TRI-COUNTY TCRPC REGIONAL PLANNING COMMISSION

Tri-County Regional Planning Commission
Request for Qualifications
Engineer/Planner for Federal Aid Projects

Proposal Date: June 20, 2025

Whitman, Requardt & Associates, LLP
4900 Ritter Road, Suite 130
Mechanicsburg, PA 17055
Gregory Frisby, PE, PTOE
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WRA

Whitman, Requardt & Associates, LLP
Engineers · Architects · Environmental Planners Est. 1915

June 20, 2025

Mr. Andrew Bomberger, AICP
Executive Director
Tri-County Regional Planning Commission
112 Market Street, 2nd Floor
Harrisburg, PA 17101

Re: **Engineer/Planner for Federal Aid Projects** – Statement of Interest

Dear Mr. Bomberger:

Whitman, Requardt, & Associates, LLP (WRA) is pleased to provide this Statement of Interest for retention by the Tri-County Regional Planning Commission (TCRPC) as **Engineer/Planner for Federal Aid Projects.**

WRA is a full-service engineering, planning, and architectural firm headquartered in Baltimore, MD that has provided professional services since 1915. We will manage and provide services for this project from our local Mechanicsburg, PA office with support from our six other PA offices and Wilmington, DE office as individual tasks require. WRA will serve as the lead firm for our team; **Mr. Greg Frisby, PE, PTOE, will be our Project Manager and primary point of contact: WRA; 4900 Ritter Road, Suite 130, Mechanicsburg, PA 17055; gfrisby@wrallp.com; 717-748-9021.** Greg has worked on numerous transportation planning and engineering studies throughout his career. He will be supported by WRA's **Chad Reese, PE (Planning Lead), Dan Fritz, PE, PTOE (Traffic Lead)**, and **Chris Banner, PE (Design Lead)** for this project. Supplemental roles will be filled using key staff identified in our organizational chart.

We have assembled a project team that brings an extensive and unique combination of local and regional/national experience leading transportation planning services for MPO/RPO, state, and municipal clients across the Mid-Atlantic. As lead firm, **WRA** will provide project oversight and engineering/planning services via our Pennsylvania staff who regularly collaborate on assignments from local designs to corridor studies, countywide to regional plans/programs, and statewide systems to policy-level support. In fact, many of WRA's corporate-wide technical leads for specialized services such as land use/scenario planning, travel demand modeling, forecasting, simulation analyses, and freight planning reside in Pennsylvania. WRA can also provide all engineering design services or oversight that may be required, including roadway/bridge design, SWM modeling/design, surveying, utility & right-of-way clearance, cost estimation, bid document preparation, contract administration, and construction inspection.

Our team includes several PennDOT registered business partners to provide specialty services including **Paschak+MTR** and **Rockland Planning** for planning support; and **NTM Engineering** for environmental studies/planning and SWM. Collectively, our team's proposed keys to success for TCRPC include:

(1) Expertise with Customization: We pride ourselves on providing ample staff with multidisciplinary expertise to provide customized and innovative solutions that fit the context and needs of every project we encounter.

(2) Quality via Service: We value the personal approach of a smaller firm; and we always strive to treat people well, work diligently to understand their needs, and deliver solutions that exceed expectations. Our customer-service focus, responsiveness, and the quality of our work are evidenced by our repeat business with satisfied clients.

(3) Practical Vision to Implementation. We know what it takes to get a project approved, permitted, and built, and we have the foresight to integrate that knowledge at the earliest stages of planning and project development.

We appreciate the opportunity to submit this Statement of Interest, and we would commit both our experience and enthusiasm to supporting TCRPC's needs if selected.

Sincerely,

Whitman, Requardt and Associates, LLP

Rob Wills, PE, Vice President

Enclosures

Team Qualifications and Experience

Whitman, Requardt, & Associates, LLP (WRA) and its partners propose to support the Tri-County Regional Planning Commission (TCRPC) and their overall engineering/planning needs for federal aid projects by providing a diverse staff and resources that will balance expertise and appropriately scaled planning, engineering, and design perspectives. WRA is joined by **Pashek+MTR (PMTR, DBE), Rockland Planning (DBE), and NTM Engineering (DBE)**. Our team's staff includes a multidisciplinary mix of planning, traffic, and design experts that will ensure the capacity and capability to deliver any type of assignment from TCRPC.

Keys to Success

- ✓ **Expertise with Customization**
- ✓ **Quality via Service**
- ✓ **Practical Vision to Implementation**

Technical Knowledge and Experience

Our team has the expertise and breadth of planning, engineering, and design service experience to support TCRPC and a potentially diverse group of stakeholders. We have assembled a team with both national and local experience to add innovation and state-of-the-practice solutions that have successfully provided all of TCRPC's requested services for both regional and local public sector clients. A sample of our team's experience is summarized below with further details on select projects included on the following page as well as highlights of our unique freight planning expertise.

Project and Technical Area Matrix

	Agencies				Required Technical Areas to Support TCRPC									
	MPO / RPO	State	Federal	City / Municipal / Other	Roadway/Bridge Design and Cost Estimating	Traffic Management Facilities	Travel Demand Modeling, Studies, & Data Analytics	Emerging Transp. Trends and Project Needs Eval.	Safety, Congestion Mgmt, and Freight Planning	Land Use and Growth Management	Non-Motorized Planning and Design	GIS, Visualization, & Scenario Planning	Environmental Studies and Planning	Storm Water Management
Regional Planning														
Mercer Co. LRTP	L	S	S	S	+		+		+	+	+			
Erie Co. LRTP	L	S	S	S	+		+		+	+	+	+		
Centre Co. Travel Demand Model	L			S			+	+	+	+	+			
SPC Active Transportation Report	L	S	S	S					+	+	+	+		
Westmoreland Co. Transit Development	L	S		S			+	+		+		+		
MWCOG Transportation/Land Use	L	S	S	S			+	+	+	+	+	+		
Mercer Co. CMP Update	L	S					+		+	+		+		
Local Planning														
SPC On-Call Support Services	L	S		S	+		+	+	+	+	+	+		
Good Hope Road Study	S	L		S	+		+		+	+	+	+	+	
PA 283/230 Corridor Study	L			S		+	+		+	+	+	+		
Brodhead Road Corridor Study	L	S		S	+		+	+	+	+	+	+		
SR 885/2nd Ave Multimodal Study	L	S	S	S	+		+	+	+	+	+	+		
ATCMTD/Smart Cities Syst. Eng.	S	L	S	L	+	+		+	+	+	+			
12th Street Reimagined	L	S	S	S	+			+	+		+	+		
I-81 Exit 5 Study	S	L	S	S	+		+		+	+	+	+	+	+
Greenville Pedestrian Circulation Study	L	S	S	S	+		+	+	+		+			
Planning, Engineering & Design														
US 62 Safety Study	S	L		S	+		+		+	+	+	+		
Carson St Corridor Improvements	S	L		S	+			+	+		+	+		+
Forbes Ave Corridor Improvements	S	L		S	+		+	+	+		+			+
Big-I Roundabout	S	L		S	+		+	+	+	+	+	+	+	+
Duke Street Mobility Project (Lanc.)	S	S		L	+			+			+	+		+
Church Street Complete Streets (Lanc.)	S	L		L	+			+			+	+		+
I-81 Carlisle Master Plan	S	L	S	S	+		+	+	+	+		+	+	+
Middletown Road Improvement Project	S	L	S	S	+		+	+	+	+				
I-83 Section 079 Reconstruction Project	S	L	S	S	+		+					+	+	
Interstate 81/83 NB Merge Lane Project	S	L	S	S								+	+	

Table Legend: L (Lead Agency), S (Support Role/Major Partner), (Emphasis Area)

Good Hope Road Study (Hampden Twp, Cumberland County): WRA completed this multimodal transportation study for PennDOT, TCRPC, and Hampden Township to identify potential transportation improvement alternatives for this critical 3.5 mile corridor. Key components of the study included stakeholder engagement, public involvement, and concept development for widening alternatives along narrow portions of the roadway constrained by the Conodoguinet Creek and steep vertical inclines with a dense tree canopy. The study culminated with a public presentation that garnered a high level of community interest and attendance due to a series of recent highly-publicized safety incidents.

SR 283/230 Corridor Study (Lancaster County Planning Commission, LCPC): WRA developed an innovative planning approach to improve economic development opportunities and reduce the need for transportation system expansion by evaluating land use and transportation harmoniously along SR 283/230 between Dauphin County and Lancaster City. WRA coupled a state-of-the-art parcel scorecard and custom GIS tool to analyze land use type metrics for over 1,300 parcels to determine an optimal land use scenario which was subsequently assessed through a customized post processor to harness information from the County's TDM to evaluate measures of effectiveness. The study results validated the importance of sound land use decision-making and its impact on the transportation system so that transportation investments are maximized.

SR 885/Second Avenue Multimodal Corridor Study (Southwestern Pennsylvania Commission, SPC): WRA led this multimodal plan to accommodate the impacts from the upcoming Hazelwood Green development, the first phase of which will add 8 million SF of mixed-use development to the already-congested corridor. A variety of innovative public outreach strategies including online surveys, an interactive wiki map, and face-to-face meetings with key stakeholders and the public were deployed to aid existing condition and future need assessments. To streamline and improve the accuracy of the analysis, WRA developed a sub-area model based on SPC's Regional Model and supplemented with Streetlight O-D data to quantify performance-based results to support improvement alternatives and benefit:cost ratios. The study resulted in a mix of multimodal options and travel demand management strategies) to accommodate an additional 8,300 afternoon rush hour trips.

12th Street Reimagined (Erie MPO): WRA and PMTR completed this corridor planning study that resulted in a set of market-supported land use and transportation improvement strategies for the corridor that is primed for redevelopment opportunities. The plan includes short, mid, and long-term recommendations to upgrade corridor functionality and safety for all users. The community-driven planning process was grounded in intensive public and stakeholder engagement and market research to ensure that the recommendations would be practical, feasibile, and respond to area-specific post pandemic market conditions.

Freight Planning

WRA offers a unique blend of planning, engineering, data analytics, modeling, and design expertise to support freight studies and broader strategic plans that encompass local, regional, and statewide perspectives to yield practical insights to a wide range of freight system interests from site-specific multimodal infrastructure needs, to freight network planning and routing, to strategic plans that align with state/federal freight policies. Examples include:

- Statewide Freight Plans
  - Delaware (2015, 2017, 2022, and 2026)
  - Maryland (2022)
  - New Hampshire (2019)
- Regional Freight Plans/Studies
  - SPC (2016, 2022)
  - WILMPACO 2025 First/Final Mile Network Update
- Municipal Freight Plans and Truck Routing Studies
  - Delaware (Dover, Milton, and Milford)
  - Titusville, PA (Northwest Commission)
  - Sharon, PA (MCRPC)
- Intermodal Feasibility Studies
  - Harrington, DE (Transload Terminal Study), Sharpsville, PA (Bulk Handling Facility Study)
  - Confidential Port Access Site
- Freight data analytics and methodology support for FHWA, TETC, and FDOT; and freight model development for DOT clients in PA, DE, FL, GA, and LA
- Freight program and technical support for Pennsylvania Motor Carrier Safety Advisory Committee (MCSAC), PennDOT CO Special Hauling Unit, Delmarva Freight Working Group, DelDOT Truck Parking Group

Brodhead Road Corridor Planning Study (SPC): WRA led this 11-mile multimodal corridor planning study in partnership with the SPC. Study efforts included corridor-wide field view and walkability assessment teams, HSM based safety reviews, traffic operations modeling using PTV Vistro software, and extensive virtual outreach with SPC, a project steering committee, stakeholder groups, Beaver County officials, and the general public. Improvement alternatives were explored at 22 primary study intersections and other key locations to include typical section upgrades, transit, pedestrian and bicycle network enhancements, turn lanes, signal upgrades and additions. Major reconfigurations at key locations explored widening, roundabouts, left-turn acceleration (LTA) and continuous Green-T (CGT) options. Final study efforts compiled a long-term corridor improvement plan and related project implementation documentation to support future local, county, and regional planning and programming decisions.

Knowledge and Experience in Integration of Planning Concepts with Transportation Needs and Concept Development

The greatest accomplishment for any planner or engineer is to see their plan, study, or concept evolve from a community idea, want, or need into a fully constructed/implemented project. WRA's ***"concept to execution"*** culture is a cornerstone to transportation plans we have developed and one that has allowed us to develop a strong reputation for producing plans that are innovative, customized, and practical. Our collaborative culture allows us to combine cutting edge data analytics, modeling, scenario planning, stakeholder and public engagement strategies with real-world design and implementation to understand the entire transportation project development process from planning through construction.

Our team understands client resource constraints in today's fiscal climate, so we work closely with our clients to provide solutions that achieve their goals while acknowledging available resources. We are able to do so by leveraging our national expertise and innovation to determine meaningful, performance-based metrics.

We understand that effective outreach and communication among the local community and key stakeholders is the foundation of any successful planning project. We have always relied on effective outreach at the outset of every plan or project, even prior to the conception of the PennDOT Connects process. We take pride in listening to our client and the community throughout the planning process to ensure our solutions are going to address their fundamental needs.

One of the most effective tools to turn those needs and conceptual improvements into built projects is a good implementation plan. We facilitate implementation by clearly describing plan recommendations, developing reliable cost estimates for recommended improvements, properly assigning a responsible party for each recommendation, and establishing accountability mechanisms to track implementation progress. WRA's "monitoring and activating" methodology has been particularly effective at resulting in on-the-ground implementation. This process involves regular (generally annual) monitoring of key performance measures such as congestion, safety, transit on-time performance, bicycle level of stress, and pedestrian network connectivity. When performance falls below designated levels, projects are programmed for implementation. This allows for "just-in-time" construction, ensuring projects are built as the need arises, and fosters clear understanding of the implementation process among stakeholders. Some example projects that highlight the integration of planning concepts with transportation needs and concept development include:

East Carson Street Corridor Safety Improvements (PennDOT District 11-0): WRA completed this project to address congestion, mobility, and safety issues on 2.6 miles of East Carson Street in the South Side of Pittsburgh. The WRA team engaged more than 30 local stakeholders with competing interests using a combination of individual stakeholder meetings and town-hall public meetings to garner consensus for improvements. We successfully combined detailed safety and operational analyses into understandable display boards and presentations to aid us in soliciting feedback for a locally preferred alternative. The project resulted in the implementation of traffic signal and safety enhancements which included 12 traffic signal replacements, transit bulb stops, curb extensions, sidewalk and bike lane connections, and new LED street lighting.

I-81 Carlisle Master Plan (PennDOT District 8-0): WRA developed a Master Plan to identify projects that will improve the poor roadway conditions, safety, traffic operations and system linkage through the I-81 Carlisle corridor. We built upon previous macroscopic studies of I-81, including TCRPC's I-81 Improvement Strategy, to shape a corridor vision informed by a more detailed analysis of local and regional factors. Alternatives were developed and a preferred concept was ultimately chosen. In concert with TCRPC's study, we developed an Implementation Plan to break the corridor into "fundable" projects that when all completed, address the purpose and need of the corridor now and into the future. District 8-0 is in the process of applying this implementation plan to move forward.

"Big I" Roundabout (PennDOT District 1-0): An excellent example of our team's planning to implementation expertise is WRA's "Big I" Roundabout Project in Vernon Township, Crawford County. WRA identified a roundabout at this location as a potential solution in the Meadville Traffic & Land Use Study, which evolved into the design of a multi-lane roundabout to improve safety, pedestrian connectivity, and traffic flow. This WRA-designed project was awarded ***Project of the Year by the ASHE Franklin Section.***

Forbes Avenue Corridor Improvements (PennDOT District 11-0): WRA was responsible for identifying and designing pedestrian & bicycle safety/mobility improvements along this urban 1.8-mile corridor that connects the Carnegie Mellon University and University of Pittsburgh campuses. WRA performed an RSA to identify countermeasures to address multimodal safety and operations. The RSA resulted in the analysis of four road diet/complete streets options between Craft Avenue and Craig Street to determine whether excess capacity was available to reallocate a travel lane for other multimodal opportunities. Implemented improvements on Forbes Avenue included bike lanes adjacent to the curb, one travel lane per direction with center left-turn lanes at all intersections/driveways, and an adaptive signal system with ethernet communication.

> *"District 11-0 is proud of the accomplishments set forth by WRA and the **Forbes Avenue Corridor Improvements** project team. They have provided a soundly engineered and constructed project that not only meets the needs of the community and traveling public but exceeds the expectations of everyone involved."*
>
> ***Doug Seeley, PennDOT District 11-0 ADE-Design***

Product Quality Assurance

Quality Control Process	
Develop PSQMP	**QA/QC**
✓ Define Team Roles ○ Contact List ✓ Reference Documents ✓ Key Deliverables ✓ Work Plan and Schedule ✓ Review Procedures ✓ Tech & Submittal Checklist	✓ Internal & Subconsultant Review ✓ WRA technical lead review ✓ Project Manager Review ✓ QA/QC Manager Review

Quality Control and Quality Assurance (QA/QC) procedures under this agreement will comply with WRA's Quality Management Plan (QMP) for Pennsylvania transportation projects. As part of our QMP process, we will develop a project specific QMP to clearly define team roles and will include a project personnel/contact list, reference documents, key deliverables, work plan and schedule, QA/QC review procedures, and relevant technical or submittal checklists. Our internal schedules include submission dates for QA/QC reviews which are set to allow for adequate review time as well as the subsequent revisions resulting from the review. Technical leads will ensure quality in each phase of an assignment and each deliverable will be reviewed and checked by at least one of WRA's Technical Quality Advisors for this project.

Scott Thompson-Graves, PE, PTOE (29 yrs) will serve as **Planning/Traffic Technical Quality Advisor**. Scott is responsible for WRA's transportation planning and traffic engineering groups in PA and has led or assisted with dozens of transportation planning projects in PA and nationally, including all of WRA's projects mentioned in this proposal. **Rob Wills, PE (27 yrs)** will be the **Design Technical Quality Advisor**. Rob oversees WRA's Central/Eastern PA Transportation Design and is responsible for QA/QC of all roadway, traffic and bridge design projects.

As part of this plan, subconsultants will verify completion of their own internal reviews by signing WRA's Subconsultant Quality Verification Form before their submittals undergo a review by WRA. The following product quality leads have been assigned by our subconsultants: John O. Buerkle, Jr., RLA, AICP of PMTR, Toby Fauver, FAICP of Rockland Planning, and Namita Sinha, MS, EIT of NTM Engineering. Each of these subconsultant firms have excellent reputations based on the quality of their work. Our subconsultants must adhere to the QA/QC submission dates so that WRA can review the entire submission at one time to ensure consistency and accuracy. These procedures ensure that all submittals receive the appropriate review prior to submission.

Quality is not just about formal procedures or end-of-the-process checks and reviews. Our entire team works under a philosophy in which quality is an integral and ongoing mindset woven into the accuracy and completeness of all proposed data compilations, analyses, communications efforts, products, and deliverables throughout every stage of an assignment. Based on our experience completing similar assignments, key staff and technical leads routinely engage senior-level and specialty service experts early and often for peer reviews and exchanges to make sure the team is efficiently working toward a common goal: that our final products exceed our clients' needs. Where unique issues or topics are at play, independent reviewers may also be assigned to perform additional reviews.

Cost-Effective Project Planning / Design

WRA makes a conscientious effort to avoid the typical planning and engineering silos to ensure our transportation staff are well-rounded and see the big picture regarding the project development process. As evidenced in our organizational chart, the majority of our planners are also professional engineers which has been instrumental in project identification, prioritization, and realistic cost estimating for project implementation. ***Incorporating engineering design principles in the planning process to identify feasible/constructible projects with the highest benefit is a cornerstone of our planning assignments.***

Keys to Cost-Effective Project Planning/Design

- Engage stakeholders/public early to understand project needs/vision and remain engaged to create collaborative environment to lessen likelihood of costly redesigns.
- Use online public engagement for high impact, low cost.
- Develop a purpose statement based on project needs to avoid scope creep that may result in less cost-effective improvements.
- Utilize a data driven approach (traffic simulation models, big data analytics, etc.) to develop optimal concepts.
- Perform a lifecycle cost analysis with realistic cost estimates that consider escalation until implementation, environmental impact, and future M&O costs.
- Utilize a benefit/cost ratio evaluation to identify and prioritize feasible/constructible projects.
- Leverage technology and innovation in design to develop efficiency-driven improvements.
- Develop an implementation plan that allows for project progression utilizing "fundable" projects that meet the overall project vision.

We believe in collaborating with our clients throughout the planning process and will assign the appropriate technical experts from our team to ensure the projects identified are addressing the core needs of our client and the communities they serve while maximizing available transportation funding. Our team of experts are able to leverage our nationally recognized modeling and design expertise to ensure every project proposed is feasible from an operational, environmental, and geometric perspective. Harmonizing planning and engineering/design has allowed us to develop a strong reputation for producing plans that are customized, innovative, technical, and cost-effective and that routinely result in implemented/constructed projects.

Knowledge of MPO Operations, Governing Regulations and Roles

Through ongoing transportation planning open-end agreements with clients across PA, DE, MD and nationally, the WRA team has completed a wide array of transportation planning services. This work spans regional long-range planning, performance measures, prioritization, corridor studies and design, non-motorized planning and design, transit planning, financial planning, and programming. We have stood side by side with our MPO partners and understand both the written and unwritten regulations they operate under. We are equally comfortable and adept in both the high-level policy development and detailed implementation realms, allowing our team to bring a level of agility and effectiveness that will help TCRPC continue to improve the quality of life for its communities.

We understand the critical role that MPOs play in our transportation system, often as a facilitator to foster cooperation amongst a variety of public and private stakeholders while simultaneously ensuring that taxpayer dollars are used effectively.

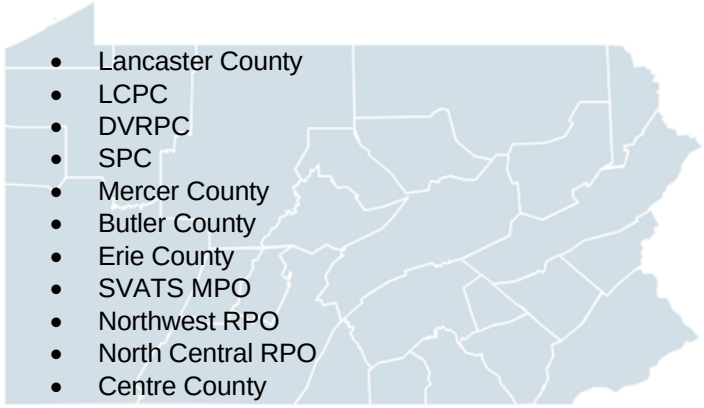
WRA's Ben Gruswitz, AICP (17 yrs) is intimately familiar with MPO operations, federal regulations, and collaborating with federal, state, and county partners, having previously worked at DVRPC (11 yrs). He also served various AMPO, AASHTO, and FWHA committees while there. In various roles, including management of the Socioeconomic and Land Use Analytics program and committee that he created, Ben: collaborated with planning partners to produce DVRPC's mandated population and employment forecast for long-range plan and air quality conformance analysis; advanced several planning tools and contributed to analyses—including their regional indicators dashboard, LRP and TIP project evaluation criteria, Title VI Compliance Tool, and federal Transportation Performance Metrics; and led or aided a variety of transportation plans using land use, travel demand, and scenario planning models.

In addition, our team includes Toby Fauver, FAICP (Rockland Planning), former Deputy Secretary for Multimodal Transportation at PennDOT. Toby and his staff have been working with MPOs and RPOs assisting them with project planning, grant applications and funding considerations to support programming projects and navigating federal regulations. More specifically, Toby assisted MPOs, RPOs, and transit agencies with navigating federal funding and regulations to find solutions to difficult multimodal transportation problems while he was Deputy Secretary. Examples of Rockland's work include:

- Clearfield and Elk Counties Comprehensive Plan for North Central RPO
- Facilitation of Ernst Trail Meadville, PA Connection
- SEDA-COG MPO LRTP Performance Measure Dashboard
- SEPTA Microtransit Playbook

Performance Track Record

WRA has an excellent track record of working on and managing Planning Partner and PennDOT projects and agreements across the Commonwealth as well as nationally. Our Pennsylvania planning clients include:



- Lancaster County
- LCPC
- DVRPC
- SPC
- Mercer County
- Butler County
- Erie County
- SVATS MPO
- Northwest RPO
- North Central RPO
- Centre County

WRA also has an excellent working relationship with PennDOT District 8-0 with whom we are currently leading 5 agreements and are providing support on 8 additional agreements. We encourage you to discuss our work with any of these clients.

I-81 Exit 5 Study

"Rob and his team did a great job in producing the report at the Exit 5 interchange in Franklin County with viable alternatives that took into consideration the many constraints and obstacles around the interchange area. The report was well written and easy to follow and written so that it was easy to comprehend."

Ben Singer, Portfolio Manager, PennDOT District 8-0

Over the past 5 years, WRA has received 169 consultant ratings from PennDOT, 50% either Exceeds Expectations or Consistently Exceeds Expectations and the remaining 50% are Expected Performance. However, the best indicator of a firm's performance is repeat business and client testimonials. Excellent examples include WRA's 5 consecutive PennDOT District 1-0 Misc. Engineering Open Ends which included the Sharpsville Bulk Facility Study, pedestrian safety study for Allegheny College, and a land-use/access management study for Millcreek & Summit Townships; 4 consecutive cycles of SPC's Signal Retiming Program; and 30 years of managing DelDOT's Safety Program.

Our firm has the expertise and capacity to deliver prompt and complete service on time, every time. An excellent example of this is the Erie LRTP update when we condensed a typical 12-month update into 4 months. We pride ourselves on becoming our clients' trusted advisors, which can be attested to by our references and the number of long-time clients. With over 150 years in planning expertise dedicated to this project, we are confident that we can deliver successful projects on time and within budget. **We look forward to partnering with TCRPC on this exciting opportunity!**

Organizational Chart

Tri-County Regional Planning Commission
Engineer/Planner for Federal Aid Projects

WRA Team Organization Chart

	Team Member	Role	YEARS OF EXPERIENCE	Roadway/Bridge Design & Cost Est.	Traffic Management Facilities	TD Modeling, Studies, & Data Analytics	GIS, Visualiz., & Scenario Planning	Transp. Trends & Project Needs Eval.	Safety, Cong. Mgmt, Freight Planning	Non-Motorized Planning & Design	Land Use & Growth Management	Environmental Studies & Planning	Storm Water Management
WRA	**Greg Frisby, PE, PTOE**	**Project Manager**	15	•		•	•	•	•	•	•		
	Chad Reese, PE	**Planning Lead**	27	•		•	•	•	•	•	•		
	Dan Fritz, PE, PTOE	**Traffic Lead**	22	•	•	•	•	•	•	•	•		
	Chris Banner, PE	**Design Lead**	19	•				•	•	•			•
	Leah Kacanda, AICP	**Planning**	15				•	•	•	•	•		
	Benjamin Gruswitz, AICP	**Planning**	17		•	•	•	•	•	•	•	•	
	Mike Campbell, RLA	**Planning**	26							•	•		•
	Lisa Murphy, AICP, GISP	Planning	25				•		•	•	•		
	Nick Streets, PE, PTOE	Planning / Traffic	15	•	•	•	•	•	•	•	•		
	Christopher Lucia, PE, PTOE	Planning / Traffic	16	•		•	•	•	•	•	•		
	Corey Bevis, PE	Planning / Traffic	13	•		•		•		•			
	Mindy Laybourne, PE, PTOE	Planning / Traffic	12	•	•	•	•	•	•	•	•		
	Alexa Janikowski, EIT	Planning / Traffic	5	•		•	•	•	•	•	•		
	Brent Barrett, PE	Design - Roadway	20	•			•	•		•			
	Brett Abrahamsen, PE	Design - Roadway	15	•				•					
	Zach Gregory, PE	Design - Roadway	9	•				•					
	Rob Miller, PE	Design - Bridge	28	•				•					
	Sherry Hockenberry, PE	Design - Bridge	27	•				•					
	Abigail Brulo, PE	Design - Bridge	7	•				•					
	John Allen, PE, CFM	Design - Water Resources	36					•					•
	Jonathan Avner, PTP	TDM Modeling	28			•	•	•					
	Sam Boso, PE	TDM Modeling	7			•	•	•					
	Nate Smith, EIT	Planning/Traffic	2	•		•			•				
	Krishnana Viswanathan	Data Analytics	28			•	•	•					
	Byron Chigoy	Data Analytics	20			•	•	•	•				
	Scott Thompson-Graves, PE, PTOE	**Planning/Traffic Technical Quality Advisor**	29		•	•	•	•	•	•	•		
	Rob Wills, PE	**Design Technical Quality Advisor**	27	•				•					
Pashek+MTR	**John Buerkle, Jr., RLA, AICP**	**Planning/Quality Lead**	35				•	•		•	•	•	
	Jenni Easton, AICP, CNU-A	**Planning**	16				•	•		•	•	•	
	Nick Sisco, AICP	Planning	7				•	•		•	•	•	
	Sarah Rizk	Planning	2				•	•		•	•		
NTM	**Steve Baumgardner**	**Environmental Studies and Planning Lead**	36									•	
	Namita Sinha, MS, EIT	Environmental Planning/Quality Lead	25									•	
	J. Benjamin Reiman	Environmental Planning	28									•	
	Kevin Kozain, PE, CPESC	Stormwater Management	25										•
Rockland	**Toby Fauver, FAICP**	**Planning/Quality Lead**	31			•	•	•	•	•	•		
	Morgan Ruziecki	**Planning**	6			•	•	•	•	•	•		
	LaVerne Collins	Planning	40				•	•	•	•	•		

Bold Text = Resume Included

Key Staff

Resumes of Key Personnel

Gregory Frisby, PE, PTOE

Associate

Project Manager

EDUCATION

B.S./Civil Engineering/ Specialization in Transportation/Pennsylvania State University/ 2010

REGISTRATION/ CERTIFICATIONS

2015 Pennsylvania Registered Engineer / No. PE084188

2015 Maryland Registered Engineer / No. 46329

2015 Professional Traffic Operations Engineer (PTOE) / No. 3111

EXPERIENCE

15 Years

Mr. Frisby has 15 years of extensive traffic planning (safety studies, operational studies, corridor studies, multimodal studies, alternative development, public engagement), traffic design (signals, ITS, lighting, SPM, MPT), and project management experience.

Good Hope Road Study (E03753, PennDOT Dist. 8-0): WRA completed this multimodal transportation study for PennDOT, TCRPC, and Hampden Township to identify potential transportation improvement alternatives for this critical 3.5 mile corridor. Key components of the study included stakeholder engagement, public involvement, and concept development for widening alternatives along narrow portions of the roadway constrained by the Conodoguinet Creek and steep vertical inclines with a dense tree canopy. The study culminated with public presentation that garnered a high level of community interest and attendance due to a series of recent safety incidents. Mr. Frisby was the project manager/lead planning engineer for the study.

Route 283/230 Corridor Study, Lancaster County, PA: WRA developed an innovative planning approach to improve economic development opportunities and reduce the need for transportation system expansion by evaluating land use and transportation harmoniously along SR 283/230 between Dauphin County and Lancaster City. WRA coupled a state-of-the-art parcel scorecard and custom GIS tool to analyze land use type metrics for over 1,300 parcels to determine an optimal land use scenario which was subsequently assessed through a customized post processor to harness information from the County's TDM to evaluate measures of effectiveness. The study results validated the importance of sound land use decision-making and its impact on the transportation system so that transportation investments are maximized. Mr. Frisby was a lead traffic engineer/planner supporting this study.

I-81 Carlisle Master Plan, Cumberland County, PA (E05344, PennDOT Dist. 8-0): WRA developed a Master Plan to identify projects that will improve the poor roadway conditions, safety, traffic operations and system linkage through the I-81 Carlisle corridor. The Plan was built upon previous macroscopic studies of I-81, including TCRPC's I-81 Improvement Strategy, to shape a corridor vision informed by a more detailed analysis of local and regional factors. Alternatives were developed and a preferred concept was ultimately chosen. An Implementation Plan breaks the corridor into "fundable" projects that when all completed, address the purpose and need of the corridor. Mr. Frisby is the lead traffic engineer responsible for all project aspects including operational and safety assessments, alternative development, and traffic/ITS design.

Middletown Road Safety & Congestion Improvement Project, Dauphin County, PA (E05382, PennDOT Dist. 8-0): WRA is providing traffic engineering services for this 2.75 mile suburban corridor project. The project proposes construction of a center two-way left-turn lane, access management, and intersection control improvements. Mr. Frisby is the lead traffic engineer responsible for traffic data collection, traffic analyses (Synchro, Sidra, VISSIM), crash data and predictive safety analyses, and traffic design.

South Duke Street Mobility Project (Lancaster, PA): In support of the City's Vision Zero Plan, WRA developed Complete Street improvements for this 0.6 mile corridor located in the City's southeast neighborhood. In consultation with the city and community, WRA developed concepts that provide low-stress bicycle access through the addition of a shared use path, sidewalk improvements, upgraded existing and new crosswalks, traffic calming, green infrastructure, pedestrian lighting, and gateway treatments. Mr. Frisby is the lead traffic and safety engineer.

Church Street Modernization Project (Lancaster, PA): In support of the City's Vision Zero Plan, WRA developed Complete Street concepts along a 0.3-mile segment of Church Street, a one-way state-maintained road. Project elements, currently under design for inclusion with a PennDOT resurfacing project, include a 3 to 2-lane road die, traffic signal enhancements, curb extensions, a multi-use path, green infrastructure, and pedestrian lighting.

I-83 North York Widening Project, York County, PA (E02748, District 8-0): WRA is the lead traffic engineer for this critical set of projects in York that involves widening 5 miles of I-83 and modifying three interchanges (Exits 19, 21, 22). Since the project entered preliminary engineering, Mr. Frisby has led all traffic related tasks, including field studies, traffic analyses using VISSIM software, safety assessments using HSM methodologies, preparing two Point

of Access (POA) studies (both receiving FHWA approval), lighting needs assessment, designing and preparing traffic signal/ITS plans, signing/pavement marking plans, and highway lighting plans.

119233 Districtwide Countdown Ped Signals Safe Project for VRU (E03753, PennDOT Dist. 8-0): WRA and Mr. Frisby are leading this project to install countdown pedestrian signal heads at up to 200 intersections across the District to support meeting the statewide Vulnerable Road User (VRU) special rule requirements for HSIP funding. Mr. Frisby is working closely with District Traffic staff to creatively deliver this project.

I-81 Exit 5 Interchange Study, Franklin County, PA (E03758, District 8-0): Lead traffic engineer responsible for all traffic and safety tasks. Tasks include field studies, alternative development, traffic analyses using VISSUM/VISSIM software, and HSM safety analyses. As part of the project, WRA utilized cell phone-based origin-destination data to improve its understanding of traffic patterns throughout the localized region.

Lancaster HSIP Applications (E03753, PennDOT Dist. 8-0): Through an open-end agreement, WRA assisted PennDOT D8-0 and Lancaster County MPO by preparing four HSIP funding applications. WRA conducted HSM safety analyses, prepared cost estimates, and performed B/C analyses. Mr. Frisby was PM and lead engineer.

SR 0006-S01/SR 0019-S01/SR 0098-S01 ("Big I") Roundabout, Vernon Township, Crawford County (E03830, District 1-0): WRA provided preliminary engineering and final design for construction of a multi-lane roundabout. The project will improve both traffic safety and operations at the intersection and improve multimodal accommodations. Responsible for conducting traffic simulation modeling analyses using VISSIM software for the proposed multilane roundabout design and preparing a summary report.

FMCSA HP-ITD Grant Support (E04663, PennDOT CO): WRA supported PennDOT's Special Hauling Permits Unit in Spring 2024 with developing materials to pursue a Federal Motor Carrier Safety Administration (FMCSA) Grant for High-Priority Innovative Technology Deployment (HP-ITD). PennDOT was awarded a $1.4M grant to support PennDOT's goal to reach ITD Core Compliance. Mr. Frisby co-authored the grant and served as WRA's PM.

US 30 York Signal Improvements (E04024, PennDOT Dist. 8-0): Project manager/lead traffic engineer responsible for implementing traffic signal enhancements along this supercritical corridor in York, PA. The project will install radar detection, replace/reconfigure signal controllers, and improve communication systems (as necessary) to provide ATSPM capabilities via PennDOT's Unified Command Control (UCC).

SR 0034-051 SR 34/Calvary Road Intersection Improvements (E03753, PennDOT Dist. 8-0): WRA is leading this intersection improvement project to install a left-turn lane and replace an existing traffic signal. Responsibilities include safety study, traffic signal design, signing/pavement marking and traffic control plans.

2022 TSMO ITS Project Bundle (E04024, PennDOT Dist. 8-0): WRA led this project to install 50 CCTV cameras and 9 DMS signs in a multi-county region. Mr. Frisby is the overall project manager and lead ITS engineer responsible for all project aspects. Through effective communication and close collaboration with the consultant team and PennDOT, the project was successfully LET under an accelerated schedule.

2023 TSMO ITS Project Bundle (E04024, PennDOT Dist. 8-0): WRA is leading this project to install 25 CCTV cameras, 5 changeable message signs (CMS), replace 3 CMS, and install approximately 2.55 miles of fiber optic cable backbone. Mr. Frisby is the overall project manager and lead ITS engineer responsible for all project aspects.

DelDOT Highway Safety Improvement Program (HSIP), State of Delaware: Lead Safety Engineer assisting DelDOT's Traffic Section with the development and implementation of its HSIP. Responsibilities include:

- Conducting/leading safety and operational studies at over 250 locations (rural intersections, suburban arterial corridors, limited access freeways) through the HSIP.
- Lead safety engineer for 3 ped safety studies along commercial arterial roadways (12 miles total length)
- Strategic Highway Safety Plan (SHSP) – Lead crash data analyst and author for 2015 and 2021-2025 Plans, including extensive stakeholder (law enforcement, behavioral specialties, federal partners, etc.) and general public coordination and engagement. *The 2021-2025 SHSP was recognized by ASHE First State as the Project of the Year for its commitment to safety and project necessity.*
- Annually prepares DelDOT's HSIP and HRGX Annual Reports.
- Annually manages and develops DE's five federally required safety performance measure targets.
- Annually performs data-driven site selection for DE's Highway-Rail Grade Crossing Safety Program
- Lead author of DE's first statewide Rail Safety Action Plan

Chad D. Reese, PE,
Associate

Planning Lead

EDUCATION

M.S./Engineering Management/George Washington University/2020

B.S./Civil Engineering/ Penn State University/1996

REGISTRATION/ CERTIFICATIONS

2002, Pennsylvania Registered Professional Engineer, No. PE060385

2018, West Virgina Registered Professional Engineer, No. 23126

2023, North Carolina Registered Professional Engineer, No. 056219

2023, Florida Registered Professional Engineer, No. PE96586

EXPERIENCE

27 Years

Chad has over 27 years of experience in transportation planning and engineering, including traffic, corridor, transportation/land use, and freight-related plans/studies; traffic modeling and operational analyses; and traffic design. His expertise includes developing multi-faceted plans and studies that range in scale from localized efforts requiring unique approaches for assessing transportation needs, alternatives, and priorities; to the completion of systems level performance-based plans that must balance multi-jurisdictional coordination, state/federal policies, freight system needs, Big Data analytics, or performance-based planning insights.

Erie MPO – Erie County 2040 LRTP, Erie County, PA: Lead Project Engineer for development of a major update to the Erie MPO's countywide Long-Range Transportation Plan including revisions to mesh with federal planning factors and PennDOT LRTP guidance. Efforts involved extensive outreach and policy perspectives, identification of needs and deficiencies, performance-based planning evaluations, project prioritization via Decision Lens software support, and fiscally constrained project planning.

SVATS MPO – 2022 / 2018 / 2013 / 2009 Congestion Management Process (CMP) Updates, Mercer County, PA: Project Manager for the county's CMP program to define, evaluate, and prioritize countywide congestion needs. The initial CMP was developed in 2009 based on field reconnaissance, GIS mapping, and GPS travel time runs to monitor congestion along 24 designated CMP corridors. Subsequent updates through 2013, 2018, and 2022 were evolved to wholly rely on RITIS/INRIX big data resources with an emphasis on travel reliability and congestion.

Wilmington Area Planning Council (WILMAPCO) – 2025 First/Final Mile Freight Network Update, New Castle County, DE: Assistant project manager and lead freight planner expanding the New Castle County portion of Delaware's FFM Freight network established in 2021. The network was revised based on changes to demographics, policies, and traffic conditions, identifying 174 routes that provide critical connections between freight-intensive businesses and higher classification roadways. The network was subjected to a performance-based conflict screening process using 33 quantitative/qualitative criteria to rate Institutional, Land Use, Mobility, Safety, and Infrastructure Condition needs or conflicts. The screening results inform strategic policy/project recommendations that the county, MPO, and/or state can implement to manage freight versus non-freight conflicts.

DelDOT – Open-End Transportation Planning and Engineering Services, Statewide, DE: Lead Freight Planner who has assisted with various projects under four consecutive open end planning contracts for DelDOT. Notable projects have included developing Delaware's Statewide Freight Plan with updates in 2015 (under MAP-21), 2017 (under FAST Act), 2022 (under IIJA/BIL) and (upcoming) in 2025-2026. Ongoing freight implementation support includes coordination with DelDOT for statewide Critical Urban/Rural Freight Corridor updates and direct involvement in monthly Delmarva Freight Working Group meetings and quarterly DelDOT Truck Parking Group meetings. Prior open-end support also canvassed state-sponsored municipal freight planning, exploration of federal discretionary grant opportunities for truck parking facilities, parcel screening to identify future truck parking sites, statewide freight and travel demand model updates, transportation and land use plans, and federal performance measure (PM3) reporting.

PennDOT and SVATS MPO – Sharpsville Bulk Handling Facility Study, Mercer Co., PA: Lead Project Engineer for the assessment of safety benefits and potential systems maintenance savings if a bulk materials facility with railroad unit train connectivity were developed in Sharpsville. Efforts estimated regional bulk material volumes spanning a 15-county area; shipping/handling costs by rail versus truck; and truck mileage reductions under future scenarios.

MCRPC – City of Sharon Truck Route Plan, Mercer Co., PA: Project Engineer for the analysis of truck routes and traffic patterns throughout the City of Sharon with emphasis on local industry truck traffic and regional truck traffic to/from I-80, US 62 and PA 60. Truck route identification included mail-in origin-destination surveys to over 40 major and minor trucking stakeholders. Preferred improvements included truck wayfinding signage upgrades, truck route modifications, short-term geometric improvements, and longer-term intersection/interchange modifications.

Whitman, Requardt & Associates, LLP

SPC Brodhead Road Corridor Planning Study, Beaver County, PA: Lead traffic planner/engineer for this 11-mile multimodal corridor assessment for Southwestern Pennsylvania Commission. Efforts included field view and walkability assessments, Highway Safety Manual based crash reviews, traffic operations modeling using PTV Vistro, and extensive virtual outreach with SPC, a project steering committee, stakeholder groups, Beaver County officials, and the general public. Improvement alternatives were explored at 22 primary study intersections and other key locations to include typical section upgrades, transit, pedestrian, and bicycle network enhancements, turn lanes, traffic signal upgrades and additions, and major reconfigurations at key locations that explored widening, roundabouts, left-turn acceleration (LTA) and continuous Green-T (CGT) options. Final plan efforts compiled a long-term corridor improvement plan and related project implementation documentation to support future local, county, and regional planning and programming decisions.

SPC – 2020 Corridors of Regional Significance, 10-county SW PA Region: Senior Planner for this project to assist the Southwestern Pennsylvania Commission (SPC) with the development of a Methodology Guide and Master Planning Framework to allow SPC and their planning partners to better inform transportation planning and coordination among agencies and municipalities along 13 Corridors of Regional Significance throughout their planning region. The framework document serves as a means to standardize mapping, format, and content of each plan while the methodology guide outlines how to complete the framework, sources of information, and how to present information.

SPC – SR 885/Second Avenue Multimodal Corridor Study, City of Pittsburgh, PA: Project Engineer and Technical Lead (Multimodal Transportation Planning and Freight) for this complex corridor study for the Southwestern Pennsylvania Commission (SPC). The project includes a steering committee composed of SPC, City of Pittsburgh, Allegheny County, and Port Authority of Allegheny County. This multimodal plan will incorporate the expected impacts from the upcoming Hazelwood Green development, the first phase of which will add 8 million square feet of mixed-use development to the already-congested corridor. The multimodal master plan will improve access to and through the corridor for all modes of travel and reduce single-occupant vehicle trips. Responsibilities include transportation planning and analysis oversight, technical guidance for corridor safety and freight elements, and support for public/stakeholder outreach, walkability assessments, and improvement concept development.

SPC – 2016 Southwestern Pennsylvania Regional Freight Plan, 10-county Region, PA: Project Manager and Lead Freight Planner for development of the Southwestern Pennsylvania Commission's first comprehensive multimodal freight plan for their MPO jurisdiction, coupled with a broader assessment area spanning 37-counties in 4 states. Plan development utilized a multi-resolution approach to craft a regional freight context and action plans to help guide future freight policy and transportation investment decisions. The action plan included a proposed regional freight network with tiered route designations, plus standalone county-specific freight profiles to serve as a standalone resource for local planners, economic partners, and PennDOT.

2022 Maryland State Freight Plan, Statewide, MD: Assistant Project Manager and Lead Freight Planner for the 2022 update to MDOT's statewide freight plan per expanded federal requirements under IIJA. The update was completed in partnership with Jacobs Engineering Group under an MDOT open-end planning contract. Assessments covered multimodal freight networks, trends, needs, and issues, including over 50 freight performance measures; coordination with MDOT's statewide rail plan and truck parking studies; and emphasis on new developments related to freight fluidity supply chain work and freight-related technology (ITS, TSMO, CAV). Content and policy or programmatic recommendations were also informed by outreach with the project Core Team, MDOT's Freight Transportation Business Units, State Freight Advisory Committee, MPOs, regional freight stakeholders, FHWA, and senior leadership.

PennDOT – (E04315, District 1-0) 2019 US 62 Corridor Safety Study, Mercer County, PA: Project Manager for this assignment to study safety issues along the 11-mile US 62 corridor between Hermitage and Mercer. The study involved Highway Safety Manual based methodologies to document the benefits of proposed safety countermeasures. Responsibilities included overall project guidance, technical oversight for all traffic engineering and safety analyses, support for identification of corridor needs and development of improvement concepts, and overall planning and coordination of public/stakeholder engagement meetings and survey activities including WikiMapping resources.

Daniel Fritz, PE, PTOE

Associate

Traffic Lead

EDUCATION

B.S./Civil Engineering/University of Pittsburgh at Johnstown/2003

REGISTRATION/ CERTIFICATIONS

2009, Pennsylvania Registered Professional Engineer No. PE076440

2017, Professional Traffic Operations Engineer No. 4279

EXPERIENCE

22 Years

Mr. Fritz has 22 years of traffic and transportation engineering experience. His experience includes traffic signal design, signal timing analysis and optimization, traffic safety analyses, capacity and operational analyses, alternative development and analyses, roundabout and highway design, queuing analysis, traffic impact studies, temporary traffic control plans, signing and pavement marking plans, Incident Management Plans (IMP), Intelligent Transportation Systems (ITS), and highway lighting design. Dan is familiar with PennDOT, AASHTO and HCM standards, procedures, and manuals, and has project experience using VISSIM, VISUM, Synchro, SIDRA, HCS, AutoTURN, and Microstation. Type 170/2070 traffic signal controller training; Wapiti Software training; NEMA controller training; Trafficon USA video detection/ITS training; Wavetronix radar detection training, PennDOT signal design training.

SR 0022 Section A37 Steubenville Pike Interchange Improvements, Robinson Township (E04543, District 11-0): Project manager for this interchange improvement project along I-376 (Parkway West) near the Pittsburgh International Airport. The purpose is to relieve debilitating queuing and congestion during peak periods and reduce the high accident frequency along both I-376 and Steubenville Pike. Responsible for the traffic and safety studies as part of the alternatives analysis which resulted in selection of a Diverging Diamond Interchange (DDI) concept. Additional tasks include a Point of Access (POA) study and all traffic design elements (ITS, signals, traffic control, and signing & marking). The project is currently advancing through preliminary engineering.

PennDOT – SR 0062 Section 13M Liberty Street Safety and Multimodal Improvements (E04984, District 1-0): Lead Traffic Engineer for this project to improve safety and multimodal operations. The project is an outcome of the Liberty Street at 12th Street Intersection Safety Study completed by WRA for PennDOT District 1-0. The selected improvements include realigning the 12th Street intersection to soften the current sharp horizontal curve, adding bike lanes, pedestrian upgrades at all intersections, full traffic signal replacements at 8 intersections and partial upgrades at 2 intersections. All new traffic signals will have LED signals, full pedestrian accommodations, high visibility crosswalks, and includes retiming with a 3 second lead pedestrian interval to give pedestrians a 3 second head start before vehicular traffic receives a green light.

US 62/SR 3008 Roundabout, Hermitage, Mercer County, PA (E03435, E03830, & E04315, District 1-0): Lead Traffic Engineer for this project to design a single-lane roundabout to improve safety, pedestrian connectivity, and traffic flow at the intersection of SR 3008 (E. State St.) and SR 0062 in the City of Hermitage. The project includes full depth pavement in the roundabout area, widening to the east on SR 3008, as well as milling and overlaying the roundabout approaches. The roundabout is designed to accommodate future expansion to two lanes as redevelopment around the mall occurs. The project also includes completing sidewalk connections from SR 0018/SR 3008 intersection to the west to Snyder Rd to the east, as well as landscaping, lighting, R/W acquisition, drainage design, and development of a video simulation to show the public and stakeholders how the roundabout will function. Responsible for the traffic study, highway lighting plan design, signing & pavement marking plan design, and traffic control plan design. The traffic control design worked so well during construction, PennDOT received the following compliment, *"Our compliments to whoever organized the traffic flow around the new circle near the mall…We live on Easton and so travel thru there several times a day, it's been smooth and well arranged. Well done!"* via the District 1-0 Newsletter for Sept. 2020.

Forbes Avenue Corridor Improvements, Allegheny Co. (E03023, District 11-0): Lead traffic engineer assisting with this project being administered under WRA's DOI Open End Agreement. The project goals were to identify pedestrian and bicycle safety and mobility improvements along this urban 1.8-mile corridor that connects the campuses of Carnegie Mellon University (CMU) and the University of Pittsburgh in Oakland with the city's South Side via the Birmingham Bridge. The project includes full traffic signal replacements at 11 intersections and partial upgrades at 6 intersections, including the addition of radar detection, and Ethernet communication equipment. Additional design and construction aspects include curb extensions to improve pedestrian safety, ADA curb ramps to improve pedestrian accessibility, and milling and paving to improve ride quality and extend the pavement life. *Award: 2021 Outstanding Highway Engineering Award, Pittsburgh Section ASHE*

SR 3011 Franklin St. Improvements, City of Johnstown, PA (E03799, District 9-0): Traffic engineer and Quality-Control lead for all traffic tasks for this project to address congestion, mobility, and safety issues on Franklin St from Southmont

Blvd to Valley Pike through a complete streets approach. Work included traffic data collection/analysis, detailed HSM safety analysis, and traffic analysis/ simulation of potential countermeasures to determine the final alternative. Proposed improvements include LED countdown pedestrian signals, curb extensions, roadway narrowing, rectangular rapid flashing beacons, signal replacements, drainage improvements, and new LED highway lighting.

PennDOT – SR 837 Section A42 East Carson St. Corridor Safety Improvements (District 11-0, E03208 & E04663), City of Pittsburgh, PA: Lead Traffic Engineer who assisted with the design of alternatives on this project in the vibrant South Side of Pittsburgh to address congestion, mobility, and safety issues on 2.6 miles of the SR 837 E. Carson St. corridor. The project employed a complete streets approach allowing for better delineation of parking, bike and travel lanes, transit stops, and enhanced pedestrian crossings. The project deployed the new City Standard signal pole design and included fiber-optic interconnect. Considerations included sidewalks and crosswalks for significant pedestrian volumes, high-volume bus stops, bike lanes, and motor vehicle traffic. The project included safety improvements such as LED countdown pedestrian signals, advance pedestrian walk phasing, curb extensions, retroreflective backplates on traffic signals, and new LED street lighting, all of which are proven safety countermeasures, as well as a safety benefit cost analysis using HSM methodology.

SPC Regional Traffic Signal Program Cycles 1-4, Southwestern PA (Districts 10-0/11-0/12-0): Lead Design Engineer responsible for design of all 4 consecutive open-end contracts assisting Southwestern Pennsylvania Commission (SPC), PennDOT Districts 10-0, 11-0, & 12-0, and local municipalities in updating and retiming traffic signals throughout the 10-county Pittsburgh region. Tasks include evaluating traffic signal performance, conducting capacity analysis, implementing signal timing improvements, designing traffic signal equipment upgrades, and documenting improvements for over 650 traffic signals along 60 corridors assigned to date across 96 municipalities. The program has yielded the following results: Cycle 1: 90:1 benefit:cost ratio, 34% reduction in stops, 21% decrease in delay; Cycle 2: 46:1 b:c ratio, 41% reduction in stops, 40% decrease in delay; Cycle 3; 21:1 b:c ratio, 23% decrease in delay. *Awards: 2012 ITSPA Project of the Year, 2012 & 2016 Governor's Award for Environmental Excellence, PA Environmental Council.*

SPC – Regional Roundabout Screening Study, Southwestern PA (Districts 10-0/11-0/12-0): Project Manager responsible for assisting with this study to screen candidate intersections for future installation of roundabouts. The study followed a 2-step process that included Highway Safety Network Screening (HSNS), PennDOT's Highway Safety Manual (HSM) Tool A & B, and PennDOT's Intersection Control Evaluation (ICE) Stage 1 and Stage 2. A total of 1,379 intersections were screened and reduced to 35 High Potential Roundabout Candidates. Of these 35 candidates, 7 were selected for concept design reports including design graphics, environmental screening, and cost estimation.

PennDOT – SR 0018 Section S04 Main St Intersection Improvements (District 1-0, E04658), Greenville Borough, PA: Lead Traffic Engineer for this project to improve access, safety, and operations along the Main Street corridor in downtown Greenville Borough with specific geometric improvements at the intersection of Main Street and Clarksville Street to improve truck turning. This project is an extension of one of the recommendations from the Greenville Pedestrian Circulation Study completed by WRA for MCRPC. The project includes a traffic and safety study, alternatives analysis, traffic signal design, signing & pavement marking plan design, and traffic control design.

Millcreek Township Traffic Circulation Study, Erie, PA: Project Manager for this intersection study in Millcreek Township to improve safety and corridor operations along Perry Highway (SR 97/505) at the 5-legged intersection of Evans Road, Glenwood Park Avenue, and Young Road and secondly at the nearby intersection of Old French Road. The existing 5-legged intersection, which is two-way stop controlled, is plagued by a history of right angle and left turn angle crashes. Using the existing data collection, the project team developed three short-term and four long-term improvement options. The four long-term improvement options included various ideas such as installing a traffic signal to installing a single-lane roundabout with new connections and other geometric improvements with the goal of improving safety and operations. After significant public engagement through various agency (PennDOT, Erie County MPO, Millcreek Township) coordination, stakeholder outreach, and a public meeting, the project steering committee selected a single-lane roundabout with a new connection to Old French Road as the preferred alternative.

US 322/US 222 Interchange Improvements Project, Lancaster County, PA (E03251, District 8-0): Quality-Control lead for all traffic tasks for this project at a highly congested, high-accident interchange. The project involved developing alternatives to reduce accidents and address low clearance under US 222. Following completion of alternative analyses and preliminary engineering, WRA developed final construction plans that involved design of a Diverging Diamond Interchange (DDI). Tasks included traffic analyses using VISSIM; safety analyses using PennDOT's HSM Analysis Tool spreadsheet to apply Highway Safety Manual (HSM) methodologies; traffic signal construction plans, signing & pavement marking plans, highway lighting plans, and ITS plans. The project will include flashing yellow arrows, a hybrid fiber/wireless interconnect system, emergency preemption, radar detection systems, and new pedestrian signals.

Chris Banner, PE
Associate

Design Lead

EDUCATION

B.S./Civil Engineering/ Specialization in Transportation/Pennsylvania State University/ 2005

REGISTRATION/ CERTIFICATIONS

2010 Pennsylvania Registered Engineer / No. PE078108

EXPERIENCE

19 Years

Mr. Banner has more than 19 years of experience managing PennDOT projects across multiple Districts and delivering critical milestones on schedule and within budget. Mr. Banner has a diverse portfolio of project experience that includes State and Local bridge replacements, highway realignment design, interchange design, limited access facilities and innovative design solutions including roundabouts and diverging diamond interchange (DDI). He has managed intersection improvement, corridor safety enhancement projects, and interstate resurfacing and reconstruction projects. Mr. Banner is actively involved in the development of project deliverables, QA/QC, project schedule, and has extensive utility coordination experience using PennDOT's Utility Relocation Management System (URMS).

Good Hope Road Study (E03753, PennDOT Dist. 8-0): WRA completed this multimodal transportation study for PennDOT, TCRPC, and Hampden Township to identify potential transportation improvement alternatives for this critical 3.5 mile corridor. Key components of the study included stakeholder engagement, public involvement, and concept development for widening alternatives along narrow portions of the roadway constrained by the Conodoguinet Creek and steep vertical inclines with a dense tree canopy. The study culminated with public presentation that garnered a high level of community interest and attendance due to a series of recent safety incidents. Mr. Banner was the lead highway engineer for the study.

I-81 Carlisle Master Plan, Cumberland County, PA (E05344, PennDOT Dist. 8-0): WRA developed a Master Plan to identify projects that will improve the poor roadway conditions, safety, traffic operations and system linkage through the I-81 Carlisle corridor. The Plan was built upon previous macroscopic studies of I-81, including TCRPC's I-81 Improvement Strategy, to shape a corridor vision informed by a more detailed analysis of local and regional factors. Alternatives were developed and a preferred concept was ultimately chosen. An Implementation Plan breaks the corridor into "fundable" projects that when all completed, address the purpose and need of the corridor. Mr. Banner is the deputy project manager and lead highway designer.

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Church Street Modernization Project (Lancaster, PA): In support of the City's Vision Zero Plan, WRA developed Complete Street concepts along a 0.3-mile segment of Church Street, a one-way state-maintained road. Project elements, currently under design for inclusion with a PennDOT resurfacing project, include a 3 to 2-lane road die, traffic signal enhancements, curb extensions, a multi-use path, green infrastructure, and pedestrian lighting. Mr. Banner is the project manager.

I-81 Exit 5 Interchange Study, Franklin County, PA (E03758, District 8-0): Highway Discipline Lead for developing alternatives for improving traffic operations and safety at the I-81 Exit 5 Interchange while accommodating future planned growth and improving multi-modal transportation along SR 16. Six alternatives were developed including a tight diamond interchange, a diverging diamond interchange (DDI), and single point urban interchange (SPUI), ramp relocations, roundabouts at ramp terminals. Cost estimates were prepared for all alternatives that met the purpose and need and a cost/benefit ratio was calculated. The WRA team consulted Antrim Township and the Franklin County MPO to confirm the study and future planned growth.

SR 0034-051 Intersection Improvements (E03753, PennDOT Dist. 8-0): Project Manager leading the SR 0034-051 intersection improvement project to install a left-turn lane and replace the existing traffic signal in North Middleton Township, Cumberland County. The project included radius improvements at the intersection to accommodate truck traffic to improve the traffic signal operational efficiencies. The design included reprofiling SR 1001, Cavalry Road, as it approached the intersection to reduce the grade break and eliminate vehicles from bottoming out as they navigated through the intersection. The design also focused on reducing the existing super elevation rate to be in accordance with the design standards. The challenge presented with modifying the superelevation rate was existing business were adjacent to the shoulder and parking spaces could not be impacted. Close coordination with stakeholders, WRA and the District was critical to developing a solution for the corridor. Additional improvements

included replacing the aging drainage system to meet current design criteria. The urban environment required SUE coordination to locate the existing water and sewer mains to ensure that they were not in conflict with the proposed drainage system replacement. Mr. Banner managed the development of the Utility Conflict Matrix, coordinated all conflicts on URMS and prepared the final D-419 for review and its ultimate approval. Mr. Banner worked with the District PM to incorporate an adjacent PennDOT project into one bid package during the PS&E development phase.

E03777 SR 3011-01T, Franklin Street Improvements (PennDOT Dist. 9-0): WRA assisted PennDOT District 9-0 to address pedestrian safety, mobility and connectivity concerns, and congestion on 0.48 miles of the Franklin Street Corridor corridor in the City of Johnstown. This section of Franklin Street was is as a Minor Arterial that connected Southmont Township to the Johnstown city center with over 12,000 average daily traffic. Within this corridor is the Conemaugh Memorial Hospital and nursing school. Additionally, numerous pedestrian generators were present including outpatient centers, cancer treatment center, pharmacy, nursing home, and parking garges that contributed to the high volume of pedestrians that navigated the corridor on a daily basis. The improvements included providing delineation for pedestrians through the use of vegetative and pedestrian buffers to ensure pedestrians cross Franklin Street at high visible crosswalk locations. The project included 1 traffic signal replacement, 3 traffic signal upgrades and 2 Rectangular Rapid Flasher Beacons (RRFB) were installed at high volume pedestrian crossing locations. Traffic signal and safety enhancements included LED countdown pedestrian signals, curb extensions, and new LED street lighting, all of which are proven safety countermeasures for pedestrians and motor vehicles. A traffic operational analysis using Synchro software was used to asses and reduce congestion along the corridor and included modifications to the traffic signal operations. The curb line was modified and the travel lanes were reduced to calm traffic, incorporate bike lanes and bus turnouts. Redesign of the drainage system was incorporated into the project to reduce flooding of properties and requried over 4,000 feet of pipe and 60 manholes and inlets. The drainage design resulted in the relocation of gas, water and telephone utility facilities. The public coordination effort culminated in a solution that improved safety and traffic operations.

Pennsylvania Department of Transportation, Local Bridge Program, Engineering District 8-0: As the District 8-0 Consultant Project Manager, Mr. Banner was responsible for managing the review and approval of the Local Bridge project submissions. Mr. Banner developed a quality assurance program that adhered to the design and plan presentation criteria identified in PennDOT Publications. Mr. Banner would coordinate the reviews of all project plan submissions including Construction, Structure, E&S and Right-of-Way plans, complete and document reviews and develop comment letters for consultant submissions. Additionally, Mr. Banner would coordinate milestone reviews with Department staff, field meetings and assist with the schedule updates. Mr. Banner would work directly with the consultant to advance the project for approval and assist with the development of the PS&E package to ensure a quality product was prepared for final approval by the Department.

E01021 Highway Occupancy Permit Review Agreement, Engineering District 8-0: Highway Engineer responsible for conducting administrative, roadway, drainage and traffic reviews for HOP permit application submissions for PennDOT Engineering District 8-0 HOP Department. Evaluated the permit applications for engineering deficiencies based on applicable PennDOT publications, the Pennsylvania Vehicle Code, AASHTO criteria, and local municipal requirements. Responsible for the review of the construction plan, cross sections, drainage design and traffic reports. Developed comments for applicants for incomplete permit submissions and would coordinated with applicants for permit approval. Additional responsibilities included to schedule field views to measure sight distance, evaluate utility conflicts, drainage deficiencies and potential traffic impacts.

SR 0743 and SR 0322 Intersection Improvements, Dauphin County, PA (PennDOT Dist. 8-0): Highway Engineer for this project involving intersection reconstruction and improvements. Primary responsibilities included design and placement of temporary swales for drainage maintenance and curbed sidewalk ramps. Also performed field verification of survey data for accuracy and included additional site information that could impact design.

E04999 PA 756 - Lamberd Ave to Alvin St and PA 756 - Alvin St to Industrial Park Rd, Cambria County (PennDOT Dist. 9-0): Project Manager for the pavement structure upgrades drainage improvements and safety improvements for the SR 756 corridor from Lamberd Avenue to Alvin Street. Mr. Banner is also the Project Manager for the SR 756 corridor improvement from Alvin Street to Industrial Park Road. The scope of the project includes pavement structure upgrades, drainage improvements, traffic signal replacements and upgrades, signing and pavement marking improvements, roadway widening and safety enhancements and intersection improvements at various intersections along the entire corridor. Mr. Banner worked directly with the Project Manager to develop a comprehensive design schedule to ensure adequate time was provided for public coordination and alternatives analysis, but also sensitive to the District Let schedule and project funding requirements.

Leah Kacanda, AICP
Senior Project Planner

Planning

EDUCATION

M.A./Urban Affairs and Public Policy/ University of Delaware/2011

B.S./Architectural Studies/Philadelphia University (now Jefferson University)

REGISTRATION/ CERTIFICATIONS

2020, National Charrette Institute Certificate

2017, American Institute of Certified Planners, Certificate No. 29737

EXPERIENCE

15 Years

Leah is a certified planner with 15 years of planning, policy, design, and management experience who has coordinated transportation planning efforts at the local, county, regional, and statewide levels. She regularly leads stakeholder groups comprised of technical experts, municipal representatives, elected officials, and the public in active transportation initiatives. An expert on bike and pedestrian network planning, Leah coordinates with traffic engineers, modeling staff, and highway engineers on data collection, analysis, and design with a focus on developing materials that are easy for the public to understand. She is a creative and detail-oriented project manager who is skilled at building consensus around practical solutions that improve safety for all road users. Her project experience includes:

Erie Active Transportation Plan and Implementation, City of Erie, Pennsylvania: Led the development of an Active Transportation Plan focused on making low-stress connections for pedestrians and cyclists to local destinations including schools and transit. Conducted a facility inventory and extensive public outreach to identify gaps in the current network. Developed specific project recommendations to close gaps in the multi-modal network. Worked with a Steering Committee including PennDOT District 1-0. Led public engagement and advised on facility design for the final design of bike lanes along Greengarden Boulevard, ensuring bicycle facilities maintain an adequate Level of Traffic Stress throughout each corridor, with an emphasis on safe passage through intersections. Coordinated community outreach to elected officials, non-profit organizations, and local businesses.

South Duke Street Mobility Project, City of Lancaster, Pennsylvania: Public engagement lead and active transportation planning support working to identify Complete Street roadway improvements in support of the client's Vision Zero Plan. In consultation with the city and community, developed concepts that provide low-stress bicycle access through the addition of a shared use path, sidewalk improvements, upgraded existing and new crosswalks, traffic calming, green infrastructure, lighting, and gateway treatments. Installed a temporary pop-up protected two-way bike lane to engage the community around potential improvements. Provided bi-lingual meeting materials to support supplemental city-led outreach at the San Juan Bautista Hispanic Festival. Prepared a final report summarizing public outreach feedback and development of concept design. Providing feedback on bike facility and intersection design through final design.

Church Street Complete Street Project, City of Lancaster, Pennsylvania: Public engagement lead and active transportation planning support for the Church Street corridor. This project includes a 3 to 2-lane road diet along a one-way state-maintained road that directly abuts the South Duke Street project. Coordinating public outreach which included two stand-alone public meetings and staffing the Lancaster City Transportation Open House. In consultation with the city and adjacent community, developed concepts that provide two-way low-stress bicycle circulation via a shared use path located along a one-way street. Working with traffic engineers and PennDOT to facilitate intuitive and safe transitions at the intersections where people biking leave the shared use path to rejoin to shared lanes.

Trail Access, Diversity, & Awareness Plan, Montgomery County, Pennsylvania: Led a comprehensive public outreach effort to increase the diversity of trail users in the Norristown, Pottstown, and Pennypack areas of Montgomery County. The engagement plan was developed for each community based on the demographics of the neighborhoods (predominantly Hispanic and/or African American) that the County trail system serves. Recommendations included increasing awareness through increased cultural programming and improving access through wayfinding signage, safe pedestrian and bicycle connections, and trailheads.

SR 1 Low-Stress Bikeways Study, Delaware DOT, Sussex County, Delaware: Project Manager. Leading the effort to identify continuous low-stress bikeway routes on either side of SR 1 between Lewes and Rehoboth. Conducting “community conversations” with area stakeholders including residents, business owners, advocates, and agency partners. Guiding the development of a promotional video to broaden awareness and build support among stakeholders. Developing recommendations for which segments should be prioritized for design and construction in consideration of current development proposals, upcoming capital projects, bicycle Level of Traffic Stress analysis, travel data analysis, and the DelDOT transportation model.

Whitman, Requardt & Associates, LLP

Governor Printz Boulevard Corridor Study, Wilmington Area Metropolitan Planning Organization, New Castle County, Delaware: Public engagement lead and active transportation planning support for a WILMAPCO corridor study focused on identifying multimodal improvements that improve safety and enhance neighborhood vitality. Evaluated potential improvements to bicycle, pedestrian, and bus facilities to provide low-stress bicycle connectivity to the local trail system, parks, and a regional transportation center and fill a gap in the East Coast Greenway.

Coastal Corridors Study, DelDOT, Sussex County, Delaware: Project manager assisting DelDOT Planning with identifying multimodal transportation solutions for east-west routes in Sussex County. Worked with the lead traffic engineer to prepare data for review by the project team, including big data from StreetLight and projections from the DelDOT Peninsula model, to create visualizations for use by the Coastal Corridors Committee and the general public. Coordinated all meetings of the Committee, which is comprised of local stakeholders including municipal representatives, business owners, community-based organizations, and residents. Developed plan and coordinated public workshops to collect feedback on potential transportation solutions.

Five Points Transportation Study, DelDOT, Sussex County, Delaware: Project Manager for an area plan focused on managing growth in the vicinity of the intersection of Routes 1, 9, and 23 southwest of Lewes. The implementation of the study is guided by a Working Group comprised of elected officials, DelDOT, and Sussex County representatives as well as residents and businesspeople. The Working Group oversees the implementation of 78 recommendations, including land use coordination, travel demand modeling, traffic analysis, and stakeholder outreach.

Maryland Bicycle and Pedestrian Master Plan, Maryland Department of Transportation, Statewide, Maryland: Leah led a project team comprised of MDOT representatives and three consulting teams in the 2023 update to the statewide Bicycle and Pedestrian Master Plan. The planning process emphasized a concise, data-driven approach aimed at increasing mode shift and improving safety. The plan is intended to update and strengthen MDOT's bicycle, micromobility, and pedestrian policies practices, and tools. WRA leveraged bicycle mobility modeling experience with DelDOT to develop a proof-of-concept bike network mobility model using their bicycle level of traffic stress network data. A project-specific website and data portal were used to engage stakeholders located across the state with new active transportation planning tools and solicit comments.

Complete Streets Policy & Implementation, Howard County, Maryland: Led the development of an award-winning Community Engagement Plan for all County transportation projects. Assisted in the development and implementation of a Complete Streets policy that ranked first nationwide out of 270 policies according to a 2023 evaluation by Smart Growth America. Supported substantial revisions to the County Design Manual, Complete Streets and Bridges. Assisted the County with implementing a performance measure monitoring system, and initial 2 years of tracking. Developed and conducted training for County staff, their consultants, and community members to cultivate an understanding of the Complete Streets policy and revisions to the Design Manual.

Harford Community College Collector, Harford County, Maryland: Project support for public engagement and active transportation support for a corridor study focused on developing conceptual plans for a bicycle and pedestrian path between the Town of Bel Air and Harford Community College in Harford County, Maryland. Developing and evaluating alternatives for traffic-separated facilities based on existing conditions, prior studies, field studies, and community input. Key elements of the project include community outreach and exploring opportunities to connect to the MA & PA Trail and the East Coast Greenway.

Wilmington Bike Share Feasibility Study, Wilmington, Delaware. Lead planner for the City of Wilmington, responsible for developing multiple stakeholder groups and assisting in communications between project consultant and the general public. Responsible for developing GIS data for use by project consultants in evaluating conditions on the ground. Assisted in the development of public meeting materials. Participated in the development of goals and objectives based on stakeholder and public feedback in consideration of City planning documents. Upon completion of the plan, educated City Officials on how bike share could accomplish stated goals including improving livability and economic competitiveness, increasing social and geographic equity, and improving quality of life through bicycling.

Union Street Rapid Reconfiguration Project, City of Wilmington, Delaware: While with the City of Wilmington before joining WRA, served as project manager responsible for coordination among stakeholders. Assisted in the development of a "Better Block" approach to test a road diet concept on Union Street. Advocated for permanent lane reductions to calm traffic, increase parking availability, improve pedestrian access and safety, and spur economic development. Aided in the development of a rapidly deployable permanent restriping plan, affordably executed with State and City maintenance dollars.

Ben Gruswitz, AICP
Project Planner

Planning

EDUCATION

M.A./City and Regional Planning/ Morgan State University/2008

B.S./Theology/Loyola University Maryland

REGISTRATION/ CERTIFICATIONS

2011, American Institute of Certified Planners, Certificate No. 024992

EXPERIENCE

17 Years

Ben is a certified professional planner specializing in land use, socioeconomic analysis, and transportation planning. Ben spent more than a decade at the Delaware Valley Regional Planning Commission (DVRPC), leading land use forecasting, scenario planning, and travel demand model applications. He is well-versed in the world of MPOs, state DOTs, and USDOT collaboration and compliance needs. He was active on AMPO and AASHTO boards, committees, and advisory groups.

Ben's planning career began as an environmental planner and later a socioeconomic research lead at the Maryland-National Capital Park and Planning Commission (M-NCPPC) in Montgomery County, MD. After DVRPC, Ben worked part-time leading a non-profit trails coalition and at CHPlanning, LTD in Philadelphia. He is a former volunteer mayor of a small municipality and has worked with his local MPO on multiple plans and ongoing plan implementation. He has extensive experience applying scenario modeling, economic impact analysis, and multimodal travel demand tools to evaluate transportation and land use policies. He is skilled in public and stakeholder engagement, graphics and visualization, communication of technical subjects to planners and the public. helping agencies navigate the challenges of limited funds for long-term investments.

Planning Support Services for Mobility Studies and Health, Delaware, DelDOT: Local lead for DelDOT's latest five-year contract with WRA. Manage and coordinate task delivery between agency contacts and WRA's travel modeling team, including: ongoing DelDOT travel demand model and bicycle accessibility model maintenance and development, travel forecast and bicycle model requests for any DelDOT planning studies or engineering needs, development and application of prioritization criteria for the Capital Transportation Program, travel and air quality conformity forecasts for the state's MPOs' long-range transportation plans, federal HPMS reporting, evaluation and application of "big data" analytics products, federal grant applications and management for travel model development and application innovations, and development of model-related internal and external educational resources as well as documentation.

Sussex County Corridor Studies with Varied Pace and Pattern of Growth Scenarios, Delaware, DelDOT: Project manager for SR 24 Corridor Study and assist WRA leads on concurrent studies of SR 16 and US 9. Beyond the typical corridor study approach assessing existing conditions, evaluating setbacks/constraints, and running microsimulation models to identify recommended improvements, these studies all integrate a range of land use development outcomes in a high-growth area of the state. With varying dimensions of high and low growth, compact-to-sprawling development, and seasonality of travel conditions, the corridors will be informed by greater context of potential outcomes on the travel network and seek to prioritize improvements that address common hotspots on the corridors across all scenarios. Ben leads development of land use allocation scenario methodology and visualization/communication of land use and travel model results for all three studies.

SR 1 Low-Stress Bikeways Study, Delaware DOT, Sussex County, Delaware: Support project team with GIS mapping and graphics, report writing, and public outreach/stakeholder communication. Study identifies continuous low-stress bikeway routes on either side of SR 1 between Lewes and Rehoboth. It offers recommendations for which segments should be prioritized for design and construction in consideration of current development proposals, upcoming capital projects, bicycle Level of Traffic Stress analysis, travel data analysis, and the DelDOT transportation model.

Haverford Township Safety Action Plan and Business District Parking Studies, Haverford, PA: Oversaw and advised CHPlanning's staff assigned to Haverford Twp. contracts and provided QA/QC for deliverables. Projects included a study to determine potential enhancements to the street and road network, aiming for improved safety and navigability and another to analyze parking conditions, regulations, and needs in the township's business districts.

Long-Range Plan (LRP), Greater Philadelphia Region, DVRPC: Led multiple initiatives contributing to key components of agency's LRP, including:

- ***Tracking Progress* Regional Data Trend Dashboard:** Project manager for effort overhauling trend analysis on progress toward LRP goals, creating a web-based *Tracking Progress* interactive indicators dashboard, augmenting

partner and public engagement. Project included: integration of federally required regional Transportation Performance Metrics (TPMs) and DVRPC Municipal Implementation Toolbox; data architecture design for rapid processing for timely commentary on data releases of multiple datasets, geographic levels, and sources; and launching #TrackingTuesday social media posts alerting public and stakeholders anytime newly updated indicators and staff analyses are available.

- **Population and Employment Forecasts**: Project manager. Revamped and implemented new process with county stakeholders, culminating in the board-adopted 2050 socioeconomic forecast, using UrbanSim land use model, described below.
- **Scenario Planning for Alternate Regional Futures:** Led development of integrated modeling frameworks for scenario planning in multiple regional LRP development cycles. Created growth allocation scenarios using UrbanSim, Impacts 2050, and VisionEval models to evaluate development impacts on transportation performance and infrastructure investment needs. Helped develop narratives for public and stakeholder consumption, highlighting policy choices' and external forces' impact on travel, economic development, and land use trends, as well as universal and contingent recommendations for scenarios.
- **LRP and Transportation Improvement Program (TIP) Project Evaluation Criteria:** Developed methodologies to integrate land use development intensity/urban form in LRP and TIP scoring criteria to prioritize investment aligned with smart growth principles.

Land Use Model Development and Application, Greater Philadelphia Region, DVRPC: Led and managed process leading to use of an UrbanSim's block level allocation land use model including vision, case-making for the agency's investment in new approach, model development, integration with other models, implementation for applications, and maintenance and improvement planning. This entailed: working with DVRPC staff and consultant team through development; and integrations with required inputs for trip-based and tour/activity-based travel models for air quality conformity and studies, and VisionEval scenario planning model.

2020 Census Participant Statistical Areas Program (PSAP), AASHTO's Census Transportation Planning Products (CTPP) Oversight Board & DVRPC: Helped DVRPC and agencies across the country navigate the Census Bureau's discontinuation of support for reporting special tabulations of data to local travel model zonal geographies. Co-led the update to census tracts and block groups across 9-county region for 2020 Census.

Title VI Compliance Tool for the Greater Philadelphia Region, DVRPC: Managed and developed revamped methodology for Indicators of Potential Disadvantage (IPD). Improved agency analysis of and measures for census tract concentrations of 9 key demographic groups named in Title VI, Title IX, and environmental justice executive orders.

Transportation Studies and Travel Model Support, Greater Philadelphia Region, DVRPC: Managed and contributed to agency transit and highway studies, collaborating with travel demand model unit, wider MPO staff, and various project stakeholders.

- **Transit studies** included modifying existing and proposing new bus, rail, and station-area changes. Example studies: FTA New Starts grant for King of Prussia Rail, Boulevard Direct bus-rapid-transit, and proposed Gloucester-Camden Line.
- **Highway studies** included proposals to reduce the footprint of PA Turnpike interchanges in lieu of circuitous routes to funneling traffic through toll plazas, enabled by automated tolling and slip ramps into business parks along the PA Turnpike in Montgomery and surrounding counties.

Economic Benefits of PATCO, Greater Philadelphia Region, Delaware River Port Authority: Managed analysis estimating the economic value of the PATCO heavy rail system. The study utilized DVRPC's travel demand model, TREDIS software, and hedonic regression analysis to quantify PATCO's contribution to regional economic development and assess station-area land use trends and transit accessibility benefits for property values.

SHRP2 EconWorks: Wider Economic Benefits Analysis Tools, FHWA & DVRPC: Managed an FHWA-funded initiative to evaluate the EconWorks tool for estimating economic impacts of transportation investments. The study explored: how accessibility, reliability, and intermodal connectivity improvements affect regional economies, and compared results between EconWorks and TREDIS economic modeling outputs.

2012–2016 Subdivision Staging Policy, Montgomery County, MD, M-NCPPC: Assisted in developing the guide for administering the county's adequate public facilities (APF) requirements and developer responsibilities for funding surrounding transportation and school facilities to meet the needs of future growth.

Michael Campbell, PLA

Associate Vice President

Transportation Planning

EDUCATION

B.L.A./Landscape Architecture/ University of Rhode Island 1998

REGISTRATION/ CERTIFICATIONS

2006, Pennsylvania Registered Landscape Architect No. LA002696

2006, Delaware Registered Landscape Architect No. S1-0000421

2006, Maryland Registered Landscape Architect No. 3414

2023, Texas Registered Landscape Architect No. 3814

EXPERIENCE

26 Years

Mike leads WRA's landscape architecture and active transportation planning division. He is a registered landscape architect with 26 years of experience throughout the Mid-Atlantic region. He specializes in multimodal transportation studies for transit, bicycle, pedestrian, complete streets, parks, and recreational facilities. His project experience includes transportation facility planning and design, public engagement, environmental studies and mitigation, final design and construction oversite. He has led several on-call multi-modal planning and design agreements for various state department of transportation agencies, county Department of Public Works and MPO's throughout Pennsylvania, Maryland, and Delaware.

Main Street Streetscape Improvement Plan, Lawrence Park Township, Pennsylvania: Mr. Campbell led a design team to develop streetscape improvement concepts for Lawrence Park Township's Main Street business district. Several concept alternatives were developed based on input received through a series of public outreach events including a walking audit tour and open-door design charette event led by Mr. Campbell. Concept improvements include narrowing travel lanes, inclusion of bike facilities, increasing angle parking depths, providing additional pedestrian connections, proving street trees for shade, and overall aesthetic enhancements. The project is funded through the Erie County MPO, Unified Planning Work Programs Metropolitan Planning funds.

Erie Active Transportation Plan, Erie, Pennsylvania: Assisted with the development of a walking and bicycling master plan for the City. The final plan included improvement recommendations to provide continuous, connected pedestrian and bicycle networks, as well as a Complete Streets policy to guide plan implementation.

Montgomery County Trail Access, Diversity, & Awareness Plan, Montgomery County, Pennsylvania: Project Manager responsible for overseeing a study focusing on increasing the diversity of trail users, increasing access to trail systems, and modernizing trail design for three segments of trails within Montgomery County. The project team was responsible for developing public engagement materials and collecting community feedback to develop conceptual designs for proposed improvements which included ADA accessible trailheads, restrooms, wayfinding signage, public art, pavilions, landscaping, and park programming.

Manayunk Bridge Trail, Philadelphia & Montgomery Counties, Pennsylvania: Assistant project manager for this high-profile, complex project through PennDOT's PCTI program. This trail link is considered the "crown jewel" of the Delaware Valley trail network. The project was advertised through PennDOT's Engineering and Construction Management System (ECMS) and Mr. Campbell was responsible for overseeing all PennDOT coordination throughout the project development process. Mr. Campbell was also responsible for all hardscape design, coordination of subconsultants, coordination of multiple railroads, and trail integration into the context of the community. The project was constructed in 2015 and was awarded the 10,000 Friends of Pennsylvania 2015 Commonwealth Award, the 2016 WTS Innovative Transportation Solution Award, the Top 10 Bridge Projects of 2016 Award for Roads and Bridges Magazine, and the Communities in Motion Star Award. Currently, Mr. Campbell also led the design effort to include trail lighting and a video surveillance system to allow the trail to remain open for extended commuter hours. This work was managed by the local MPO, Delaware Valley Regional Planning Commission under PennDOT's TAP program.

SR 0837-A42 East Carson Street Safety Improvements Project, City of Pittsburgh, Pennsylvania (E03208, District 11-0): Assisted with this WRA-led project to address congestion, mobility, and safety issues along the 2.6-mile SR 837 East Carson Street corridor, from Smithfield Street to the UPMC Sports Performance Complex (after South 33rd Street) in the vibrant South Side of Pittsburgh. Specific responsibilities included complete street implementation and streetscape design.

Borough of Tarentum Streetscape, Tarentum, Pennsylvania: Project landscape architect for streetscape improvements project in the central business district of Tarentum Borough. Improvements include new street

furniture, street trees and hardy/native plantings, sidewalks, and curb extensions. Mr. Campbell designed landscape/environmental elements of streetscape improvements, prepared conceptual design drawings, and helped prepare construction/engineering drawings.

Reconstruction of Maplewood Mall, Philadelphia, Pennsylvania: Project manager and lead landscape architect responsible for planning, final design, and construction oversight for the Maplewood Mall Reconstruction Project. The project includes the full reconstruction of a shared-use pedestrian street and two pedestrian plazas in the city's historic Germantown neighborhood. Site improvements include outdoor seating areas, lighting, public art, street trees, and landscaped areas. The project was awarded the Association of Pedestrian and Bicycle Professionals Delaware Valley Chapter Project of the Year.

Kittanning Borough Transportation Study, Armstrong County, Pennsylvania: Mr. Campbell was the project landscape architect for this Pennsylvania Community Transportation Initiative (PCTI) study to assist the Borough of Kittanning and County of Armstrong in determining scenarios and selecting alternatives for the downtown Central Business District. Multi-modal alternatives include addressing streetscape enhancements within the district.

North Main Street (SR 886) Safety Study, Meadville, Crawford County, Pennsylvania: Mr. Campbell oversaw the development of pedestrian and bicycle improvement design concepts to address pedestrian safety along N. Main St. through the Allegheny College campus. Three distinctively different alternatives were evaluated to provide a balanced multi-modal reconfiguration of the streetscape. The preferred alternatives included strategically placed curb extensions and a raised intersection to provide traffic calming and prioritize pedestrians within the streetscape.

DelDOT Transportation Alternatives Program, Statewide, Delaware: Contract Manager for WRA's most recent open-end contract for DelDOT's Active Transportation & Community Connections Division focusing on community-based pedestrian and bicycle improvement projects. Several task orders to date include the concept to the final design of shared-use pedestrian and bicycle facilities, sidewalk connectivity, rehabilitation of existing sidewalks, streetscape improvements, enhanced pedestrian crossings, green streets, and landscape improvements. Projects are carried out from initial concept design and stakeholder involvement through the preparation of construction documents.

DelDOT Transportation Planning and Engineering Services, Statewide, Delaware: Managing the current open-end agreement (1902F) for the Delaware Department of Transportation's Division of Planning. Responsible for oversight of all planning tasks, WRA and sub-consultant staffing, and quality assurance. Tasks include several multimodal safety and connectivity studies for multiple locations statewide, statewide traffic modeling, land use assessment, and growth projections.

New Castle County Multimodal Planning, New Castle County, DE: Managing multiple open-end agreements for New Castle County Department of Public Works and Department of Land Use. Lead a study to evaluate a three-mile trail connection between New Castle Corporate Commons and the Jack A. Markell Trail. This new trail will provide an entirely off-road pedestrian and bicycle connection between downtown Wilmington with the offices of the State's largest employer, Christiana Care Health System. Developed several trail alignment alternatives and led a stakeholder outreach effort to engage the local businesses and surrounding community. Currently responsible for oversite of the final design of Phase 1B and Phase 2, and concept development of Phase 4 to connect the trail to the New Castle County Hope Center.

WILMAPCO Multimodal Planning Projects, New Castle County, DE: The Project Manager in charge of a corridor study focused on identifying multimodal improvements that improve safety and enhance neighborhood vitality. Evaluating potential improvements to bicycle, pedestrian, and bus facilities to provide connectivity to the local trail system, parks, and a regional transportation center.

Howard County Complete Streets, Policy, Planning, and Design, Howard County, MD: Leading an on-call agreement for the planning and design of walking and bicycling facilities for Howard County. Preparing preliminary and final designs for low-stress bicycle facilities to advance projects identified in the Walk Howard and Bike Howard master plans. Improvements include traffic signal replacement to accommodate new ADA-accessible pedestrian crossings, improved access to transit, safe connections to nearby shopping centers, pedestrian level lighting, and stormwater management. Specific projects include a new shared-use pathway along Broken Land Parkway to connect pedestrians to the Park and Ride at MD 32 and Broken Land Parkway; a new shared-use pathway and sidewalk connection along Dobbin Road from Oakland Mills Road to MD 175; and a new cycle track along Oakland Mills from Old Montgomery Road to Dobbin Road. Additional tasks under this agreement include supporting a rewrite of the County's Design Manual for the execution of the County's Complete Streets implementation policy.

Scott Thompson-Graves, PE, PTOE

Sr. Vice President

Planning/Traffic Technical Quality Advisor

EDUCATION

B.S./Civil Engineering, Transportation/ Purdue University/ 1996

REGISTRATION/ CERTIFICATIONS

2001, Pennsylvania Registered Professional Engineer No. PE058887E

2001, Indiana Registered Professional Engineer No. PE10100257

2005, Professional Traffic Operations Engineer, Certificate No. 1862

2011, Virginia Registered Professional Engineer No. 0402048307

2010, Maryland Registered Professional Engineer No. 0039539

EXPERIENCE

29 Years

Scott is a nationally-known transportation expert with 29 years of experience in many aspects of multimodal planning and transportation engineering and leading large, complex transportation planning projects as well as conducting detailed operational analyses, determining recommended improvements, and developing budgetary cost estimates for clients throughout North America. Scott has also led the design for transportation projects throughout western Pennsylvania. He leads one of the largest transportation planning and traffic engineering groups in Pennsylvania. Scott has been actively working with Erie County since 2007 and since that time he has worked with most of the municipalities in the county under stand alone assignments such as the Northeast Transportation and Land Use Study, regional assignmenst such as the countywide traffic signal inventory and assesment program, or through the past 3 updates to the Long Range Transportation Plans. This mix of local and National experience allows Scott to provide innovations, ideas, and lessons learned from others while understanding the unique transportion challenges to provide context sensitive solutions for Erie County.

He has led or assisted with dozens of transportation planning projects in Pennsylvania and throughout the country. Scott is well-known for his realistic, comprehensive transportation planning studies that result in stakeholder support and ultimately, implementation. His plans and analyses have resulted in new sidewalks, trails, transit stops, roadway connections, intersection improvements, new ordinances, and modifications to existing ordinances. His group are also national leaders in using accessibility metrics to evaluate and prioritize projects. For example, he recently helped Maryland DOT through their first performance-based project prioritization process using metrics such as change in access to jobs and changes in the average commute time.

He has led statewide and regional multimodal freight plans, congestion management processes, traffic signal inventories/ assessments, model development and maintenance, truck circulation, and transportation & land use studies throughout Pennsylvania, Maryland, Delaware, Indiana, Virginia, New Hampshire, Missouri, Kansas, Alabama, Kentucky, and Grand Cayman.

Erie County Planning and Preliminary Engineering Services: Project manager for the current open end planning contract. Our work has included 13 tasks which ranged from streetscape plans to active transportation plans and the most recent Long Range Transportation Plan.

Open Ends for Miscellaneous Engineering & Environmental Services (E02331, E03435, E03830, & E04315, PennDOT District 1-0): Led (or leading) all of WRA's traffic & transportation planning tasks under these District 1-0 Open End Agreements, including:

Erie County Long Range Transportation Plan 2042 Update: WRA completed the first Erie County LRTP (2040) Update for the Erie County Dept. of Planning in 2011 and was tasked to complete a second update under this open end. Project included extensive stakeholder coordination as well as review of all current/ongoing plans and studies within the region. Innovations included accounting for accessibility, quantifying the health benefits of transportation improvements, and integration of PennDOT Connects. Normally a 12-month process, the 2042 Update was completed in only four.

Edinboro Road Access Management Study, Erie County: This project involved reviewing the existing infrastructure along SR 699 between Interchange Road and Hershey Road and then along SR 4010 Hershey Road between SR 699 and US 19 (Peach Street) near the Millcreek Mall outside the City of Erie. This review consisted of an existing and future condition traffic/safety analysis which helped WRA determine future infrastructure and access improvements based on proposed developments and zoning. Tasks included: stakeholder interviews, traffic counts, inventory of existing roadway infrastructure (road geometry, sidewalks, traffic signals, driveway spacing, etc.), crash analysis, existing/future conditions analysis, 2 public meetings,

developing conceptual designs for improvements, and developing draft municipal zoning and SALDO ordinances for access management.

Meadville Traffic/Land Use Study for US 322/SR 19/SR 98, Crawford County: WRA completed this traffic study for District 1-0 (under E02331) and Vernon Township along the US 322 corridor to identify existing traffic concerns and determine potential improvements for future implementation. Alternatives were presented on short/mid/long-term measures to improve the corridor as it exists and as future development occurs. WRA is currently completing design for one of the study alternatives, a roundabout at the intersection of SR 322 and SR 6/SR 98/SR 19, under E03830 & E04315.

N. Main Street (SR 886) Study, Allegheny College, Crawford County: Project Manager for this study for District 1-0 (under E03435) to assess pedestrian safety along N. Main St. through the Allegheny College campus. WRA inventoried pedestrian infrastructure along SR 886 from Henry St. to Limber Rd., and also conducted travel time runs during peak hours. Vehicle and pedestrian/bicycle volumes were measured at all intersections and mid-block locations to capture jaywalking/non-traditional crossings. WRA worked closely with PennDOT, Allegheny College, and the City of Meadville to reach consensus on a set of alternatives for implementation that was presented to the general public. WRA is currently leading the design of one of the study alternatives.

SR 62 Safety Study, Mercer County: Agreement Manager for this assignment (under E04315) to study safety issues along the 11-mi. SR 62 corridor between Hermitage & Mercer. Study involved a safety analysis using Highway Safety Manual (HSM) methodology to document the benefits of any proposed safety countermeasures.

Traffic Signal Inventory & Improvement Programs for Erie County MPO and Northwest RPO: Project Manager for these projects to assist Erie County MPO and Northwest RPO with developing thorough and accurate inventories of existing traffic signal assets in the project areas, analyzing the data, and determining needs, and developing cost estimates for signal improvements. Involved inventories for over 540 signals in five counties.

US 6N Corridor Study, Erie County, PA: Project Manager for this project for the Erie County Department of Planning that involved a corridor analysis and development of low-cost, smart transportation improvements as part of a land use and transportation study along a 5-mile stretch of US 6N through Edinboro and Washington Township. Project goals focused on encouraging growth while reducing traffic congestion, improving safety, managing incidents, and enhancing pedestrian, bicycle, and transit circulation. Extensive municipal coordination occurred through meetings with a Project Advisory Committee, community stakeholders, and the public. Recommendations from the study have been and continue to be implemented.

On-Call Consultancy Services, SPC, Southwestern Pennsylvania: Directing WRA's traffic engineering assignments under this On-Call Consultancy Services Open End for Southwestern Pennsylvania Commission (SPC). Tasks assigned have included the SR 18 Corridor Operations Planning Study, Road Safety Audits, and evaluating the potential benefits and impacts of Transit Signal Priority (TSP) along the SR 51 corridor in the City of Pittsburgh as a case study for SPC. The SR 18 Corridor Study included assessing corridor background information prepared by SPC, key person interviews, crash analysis, review of corridor planning documents and proposed developments, a week-long multimodal operations assessment, preliminary findings presentation, and development of a final report. The Road Safety Audits involved assessing background information prepared by SPC, key person interviews, crash analysis, 3-day safety assessment, preliminary findings presentation, development of a final report, and reviewing formal responses from roadway owners.

Borough of Greenville Pedestrian Circulation Study, Mercer County, PA:Project Manager for this project for the Mercer County Regional Planning Commission (MCRPC) to conduct a pedestrian circulation study for the Borough of Greenville. The study was one of the prioritized projects from the Mercer County LRTP that WRA completed for MCRPC in 2016. The project kicked off in April 2018 with a pop-up meeting at Thiel College, where students gave their input on everything from sidewalk linkages to bike trails. Robust attendance at stakeholder meetings as well as hundreds of responses to an online survey by engaged residents contributed valuable input to the listening phase of the project. The final plan includes a set of implementable short-, medium-, and long-term projects including conceptual designs and rough-order-of-magnitude costs. Project included working with a steering committee and extensive public involvement.

Mercer County Long Range Transportation Plan Update, Mercer County, PA: Project Manager for this project to assist MCRPC in updating their Long Range Transportation Plan (LRTP) through an approach that capitalized on the tools and data available from PennDOT's Statewide LRTP Update (PA On Track), leveraged active stakeholder engagement, and involved innovative public outreach.

Rob Wills, PE
Vice President

Design Technical Quality Lead

EDUCATION

B.S./Civil Engineering/ Pennsylvania State University/ 1997/ Specialization in Transportation

REGISTRATION/ CERTIFICATIONS

2002 Maryland Registered Professional Civil Engineer, No. 27749

2014 Pennsylvania Registered Professional Civil Engineer, No. PE082866

2016 Delaware Registered Professional Civil Engineer, No. 20945

EXPERIENCE

27 Years

Mr. Wills has 27 years of experience in transportation design including transportation projects in Pennsylvania, Maryland, and Delaware. He has managed and designed a wide variety of projects including resurfacing, pedestrian improvements, roadway widening, intersection improvements, bridge improvements, safety improvements, and new roadway alignment. Recent projects include:

SR 0081 Auxiliary Lanes – Carlisle, Cumberland Co., PA (PennDOT Dist. 8-0): Project Manager for the design of improvements along I-81 through Carlisle, PA. As part of this project, WRA developed an I-81 Carlisle Master Plan to identify projects that will improve the poor roadway conditions, safety, traffic operations and system linkage through the I-81 Carlisle Corridor (Exits 44-52). WRA developed an interchange alternatives analysis to complete several interchanges and identify the optimum configuration based on several factors including traffic analysis, traffic modeling, right-of-way and environmental impacts. The interchanges and corridor alternatives were evaluated for future growth along the corridor from both a state and national freight planning perspective as the I-81 corridor is critical to the economy. As part of the Master Plan and implementation plan was developed for District 8-0 to use as guidance for moving fundable projects forward.

SR 0322 Sec 036 Interchange Improvements, Lancaster Co., PA (PennDOT Dist. 8-0): Project Manager for Preliminary Engineering and Final Design of a diverging diamond interchange (DDI) at the SR 0322/SR 0222 interchange. Mr. Wills was responsible for developing the Preliminary Alternatives Analysis which included a diverging diamond interchange, tight diamond and TSM improvements as alternatives. The DDI was selected based on the fact that it met the purpose and need and had the best benefit/cost ratio. The project was developed in coordination with the Lancaster County MPO. The project included a public involvement campaign to educate the public on the DDI as well as coordination with the local Old Order community. The design addressed multi-modal transportation including horse and buggy traffic. Stormwater Management, Right-of-Way Plans, and Utility Coordination are also involved. *2023 ASHE National Project of the Year (<$20M).*

I-81 Exit 5 Interchange Study, Franklin County, PA (PennDOT District 8-0): Project Manager for developing alternatives for improving traffic operations and safety at the I-81 Exit 5 Interchange while accommodating future planned growth and improving multi-modal transportation along SR 16. Six alternatives were developed including a tight diamond interchange, a diverging diamond interchange (DDI), and single point urban interchange (SPUI), ramp relocations, and roundabouts at ramp terminals. Cost estimates were prepared for all alternatives that met the purpose and need and a cost/benefit ratio was calculated. As part of the study, WRA consulted with the Franklin County MPO to confirm study assumptions.

I-83 North York Widening, York Co., PA (PennDOT Dist. 8-0): WRA Project Manager for improvements to Interstate 83 in York County, Pennsylvania between Exit 18 (PA 124, Mt. Rose Avenue) and Exit 22 (PA 181, North George Street), a distance of approximately 4 miles. The project includes multiple interchanges and roundabouts as well as adjacent roadway improvements. As part of the alternatives analysis, WRA collected data and developed macro and micro traffic models to simulate traffic for existing and proposed conditions in order to evaluate various alternatives. This study was done in coordination with the York Area MPO. Following the selection of the preferred alternative, WRA prepared Cross Sections and Signing and Pavement Marking Plans and provided Drainage Design, Traffic Signal Design, and Traffic Control Plan support as part of Preliminary Engineering. WRA also prepared a Point of Access Study for the project as well as one of the early action projects. This project in Final Design and WRA is preparing the Signing and Pavement Marking Plans, Traffic Signal Plans, ITS plans, Lighting Plans, and Traffic Control Support.

Franklin Street Improvements, Cambria, Co., PA (PennDOT Dist. 9-0): Senior Highway Project Engineer assisting on developing alternatives, Preliminary Engineering and Final Design to improve Franklin Street in downtown Johnstown, PA. Alternatives included improvements for drainage, transit, pedestrian and bicycle mobility, access management, and intersection geometry. Multiple stakeholders (hospital, schools, businesses, CamTran) were involved as part of

the public involvement campaign. A pedestrian buffer/barrier was installed along the corridor in areas of high pedestrian volumes to eliminate pedestrian and vehicle conflicts and to encourage pedestrian crossings at high visibility enhanced cross walk locations. Public coordination with CamTran resulted in an agreement to consolidate transit stops with the construction of four (4) dedicated bus turnouts to improve traffic flow along the corridor. A dedicated bicycle connection was provided along a portion of the project to connect to a park. Traffic signal upgrades were also included.

SR 3017 (Bethel Mill Road)/SR 3014 (Mill Road) Roundabout, Delaware Co., PA (PennDOT Dist. 6-0): Contract Manager and QC reviewer for Preliminary Engineering and Final Design of a roundabout at the intersection of SR 3017 (Bethel Road) and SR 3014 Mill Road. Due to the steep grades (8%-11%) along SR 3017, the roundabout was designed on an inclined plane to reduce impacts while still maintaining the required sight distance. Due to the inclined plane, another unique feature of the roundabout was that the cross slopes in the roundabout direct water to the interior of the roundabout. Coordination with Upper Chichester Township was essential to incorporating the township's plans for a park in the northwest quadrant of the intersection into the design for the roundabout. The project also included pedestrian improvements, roadway lighting, stormwater management facilities, and public involvement.

Perry County Bridges (Newport) – 2022, Perry County, PA (PennDOT Dist. 8-0): Agreement Manager for District 8-0 agreement which includes five (5) work orders that includes three (3) structure replacements and two (2) structure rehabilitation projects.

District 8-0 Open End Engineering Agreement (PennDOT Dist. 8-0): Agreement Manager for District 8-0 open end which included the following tasks:

- SR 0034-051, Cumberland Co., PA: WRA performed PE and FD for intersection improvements at the SR 034/Calvary Road in Carlisle, PA. The scope of improvements includes the addition of a left turn lane, traffic signal improvements and pavement reconstruction.
- SR 0030-113, Lancaster Co., PA: WRA performed PE and FD for resurfacing and safety improvements for a 9 mile section of US 30 east of the City of Lancaster. The project includes signal improvements, access management, signing and pavement marking upgrades, installation of advance flashing warning beacons, drainage upgrades, turning movement improvements at intersections, and incorporation of township master plan improvements.
- Good Hope Road Study: WRA performed a multimodal transportation study to analyze existing conditions and identify potential transportation improvement alternatives to improve safety and mobility for all roadway users within the Good Hope Road (SR 1013) corridor (3.5 miles).
- Lancaster HSIP Applications: WRA assisted PennDOT D8-0 and Lancaster County MPO by preparing four HSIP funding applications. WRA conducted HSM safety analyses, prepared cost estimates, and performed B/C analyses.
- 119233 Districtwide Countdown Ped Signals Safe Project for VRU: WRA performed PE and FD to install countdown pedestrian signal heads at up to 200 intersections across the District to support meeting the statewide Vulnerable Road User (VRU) special rule requirements for HSIP funding.

SR 0222-083 Church Street, Lancaster Co., PA (PennDOT District 8-0): Senior Highway Engineer assisting in performing PE and FD for the resurfacing of SR 0222 including corridor improvements from the Queen Street to Lime Street intersection. Additional improvements include traffic signal reconstruction at Queen, Lime and Church Street. An alternatives analysis was completed that determined Church Street could be reduced from three (3) lanes to a two (2) lane typical section. Multiple public outreach initiatives were conducted including public meetings, online surveys and in-person discussion at community events to determine how the community envisioned development of the additional space that would be available with the lane reduction. Alternatives included bike lanes, cycle tracks and a shared use path. Additional elements included curb extensions, green space, tree lawns and high visible cross walks to enhance the multimodal and community connections along the corridor.

SR 356 Section J10 Garvers Ferry Road, Westmoreland Co., PA (PennDOT Dist. 12-0): Senior Highway Engineer assisting in development of roadway construction plans and erosion and sediment control plans for a 1.5-mile full reconstruction and partial relocation project for the addition of additional travel lanes and center left turn lanes. Project also addressed several deficient AASHTO design criteria and brought the corridor up to current standards.

Lancaster Co. Bridges (3 Bridges) – SR 1026, SR 1030 & SR 1044, Lancaster County, PA (PennDOT Dist. 8-0): This agreement included two superstructure replacements and a culvert replacement in Lancaster County.

John O. Buerkle, Jr., RLA, AICP

President
jbuerkle@pashekmtr.com

PROFESSIONAL EXPERIENCE

Over the past 35 years, John's work has established Pashek + MTR as a leader in the planning and design of outdoor environments for state and local parks, K-12 & post secondary education campus planning and design, active transportation improvements, and walkable communities.

He has managed over $20 million dollars of construction improvements in the tri-state area. Further, John has successfully assisted many of our clients in securing grants to fund their projects. John's consensus building approach meets our clients' needs while incorporating sustainable design principles and identifying opportunities to maximize economic development impact within communities.

John is experienced in working with PA Department of General Services requirements, PA Board of Public Education requirements, PA State System of Higher Education requirements, College and University specific requirements, ADA 2014 ADA Standards for Accessible Design, the International Building Code, local municipal codes, PA DEP & County Conservation District permitting requirements.

Drawing from his diverse experience, John has been asked to write and lecture on a large range of topics. He periodically presents at state-wide Pennsylvania Annual Greenway and Trails Summits, and Pennsylvania Recreation and Parks Society Annual Conferences. John has served as a guest lecturer for Slippery Rock University's Department of Park, Recreation and Resource Management, PA DCNR Bureau of State Parks, and PA DCNR Bureau of Forestry.

John was appointed by former PennDOT Secretary Allen Biehler to the Technical Committee of Envision Downtown, a public-private partnership created by City of Pittsburgh Mayor Bill Peduto and The Pittsburgh Downtown Partnership to craft a 21st century vision for the sustainable and efficient development of a Downtown for all.

CLIENTS

- Pennsylvania Department of Conservation and Natural Resources, Bureaus of Conservation and Recreation, State Parks, and Forestry
- U.S. Forest Service, Allegheny National Forest
- Pennsylvania Department of Transportation
- Penn State University, various campuses
- University of Pittsburgh, various campuses
- PA County Government Agencies
- NY County Government Agencies
- MD County Government Agencies
- PA Municipalities
- City of Pittsburgh, Department of Public Works
- NY Municipalities
- Not-for-Profit Organizations

EDUCATION

1989 Bachelor of Landscape Architecture: Pennsylvania State University College of Arts and Architecture

2010 International Mountain Biking Association Trail Care Crew Training, IMBA Sustainable Trail Design

2013 Certificate of Academic Achievement, Urban Power to Prosper Class of 2013, University of Pittsburgh Joseph M. Katz School of Business

2016 Public Interest Design Institute Social Economic Environmental Design (SEED) Training

LICENSURE & CERTIFICATIONS

Registered Landscape Architect in Pennsylvania: (# LA-001240-E), American Institute of Certified Planners (AICP), Social Economic Environmental Design (SEED) Certification

AWARDS

- Dead Mans Hollow Conservation Plan - Governors Award of Environmental Excellence
- Chautauqua County Greenway Plan - Upstate New York APA Award for Planning Excellence in Comprehensive Planning
- The Dam Park at Austin: Master Plan and Economic Development Strategies - Pennsylvania Chapter APA Planning Excellence Best Practice Award

PUBLICATIONS

Pennsylvania Trail Design & Development Principles: Guidelines for Sustainable Non-Motorized Trail Design

Jenni Easton, AICP, CNU-A

Principal
jeaston@pashekmtr.com

PROFESSIONAL EXPERIENCE

Jenni Easton, a principal at Pashek+MTR, leads the firm's planning studio. Working with municipalities to facilitate comprehensive plans, land use ordinances and other planning projects, Jenni's approach introduces leading-edge innovation rooted in the practical realities of implementation. She helps communities reveal and realize shared visions.

Jenni's planning practice focuses on the relationship between the physical design of neighborhoods, communities and regions and the social and economic issues they experience. She is passionate about evaluating and retooling the local regulatory frameworks that shape the built environment. Her 16 years of experience have focused on helping communities change the ground rules for development, giving them the tools they need to enable and incentivize the investments they envision.

Jenni combines a fine arts background with advanced training in data and policy analysis. Her concise analysis and robust illustrations make her work easy to digest, and clients appreciate that she provides both granular details and big-picture context. Her experience in administering ordinances as a contract zoning officer is clear in the practical, internally consistent way she drafts regulatory language.

SELECTED PROJECTS

- "Plan Marshall" Implementable Comprehensive Plan; Zoning and Land Development Ordinance Updates, Marshall Township, PA
- "Ascend Lebo" Municipal Comprehensive Plan, Mt. Lebanon, PA
- "Activate Uptown" Placemaking Project, Mt. Lebanon, PA
- "Plan for Our Future" Joint Implementable Comprehensive Plan, O'Hara Township and Fox Chapel Borough, PA
- Brodhead Road Corridor Planning Study
- Aspinwall Borough Implementable Comprehensive Plan and Zoning Rewrite, Aspinwall, PA
- "Your Brentwood Plan" Implementable Comprehensive Plan, Brentwood Borough, PA
- On-Call Planning Services, Jefferson Hills Borough, PA

Prior to joining Pashek + MTR

- "Blueprint Bethel Park" Comprehensive Plan and Zoning Rewrite, Bethel Park, PA
- "Connellsville Next" Comprehensive Plan and Walk/Bike Audit, Connellsville, PA
- Lawrence County Affordable Housing Implementation Plan, Lawrence County, PA
- Analysis of Impediments to Fair Housing Choice, Allegheny County, PA
- A New Blueprint for New Stanton": Borough Comprehensive Plan, Westmoreland County, PA

EDUCATION

2008 Master of Public Administration: University of Pittsburgh, Pittsburgh, PA

2006 Bachelors of Arts in Journalism and Interdisciplinary Fine Art: Indiana University of Pennsylvania, Indiana, PA

CREDENTIALS

American Institute of Certified Planners

Accredited by the Congress for New Urbanism

Member, American Planning Association

Member, Urban Land Institute Pittsburgh

Speaking Engagements

Rail-volution Conference, Vancouver, September 2019: "Remaking the Suburbs with TOD Policy and Planning," with panel

APA National Planning Webcast Series, April 2016: "Assessing Affordable Housing Need: A Practical Toolkit"

PASHEK MTR

Steven Baumgardner

Environmental Studies and Planning Lead

NEWELL TERESKA & MACKAY ENGINEERING

Professional Experience

Total Years of Experience: 36

Education:

BS, Geology, University of Pittsburgh, 1987

Licenses/Certifications:

Qualified Professional under Maryland Forest Conservation Act

Key Qualifications:

- *36 years of environmental experience*
- *He has assisted in the preparation of documentation for CEEs and BRPAs.*
- *He also specializes in forest stand delineations, forest conservation planning, and Phase I Environmental Site Assessments*
- *He has worked in Pennsylvania, Maryland, New Jersey, New York, Ohio, and West Virginia.*

Mr. Baumgardner is an Environmental Scientist/Senior Project Manager with over 36 years of experience in both conducting and managing natural resource investigations. His NEPA documentation experience includes CEEs and BRPAs, as well as the required associated documents and tasks for both natural and cultural resources. Mr. Baumgardner has conducted numerous wetland and stream identifications and delineations, wetland mitigation site evaluations, permitting, habitat surveys, and post-construction monitoring and design. He also specializes in forest stand delineations, forest conservation planning, and Phase I Environmental Site Assessments. Other experience includes Chesapeake Bay Critical Area Environmental Assessments, Phase II Environmental Site Assessments, Health and Safety Plans, and Environmental Assessments. His related project experience includes:

L00589, South Main Street over Fishing Creek, PennDOT District 8-0, Marysville Borough, Perry County, PA—*Project Manager* for the environmental investigations for the improvements to the intersection of SR 0124 and SR 2011 in York County, PA. Responsible for managing completion of the scoping field view.

E05224, SR 0441 (Eisenhower Boulevard) Pedestrian Safety Improvements, PennDOT District 8-0, Dauphin County, PA—*Environmental Scientist* responsible for the investigations for the proposed improvements to SR 0441 including completion of the CEE document.

E04730, SR 0124 Intersection Improvements, PennDOT District 8-0, York County, PA—*Project Manager* for the environmental investigations for the improvements to the intersection of SR 0124 and SR 2011 in York County, PA. Responsibilities include managing completion of the scoping field view and alternatives analysis of environmental constraints.

E03252, WO 2, SR 8019 Southbound I-83 Exist 24 Ramp Improvements, PennDOT District 8-0, York County, PA—*Project Manager* for the environmental investigations for improvements to the southbound I-83 ramp improvement in York County, PA. Responsibilities include managing completion of the CEE document, wetland/stream absence memo, and threatened and endangered species clearance, as well as conducting a Phase I ESA.

E03252, WO 6, SR 0238 Intersection Improvements, PennDOT District 8-0, York County, PA—*Project Manager* for the environmental investigations for improvements to the SR 0238 and SR 4005 intersection in York County, PA. Responsibilities include managing completion of the CEE document, wetland/stream absence memo, and threatened and endangered species clearance, as well as conducting a Phase I ESA.

E04732, SR 2029 Improvements, PennDOT District 8-0, Lancaster County, PA—*Project Manager* for the environmental investigations for the roadway improvements to SR 2021 in Lancaster County, PA. Responsibilities include managing completion of the scoping field view and alternatives analysis of environmental constraints.

E04732, SR 0741 Improvements, PennDOT District 8-0, Lancaster County, PA—*Project Manager* for the environmental investigations for the roadway improvements to SR 0741 in Lancaster County, PA. Responsibilities include managing completion of the scoping field view and alternatives analysis of environmental constraints.

E04731, SR 0030-040 Improvements, PennDOT District 8-0, York County, PA—*Project Manager* for the environmental investigations for the roadway improvements to SR 0030, Section 040 in York County, PA. Responsibilities include managing completion of the scoping field view and alternatives analysis of environmental constraints.

E04731, SR 0030-150 Improvements, PennDOT District 8-0, Franklin County, PA—*Project Manager* for the environmental investigations for the roadway improvements to SR 0030, Section 150 in Franklin County, PA. Responsibilities include managing completion of the scoping field view and alternatives analysis of environmental constraints.

E04342, Part 5, SR 34 Carlisle Street, PennDOT District 8-0, Perry County, PA—*Project Manager and Lead Investigator* responsible for the environmental investigations for the improvements to Carlisle Street bridge in Perry County, PA. Responsibilities include attending the scoping field view and completion of the scoping document.

E04342, Part 9, SR 274 over Montour Creek, PennDOT District 8-0, Perry County, PA—*Project Manager and Lead Investigator* responsible for the environmental investigations for the improvements to SR 274 bridge in Perry County, PA. Responsibilities include managing completion of the scoping field view, CEE document, wetland/stream delineation, threatened and endangered species habitat survey, historic resource survey form, and Phase I Archaeological Survey report.

E04342, Part 13, SR 850 over Trib to Sherman's Creek, PennDOT District 8-0, Perry County, PA—*Project Manager and Lead Investigator* for the environmental investigations for the improvements to SR 850 bridge in Perry County, PA. Responsibilities include managing completion of the scoping field view, CEE document, wetland/stream delineation, and Phase I Archaeological Survey report, as well as conducting the Phase I ESA.

E04735, Part 5, SR 0034 over UNT to Sherman Creek, PennDOT District 8-0, Perry County, PA—*Project Manager* for the environmental investigations for the SR 0034 bridge replacement over a UNT to Sherman Creek in Perry County, PA. Responsibilities include managing completion of the scoping field view, CEE document, wetland/stream delineation, and archaeological and geomorphological surveys, and threatened and endangered species clearance.

E04347, Part 2, SR 3001 over Tyler Run, PennDOT District 8-0, York County, PA—*Project Manager* for the environmental investigations for the SR 3001 bridge replacement over Tyler Run in York County, PA. Responsibilities include managing completion of the wetland/stream delineation.

E04347, Part 6, SR 0116 over UNT to Codorus Creek, PennDOT District 8-0, York County, PA—*Project Manager* for the environmental investigations for the SR 0116 bridge rehabilitation over a UNT to Codorus Creek in York County, PA. Responsibilities include managing completion of the wetland/stream delineation.

E04347, Part 10, SR 2002 over UNT to Mill Creek, PennDOT District 8-0, York County, PA—*Project Manager* for the environmental investigations for the SR 2002 bridge replacement over a UNT to Mill Creek in York County, PA. Responsibilities include managing completion of the wetland/stream delineation and Phase I Bog Turtle habitat survey.

E04730, SR 0124 Intersection Improvements, PennDOT District 8-0, York County, PA—*Project Manager* for the environmental investigations for the improvements to the intersection of SR 0124 and SR 2011 in York County, PA. Responsibilities include managing completion of the scoping field view and alternatives analysis of environmental constraints.

E03489, SR 2048 Old Forge Road, PennDOT District 8-0, York County, PA—*Project Manager and Lead Investigator* for the environmental investigations for the SR 2048 bridge replacement in York County, PA. Responsibilities include leading the wetland delineations, preparation of the CEE document, and threatened and endangered species habitat survey.

ROCKLAND PLANNING

Toby L. Fauver, FAICP

Consultant

Years with Rockland Planning, Inc: 6
Years with Other Firms: 25

Degrees

Certificate, 1999, Traffic Engineering, Northwestern University Traffic Institute

M.R.C.P., 1995, Community Planning, Kansas State University

B.A., 1993, GeoEnvironmental Studies, Shippensburg University

Licenses/Certifications

Fellow American Institute of Certified Planners, 013832

General Qualifications

Mr. Fauver has over 30 years of professional experience in executive leadership, planning, policy, legislative efforts and stakeholder involvement/communications. He was most recently the Deputy Secretary for Multimodal Transportation at the Pennsylvania Department of Transportation.

Experience

Crawford Area Transportation Authority. Provided assistance to CATA's executive leadership to conduct a shared ride fare increase analysis for both Crawford and Venango. This analysis included analyzing ecolane data for the agency, developing a new consolidated fare structure, analyzing the impacts on sponsors and MATP, and completing the fare increase application for PennDOT.

Pennsylvania Public Transportation Association. Provided technical assistance to the executive director on Pennsylvania Public Transportation legislation and the Pennsylvania legislative process.

Cumberland County, PA. Provided technical assistance to analyze transit investment return on investment for County. Assisted the Commissioners with analysis on opportunities for Capital Area Transit and Rabbit Transit to merger their management functions.

Westmoreland County Transportation Authority. Provided assistance to Westmoreland Transit to analyze option to bring their fixed route and paratransit service in house for delivery and management. Provided assistance to develop a revised organization chart, job descriptions, policies, budget and funding plan to bring service in house. Provided strategic advice to the Executive Director and Board. Provided analysis of the state's medical assistance program brokerage costs and provided lobbying services to educate legislators and the Governor's office on the cost and impacts to public transit authorities if the MATP program is given to a broker.

Freight Goods Movement Study, Statewide PA, Transportation Advisory Committee to PennDOT. Planner for this statewide freight study to discover ways to upgrade the transportation system to improve freight goods movement in the commonwealth. The study provided an analysis of statewide freight goods movement data, a state-of-the-practice survey, and a forum with shippers and carriers. Recommendations were developed for training personnel, implementing intelligent transportation systems (ITS), corridor planning, and state transportation improvement projects.

SEPTA Microtransit Study, SEPTA. Transit Technical Exert assisting Nelson Nygaard to develop a Microtransit Service Plan for SEPTA. Specifically, we assisted the team to help evaluate labor considerations and prepared an analysis and recommendations for improving the Frontier Maint. and Bus storage facility to meet the requirements to store/maintain microtransit vehicles at the facility.

Luzerne County Transportation Authority. Provided assistance to the Board of Directors to evaluate the organization structure, management and staffing and assess opportunities to improve efficiency as well as assist the general manager and chief financial officer to evaluate and manage the agency while in a management transition. Provided assistance to LCTA to conduct and develop a transit development plan including microtransit as part of the future service improvement. Assisting LCTA with implementation of their microtransit service plan.

Bus Propulsion Benefit and Cost Assessment, PennDOT. Transit Technical Expert assisting the Whitehouse Group team with the development of a bus propulsion technology benefit cost assessment tool for PennDOT. Specifically, we conducted research on the vehicle propulsion technology through interviews with transit agencies and manufacturer research.

Morgan Ruziecki

Consultant

Years with Rockland Planning, Inc: 2
Years with Other Firms: 4

Degrees

B.S., 2018, Environmental, Geological, & Geographic Studies, Bloomsburg University

B.A., 2018, Anthropology, Bloomsburg University

General Qualifications

Morgan has a Bachelor of Science in Environmental, Geographical, and Geological Sciences/Geography & Planning and a Bachelor of Arts in Anthropology from Bloomsburg University of PA. Morgan's planning experience covers multiple aspects of the field, with an emphasis on community, geospatial, and multimodal transportation planning. Morgan has built an extensive portfolio of project experience including bike/ped planning, public outreach, and data analysis. She is also skilled at GIS and leveraging ESRI products for data communication and analysis.

Experience

Crawford County Comprehensive Safety Action Plan (CSAP), *Crawford County, PA.* Planner involved in the development of a CSAP that will identify high-risk locations and implement measures to those reduce risks. It will also identify strategies to protect all road users (drivers, pedestrians, cyclists, and transit riders), and propose infrastructure improvements. Community engagement is a critical component of the plan and includes leveraging key stakeholder input through public meetings, distributing a map-based interactive survey, and conducting a series of focus groups. An ArcGIS Hub site will serve as a central platform for tracking project progress and public participation opportunities and eventually presenting the plan's findings and implementation updates.

Ernst Trail Connection Feasibility Study, *Northwest Commission.* GIS support involved in fieldwork, data collection, and concepts and alternatives development for the proposed Ernst Trail Extensions. An evaluation of barriers to active transportation modes as well as public and stakeholder outreach was also conducted.

Ernst Trail-Meadville Connection Action Plan, *Economic Progress Alliance of Crawford County.* Planner involved in development of an Action Plan to connect existing segments of Ernst Trail to the City of Meadville's Bicentennial Park. The project consisted of stakeholder engagement and development of a conceptual strategy to make the extension of the trail a reality.

Lackawanna & Luzerne Joint Long-Range Transportation Plan (LRTP), *Luzerne County.* Planner assisting in the development and update of the counties' LRTP through public engagement support and GIS analysis. The updated LRTP will be in alignment with recent federal requirements related to freight, air quality, performance measures, and new planning factors that are currently in progress.

CMAQ Technical Planning Support. *PennDOT Central Office.* Planner to PennDOT to conduct CMAQ emissions analyses, performance measure analysis, and other climate change and greenhouse gas emission assessments. Performed GIS data migration and map development in PennDOT's PennShare database. Tasks leveraged technical programs including FHWA CMAQ Emissions Calculator Toolkit Tools, ArcGIS Pro, and Microsoft Excel.

Unified Environmental Justice (EJ) Analysis 2025-2028 TIP, *PennDOT Central Office.* Lead planner for implementation of statewide EJ evaluation and analysis standards for multiple MPOs and RPOs across the state (including LLTS MPO) as applicable for the 2025-2028 TIP. The project included a variety of EJ data processing tasks based on county-by-county identification of traditionally underserved populations at the block group level using Census data and ArcGIS mapping. The project also assessed conditions and identified needs by analyzing bicycle and pedestrian crashes, fixed route bus stops, pavement conditions, and bridge conditions.

Transportation Performance Measures Dashboard, *SEDA-COG MPO.* Lead planner and GIS expert responsible for building ESRI-based Transportation Performance Measure Dashboard to allow the MPO to track transportation performance and present progress to the public. Emerging from the MPO's latest LRTP update, the dashboard compiled a suite of data products and ArcGIS applications (including Story Maps, Dashboards, Experiences, and Survey123) into a presentable ArcGIS Hubsite.

Whitman, Requardt & Associates, LLP
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