Justin Ferri, IT Specialist II

***Education*:** B.S. in Pre-Medicine, Pennsylvania State University, 2011
Highway Safety Manual Workshop, March 2015

Certification: CompTIA Network+

Teaching: Civil Engineering 585 – Transportation Planning and Capacity, Drexel University 2016/2017 – Guest Lecturer

Justin is responsible for KMJ's technology applications and information technology needs. He supports a variety of data collection and statistical analysis functions and has participated in various transportation analyses that require both field experience and statistical analysis. As an analyst, he has performed statistical assessments of travel time, delay, and LOS studies conducted using different data collection methods. These analyses involved both graphical and numerical techniques. Justin has also been responsible for managing, deploying, and analyzing data collected by BlueTOAD™ units. This technology using anonymous crowd-sourced Bluetooth™ pairing allows for a next-generation, real-time approach to conducting traffic studies. He has conducted numerous manual traffic counts, travel time and delay studies and has made field measurements and observations of geometric and traffic signal conditions and timings.

Relevant Projects

- **NYMTC Transportation Information Gateway** – Project Manager and Technical Specialist responsible for developing the feedback suite for stakeholder use. He developed the method for mining rich metadata from user feedback for distribution to both the developers and the steering. He also developed training materials and conducted a total of **three training sessions** for agency users as well as **advanced training** for system administrators. The New York Metropolitan Transportation Council (NYMTC) is a member agency-guided MPO that serves as a planning forum for NYC, Long Island, and the Lower Hudson Valley. To help address transportation-related needs and forecasting future conditions, NYMTC is implementing a specialized web-based transportation application (the Transportation Information Gateway) to function as a data warehouse, so member agencies can contribute databases to be viewed internally or by the public. Acting as a liaison between the NYMTC stakeholders and the Cambridge Systematics development team, KMJ fosters constructive dialogue to meet project requirements and address test-user feedback. As an integral part of the iterative "agile" software development process, KMJ created an intuitive, self-contained user feedback suite which contains detailed instructions pertinent to the current iteration, lists of known issues and project requirements, and a feedback input form. KMJ has also developed a method for extracting rich metadata from user feedback for distribution to both the developers and the steering committee to better understand avenues for future project development. (2014-2017)

- **Pennsylvania Turnpike Commission – Transportation Operations and ITS, Smart Work Zones** – Technical Lead responsible for compiling a best practices memo detailing the current state of smart

work zone technology. The Pennsylvania Turnpike Commission (PTC) is working to create a Smart Work Zone Concept of Operations to detect, display and disseminate traffic impacts associated with roadway construction efforts. KMJ worked with Gannett Fleming to provide comprehensive research to identify best practices for the PTC's Smart Work Zone Systems. The best practices memo was comprised of a literature review, which researched federal and state agency published documents, academic primary research, and tech showcases, along with four state DOT interviews with nationally recognized smart work zone experts. This memo summarized types of devices deployed, overall deployment approaches, application types, communications protocols, traveler information techniques, connected vehicle applications, procurement mechanisms, project costs, and success measures. (2017)

- **Pennsylvania Turnpike Commission – Transportation Operations, Wrong Way Driving Study –** Technical Lead responsible for summarizing survey results, along with arranging and conducting interviews with turnpike employees. The Pennsylvania Turnpike Commission (PTC) is seeking a solution to combat wrong way driving practices. KMJ is responsible for Stakeholder survey, outreach and documentation. KMJ created an in-depth online survey for PTC Interchange managers, District Managers, Maintenance and TOC Staff. Based on this survey, KMJ conducted several interviews with PTC employees who could identify problems and produce solutions to wrong way driving on the turnpike and surrounding roadways. These survey and interview results helped shape a mitigation plan to reduce common factors (poor pavement markings, poor signage, distracted driving, etc) that caused drivers to travel the wrong way on the turnpike. (2017)

- **Pennsylvania Turnpike Commission – Transportation Operations and ITS Training –** Responsible for training PTC Traffic Operations Center Staff on Dynamic Message Signs (DMS) software. He was responsible for providing step-by-step visual and textual instruction on proper operation of DMS signs. The Pennsylvania Turnpike Commission (PTC) is continually working to create a more effective, efficient, and safe toll road. KMJ worked with AECOM, PTC, and Daktronics to **create a training program** for PTC Traffic Operations Center (TOC) Staff. That provided step-by-step visual and textual instructions on proper operation of DMS signs in Daktronics Vanguard software. KMJ conducted **two training sessions** on the PTC's new **Full Color DMS**. Training sessions included Duty Officers (DOs) that emphasized usage of the message library for consistency, accuracy, and simplicity. (2016-2017)

- **Philadelphia International Airport On-Call Planning Services, Philadelphia PA-** Responsible for collecting and analyzing parking utilization data. The Philadelphia International Airport seeks to improve ground transportation options by providing a Transportation Network Companies (TNC) Parking facility. KMJ is responsible for the parking utilization analysis in the existing TNC Lot, and provided recommendations for a potential new valet/TNC Lot. KMJ also evaluated two traffic signals at the International Plaza Driveway and the Cell Phone Lot Driveway to determine congestion issues and potential improvements. This involved verifying existing conditions, calculating clearance timings and conflict factors, and measuring sight distance. KMJ conducted 14-hour manual turning movement traffic counts at both intersections and conducted capacity analysis using Synchro 9. (2017)

- **City of Philadelphia Roosevelt Boulevard Multimodal Corridor Program -Traffic Engineering, City of Philadelphia Department of Streets -** Responsible for developing the Synchro model. The City of Philadelphia Department of Streets has taken on the robust effort to transform the bustling yet problematic Roosevelt Boulevard to a modern multimodal transportation corridor. KMJ is responsible for preparing the Synchro Model for 40 complex intersections along the Roosevelt

Boulevard Corridor, between Broad Street and Devereaux Street. KMJ also conducted field observations, verified roadways and traffic signal conditions and collected data to verify the Synchro Model. (2015-2019)

- **Philadelphia International Airport On-Call Planning Services, Philadelphia PA- Individual's Responsibility** – Responsible for collecting and analyzing parking utilization data. The Philadelphia International Airport seeks to improve ground transportation options by providing a Transportation Network Companies (TNC) Parking facility. KMJ is responsible for the parking utilization analysis in the existing TNC Lot, and provide recommendations for a potential new valet/TNC Lot. KMJ also evaluated two traffic signals at the International Plaza Driveway and the Cell Phone Lot Driveway to determine congestion issues and potential improvements. This involved verifying existing conditions, calculating clearance timings and conflict factors, and measuring sight distance. KMJ conducted 14-hour manual turning movement traffic counts at both intersections and conducted capacity analysis using Synchro 9.

- **Pennsylvania Turnpike Commission - Procurement of Real Time Traffic Flow Data** – Responsible for collecting and summarizing data as part of this validation effort. The Pennsylvania Turnpike Commission (PTC) is working to have real-time speed and travel time information for selected sections of the Turnpike System. The dissemination of such information is a key component in the efficient use of transportation facilities, which in turn can be used to inform travelers. As part of this project, the PTC sought an independent source to collect travel time information to ensure the accuracy and reliability of the real-time data collected by the vendor. KMJ along with Texas A&M Transportation Institute are jointly conducting a validation of the vendor's real-time traffic information on the Pennsylvania Turnpike. The report summarizes data collected across 29 miles of rural and urban sections of the Turnpike, and is compared to the vendor's traffic data to meet PTC accuracy requirements. KMJ mapped out locations for sections of the Turnpike and installed BlueTOAD™ devices to collect high quality, timely, reliable, and relevant traffic speed and travel time information. (2014-2016)

- **City of Philadelphia Citywide Traffic Signal Retiming Initiative, City of Philadelphia Department of Streets** – Responsible for installation of BlueTOAD™ travel time data collection devices, analysis of BlueTOAD™ data, development of spreadsheets and graphics related to data visualization. In addition, he was responsible for data collection, and data management of travel time and delay studies conducted to compare conditions before and after traffic signal retiming for several major corridors within the City of Philadelphia. The City of Philadelphia sought to improve mobility and the flow of traffic along 21 major corridors within the City. Signal retiming remains as one of the most cost effective ways to improve traffic flow, increase capacity, and reduce congestion. (2011-2014)

- **New Jersey Department of Transportation Route 1 Left Turn Restrictions Travel Time Study-** Responsible for spotting, assessing, and evaluating key sites for BlueTOAD™ nodes and processing data from those nodes. The New Jersey Department of Transportation (NJDOT), in an effort to increase throughput and reduce delays on Route 1 (just north of I-95), introduced restrictions on left turns at select signalized intersections in West Windsor, Mercer County NJ. As a result, travelers were directed to use alternate routes. Travel time data was collected using BlueTOAD™ Bluetooth™ devices along a total of 28 routes during the course of the project to measure the impact of the left-turn restrictions. (2012)

- **I-95 Corridor Coalition Program Management, Administrative and Technical Support for the Vehicle Probe Project** – Responsible for pioneering, maintaining, and troubleshooting Adobe Connect as a web conferencing tool. Administered surveys to provide support to the VPP Suite User Group, comprised of DOTs and MPOs actively using the performance measures tools. KMJ provides support to the VPP Management Team through regular webcasts and coordination to ensure that issues are being identified and addressed in a timely fashion. KMJ supports the validation team by reviewing, and editing the validation reports. Assists the VPP Suite User Group comprised of DOTs and MPOs actively using the performance measures tools through webcasts and coordination. Worked with the Suite developers and users to identify new features that would best serve the members. KMJ guides these reports through the approval process and provides the information to the agency members of the VPP Team. KMJ organizes and conducts quarterly webcasts for the member agencies using the VPP data to keep the apprised of important project issues and provide a forum for exchange related to agency use of the data. (2004-2019)

- **30th Street Station Precinct Joint Master Plan** – Responsible for the traffic data collection assessed as part of this study. A 30th Street Station District Joint Master Plan is being developed with AMTRAK, Drexel University, and Brandywine Realty Trust. This Master Plan will take into account development in and around the 30th Street Station area, including Drexel University's Innovation Neighborhood. KMJ is responsible for collecting and evaluating the current vehicular traffic conditions in the area surrounding 30th Street Station; as well as comparing the current conditions to several studies previously conducted in the area. KMJ is also responsible for evaluating future conditions with new development in the area and determining recommendations for future congestion reduction (2014-2016)

- **City of Philadelphia Traffic Operations and ITS (TOITS), Lindbergh Boulevard and Hunting Park Avenue Traffic Signal Retiming, City of Philadelphia Department of Streets** – Responsible for travel time data collection and summarization. KMJ is responsible for traffic signal retiming along 14 intersections on Lindbergh Avenue and 15 intersections on Hunting Park Avenue. The City of Philadelphia seeks to improve mobility and the flow of traffic along major corridors within the City. Signal retiming remains as one of the most cost effective ways to improve traffic flow, increase capacity, and reduce congestion. (2013-2014)

- **City of Philadelphia Traffic Operations and ITS (TOITS), Allegheny Avenue and Academy Road Traffic Signal Retiming, City of Philadelphia Department of Streets** – Responsible for travel time data collection and summarization. KMJ was responsible for developing updated traffic signal timings for 21 intersections on Allegheny Avenue and 23 intersections on Academy Road. The City's objective is to improve traffic flow while providing for appropriate pedestrian clearance, yellow, and all-red times. Retiming traffic signals is one of the most cost effective ways to improve traffic flow, increase capacity, and reduce congestion. (2013-2015)

- **City of Philadelphia Traffic Operations and ITS (TOITS), Bustle ton Avenue South, City of Philadelphia Department of the Streets** – Responsible for travel time data collection and summarization. The City of Philadelphia Department of Streets seeks to identify, plan, design and construct improvements to make streets and intersections safer for all roadway users. This program is the design and implementation of traffic signal and operational safety improvements along several corridors in the City of Philadelphia through a federal TIGER 3 Grant. KMJ was responsible for preparing the safety a review report for the entire Bustleton Avenue South corridor along with preliminary and final design plans for 11 signalized intersections. (2012-2013)

- **City of Philadelphia On-Call ADA Design & Construction, City of Philadelphia Department of Streets –** Responsible for conducting field investigations, entering data, and creating summary sheets for the as-built reviews of 83 recently constructed curb ramps throughout the City of Philadelphia. Conducted field investigations to measure all controlling criteria needed to assess each ramp's compliance with PennDOT and Streets' Department ADA standards. This field work was performed using smart-levels and PennDOT's CS-4401 form and developing photo logs. A Quality Control (QC) checklist was also completed noting general conditions, pedestrian access route, ponding, triangular landing area, detectable warning surface, cheek wall, step & handrail, and on- street parking. Summary sheets for each ramp work order were created indicating the compliance status of each ramp (Acceptable or Ramps in Need of Repair/Reconstruction). Where ramps were deemed in need of repair/reconstruction, deficiencies found from the field investigations were noted. Identified deficiencies can then be corrected by the contractor to ensure the curb ramps are ADA compliant. (2013-2014)

- **City of Philadelphia Signal Integration Project, City of Philadelphia Department of Streets** – Responsible for the creation of intersection graphics for the KITS software, which is the advanced transportation management software used by the City of Philadelphia, Streets Department. These graphics incorporated the existing lane configurations and signal phasing. He is responsible for field investigation and verification of existing conditions. The City of Philadelphia Department of Streets seeks to integrate its existing signal system and implement an expanded Advanced Traffic Management System (ATMS). The City of Philadelphia has upgraded about 800 of its 3,000 traffic signals to Type 170 controllers. These upgrades will improve traffic signal coordination and mobility saving the driver both time and money. KMJ developed and deployed a consistent, repeatable and fail-safe process to produce intersection graphics and representative phasing movements for each intersection. This consistent process-driven approach will save the City money and provide a top-quality product. (2012-2013)

- **Delaware Department of Transportation Traffic Impact Study Services (Agreements 1528 &1654-1655) –** Responsible for performing reviews of completed traffic impact studies throughout the state of Delaware. This work includes data collection, field verification of intersections, development/review of current and projected traffic volumes, and analysis/review of existing and future traffic conditions both with and without the proposed site to identify potential impacts as a result of the development. In-depth investigations of the Synchro and/or HCS analyses will also be completed by KMJ staff to ensure proper modeling of the traffic operations. A list of recommendations is developed for the Final TIS review letter. (2013-2016)

- **Philadelphia Navy Yard Bus Study, Philadelphia Industrial Development Corporation (PIDC), Philadelphia, PA** – Responsible for travel time data collection to evaluate the bus service needs at the Navy Yard. The analysis of the effectiveness and efficiency of bus services always begins with an effort to collect timely, fresh data. The goal of the data collection task was to compile key service indicators to help frame a discussion of how well the existing transit routes are servicing their various clients and how efficiently the routes are being operated. KMJ conducted an initial review of potential service routes. KMJ also conducted travel time analysis including data collection in support of the new route development tasks. (2012)

- **Pennsylvania Department of Transportation E01254/E02599 District 6-0 Traffic Signal / Safety Support** – Responsible for data collection, management and analysis for before and after studies using PC Travel and associated hardware during traffic signal retiming. (2012-2018)

- **Pennsylvania Department of Transportation E01107 District 2-0 Highway Occupancy Permit (HOP) Application Reviews** – Responsible for data collection and analyses in the review of traffic impact studies, signal permit plans, level of service and capacity analyses, trip forecasting (generation, distribution, modal split, and assignment), signal warrant analyses, turn lane and phasing warrant analyses, signal timing, phasing, coordination, data collection and preparation of final review comments. (2011-2017)

- **River Avenue Improvement Initiative, Camden County, NJ -** Responsible for conducting the data collection in the development of the new traffic signal timings along River Avenue. The Coopers Ferry Development Association initiated a signal retiming study for River Avenue in Camden, New Jersey, in response to resident complaints. This corridor is used by motorists as an alternative to NJ Route 130 in Pennsauken Township, New Jersey. Traffic signal retiming was identified as a way to discourage use of the River Avenue corridor by heavy vehicles while maintaining intra-neighborhood travel times. As part of this project, KMJ is determining the new traffic signal timings along the River Avenue, in compliance with the current general practices, rules and guidelines followed by Camden County, New Jersey. (2015)

- **Winter Weather Response Plan, City of Philadelphia Department of Streets** – Assisted with preparations for focus groups with staff, and stakeholder and external partner interviews to understand available technology and state-of the-practice methods for snow removal, including chemical treatment, equipment, situational awareness and technology. (2015)

- **Environmental Impact Study Capacity Enhancement Program (CEP), Philadelphia International Airport, Philadelphia, PA** – Responsible for the analysis of transportation elements of this environmental impact statement prepared for the Philadelphia International Airport (PHL). Impacts to the internal and external transportation circulation system were explored and documented for the CEP. The three alternatives included re-alignment of the airport runway system that would have potential impact to the adjacent highway and freight rail network. Conducted LOS analysis for approximately 20 different intersections during peak periods for three alternatives in three future time frames. (2006)