System, Intersection Movement Assist, Probe Enabled Traffic Monitoring, Transit Signal Priority, Vehicle Turning Right in Front of Bus, Pedestrian in Signalized X-Walk and Mobile Accessible Pedestrian Signal—will be applied to six existing, documented use cases/needs. These include morning backups, pedestrian conflicts/pedestrian safety, wrong way drivers, traffic progression, bus rapid transit optimization and trolley/auto/pedestrian/bike conflicts. Phase 2, design-build and Phase 3, operate and maintain for 18-month evaluation period, are already funded under this grant and will proceed with the team and leadership.

### **I-595 Express Lanes Concessionaire, I-595 Express, LLC, FDOT District 4, Fort Lauderdale, FL**

Responsible for the ITS portion of the project that includes constructing reversible, variable toll lanes in the existing median of I-595 and providing ITS relocation and new ITS construction to facilitate operations and maintenance from the existing FDOT District 4 Regional Traffic Management Center (RTMC).

### **I-75 from CR 54 to SR 52, FDOT District 7, Tampa, FL**

Project Manager for the design of nine miles of new ITS construction and integration. Provided design of the fiber optic communications network, IP scheme assignments and layer 2 Ethernet switch configuration and coordinated for integration into existing SunGuide® layer 3 network. Led design team in layout of ITS devices including, conduit/manhole system, power service points, sign structures, closed-circuit television (CCTV), dynamic message sign (DMS), road weather information systems (RWIS), highway advisory radio (HAR) and microwave vehicle detection stations (MVDS).

### **ITS/RTMC, City of Tallahassee, Tallahassee, FL**

ITS Construction Engineering and Inspection (CEI) Project Manager who provided acceptance testing and certification of new ITS elements including FOC, DMS, CCTV, MVDS, and RWIS, including the integration of these elements into the new RTMC and video wall. Authored acceptance test plan documents and managed the testing and acceptance procedures.

### **ITS Deployment along I-75, I-595 and I-95, FDOT District 4, Broward County, FL**

Senior network engineer and ITS project manager. Responsible for the installation and integration of 34 DMS sites, 29 HAR stations, three RWIS stations, and 78 voice over Internet protocol (VoIP) sites, all connected by existing single-mode fiber optic cable.



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## Steve Johnson

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### **ITS System Manager Phase VII and IX, FDOT District 2, Jacksonville, FL**

Senior Network Engineer, provided fiber optic network design, splicing diagrams and creation of technical Special provisions for wireless communications system. Conducted video line of sight field surveys and wireless spectrum analysis.

### **ITS Design-Build I-395 and SR 826, FDOT District 6, Miami, FL**

Senior network Engineer and Integration Project Manager. Provided communications design, field reviews, device layout and submittals review for design phase. Managed integration of new fiber optic network, migration of existing wireless devices into new FON, configuration, integration and testing of CCTV, DMS, MVDS including acceptance testing of system with SunGuide® at RTMC.

### **RTMC Build Out, FDOT District 7, Tampa, FL**

Project Manager for design, installation, and integration of the Tampa Bay SunGuide® RTMC. This project delivered a comprehensive traffic management center, integrating ITS/ATMS elements across the District 7 regional architecture including CCTV, DMS, arterial DMS, MVDS, HAR, and RWIS.

### **I-95 ITS Deployment/I-95 from Miami Gardens to US 1, FDOT District 6, Miami, FL**

ITS Project Manager. Provided configuration, integration and testing of fiber optic communications network, CCTV, MVDS, DMS and Ramp Metering, including acceptance testing with SunGuide® at the RTMC.

### **ITS Power Distribution System Upgrade, FDOT District 4, Broward County, FL**

Senior Network Engineer. Responsible for the design, construction, and integration for the deployment of the Broward County ITS power distribution system upgrade. The deployment included a power distribution system and backup power generation system, including all ancillary components within the I-95 limited access right-of-way in Broward County as a single homogeneous system with control and management from the District 4 RTMC.

### **Districtwide ITS Maintenance, FDOT District 7, Tampa, FL**

Project Manager who provided oversight of regularly scheduled and emergency maintenance of the ITS elements and support structure. Created and maintained a maintenance and inventory database system to generate, prioritize, and dispatch maintenance activities as well as provide real-time inventory management.





## JESSICA BAKER

### SOFTWARE, BIG DATA, AND SECURITY

#### Academic Background

B.S., Computer Engineering

University of Central Florida, 2017

A.A., Engineering (Articulated) Valencia Community College, 2012

Jessica Baker is an experienced senior leader and principal delivering core information technology (IT) solutions in software, infrastructure, and operations for 18 years. She is a specialist in the areas of system engineering, information technology systems (ITS) information systems architecture design, SunGuide® software support, development and automation techniques, ITS database management, data collection, authoring of visually dynamic reports to support critical business decisions, distilling business objectives into technical requirements and project plans. She has proven successful relationships with Florida Department of Transportation (FDOT), Central Florida Expressway Authority (CFX), Florida's Turnpike Enterprise, Road Rangers, Florida Highway Patrol, Department of Defense, and third party vendors.



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## Jessica Baker

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### Science Applications International Corporation (SAIC), FL

Senior lead engineer responsible for the end-to-end implementation and operation of database and various applications, software development and IT projects, including the collection and translation of business requirements into project plans, ITL definitions and scheduling, architectural design, and engineering execution, including special projects such as Engineering as a Service, Data Centricity, Next-Gen Network and more.

- Provided guidance and support to the Enterprise Business Transformation organization within ITO in planning efforts for maturing Enterprise Architecture according to the Federal Enterprise Architecture Framework (FEAF)
- Tactical Lead Engineer in the establishment of SAIC's Enterprise Portfolio Management capability.
- Managed and maintained vendor relationships, co-op developments and vendor workshops with ITO teams.
- Trained, mentored and developed junior and mid-level engineers, architects, and administrators on business and technical processes, infrastructure (architectural and engineering) and diagrams.
- Assisted others with adapting and developing technical capabilities.
- Recommended by the Chief Information Officer, Director of EBE, and Director of EBT for high performance, thought leadership, and excellence in workmanship. Awarded CEO Award Feb 2015.

### Atkins, Orlando, FL

Senior Database Principal and Software Developer who supported Central Florida Expressway Authority. Provided additional agency support to Florida Highway Patrol (FHP), Road Rangers, FL Turnpike and various FDOT districts in the deployment of roadway engineering projects.

Responsible for the management, development, integration and operation of the SunGuide® software and database system, dynamic message signs (DMS), traffic management center (TMC) and CFX control room operator support; ensuring high availability and disaster recovery, security compliance, data integrity and feature enhancements. Transform data into visually dynamic reports to inform stakeholders, including toll reports, travel times, traffic volume trends, vehicle counts, crash incident reports, FHP Trooper activity and RR reports.

### LMS Online, Orlando, FL

Director of IT Operations who performed effective and strategic IT planning and business leadership; key participant in product development, initiated IT solutions to enable the business with new capabilities and revenue streams, launched IT services to meet core objectives.

- **Technical Team Management:** Managed and directed four IT Teams - database, web development,



## Jessica Baker

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network and security teams - in task and process implementation, ensuring timely and accurate project deliverables while supporting budgets, scheduling, personnel resource allocation, and developing technical education programs, training and mentoring.

- **Service Management:** Managed budget forecasts for new and existing IT service lines, maintained continuous operation of all systems, evaluated program effectiveness, evangelized business value in IT services, provided continual process improvement and innovation for managed systems.
- **Customer and Vendor Management:** Managed, maintained and built relationships with new clients and vendors in the MC channel space, including relationships with off-shore companies, outsourced labor, ensuring timely deliverables and customer satisfaction.
- **Campaign Innovation:** Engineered pattern recognition algorithm, identified patterns in large-scale data sets and applied astute analysis to effectively target an audience. Increased campaign response rates by 2-7% on average.

### Lightstyle of Orlando, FL

Senior IT Product Lead responsible for all hardware and software assets, including transforming operations from legacy to digital operations by the use of technology.

- Performed standard accounts receivables and provided other financial support as credit manager.
- Designed and deployed the transformation of a terminal based environment to a connected, windows-based network across multiple sites. Developed software to automate rebate programs. Authored and published all technical documentation, security and computer policies.
- Implemented access controls, auditing and alerting mechanisms. Trained sales and office staff on new technologies.
- Provided financial support performing AR and AP duties, commission reports, business taxes, credit manager, processing new builder applications, legal liaison filing property liens, authoring complex reports and database queries for managing day-to-day operations.





## MARK DUNTHORN

**SUNGUIDE® SOFTWARE SUPPORT**

### **Academic Background**

B.S., Physics, Florida State University, 1983

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Mark Dunthorn is a Senior Software Engineer with AECOM having 20 years of software development experience including extensive experience in supporting traffic management systems in Florida, Texas, California and New Jersey. He has developed tools for monitoring the TMC software applications and Oracle databases that has resulted in more effective troubleshooting and quicker response times. Throughout his career, he has provided on-site support for FDOT's ATMS software systems, following a support plan customized to best fit local needs and priorities as determined by the TMC staff. He also performed troubleshooting of application, network and device issues with the goal of providing efficient, effective and timely solutions.



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## Mark Dunthorn

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### **FDOT SunGuide® Software, FL**

Senior Software Systems Engineer responsible for the following:

- Provided on-site support for FDOT's Statewide TMC Software System (SunGuide®), following a support plan customized to best fit local needs and priorities as determined by the District ITS Engineer and TMC support staff
- Performed troubleshooting of application, network and device issues with the goal of providing efficient, effective and timely solutions
- Participated in initial deployments of SunGuide® for I-595 Express and the Florida Turnpike Enterprise
- Developed deployment processes for the SunGuide® application and Oracle database that resulted in fewer errors and reduced downtime, minimizing impact on TMC operations
- Developed tools for monitoring the SunGuide® application and Oracle database that resulted in more effective troubleshooting and quicker response times; this includes graphical display of near-real-time SunGuide® metrics such as Data Archive queue size and process memory utilization, and Oracle wait class statistics and tablespace utilization
- Developed tools for automatically analyzing the SunGuide® Status Log and generating alerts under specified error conditions
- Developed a tool for comparing contents of local C2C infrastructure with FL-ATIS and reporting any differences
- Developed tools for communicating with RTMS detectors and 170 controllers, enabling independent troubleshooting of device issues
- Contributed bug fixes to the code base

### **Los Angeles ExpressLanes, Los Angeles, CA**

Senior Software Systems Engineer responsible for developing, implementing and integrating the dynamic pricing software for the I-10 / I-110 ExpressLanes. The ExpressLanes were constructed along 14.5 miles of I-10 east of downtown Los Angeles and 11.5 miles south of downtown. The project includes the design of 25 DMS signs, 25 CCTV cameras, 40 vehicle detectors, 20 toll gantries and communications; and toll collection systems including readers. The Dynamic Pricing Algorithm Component (DPAC) calculates and recommends tolls based on changing traffic conditions. The DPAC is a self-contained application that executes periodically on a configurable schedule, querying the database to retrieve data produced by various TCS components, executing the Dynamic Pricing Algorithm and storing the result back into the database where it is available to other TCS components.



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## Mark Dunthorn

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### **TxDOT Statewide ITS Software Development, Integration and Maintenance, TX**

Senior Software Systems Engineer for a contract to support the Texas DOT effort to maintain, deploy, and extend the statewide ATMS. The project involves support and integration statewide for the multi-year task order contract to improve the Lonestar ATMS software to meet the needs of TMCs throughout the state.

### **New Jersey Turnpike Authority (NJTA) ATMS Software Development & Integration, NJ**

Senior Software Systems Engineer for the development of the ATMS software for the NJTA. The IBM-AECOM team was selected by the NJTA to develop an integrated software to support the operations at the Statewide TMC. AECOM's services include development of ATMS software to control the ITS devices (i.e., CCTV cameras, vehicle detectors, dynamic message signs, highway advisory radio) and integration of the related IBM software and hardware to feature predictive models and decision support systems. The integrated software provides a streamlined interface for complete roadway awareness; a feature rich unified dashboard which displays key role-based data; and ATMS capabilities that learns from historical data to improve accuracy and quality of decisions.

### **Developer, World Avenue**

Developer who provided application support for a 24x7 Network Operations Center with an emphasis on monitoring the performance of a multi-tier web application running on a LAMP stack. Measured, maintained, and analyzed key performance metrics pertaining to networks, systems, databases, and storage, hosted on physical and virtual infrastructure.

### **Director of Network Engineering**

Designed, deployed and managed voice and data systems, platforms, and applications, providing critical telephony services to over 100,000 subscribers with nearly 100 percent uptime.

### **Consultant, LC Communications**

Provided network and systems support and training to Internet Service Providers in India and Nepal, and a prepaid calling card operator in Ukraine.

### **Director of Operations, Icanect**

Managed Internet services for over 16,000 dialup access and web hosting customers.





## STEPHEN NOVOSAD

**ATIS SUPPORT, DIVAS**

### **Academic Background**

B.S., Computer Science, Texas A&M University, 1984

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### **Professional Affiliations**

OmniAir Consortium Board of Directors and Vice Chairman

ITS Texas, Board of Directors (Past President)

ITSA State Chapter Council Representative

Connected Vehicle Working Group Member

Sustainability Transportation Working Group Member

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Stephen Novosad has subject matter expertise in Intelligent Transportation Systems (ITS), Connected Vehicle and System & Software Implementations. He brings 30 years of experience in systems requirements, design, development and integration, configuration management, project management, independent verification and validation of systems, and standard software engineering practices. Stephen has 18 years of ITS experience and 12 years of Connected Vehicle experience. Throughout his career, he has implemented systems using the System Engineering process and established software development processes such as Capability Maturity Model (CMM), and Capability Maturity Model Integrated (CMMI). He played significant roles in assisting the establishment of the software development process where his company was initially certified as a CMM Level 3 organization and subsequently as a CMMI Level 5 organization.



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## Stephen Novosad

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### **General Consultant, Florida Department of Transportation (FDOT) Central Office, FL**

Lead consultant for the development of FDOT's Connected Vehicle Regional Pilot Deployment proposal. Developed and maintained FDOT's regional test bed which was a plan for the future of connected vehicles in Florida, and supported FDOT's efforts in automated vehicles. Served as lead consultant for the development of FDOT's Connected Vehicle Safety Pilot Model Deployment proposal. Supported FDOT's connected vehicle effort for the 2011 ITS World Congress. Assisted in the integration of the Connected Vehicle infrastructure into FDOT's Traffic management software, SunGuide®. Performed quality assurance on a dynamic message sign device driver developed for SunGuide®.

### **Vehicle to Infrastructure (V2I) Integrated Prototype Development and Deployment, Washington, DC**

Manager and Technical Lead in the deployment portion of the V2I Integrated Prototype project. The first phase of the project was the development of a V2I prototype and the associated documentation for deploying the prototype in the field. Once the prototype was developed and tested, the deployment team received the documentation and began to implement a V2I prototype in a live production deployment. With the cooperation of FDOT and Osceola County, the prototypes were being deployed along Florida's Turnpike and at key intersections in Osceola County. Reviewed existing documentation generated during the development of the prototype in preparation for the deployment.

### **511 System Development, Deployment and Operation and Maintenance, MS**

Manager and Design Lead for the implementation, operation, and maintenance of the Mississippi Department of Transportation's (MDOT) 511 System. He oversaw the design of the 511 system and specifically designed the travel time subsystem. Created a template that was used to playback the travel time information to callers. Involved in the menu structure design, interface to MDOT's Advanced Transportation Management System, developed report playback of incidents, developed grammars and recordings used to identify caller requests and playback information to the caller respectively and worked closely with MDOT to customize the system to meet their needs. The 511 system entered operation and maintenance in January 2014.

### **511 System Development, Deployment and Operation and Maintenance, Wisconsin Department of Transportation's (WisDOT), Statewide, WI**

Technical Manager for the implementation, operation and maintenance of the WisDOT 511 System. Developed the system and software requirements and oversaw the 511 system design. While working with WisDOT's data provider to design the method by which the data would be processed, formatted and stored, was involved in the menu structure design, report playback design, development of grammars and recordings used to identify caller requests, and playback information to the caller respectively. He worked closely with the project team to customize the system to meet WisDOT's needs. The 511 system entered operation and maintenance in December 2013.



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## Stephen Novosad

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### **Preparing to Develop a Standards Compliance and Interoperability Certification Program for Connected Vehicle Hardware and Software, U.S. Department of Transportation (USDOT), Washington, DC**

Led the development of a set of questions designed to gather input from the Connected Vehicle Pool Fund Study (PFS) stakeholders on their knowledge and needs and provided information to the stakeholders about Connected Vehicle/Cooperative System certifications. As part of this task, conducted interviews with the stakeholders to review the questions and gather stakeholder information. Led the Gap Analysis development comparing the responses from the PFS stakeholders to where certification processes and standards are currently. Afterward, he presented the findings of the interviews and the Gap Analysis to the PFS stakeholders including recommendations on how the PFS should proceed with its certification activities.

### **Plans, Procedures, and Tools for Qualification and Certification Testing of IntelliDriveSM "Here I Am" Devices, USDOT, Washington, DC**

Participated on the USDOT-sponsored project where the OmniAir project team developed plans, procedures, and tools to qualify and certify vehicle awareness devices. He reviewed the documented plans and procedures developed to qualify the vehicle awareness devices for the Safety Pilot Model Deployment. The OmniAir team performed multiple rounds of qualification testing on several different vehicle awareness device manufacturer's devices. He reviewed the results of the qualification testing and received regular updates from the test team.





## **MALCOLM TOMATANI, PE, CCNP**

### **SYSTEM SPECIFICATIONS, TESTING AND IMPLEMENTATION**

#### **Academic Background**

M.S., Civil Engineering, Portland State University, 1997

B.S., Electrical Engineering, University of Hawaii, 1989

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#### **Professional Certifications**

Cisco Certified Network Associate, Routers and Switches, Cisco ID:  
CSC011447388

Cisco Certified Network Professional, Security, Cisco ID: CSC011447388

International Municipal Signal Association Traffic Signal Bench Technician  
Level 2

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#### **Licenses**

Florida Professional Engineer #65465

California Professional Engineer #60908

Virginia Professional Engineer #0402049926

Texas Professional Engineer #88175 (Inactive)

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Malcolm Tomatani is a Project Engineer/Squad Leader in the ITS group with more than 19 years of experience in transportation engineering, with a focus on intelligent transportation systems (ITS) design, electronic toll collection (ETC) systems design, integration, and construction engineering and inspection. He is an ITS engineer, licensed in both civil and electrical engineering, who has worked on many large scale projects across the United States and abroad.



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## **Malcolm Tomatani, PE, CCNP**

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### **Chief Engineer Support Services, Florida Department of Transportation (FDOT) Central Office, Statewide**

The Central Office is deploying a statewide project called the Truck Parking Availability System (TPAS). The goal of the project is to monitor the empty truck parking spaces at both the rest areas and weigh stations. This information will be displayed on numerical display sign boards preceding the facilities. The intent of the project is to direct the truckers to another facility downstream if the current rest area is full. Senior Project Engineer developing a design-build request for proposal (RFP) for the deployment of this system. A set of 50% plans, specifications, and estimation will be part of the RFP. Coordination with the Department's maintaining agencies for power and communications have been ongoing. Field work with each of the FDOT District representatives has been performed to investigate the placement of the TPAS signs as well as connections to the local ITS cabinets. Research and deployment of a new parking monitoring technology into the FDOT ITS system. Deployment of an established FDOT technology in a new and innovative application.

### **ITS District 3 General Engineering Consultant, Chipley, FL**

Providing cursory review of site, subsystem, and system test plans. The test procedures for the following devices were reviewed: Highway Advisory Radios, Travel Time System, and Road Weather Info System.

### **ITS/Advanced Traffic Management Systems (ATMS)/Traffic Services, Pinellas County, Clearwater, FL**

As ITS Engineer, responsibilities included field work and design for Phase 2 of this project, including field investigation and utility coordination. This application provided descriptions, scheduling, funding, interagency coordination and benefit/cost analysis for more than 40 miles of ATMS on 11 corridors. Work included ATMS design, centerline and right-of-way survey, geotechnical investigation and subsurface and overhead utility location. This project includes design of fiber optic communication network, upgraded traffic signal cabinets/controllers, DMS, CCTV, advanced (Sensys wireless) detectors, video image detection and loop detection to support adaptive signal control on SR 580, 584 and 586.

### **Tampa Bay SunGuide® RTMC Center, FDOT District 7, Tampa, FL**

As ITS Inspector, responsible for reviewing submittals, technical specifications and field inspection. HNTB, along with two subconsultants, provided an RTMC manager, an IT manager, lead operators, operators, IT technicians and administrative staff to support on-going operations, traffic incident management, inter-agency communication and Road Ranger Service Patrol dispatching. This RTMC provided traffic management for I-75, I-275 and I-4 in the Tampa/St. Petersburg area, and houses FDOT freeway operations and traffic, engineering, the Florida Highway Patrol regional dispatching center and the District Emergency Manager.

### **General Engineering Consulting Services, Tampa-Hillsborough County Expressway Authority, Tampa, FL**

As Engineer of Record for the conversion of manual lanes to electronic tolling, responsibilities included power and communication infrastructure design, fiber layout and power service to the ramp and mainline facilities, plans production, conducted field investigations on existing conditions of toll facilities, coordination with



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## Malcolm Tomatani, PE, CCNP

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Florida Power and Light. The project also included widening the roadway at the toll facilities, demolishing booths and canopies, and installing gantries and electronic toll equipment. The engineer's estimate for each ramp was approximately \$500,000 and the mainline plazas at \$2 million.

### **Bruce B. Downs Boulevard Roadway Design - Segment D (Pebble Creek Drive to County Line Road), County of Hillsborough, Tampa, FL**

As Designer for the ITS section of this segment, responsibilities included site investigation, design and plans production. The project is 1.5 miles and consists of widening an existing four-lane rural section to an eight-lane divided urban roadway. Phases of the project included project ITS architecture, concept of operations, functional requirements, communication plan, preliminary design, final design and specifications. ATMS features included advanced traffic controllers, traffic monitoring cameras, dynamic message signs (DMS), adaptive signal control and fiber-optic/Ethernet communication network with the City of Tampa Traffic Management Center and the FDOT Tampa Bay SunGuide® RTMC.

### **Presidio Parkway/Tunnel: The Doyle Drive Replacement Project San Francisco, CA**

Engineer-of-Record for the ITS portion of this 1.5-mile corridor project, consisting of two cut and cover tunnels and a bridge. Nonstandard special provisions were created for the network equipment and solar panels.

### **Southwest Intelligent Freeway Transportation SunGuide® Center, Fort Myers, FL**

ITS Inspector responsible for reviewing submittals, technical specifications and field inspection. Factory Acceptance Testing witnessed at manufacturer's facility. Field inspection duties included site testing of closed circuit television (CCTV) cameras, MVDS speed sensors, dynamic message signs and splice traces. Final sign off of subsystem and SunGuide® testing.

### **Systems Manager for the Utah Department of Transportation (UDOT), Salt Lake City, UT**

Final author of the 2002 UDOT ATMS standard specifications and standard drawings. ITS representative on the Standards Committee.

### **I-15 Reconstruction ATMS, Salt Lake City, UT**

Field Engineer responsible material procurement, delivery, inventory to the ATMS test facility. Materials included ATM/SONET equipment, CCTV cameras, video and data transceivers, video multiplexors, VMS signs, Type 170 controllers for monitoring stations, and NEMA controllers for signals.





## **VICTOR BLUE, PHD, PE**

### **PERFORMANCE MEASUREMENT AND SYSTEM EVALUATION**

#### **Academic Background**

Ph.D., Transportation Engineering, Rensselaer Polytechnic Institute, 1996  
M.S., Transportation Planning, New Jersey Institute of Technology, 1973  
B.S., Electrical Engineering, New Jersey Institute of Technology, 1969

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#### **Professional Certifications and Training**

Certified Professional Transportation Planner by Institute of Transportation Engineers  
PSMJ Project Management Boot Camp  
PSMJ A/E/C Principals Bootcamp  
ITRE-North Carolina State University - Site Development and Highway Access; Principles, Detection, and Timing of Traffic Signals  
University of Central Florida/Strong Concepts - Designing Optimized Traffic Signals and Systems Using Visual TEAPAC: PASSER, TRANSYT, and CORSIM  
MIT Professional Course in Modeling and Simulation of Dynamic Traffic Management Systems

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#### **Licenses**

New York Professional Engineer (Inactive)

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Victor Blue is a Project Engineer with more than 30 years of experience in project management, capital programming, staff supervision, and business development. His responsibilities include connected vehicles, intelligent transportation systems planning, modeling and system integration, path and network optimization algorithm development, traffic simulation model creation and use, travel demand forecasting, travel survey analysis, multimodal planning, unconventional intersection design, traffic impact analysis, signalization and preliminary highway design. Victor is has experience with the following software: Traffic (HCS, TEAPAC, CORSIM/NETSIM, TRANSYT-7F, PASSER, DYNAMIT, MITSIM, PARAMICS, TRANSCAD, SYNCHRO 7.0/SimTraffic); Generic Simulation Software (ARENA); Development Architecture: ITS National Architecture, Commercial Vehicle Reference Implementation Architecture, SET-IT.



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## **Victor Blue, PhD, PE**

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### **Signal Retiming Performance Measures, Florida Department of Transportation (FDOT) District 3, Chipley, FL**

Wrote report on Purdue performance measures and intelligent transportation systems (ITS) performance measures.

### **Hard Shoulder Running on I-75/I-4 Interchange, FDOT District 7, Tampa, FL**

Wrote Concept of Operations (ConOps), project ITS architecture, and project Systems Engineering Management Plan for this advanced traffic management concept in District 7.

### **FDOT Statewide Truck Parking Availability System**

Wrote ConOps and Project Systems Engineering Management Plan.

### **Connected Vehicle Pilot Deployment Project, Tampa Hillsborough County Expressway Authority and U.S. Department of Transportation, Tampa, FL**

Assist in using SET-IT for ConOps, team for performance measures, lead on human use approval task.

### **PBS Engineering, New York, NY**

Served as a consultant-subcontractor. Responsibilities included traffic simulation, ITS optimal rerouting, and traffic analysis.

### **Ramey Kemp & Associates, Raleigh, NC**

Served as Senior Transportation Engineer. Responsibilities included managing project teams and performing traffic impact analysis using Synchro7/SimTraffic model. Represented developers in client-government presentations, negotiations, proposals and contracts. Article on unconventional intersection design published in ITE Journal September, 2012.

### **Transportation R&D Bureau, New York State Department of Transportation (NYSDOT), Albany, NY**

Served as Engineering Research Specialist for NYSDOT's multi-agency IntelliDrive instrument test bed project on the New York State Thruway, weigh-in-motion statistical testing for statewide truck weight enforcement, intelligent transportation systems (ITS)/dynamic traffic assignment simulation modeling, research grant applications.

### **National Science Foundation (NSF) with Intelligent Automation, Inc.**

Served as consultant-subcontractor. Co-wrote winning NSF grant proposal, created advanced traffic information system project concepts, analyzed rerouting with intelligent agent simulator, published findings for optimal vehicle routing.



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## Victor Blue, PhD, PE

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### Planning and Program Management Group, NYSDOT, Poughkeepsie, NY

Served as Senior Civil Engineer.

- **Planning and Project Management** – Managed technical project teams for: (a) Hudson Valley Region air quality conformity with New York Metropolitan Transportation Council (NYMTC) Best Practice Travel Demand model, (b) NYMTC travel survey, ITS and Best Practice Model technical committee liaison, (c) Travel demand management and transit projects, and (d) consultant contracts of traffic impact and planning studies.
- **Intelligent Transportation Systems** – Led regional planning on the Hudson Valley Regional ITS and Traffic Management Center (TMC) planning and design team. Coauthored the ITS Business and Implementation Plan for the \$50 million multi-agency ITS program. Created program strategies and alternatives. Organized multi-agency, multimodal system integration requirements and identified specifications and locations for traffic detectors, closed-circuit television, and dynamic message signs on I-287, I-87 and Westchester Parkways. Contracted with Massachusetts Institute of Technology ITS lab to apply MITSIM simulator and DynaMIT demand optimization model to Westchester County's highway network for off-line emergency and construction management in the TMC. Presented Regional ITS operational strategy at ITS America Annual Meeting, published and presented an ITS dynamic routing simulation model at TRB, INFORMS, and ITS America and in international journals.
- **Traffic Research** – Created and programmed a seminal pedestrian microscopic simulation model, published, and presented at various conferences

### Rensselaer Polytechnic Institute, Troy, NY

Eisenhower Fellow. Wrote a multi-objective algorithm to reroute vehicles along optimal paths and created a traffic simulation platform. Published doctoral thesis and journal articles and presented at TRB, INFORMS, IEEE, Artificial Neural Networks in Engineering.

### Capital Program Management System, NYSDOT

Operational control of \$600 million five-year program.

### Metropolitan Planning Organizations, NYSDOT, (MPOs - NYMTC, PDCTC, NOCTC)

Liaison for biennial 5-year Transportation Improvement Programs and MPO planning work programs.

### Fort McHenry Tunnel and Westside Highway Project

Consultant for ITS preliminary plans

### Urban Corridor Demonstration Program

Consultant for a simulation study to improve highway performance with HOV lanes on NJ Route 3.





## LILY (AGELIKI) ELEFTERIADOU, PHD

### PROJECT EVALUATION/BEFORE AND AFTER ANALYSIS

#### Academic Background

Engineering Graduate Diploma, Surveying & Environmental, Aristotle University of Thessaloniki, 1987

M.S., Civil Engineering, Auburn University, 1990

Ph.D., Transportation Planning & Engineering, Polytechnic University, 1994

#### Designations or National Committee Appointments

Director of the USDOT STRIDE Regional UTC for the southeast (since January 2012)

Director of the USDOT Tier 1 UTC (Congestion Mitigation Strategies - CMS, 2007 - 2013)

Chair of TRB's Highway Capacity and Quality of Service Committee - AHB40 (April 2010 - April 2016)

Secretary, Council of University Transportation Centers (CUTC - since July 2015)

Editorial Board Member, Transportation Research Part B: Methodological (since November 2004)

Past President, Executive Board of the Research and Education Division, ARTBA (September 2014 - September 2015)

Dr. Elefteriadou is the Director of the University of Florida Transportation Institute (UFTI), and the Kisinger Campo Professor of Civil Engineering at the University of Florida. Her research focus is traffic operations, traffic flow theory and simulation. She is the principal investigator of the US DOT-funded Regional University Transportation Center for Region 4 (Southeast Transportation Research Innovation Development and Education, or STRIDE). STRIDE involves seven other universities in the southeast, and is funded with \$6.8 Million from the US DOT plus an equal amount of cost sharing from non-federal sources (period of performance is January 2012 to January 2017). STRIDE focuses on issues of livability, safety, and economic competitiveness.

Dr. Elefteriadou has served as the principal investigator for several other federal and state projects, funded by the National Cooperative Highway Research Program (NCHRP), the National Science Foundation (NSF), the Federal Highway Administration, PennDOT, and FDOT. She has authored or co-authored nearly two hundred publications and reports related to traffic operational quality and highway design, as well as a textbook titled "Introduction to Traffic Flow Theory". She serves on the Editorial Board of the Transportation Research: Part B, and is the Chair of the Transportation Research Board's Highway Capacity and Quality of Service Committee. She is also the Secretary of the Executive Board of the Council of University Transportation Centers (CUTC).



Dr. Elefteriadou received the 2015 ASCE James Laurie Prize for her contributions to highway capacity analysis. She also received the 2015 ARTBA Ethel S. Birchland Lifetime Achievement Award. She received the 2003 PSES Outstanding Research Award from the College of Engineering at Penn State where she was a faculty member. She received the Kisinger Campo & Associates Corp. Term Professorship Award from the University of Florida in September 2005, and a Fulbright Scholarship to perform research at the Technical University of Delft, Netherlands, September- December 2001. She was awarded the Transportation Research Board's Fred Burggraff award for excellence in research in January 2001. Dr. Elefteriadou received her Graduate Diploma in Surveying and Environmental Engineering, (five year program) from Aristotle University of Thessaloniki, Greece, in June 1987. She received her M.S. degree in Civil Engineering from Auburn University, Auburn, Alabama, in June 1990, and her Ph.D. in Transportation Planning and Engineering from NYU, New York, in June 1994.

### Selected Publications

- Elefteriadou, L. (December 2014) "An Introduction to Traffic Flow Theory", Springer Optimization and its Applications, 251 pages.
- Zheng, Y; Chase, R.T.; Elefteriadou, L.; Schroeder, B.; and Sisiopiku, V.P (December 2015). Modeling pedestrian-vehicle interactions outside of crosswalks. *Simulation Modelling Practice and Theory*, 59, 89-101.
- Li, Z., L. Elefteriadou, S. Ranka (December 2014). Signal control optimization for automated vehicles at isolated signalized intersections. *Transportation Research Part C*, 49, 1-18.
- McLeod, D., L. Elefteriadou, L. Jin (November 2012). Travel time reliability as a performance measure: applying Florida's predictive model to an entire freeway system. *Institute of Transportation Engineers, ITE Journal*, 82.11, 43-47.
- Martin, B. B., and Lily Elefteriadou (December 2010). Driver behavior and advanced driver assistance systems: an exploratory driving simulator study. *Advances in Transportation Studies*, Special 2010, 79-88.
- Kim, J., L. Elefteriadou (January 2010). Estimation of capacity of two-lane two-way highways using simulation model. *American Society of Civil Engineers (ASCE) Journal of Transportation Engineering*, 136 (1), 61-66.
- Kondyli, A., and L. Elefteriadou (December 2009). Driver behavior at freeway-ramp merging areas: focus group findings. *Transportation Research Record: Journal of the Transportation Research Board*, 2124, 157-166.
- Yeon, J., L. Elefteriadou, and S. Lawphongpanich (May 2008). Travel time estimation on a freeway using Discrete Time Markov Chains. *Transportation Research Part B: Methodological*, 42 (4), 325-338.
- Fang, C. and L. Elefteriadou (August 2006). Development of an optimization methodology for adaptive traffic signal control at diamond Interchanges. *ASCE Journal of Transportation Engineering*, 132 (8), 629-637.
- Torbic, D., M. El-Gindy, L. Elefteriadou, and Z. Jiang (2003). Bicycle-friendly shoulder rumble strips. *International Journal of Vehicle Design*, 33 (4), 440-466.
- Lertworawanich, P., L. Elefteriadou (June 2003). A methodology for estimating capacity at ramp weaves based on gap acceptance and linear optimization. *Transportation Research Part B: Methodological*, 37 (5), 459-483.



### Awards

- 2015 James Laurie Prize, American Society of Civil Engineering (ASCE)
- 2015 Ethel S. Birchland Lifetime Achievement Award (ARTBA)
- 2010 Best Model Development Paper Award, for the paper "A Driver Behavior Based Lane-Changing Model and Its Implementation in CORSIM," by Daniel Jian Sun and Lily Elefteriadou, Joint Subcommittee on Traffic Simulation, Transportation Research Board, January 2010
- Kisinger Campo & Associates Corp. Term Professorship Award, September 2005
- Penn State Engineering Society (PSES) - 2003 Outstanding Research Award
- Fulbright Scholar - Technical University Delft, Netherlands, September - Dec. 2001

### Thesis Advisor and Postgraduate Scholar Sponsor

- Ph.D. Advisees: Dr. Zhuofei Li, Consultant, TX, Dr. Cuie Lu, Consultant, Portland, OR, Dr. Daniel Sun, Shanghai Jaotong University; Dr. Alexandra Kondyli, University of KS; Dr. Jiyoun Yeon, Korean Transportation Research Institute; Dr. John Kim, Piedmont Authority for Regional Transportation; Dr. Xiao Cui, Florida Turnpike Authority; Dr. Darren Torbic, Midwest Research Institute (MRI); Dr. Clara Fang, University of Hartford; Dr. Ponlathap Lertworawanich, Government of Thailand; Dr. John McFadden, Federal Highway Administration
- Postgraduate Scholar Sponsor: Dr. Kevin Heaslip, Assoc. Prof. at Virginia Tech
- M.S. Advisees (last five years): Michael Armstrong (12/15) Brian St George (8/14) Hyoseuk Chang (12/12); Evangelos Mintsis (5/12); Corey Hill (5/12); Clark Letter (8/11); Barbara Martin (12/10); George Chrysikopoulos (5/10); Irene Soria (5/10)
- Current advisees: 6 Ph.D. students (Clark Letter, Thomas Chase, Yinyan Zheng, Pruthvi Manjunatha, Lei Zhang, Gustavo Riente) and 2 M.S. students (Sonia Rahman, Larry Dorilus)
- Total number of students advised to graduation: 13 Ph.D. and 36 M.S. students

