

- c. We will evaluate **changing the flashing yellow arrow mode** from protected only to protected and permitted based upon left turn cross products to minimize left turn delay during off-peak periods
 - d. For early morning, mid-day off-peak, late evening and weekend periods, we will evaluate the need for left turn phases, to possibly **omit them on a time of day/ day of week basis**. Reducing phases is a strategy to shorten cycles during times of low volume.
4. Finally, there are other capabilities of the 2070, such as **nested cycles**, where lesser volume intersections can operate with alternating cycles (i.e. 60 and 80 seconds) while congested adjacent intersections use longer cycles (i.e. 140 seconds). This greatly reduces delays and citizen complaints from these other intersections while maintain coordination in the corridor.

We will evaluate and present the merits of these plus any other recommendations we may discover to the Division of Traffic Engineering prior to finalizing the timing plans.

4. Implementation and Field Adjustments for Timing Plans

URS will evaluate the newly implemented timing plans in the field immediately after downloading. We will drive with traffic and watch critical intersections from the roadside for any adjustments that may be deemed necessary. We will contact Traffic Engineering as soon as possible to discuss any necessary changes with the signal system operator(s) and/or signal technicians.

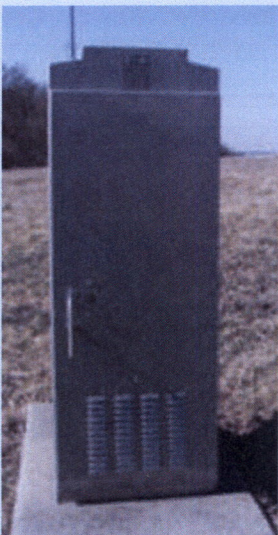
We will spend a considerable amount of our project time working in the field. The Synchro/ SimTraffic optimization package provides a good starting point, but we believe that the best timing plans are made in the field. Our expert knowledge of controller programming, street operations and years of field experience enables us to produce the best possible timing plans.

All field adjustments will be entered into our Synchro models so that Traffic Engineering will have up to date models of the timing plans as they were implemented.

5. Documentation of Results

We will perform a post implementation travel time study using Bluetooth technology. URS will use this before and after data to document the percent improvement in travel time and average travel speeds.

URS can produce one large report or smaller reports for each studied route. Because we are staggering the optimization and implementation to coincide with the data collection effort, it will be more time and cost effective to provide individual route reports. Each report will describe the step by step the methodologies, procedures, and results specific to each route. The reports will include final hardcopies of all required model output and a CD-ROM that contains the traffic modeling files for future LFUCG use. Three copies of each report will be provided.





The proposed outline for each report is as follows:

- Introduction
- Project Area Description & Map
- Existing Conditions
 - Field observations
 - Existing travel time
 - Existing timing plans & schedule
- Signal Timing Optimization
 - Recommended timing plans
 - Other recommended updates
 - Phasing
 - Vehicle & pedestrian clearances
- Evaluation of New Timing
 - After travel time study
 - Field observations
- Summary

Appendices

- Recommended Signal Timing (Wapiti Sheets)
- Synchro MOE Output
- Travel Time Data
- Traffic Count Diagrams

Schedule

We have a clear understanding that the LFUCG wants this project completed in a timely manner. Looking forward in the coming months, our traffic engineering staff has significant amounts of availability to aggressively tackle this project. We also have a firm understanding of the tasks associated with this project, which will lead to minimal schedule disruptions.

The figure below outlines our proposed schedule for this project. It is important to note that the pavement rehabilitation project on Versailles Road from Man o' War Boulevard to New Circle Road is not scheduled for completion until December 1, 2013. Therefore, the above schedule pertains to the other routes. URS proposes to perform all work on the other three routes within the required 120 day period. We propose to wait for traffic to return to normal levels on Versailles Road before beginning work. Once started, we will complete the work on Versailles Road in 90 days.

For schedule alternative1 below, it is imperative that the selection of the consultant and negotiation of the contract proceed quickly so the data can be collected before schools are out for the summer. If this process cannot be completed on that expedited schedule, we offer the schedule alternative 2.

Schedule Alternative 1 (assumes notice to proceed by May 1, 2013)	May	June	July	August
Traffic Counts				
Existing Travel Time Study				
Signal Timing Optimization				
Controller Programming				
Implementation & Adjustments				
After Travel Time Study				
Documentation				
Project duration May 1 to September 1, 2013				

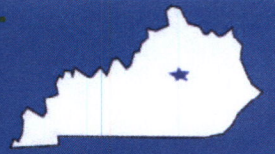
Schedule Alternative 2 (assumes notice to proceed by August 15, 2013)	August	September	October	November	December
Traffic Counts					
Existing Travel Time Study					
Signal Timing Optimization					
Controller Programming					
Implementation & Adjustments					
After Travel Time Study					
Documentation					
Project duration August 15 to December 15, 2013					



Why Select the URS Team?

- 1) We have the best Project Manager, Paul Slone, who**
 - * Is a leader in the field of on-street traffic operations**
 - * Has the most experience retiming signal systems**
 - * Is a former Traffic Signal Systems Manager for the LFUCG**
 - * Is knowledgeable about Lexington's current system and operations**
 - * Is well respected and trusted by Traffic Engineering**
- 2) We have a team of highly experienced traffic engineers**
- 3) We realize that our success is directly related to your success**
- 4) We are invested in Lexington and Central Kentucky with our projects and involvement with the Congestion Management Committee**

Thank you for your consideration of the URS Team



Local Employment

URS is pleased to team with Abbie Jones for this project. As a local DBE contractor 100% of the firm's involvement will produce local employment.

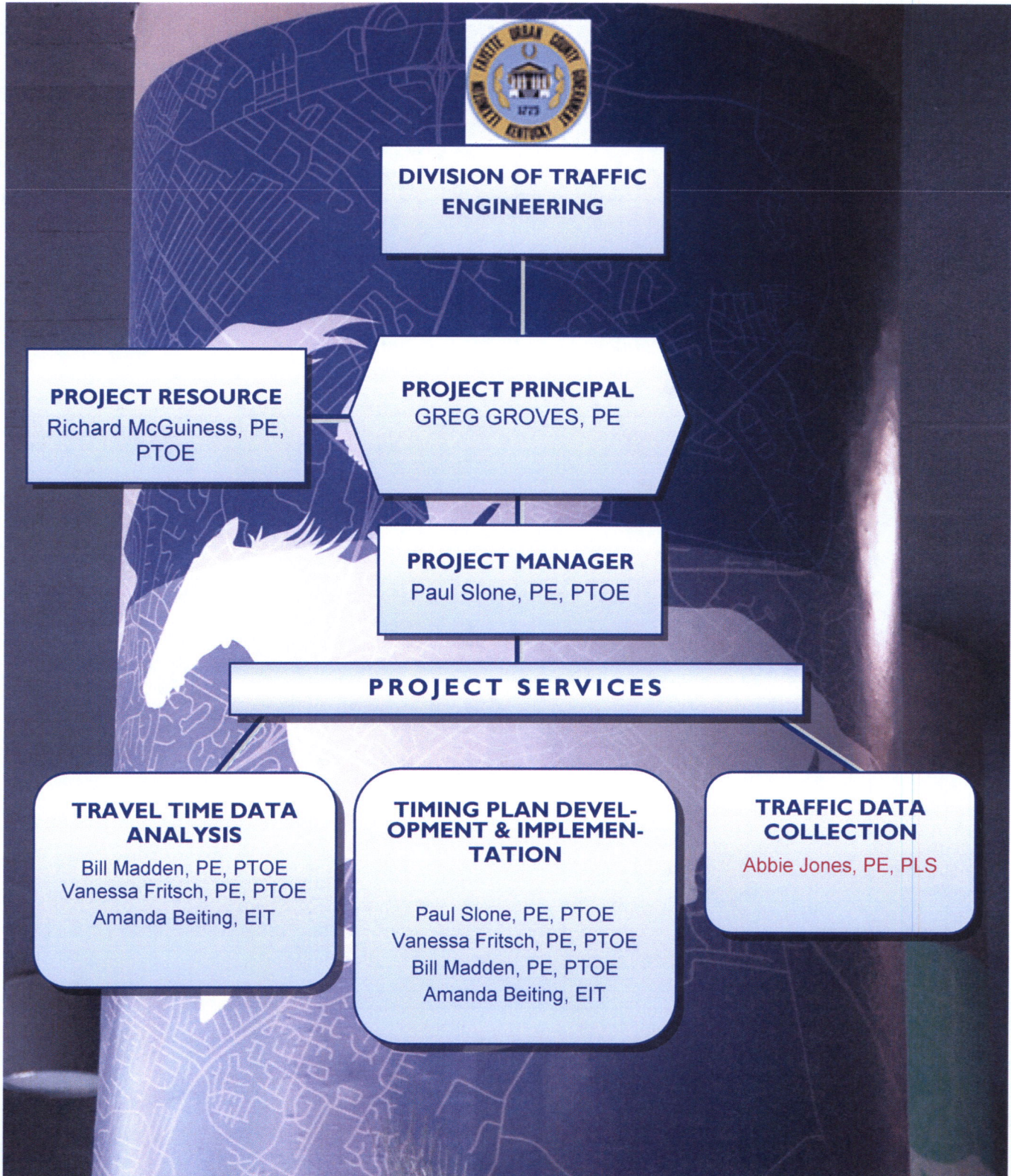
Similarly, proposed URS employees Paul Slone, Greg Groves, Vanessa Fritsch, and Bill Madden are residents of the Commonwealth living approximately 1.25 hours from the project areas.

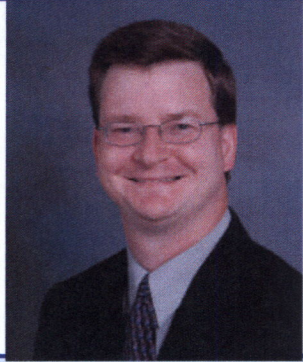
URS has offices in the Commonwealth in Louisville and Covington, as well as contract offices at Blue Grass Army Depot and Fort Knox. The Cincinnati, Ohio office has over 1/3 of its 90 employees living in the Commonwealth and providing income tax base and property taxes to the local communities.



PROJECT TEAM ORGANIZATIONAL CHART

URS **ABBIE JONES**





Paul A. Slone, PE, PTOE

Project Manager

Education

BS/1992/Civil Engineering/ University of Kentucky

Registration/Certification

Professional Engineer, Kentucky – 19880

Professional Traffic Operations Engineer (PTOE)

Areas of Expertise

- Traffic Operations & Analysis
- Traffic Signal Design & Timing
- Signal Timing Implementation
- Congestion Management
- Simulation Modeling
- Intersection/Interchange Design
- Traffic Impact Analysis

Years of Experience

21 Years, 7 with URS

Mr. Slone will serve as Project Manager. Mr. Slone is one of the top traffic operations engineers in the region.

He is highly skilled at finding solutions to today complex transportation problems. His well rounded experience with multiple public agencies gives him a unique perspective of the issues faced at the state and local levels. His attention to detail will serve this project well.

He is a former Traffic Signal Systems Manager for the LFUCG. He knows first hand the challenges of coordinating traffic signals in Lexington.

He is someone who is trusted by both the engineering and technician staffs to work inside of the signal equipment cabinets and work with the central system software, Centracs.

Experience Relevant to this project:

District 7 Traffic Engineering Services, Kentucky Transportation Cabinet (2007-present): Mr. Slone is the Program Manager for a staff augmentation contract for the KYTC District 7 Office (Lexington Area). Primary work activity is to assist on an as needed basis, with routine intersection studies to more specialized studies. Studies include traffic signal requests, speed studies plus various other traffic engineering studies, supervision of the district electrical contractor, and assisting with the day-to-day operation and management of the district's 277 traffic signals and 15 closed loop systems that are outside of Fayette County (Lexington maintains all state traffic signals in the county). **Specialized services for this contract include the US 27 Access Management Study, and developing signal construction plans for Newtown Pike and US 25 (Berea Rd.). URS was reselected to maintain this contract in 2009 and 2011.**

Statewide Traffic Engineering Services, Kentucky Transportation Cabinet (2007-present): Project Manager for providing specialized traffic engineering services under this statewide task order contract. Services include review and management of assigned coordinated traffic signal systems, collecting travel time data, developing traffic simulation models, signal retiming, and intersection inventories. Under this two-year contract, four Letter Agreements were assigned to analyze and recommend improvements to six coordinated networks. Networks ranged from small rural towns (Irvine, West Liberty, Maysville & Radcliff) to urbanized areas (Owensboro & Ashland). Now into the second iteration of this contract, URS is assisting the KYTC with three systems totaling 26 intersections in Paducah (Kentucky Avenue, Hinkleville Road and 28th Street).

ARRA Traffic Signal Retiming, Louisville Metro Government (2010-2012): Project Manager for developing new traffic signal timing plans on three major arterial routes in Louisville. The study area includes Dixie Highway (US 31W), Bardstown Road (US 31E) and Fern Valley Road (KY 1737) totaling 67 intersections. Routes vary from 35,000 to 55,000 vehicles per day. This project involved an extensive data collection effort, development of new signal timing, signal programming using TransPHAT and Centrax, and field implementation. URS utilized a Bluetooth base data collection system to analyze the before and post implementation travel times in each corridor. This system enabled URS to average hundreds of travel time runs from everyday roadway users.

District 5 Traffic Engineering Services, Kentucky Transportation Cabinet (2007-2009): Project Manager for this Six Year Highway Plan project to help the KYTC District 5 Office (Louisville Area) re-time traffic signal systems on eight arterial routes. In all, 63 intersections are included on some of Jefferson County's most heavily congested routes. Routes include Dixie Hwy (US 31W), Preston Hwy (KY 61), Outer Loop (KY 1065), Poplar Level Rd (KY 864), US 42 at I-264, Newburg Rd, and Blankenbaker Pkwy. Services included extensive traffic data collection, modeling and downloading signal timing directly to signal controllers and providing field support to adjust timing plans. As part of the modeling process, alternative signal phasing such as lead/lag, left turns and reversing order of split phased signals was evaluated.



Gregory T. Groves, PE

Project Principal

Education

BS/1989/Civil Engineering/ University of Kentucky

Registration/Certification

Professional Engineer, Kentucky – 18066

Areas of Expertise

Project Management
Transportation Planning
Pre-Construction Management
Roadway
Transportation
Decision Making

Years of Experience

With URS: 7 Years
With KYTC: 17 Years

Mr. Groves serves as the Director of Transportation for the Indianapolis, Louisville, and Cincinnati offices of URS as well as being the Louisville Office Manager; responsible for the operation of a 60+ person office that includes several engineering and environmental disciplines serving both public and private clients. Mr. Groves oversees all transportation projects including traffic projects and works with all project managers to assist them with the administrative tasks and allocation of personnel resources to make URS projects run efficiently and help to satisfy the demands of the schedule of the projects.

One of his key goals for the 2013 fiscal year is to serve **all communities** of the Commonwealth and to expand his working knowledge of the Lexington Metropolitan Area.

Experience Relevant to this project:

TRAFFIC PROJECTS

Principal in Charge, Statewide Roadway Services Roundabout Policy Development, Kentucky Transportation Cabinet. URS's role in this project was to provide a practitioner's perspective and technical input into the 2010 revision to the KYTC's Roundabout Policy. Project consisted to several regular meetings to discuss the evolving policy document being constructed the Kentucky Transportation Center.

Preconstruction Branch Manager, Jefferson County, US 42 at Seminary Drive. Mr. Groves was the Preconstruction Branch Manager during the development of this intersection reconstruction project which improved the traffic flow and safety by the addition of left turn lanes at each of the intersection legs. This project was completed on an accelerated schedule to aid in the development of a major housing complex in the area.

Principal in Charge, Statewide Roadway Services Rineyville Roundabout Independent Technical Review (QA/QC), Kentucky Transportation Cabinet. This project required the independent engineering review of the proposed roundabout at KY 1600 and KY 220 in Rineyville (Hardin County). URS checked traffic analysis comparing a traditional intersection and the proposed roundabout as well as developing a VISSIM simulation model of the recommended roundabout.

Statewide Roadway Services Roundabout Policy Development, Kentucky Transportation Cabinet: Principal in Charge where URS's role in this project was to provide a practitioner's perspective and technical input into the 2010 revision to the KYTC's Roundabout Policy. Project consisted to several regular meetings to discuss the evolving policy document being constructed the Kentucky Transportation Center.

Jefferson County, Eastern Parkway Safety Improvements: Principal in Charge of project consisted of improvements to Eastern Parkway from I-65 to 3rd Street near the University of Louisville Belknap Campus. The project included studying alternate alignments, grades, environmental constraints, traffic signal operations, pedestrian crossing patterns, public involvement, streetscape planning and cost estimates in order to select a preferred alignment. A bridge over CSX Railroad is within the limits of the project. This project has won several awards on both the state and national levels. The project was the recipient of the 2010 American Public Works Association – Kentucky Chapter (APWA) "Project of the Year" in the roadway category; the 2010 Kentuckiana Associated Builders and Contractors (ABC) "Award of Excellence"; the 2010 ABC/BKD CPAs and Advisors "BKD President's Award in Construction"; and the 2010 National ABC "Excellence in Construction – Eagle Award."



Vanessa M. Fritsch, PE, PTOE

Senior Traffic Engineer

Education

BS/2003/Civil Engineering/ University of Kentucky

Registration/Certification

Professional Engineer, Kentucky – 26090

Professional Traffic Operations Engineer (PTOE)

Areas of Expertise

- Traffic Operations & Analysis
- Traffic Signal Design & Timing
- Signal Timing Implementation
- Congestion Management
- Simulation Modeling
- Traffic Impact Analysis

Years of Experience

With URS: 6.5 Years

With Other Firms: 2.5 Years

Ms. Fritsch is a Senior Traffic Engineer with expertise in the fields of Signal Design, Signal System Timing, Traffic Control and Intersection Design. She has over 10 years of experience with consulting firms. Ms. Fritsch has experience in signal design, system timing, traffic studies, lighting, traffic control, signing, plan preparation, maintenance of traffic plans, quantity calculations, and construction cost estimates.

Ms. Fritsch has extensive experience in signal design and signal system timing. The majority of Ms. Fritsch's work has involved serving as an extension of local public agencies, such as the Kentucky Transportation Cabinet and the City of Cincinnati to assist in Traffic Engineering. She is a registered PE in both Kentucky and Ohio and a PTOE. **She is a resident of Northern Kentucky and a proud alumni of the University of Kentucky.**

Experience Relevant to this project:

District 7 Traffic Engineering Services, Kentucky Transportation Cabinet (2007-present): Project Engineer providing staff augmentation to the KYTC District 7 Office Staff. Contractual duties include performing signal warrant studies, speed studies, performing signal installation inspections, managing 15 closed loop signal systems. In the first year of the contract, URS evaluated over 100 intersections. After renewal in 2009, the contract included traffic signal warrant studies, left turn evaluations, and a sign inventory that includes 65 miles of roadway. In 2011, the contract was renewed again. The services include and access management study on US 27 in Nicholasville, signal system retiming in Georgetown near the Toyota plant and continued intersection evaluations for left turn phases and signal warrants, and the US 27 Access Management study..

Statewide Traffic Engineering Services, Kentucky Transportation Cabinet (2007-present): Project Engineer providing a broad range of traffic engineering services under this statewide contract. Services include annual review and management of assigned coordinated traffic signal systems, collecting travel time data, speed studies, performing capacity analysis and developing traffic simulation models. From 2007-2010, URS has worked on five signal systems: KY 52/89 in Irvine (3 intersections), US 31W in Radcliffe (3 intersections), US 431 in Owensboro (19 intersections), US 460 in West Liberty (3 intersections) and US 62X in Maysville (4 intersections). URS continued this work with a renew contract from 2010-13, and have received 3 new letter agreements including: 3 signal systems in Paducah totaling 28 intersections evaluated, the downtown Covington area was evaluated and retimed totaling 55 signals, and the downtown Grayson system with 6 signals on two routes.

ARRA Traffic Signal Retiming, Louisville Metro Government (2010-2012): The study area includes Dixie Highway (US 31W), Bardstown Road (US 31E) and Fern Valley Road (KY 1737) totaling 67 intersections. Routes vary from 35,000 to 55,000 vehicles per day. This project involved an extensive data collection effort, development of new signal timing, signal programming using TransPHAT and Centrax, and field implementation. URS utilized a Bluetooth base data collection system to analyze the before and post implementation travel times in each corridor.

District 5 Traffic Engineering Services, Kentucky Transportation Cabinet (2007-2009): Project Engineer providing detailed corridor analyses. Services include evaluation of assigned coordinated traffic signal systems, collecting travel time data, speed studies, performing capacity analysis and developing traffic simulation models to optimize timing. The assigned signal systems include: Preston Highway (8 intersections), Poplar Level Road (8 intersections), Outer Loop Road (4 intersections) and Dixie Highway (21 intersections), US 42 (5 intersections), Newburg Road (5 intersections) and Blankenbaker Road (7 intersections).

Specialty ITS Services, Kentucky Transportation Cabinet District 5: Ms. Fritsch has been involved in the signal construction plans for the specialty systems designed for District 5 including the Over height warning system at the University of Louisville, Eastern Parkway improvements project and the 1-265 train crossing warning system. She has completed the training courses required and holds the prequalification for highway lighting with KYTC.



William F. Madden , PE, PTOE

Senior Traffic Engineer

Education

BS/1984/Civil Engineering/ University of Kentucky

Registration/Certification

Professional Engineer, Kentucky – 15943

Professional Traffic Operations Engineer (PTOE)

Areas of Expertise

Traffic signal timing
Signal system timing
Signing, pavement marking
Trip generation

Years of Experience

With URS: 5 Years
With KYTC: 23 Years

Mr. Madden is a project engineer with URS after 23 years with Kentucky Transportation Cabinet (KYTC). He performs intersection studies and traffic engineering services for the projects within the Cincinnati office and consults with our offices in Indianapolis and Columbus for such work within the OKI area. He serves as the Quality Control officer for the entire transportation department of the Cincinnati office and has received a quarterly quality award for his work in streamlining detail checks and assuring the quality of our internal systems. He is experienced in several areas of traffic engineering. **He is a Northern Kentucky resident , and a proud Alumni of the University of Kentucky and a UK Parent.**

Experience Relevant to this project:

District 7 Traffic Engineering Services Contract, KYTC (2007-Present): Mr. Madden is the project engineer responsible for performing operational reviews of traffic signal installation and modification requests, safety studies, and signing inventories. Since inception, 160 intersections and eight signal systems have been reviewed. This is a multi-year contract that was renewed in 2009 and 2011. Under the current contract, URS has studied and made recommendations for 26 intersections, retimed a signal system in Georgetown (18 signals), provided traffic signal and lighting design for 3 intersections and performed an extensive access management plan for US 27.

Statewide Traffic Engineering Services Contract, KYTC (2007-Present): Project Engineer responsible for providing a broad range of traffic engineering services under this statewide contract. Services include annual review and management of assigned coordinated traffic signal systems, collecting travel time data, speed studies, performing capacity analysis and developing traffic simulation models. To date, URS has worked on 11 signal systems: US 60 in Paducah, (26 intersections), Various Routes in Covington (38 intersections), Multiple Routes in Northern KY (16 intersections), US 431 in Owensboro (19 intersections), and smaller systems in West Liberty, Maysville, Irvine, Florence, Ludlow, Covington and Radcliffe. This contract was renewed in 2011.

ARRA Traffic Signal Retiming, Louisville Metro Government (2010-2012): Project Engineer for developing new traffic signal timing plans on three major arterial routes in Louisville. The study area includes Dixie Highway (US 31W), Bardstown Road (US 31E) and Fern Valley Road (KY 1737) totaling 67 intersections. Routes vary from 35,000 to 55,000 vehicles per day. This project involved an extensive data collection effort, development of new signal timing, signal programming using TransPHAT and Centrax, and field implementation. URS utilized a Bluetooth base data collection system to analyze the before and post implementation travel times in each corridor.

Transportation Engineering Branch Manager, Traffic & Permits, KYTC, (2001-2007) Covington, KY:

- Investigated customer service requests relating to all aspects of traffic operations, including traffic signal timing, signal system timing, signing, and marking. Implemented solutions based on the results of these investigations.
- Investigated and approved encroachment permits for all utility and entrance encroachments on state right-of-way.
- Reviewed and provided input to other branches concerning traffic issues for all roadway design and construction projects.
- Provided written and verbal reports to all customers concerning the results of investigations into customer service complaints.

Served as KYTC's local representative to ARTIMIS, the freeway incident management system for the greater Cincinnati area.