Tri-County Regional
Planning Commission

Statement of Qualifications

Engineer/Planner for Federal Aid Projects

SUBMITTED TO
Tri-County Regional Planning Commission
ATTN: Andrew Bomberger, AICP
320 Market Street, Suite 301E
Harrisburg, PA 17101

SUBMITTED BY
Kittelson & Associates, Inc.
409 N 2nd Street, Suite 201
Harrisburg, PA 17101
717.740.6195

KITTELSON & ASSOCIATES

TRI-COUNTY TCRPC REGIONAL PLANNING COMMISSION

KITTELSON & ASSOCIATES

June 20, 2025

Tri-County Regional Planning Commission
ATTN: Mr. Andrew W. Bomberger, AICP
Executive Director
320 Market Street, Suite 301E
Harrisburg, PA 17101

RE: Engineer/Planner for Federal Aid Projects

Dear Mr. Bomberger,

Kittelson & Associates, Inc. (Kittelson) is pleased to submit this Statement of Interest in response to TCRPC's request for qualifications for an Engineer/Planner for Federal Aid Projects. Kittelson has been pleased to work with TCRPC for the last five years under the predecessor to this agreement. We understand the challenges and opportunities facing TCRPC and look forward to helping achieve your vision of long-term livability and vitality for the Tri-County region. Our team includes the following firms:

- **Kittelson** is committed to and passionate about developing thoughtful, creative, and feasible transportation solutions to solve real-world problems for the diverse communities that comprise the Tri-County region. We possess extensive experience with traditional transportation and land use planning activities and are on the leading edge of emerging issues and strategies (e.g., complete streets, road diets, ATSPM, SS4A) through research, policy, and guidance efforts, along with direct planning and design projects. We have extensive experience with project delivery & consultant project management.
- **Newell, Tereska & McKay Engineering, Inc. (NTM)** is a Pennsylvania-based, certified DBE (PAUPC #12648) and civil engineering and environmental services firm that specializes in water resources design, environmental services, and bridge design and inspection for public and private sector clients. NTM's core services include hydrologic and hydraulic studies, waterway permitting, stormwater design and permitting, environmental and cultural resources, civil/site services, transportation and bridge engineering and inspection, and technical training. NTM will assist with tasks involving stormwater management, environmental services, and consultant project management.
- **Imperial Traffic & Data Collection LLC (ITDC)** is a certified DBE (PAUPC #8523) providing full-service data collection and engineering support services. They specialize in turning movement counts, automatic traffic recorder counts, travel time studies, origin-destination studies, and speed and delay studies. ITDC is also a member of Kittelson's current on-call contract with TCRPC.

Our contract manager for this effort will be Andrew (Andy) Duerr, PE, who has successfully served as Kittelson's contract manager for our current on-call contract with TCRPC. In addition to the projects he has led/overseen for TCRPC over the last five years, Andy also has a range of planning and design experience and has built reliable relationships through work with PennDOT and the City of Harrisburg. Glenn Rowe, PE, will support Andy as our project principal, bringing 42 years of progressively responsible experience in wide-ranging transportation safety and design projects. Throughout his career, Glenn has overseen highway programs for PennDOT, including initiatives associated with highway capacity, safety, traffic operations, autonomous and connected vehicles, occupancy and hauling permits, harmonizing oversized/overweight vehicles, statewide policies, and new regulations. Andy and Glenn will be supported by a team of project managers who will leverage their extensive experience with TCRPC to successfully deliver projects, including Jeff Riegner, Laura Ahramjian, and Pete Jenior.

Kittelson is also home to over 390 engineers, planners, and specialists with experience serving more than 20 MPOs/TPOs across the country who are available to provide senior advising and subject matter expertise at any time. Should you have any questions, please contact me at aduerr@kittelson.com or 717-481-3466.

Sincerely,
Kittelson & Associates, Inc.

Signed by:
Andrew Duerr
88F315089A814E7...
Andy Duerr, PE
Contract Manager

Signed by:
Pete Jenior
6C76F3AE9C87400...
Pete Jenior, PE, PTOE
Authorized Signatory

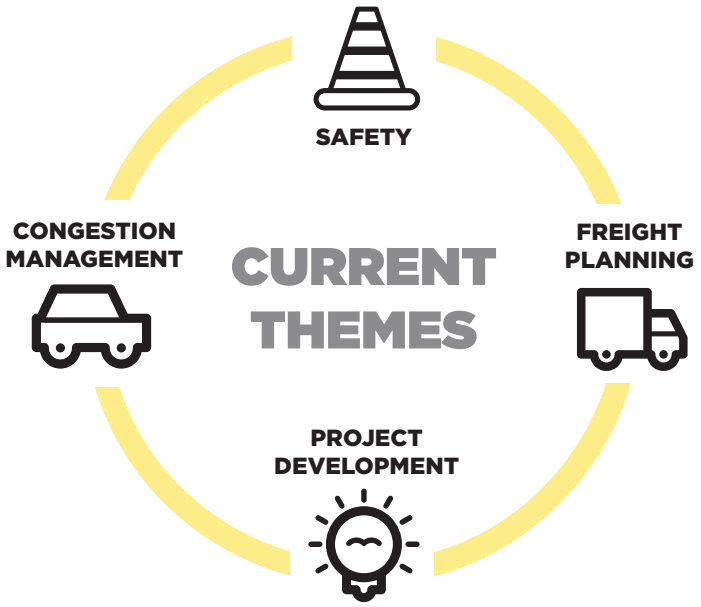
TEAM QUALIFICATIONS

Introduction

Kittelson is excited to continue working with TCRPC to foster the long-term livability and vitality of the 103 municipalities comprising Cumberland, Dauphin, and Perry counties. We have assembled a diverse team of specialists based on our experience over the last five years working with TCRPC and learning the combination of expertise that will lead to productive and efficient project teams.

We have partnered with two subconsultants for this pursuit: our current teaming partner, ITDC (data collection), and a new team member, NTM (NEPA, water resources, consultant project management). Kittelson has successfully worked with ITDC and NTM for years on similar contracts. Collectively, our team understands the challenges facing MPOs today, and we come prepared to navigate these challenges through thorough communication, thoughtful innovation, and intentional project management.

Through our interactions with TCRPC over the last several years, we have observed several contemporary themes that are of paramount importance to TCRPC and the communities you serve: safety, project development, congestion management, and freight planning. Kittelson has extensive experience with research and policy development related to these themes, and we have practical experience applying them through planning and design projects—including recent efforts carried out under our current contract.



Safety

Kittelson has been recognized as a transportation safety expert nationally—and specifically in Pennsylvania—for decades. We led the development of the *Highway Safety Manual (HSM)* and have applied its methods across the United States. We are also one of PennDOT's lead safety consultants, having led the development of the statewide Strategic Highway Safety Plan (SHSP), District Highway Safety Plans (including District 8), and Statewide Highway Safety Network Screenings in recent years. Since 2020, we have supported numerous safety initiatives for TCRPC, including extending PennDOT's network screening to include local roads within the region, identifying safety projects that would profile well against other projects in competition for limited highway safety improvement program (HSIP) dollars, supporting TCRPC's successful grant application for a Safety Action Plan, and subsequent completion of the plan and award of Safe Streets and Roads for All (SS4A) supplemental planning and demonstration funding.

Kittelson's Glenn Rowe, PE, former Chief of the Highway Safety and Traffic Operations Division, recently led an effort to develop PennDOT's HSIP Implementation Plan, which laid the framework for future safety initiatives across Pennsylvania. This project identified gaps; developed strategies, action steps, and best practices; and included a financial and performance review of all HSIP-funded projects across the state. Kittelson has also developed safety-related publications and plans that will be relevant to TCRPC's plans/projects, like the highlights below.

- TCRPC Local Road Screening & HSIP Support
- TCRPC SS4A Safety Action Plan
- PennDOT VRU Safety Assessment
- AASHTO HSM, 1st and 2nd editions (2nd ed. in progress)
- FHWA Road Safety Audit Guidebook

Congestion Management

Kittelson has reviewed TCRPC's Congestion Management Process (CMP), the latest update to the CMP, along with various reports that originated from the CMP. In addition to traditional approaches to reducing reliance on single occupancy vehicles, increasing transit ridership, and improving system management, Kittelson is a leader in emerging congestion management approaches (e.g., Transportation Systems Management and Operations (TSMO), FREEVAL, transit signal priority (TSP), parking, curbside management), and planning for the impacts of "new mobility" models, including "just in time" delivery, ridesharing, and micromobility.

Kittelson recently led the team developing a comprehensive update to the Fayetteville Area MPO's (FAMPO) congestion management process (CMP) to report federally required performance measures and identify multimodal transportation projects for inclusion in the NCDOT Statewide Prioritization (SPOT) process. Kittelson prepared the plan through a series of performance measures, including multimodal safety, bicycle and pedestrian connectivity, transit propensity, and automobile level of service. We utilized high-resolution probe data from the National Performance Measures Research Data Set (NPMRDS) to report reliability and delay for corridor travel times. The project also used an equitable public involvement process, including virtual meetings, an interactive project website and comment map, and an online survey. The project concluded by ranking the study corridors and recommendations through a project prioritization and implementation plan to maximize project scoring and chances for funding through the NCDOT prioritization process.

Project Highlights

- FAMPO's Congestion Management Process (Fayetteville Area Metropolitan Planning Organization)
- Pennsylvania's FREEVAL and ICE tools (PennDOT)
- City of Baltimore New Mobility Program Assistance (BCDOT)
- Washington DC's District Mobility Study (DDOT, districtmobility.org)
- Virginia's Automated Traffic Signal Performance Measures (ATSPM) Support Services (VDOT)

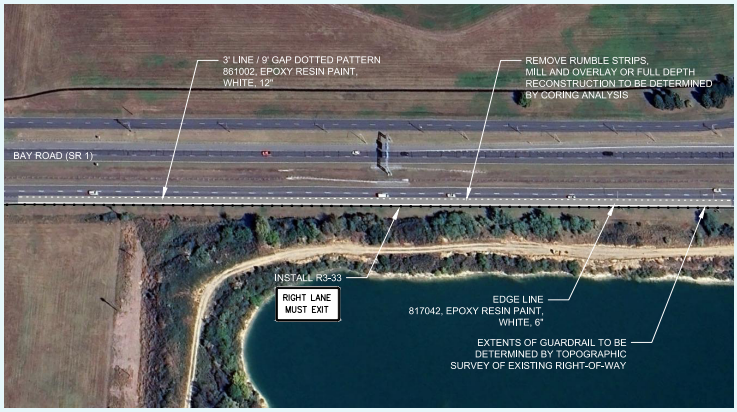
Freight Planning

Kittelson has ample experience working on freight planning projects, including a recent truck study for the Dover Kent MPO, VDOT's Statewide Truck Parking Study, Alaska DOT's Weigh-in-Motion Program update, Target Setting for MAP 21/FAST Act Requirements, and As-Needed Planning and Economic Analysis for Alaska DOT. We are currently analyzing freight safety throughout Lancaster County to inform the development of the region's Transportation Improvement Program (TIP). A hallmark of our work is giving agencies the tools to conduct data-driven decision making through data visualization and developing, evaluating, and understanding mobility performance measures. We use new data sources to monitor impacts, identify shortfalls, and adjust programs or plans to use technology as a tool meet overall goals.

Project Highlight

For Dover Kent MPO's study, for example, the team assessed truck merging challenges on southbound SR 1 near the SR 9 interchange in Dover, Delaware, and evaluated the feasibility of converting the right shoulder of the southbound SR 1 to an auxiliary lane for trucks. Due to the site's limited access configuration, fully loaded trucks struggle to accelerate to highway speeds, creating safety and traffic flow concerns.

To enhance safety and operational efficiency, Kittelson developed a striping concept plan and associated cost estimate for recommendations to convert the right shoulder into a continuous auxiliary lane (linking the site's right-out exit with the SR 9 ramp and allowing northbound trucks to avoid merging into the southbound through lanes entirely); extending the acceleration lane for southbound trucks; and installing guardrails, updated signage, and pavement restriping to accommodate the new auxiliary lane configuration The proposed improvements are expected to significantly enhance truck merging safety, reduce conflicts with high-speed traffic, and improve overall traffic efficiency along SR 1. Addressing these challenges will support both immediate safety concerns and long-term operational effectiveness for freight movement in the region.



Striping concept plan

Project Development

Kittelson has extensive experience assisting MPOs, cities, and state agencies with project development ranging from road safety audits to alternatives analyses to project delivery support and program management. Our project manager, Andy Duerr, served as a consultant PM for PennDOT District 5-0 for 5 years, managing four bridge and two intersection projects on behalf of the District. He is currently leading a team providing design and 3D modeling support for more than 30 projects being designed by three in-house teams in MD SHA's Highway Design Division. With 33 years of experience, Andy has a thorough understanding of the project delivery process, including, but not limited to, environmental, right-of-way and utility clearances, water resource permitting, public outreach, and PennDOT standards, policies and procedures,

In addition, Kittelson has led multiple projects for the City of Lancaster that originated with their Active Transportation and Vision Zero plans during the last 6 years. This work included concept, preliminary, and final designs, construction support, and public and stakeholder engagement. We currently provide program management for their SS4A Implementation program, including identifying and prioritizing projects, developing project scopes and schedules, and coordinating Vision Zero efforts and stakeholder/public engagement across multiple consultant teams.

Project Highlights

- CADD/3D Modeling/Design Support Statewide (MD SHA's Office of Highway Development – Highway Design Division)
- Program Management for SS4A Implementation – City of Lancaster
- City of Baltimore New Mobility Program Assistance (BCDOT)
- Statewide Roundabout and Alternative Intersection Support (PennDOT BOPD – 4 cycles)
- 2025 RSAs for PennDOT Districts 3-0, 4-0, 5-0 and 6-0

Team's Knowledge and Experience Across the RFQ's Technical Areas

Roadway and Bridge Design

Based on our knowledge of various TCRPC studies over the last several years, we anticipate that roadway and bridge design activities will involve concept development for planning and programming purposes. Our contract manager, Andy Duerr, PE, has a background in preliminary and final design activities for roadway, bridge, and interchange projects. His recent work includes PennDOT's Lemoyne Bottleneck project, TCRPC's Market Street Two-Way Conversion, and the City of Lancaster's Water Street Pedestrian and Bicycle Boulevard. In addition to Kittelson's PennDOT-experienced design teams, our teaming partner, NTM, also has extensive experience with roadway and bridge design.

Planning/Design of Traffic Management Facilities

Given our team's diverse background, we understand various design aspects, how projects are constructed, and how to maintain all modes of traffic during construction. We consider the safety of pedestrians, bicyclists, motorists, transit passengers, and construction workers, along with maintaining traffic operations through work zone areas, as vital elements of any project, and there are several opportunities to actively manage traffic along corridors. While there may not be a single best solution to solve all congestion and reliability issues, a suite of transportation systems management and operations (TSMO) strategies can provide the flexibility to minimize reoccurring and non-reoccurring congestion and increase system reliability. To identify the best strategy for a given condition, we recommend feasibility studies for a range of TSMO strategies and concepts of operations for corridor management. Investments in planning and analysis guide rightsizing investments on projects and resources.

Travel Demand Modeling, Supporting Studies, and Data Development

Kittelson has extensive, hands-on software experience, applying many travel demand models to projects for public and private clients nationwide. Kittelson team members are proficient in the full spectrum of modeling and analysis tools at the macro, meso, and micro levels, including TransCAD and Transmodeler. Kittelson regularly works with state-of-the-art modeling techniques and technology, including regional travel demand modeling, mesoscopic dynamic traffic assignment, microscopic simulation, and greenhouse gas emissions modeling. We are proficient in modeling analysis tools, such as TransCAD, Cube, EMME, VISUM, and VISSIM, and we have authored guidebooks, such as the Traffic Analysis Toolbox Volume III: Guidelines for Applying Traffic Microsimulation Software and Effective Integration of Analysis, Modeling, and Simulation (AMS) Tools for the FHWA. Locally, we worked with TCRPC's travel demand model to study the conversion of two one-way corridors in Harrisburg (N. Second and Market Streets) to two-way operations.

Planning Studies, Relating Emerging Trends, and Issues to Transportation Project Needs

Emerging technologies and disruptive business models radically transform what it means for communities to be connected (and viable) in the modern economy. "Just in time" delivery models are increasing freight and delivery traffic at local addresses, rideshares now substitute for both transit and single occupancy trips (changing parking/curb requirements), micromobility options (e.g., bikeshare, scooters, and drones) are being introduced at a rapid pace, competing for curb and sidewalk space in urban places, and drone deliveries may add a third dimension to local transportation planning. Kittelson authored NCHRP Report 924: Foreseeing the Impact of Transformational Technologies on Land Use and Transportation. We are also engaged in independent reviews of Connected Vehicle (CV) pilot programs for USDOT. More locally, we have successfully developed a dynamic pricing model for parking in Washington, DC, as a template for how curb management can accommodate both conventional and new transportation needs.

Safety Planning, Implementation, and Support

Recently, under an on-call contract with TCRPC, Kittelson developed Pennsylvania's first Safety Action Plan under FHWA's SS4A grant program. Cumberland, Dauphin, and Perry counties experienced 274 traffic fatalities and 1,177 suspected serious injuries in the 5 years between 2018 and 2022. Each crash ended or permanently altered someone's life, compelling TCRPC to apply for and receive an SS4A Safety Action Plan grant. The Safety Action Plan is essential to charting a course to reduce these life-altering crashes and position the region to receive funding for necessary safety improvements in the Tri-County region. The action plan recommendations were based on FHWA's Proven Safety Countermeasures, including recommendations for road safety audits to advance improvements along the high-injury network. This plan led directly to two SS4A supplemental planning and demonstration grant awards.

Land Use and Growth Management Planning

The Kittelson team has deep roots in early growth management efforts and remains a national leader in thinking about the relationships between transportation, land use, and growth management. Our work on the update of Silver Spring Township's Comprehensive Plan in Cumberland County demonstrates many of the opportunities to align transportation with livability goals through growth management. Emblematic of the issues facing fast-paced growth across the US, the Township's few arterials and infrequent intersections are prone to increasing levels of congestion for commuters and offer few options for nearby residents to walk or bicycle, even for short trips to visit a nearby park or shopping destination. Site designs focus on access to and from the arterial roadway, traffic mitigation rules focus only on major congestion points, and few places offer a mix of activity and uses that reduce the options available to people in terms of affordability, mobility, and connectivity.

Planning/Design Services for Non-Motorized Travel

Kittelson is also working throughout the region to transform multimodal transportation networks and better serve non-motorized users. Through our planning and design projects, we have re-imagined key corridors for multimodal use in Lancaster, Chester, Harrisburg, and Lemoyne, PA, as well as in Claymont and Dover, DE. Our proven track record includes collaboration with PennDOT - especially regarding safety enhancements for vulnerable road users on state routes - to enhance connectivity and placemaking in various contexts. Our work ranges from regional screening of corridors for multimodal improvements (developing a complete streets prioritization process for borough main streets throughout Lancaster County) to municipal active transportation plans (identifying a multimodal network and associated facilities in State College) to corridor feasibility studies (evaluating two-way conversions on the Market Street and 2nd Street corridors in Harrisburg), to preliminary and final design of multimodal facilities (parking separated bike lanes on Walnut Street and Lemon Street in Lancaster). Furthermore, we understand that balancing multiple modes requires understanding, considering, and discussing trade-offs. For example, reducing transit delays or adding bicycle lanes may increase motor vehicle delay – but may also reduce overall travel speeds and improve overall safety. We leverage our national expertise in this area, such as our development of *NCHRP Research Report 1036 Roadway Cross Section Reallocation: A Guide*, to guide these discussions at the local level.

GIS Analyses, Visualization, and/or Scenario Planning (Such as Community VIZ)

Kittelson uses Geographic Information Systems (GIS) capabilities in the transportation planning context as the basis for scenario planning and story-telling visualization. Our staff who apply these tools are not simply GIS technicians; they understand the planning and policy context as well. We fully understand that GIS is an outstanding problem-solving tool. We often apply GIS to corridor planning, pedestrian and bicycling gap analyses, census data and demographic data analyses, routing and travel shed analyses, travel demand modeling, and communicating project information. We recently completed a complex analysis for the District Highway Safety Plans and Vulnerable Road User Safety Assessment, two PennDOT initiatives to improve transportation safety throughout the Commonwealth. Our analyses evaluated crash history, equity measures, and land use density to identify high-risk areas in which safety improvements will be focused. GIS also played a key role in developing the high-injury network for TCRPC's Safety Action Plan.

Environmental Studies and Planning

Our subconsultant, NTM, will lead environmental activities. NTM has extensive experience working on a broad range of transportation projects – from small maintenance-force culvert replacements to large reconstruction and new limited access

highway projects. They currently provide environmental services to the Kittelson team for the Lemoyne Bottleneck project in District 8-0. Involving environmental staff during project planning increases the likelihood of successful project delivery by identifying sensitive resources early, anticipating the level of environmental clearance and types of permits, developing alternatives that avoid impacts to the extent possible, and recommending potential mitigation strategies as necessary.

Stormwater Management, Modeling, and Design

NTM is at the forefront of stormwater management and drainage design, having developed most of the relevant water resource policies and standards for PennDOT. They are experts at water resource permitting and have strong relationships with DEP and County Conservation Districts. They have a thorough understanding of various drainage design approaches and different types of stormwater and E&S best management practices (BMPs) necessary to develop conceptual SWM needs in planning. Their knowledge of maintenance needs and costs of the various types of applicable BMPs allows them to develop conceptual estimates that more closely account for life-cycle costs during the planning phase.

Project Development-Related Services

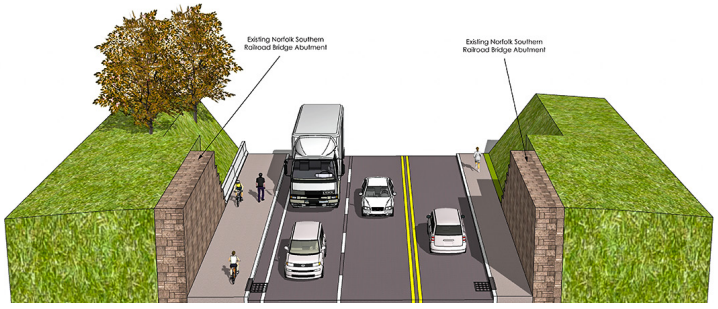
As previously mentioned, our project manager, Andy Duerr, has project delivery experience from his time serving as a consultant project manager for PennDOT District 5-0. He has also assisted municipalities with Linking Planning and NEPA forms as well as with grant applications (TIGER, GLG, and state multimodal). In addition, Andy essentially worked as the program manager for the N. 2nd Street Two-Way Conversion open end contract, working closely with the City of Harrisburg. Andy's team identified the studies and design projects necessary to convert N. 2nd Street into two-way operations. That effort involved 16 tasks to complete the two-way conversion and implement the City's Vision Zero Action Plan.

Knowledge and Experience Integrating Planning Concepts with Transportation Needs Development and Conceptual Design for Alternative Improvements

Conceptual Design

Corridors present the best opportunity to incorporate land use planning and decision-making that deliver community-supportive transportation solutions. We have conducted many corridor studies that identified strategies (e.g., roadway redesign, sidewalk additions, or transit service changes); operational changes (e.g., signal changes), access management, community branding and marketing (e.g., wayfinding), area-wide network changes (e.g., new street, trail, or sidewalk connections); and land use development and policy recommendations.

For the Lemoyne Bottleneck project with PennDOT, which involves safety improvements along a highly constrained, 0.5-mile, 4-lane roadway that connects the City of Harrisburg with communities in Cumberland County, our team carried the original purpose and need forward from the initial planning study (completed with TCRPC) into alternatives analysis, preliminary design, and final design to achieve a once-in-a-generation improvement through the corridor.



Proposed cross section along Market Street to improve safety with minimal impacts on traffic operations while providing accessible pedestrian facilities, dedicated bicycle facilities, enhanced transit access, and improved motor vehicle safety

Public Engagement and Communication

Effective transportation planning requires communicating complex transportation and land use information and concepts in simple, easy to understand pictures, maps, graphics, and videos that better engage community members, elected officials, and other decision-makers. We utilize different graphics tools depending on the scale of the project and the intended audience. Kittelson has developed public engagement approaches and strategies that recognize the value of local knowledge and relationships. With a stakeholder informed strategy in hand, we use our in-house capacity to produce compelling GIS mapping, hand-drawn renderings, 3D graphic models, and photo-realistic before and after images. These graphics can be presented through PowerPoint presentations, handouts, flyers, boards, web sites, and virtual public meetings.

For example, previous planning efforts for the Lemoyne Bottleneck revealed divergent views for corridor improvements among community members and stakeholders. Kittelson's engagement approach included a pre-concept design listening session/ workshop to gather information about existing challenges, and a second workshop reported back on draft alternatives and their impacts to vehicular operations, safety, and multimodal connectivity. The MPO, Boroughs, County officials, and emergency responders attended these workshops, and Kittelson was able to build consensus around a road diet alternative. For the public meeting, Kittelson used a comparison matrix to show the impacts under different design alternatives, including a road diet, to intersection level of service, turn-lane queues, and emergency services operations. Kittelson is now preparing final design plans for the preferred road diet alternative.

Ensuring a Quality Product

Kittelson's QA/QC plan is on file in PennDOT's ECMS system and outlined below. Project-specific QMPs have been mandatory for all Kittelson projects for 5 years - including all work from the smallest traffic studies to biggest final design projects.

Quality Assurance/Quality Control (QA/QC)

Kittelson's project managers are committed to providing professional design and consulting services in a timely manner to satisfy diverse customer needs and expectations in an ethical and responsible way. We achieve this level of service and delivery through maximum effectiveness, controlled risk, and minimal waste of resources. This is a shared philosophy between team members, and each strives to achieve the highest client satisfaction.

Kittelson's primary method of controlling quality is to provide technically competent project managers who are trained in the technical areas relevant to the projects they lead. While it is important to have high-quality project managers, we also include layers of reviews prior to a work product's delivery to a client. In addition to the project manager, quality control responsibilities are assigned to a project principal and an independent reviewer. The project principal provides direction to the project and reviews the project assumptions, methodologies, and deliverables. The independent reviewer, a senior staff member who has not been directly involved with the project, reviews and critiques project deliverables, rounding out a thorough review process that ensures quality and technical soundness.

Ensuring Cost Effective Products

Performance-Based Practical Design (PBPD)

Agencies are increasingly doing more with less. Kittelson has been a leader in PBPD ("common sense solutions"), helping agencies to address transportation needs with innovative and cost-effective transportation solutions. PBPD ensures that the investment directly addresses the defined needs and objectives of a project. Rather than applying a narrow set of infrastructure solutions to a wide variety of needs, our team starts with less costly solutions— such as operational strategies, network solutions, and travel demand management techniques—before exploring capital strategies. We clearly define the needs for conceptual and preliminary design projects and provide a data-informed diagnosis of their causes. Then, we work with project sponsors to establish sets of criteria that effectively evaluate concepts, consider tradeoffs, and rank proposed actions and engineering alternatives.

Life-Cycle Costing and the *HSM*

Regarding alternative analyses, Kittelson utilizes benefit-cost analysis to evaluate the economic advantages and disadvantages of various alternatives during planning or preliminary engineering. For intersection projects, this likely entails Intersection Control Evaluation (ICE) evaluations. For corridor projects, this involves more extensive analysis to arrive at economic valuations. In both cases, incorporating HSM analyses to identify the safety benefit is often crucial to identifying the most cost-effective solution over the lifespan of potential improvements.

Effective Design Projects

A key to effective planning efforts that result in design and construction projects is to look beyond operations and construction cost estimates to evaluate other considerations that can make alternatives infeasible. This approach recognizes the land use context surrounding a project, including how an area is expected to change over time. It also allows for consideration from a growth-in-traffic perspective and ponders any planned changes that may increase local trip-making by auto, bicycle, or walking and the potential for more freight movement or higher levels of transit service. Further, it recognizes the inherent fiscal and environmental constraints present in almost every project and the potential for stakeholders with varying degrees of interest and concern whose opinions may need to be considered or informed during the study and design processes. In summary, the project goals must be understood and, through the planning processes, informed by data.

Knowledge of MPO Operations, Federal Regulations, Governing MPOs, and MPO/PennDOT Roles in Projects

Kittelson has worked with a variety of MPOs across the nation for decades, from a great range of specific projects to establishing and staffing a new MPO. In Pennsylvania, we work closely with MPOs in the mid-Atlantic on essentially every PennDOT and municipal project we undertake. Our recent project experience directly for MPOs includes TCRPC, the Delaware Valley Regional Planning Commission (DVRPC), Lancaster County Planning Commission, SEDA-COG, Baltimore Metropolitan Council, Wilmington Area Planning Council, and Dover Kent MPO. Through our transportation safety work for PennDOT, we have coordinated in depth with all 19 MPOs and 4 RPOs in Pennsylvania, including presentations at the Planning Partners meetings where PennDOT, MPOs, and RPOs coordinate.

One project that has given us specific insights into MPO operations and the Federal regulations that govern them is being undertaken for the Delaware DOT. Key staff member Jeff Riegner is responsible for advising DelDOT's senior leadership on how to provide metropolitan planning functions in Sussex County, Delaware, which is rapidly urbanizing. Kittelson has done in-depth research on Federal guidance for MPOs. We have developed multiple alternatives for consideration, including the establishment of a new MPO or RPO, expansion of the adjacent Dover Kent MPO, and establishment of the nation's second statewide MPO. Each alternative is being evaluated based on staffing needs, delivery of core MPO functions (CMP, UPWP, TIP, etc.), and distribution of statewide metropolitan planning (PL) funds, as well as local considerations.

Past Performance on PennDOT and Federally Funded Projects

Kittelson has an excellent performance record for PennDOT Central Office, Districts, and other state DOTs regarding quality and schedule adherence, and we have very carefully selected team members either with similar reputations with the Department or that we are highly confident will perform similarly. Kittelson implements a tailored QA/QC Plan (described above) for each work order that focuses on providing high-quality deliverables that meet the specified scope, schedule, and budget. Each Kittelson project manager has a quality manager responsible for ensuring these plans are developed and adhered to for the life of the work order. All subconsultants will be held to this high standard and will follow our QA/QC plans.

Kittelson PennDOT Statewide Scores

Consistently Exceeds Expectations (CE)	2
Exceeds Expectations (EE)	24
Expected Performance (EP)	50

ORGANIZATIONAL CHART

TRI-COUNTY TCRPC REGIONAL PLANNING COMMISSION

CONTRACT MANAGER
Andy Duerr PE
Kittelson

PROJECT PRINCIPAL
Glenn Rowe PE
Kittelson

QUALITY MANAGER
Ed Myers PE
Kittelson

PROJECT MANAGERS

Andy Duerr PE
Kittelson

Pete Jenior PE, PTOE
Kittelson

Barbara Mosier PE, PTOE
Kittelson

Laura Ahramjian AICP
Kittelson

Jeff Riegner PE, AICP, PTOE, RSP1
Kittelson

Kevin Kozain PE
NTM

TECHNICAL SUPPORT		
Multimodal Design Andy Duerr PE *Kittelson* Jeff Riegner PE, AICP, PTOE, RSP1 *Kittelson* Alexandra Jahnle PE *Kittelson*	**Safety** Pete Jenior PE, PTOE *Kittelson* Jeff Riegner PE, AICP, PTOE, RSP1 *Kittelson* Barbara Mosier PE, PTOE *Kittelson*	**Traffic Analysis** Brianna Tutuska PE *Kittelson* Joost van Boekhold PE *Kittelson* Jon Crisafi PE *Kittelson*
Land Use/Environmental Planning Yolanda Takesian *Kittelson* Steven Baumgarner *NTM*	**Stormwater Management** Kevin Kozain PE *NTM* Cedomir Jesic, PE *Kittelson*	**Congestion Management** Pete Jenior PE, PTOE *Kittelson* Burak Cesme PhD *Kittelson*
Transit Planning Laura Ahramjian AICP *Kittelson* Yolanda Takesian *Kittelson*	**Freight Planning** Abby Morgan PhD, PE *Kittelson* Barbara Mosier PE *Kittelson*	**Travel Demand Modeling** Like Liu, AICP, PMP *Kittelson* Mike Aronson, PE *Kittelson*
Data Collection Lindsey Klein *ITDC*	**Project Delivery Support** Andy Duerr PE *Kittelson* Emilie Albert PE *Kittelson*	**Public Involvement** Laura Ahramjian AICP *Kittelson* Tara Hofferth PE *Kittelson*

**Kittelson assigns Quality Managers from a group of pre-approved senior experts not directly involved in the project to allow for a fresh, unbiased, outside review of each deliverable before submittal.*

***Project managers will be chosen based on specialization per assignment*

Resumes

Resumes for our proposed project team begin on the following page.

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

KITTELSON & ASSOCIATES

Resume # 1

Name Andrew (Andy) Duerr, PE **Title** Senior Principal Engineer

Primary Responsibilities

Contract Manager & Project/Task Manager (multimodal design, project delivery support)

Years Experience:	**With This Firm**	5.5	**With Other Firms**	27.5

Education

Institution	Degree(s)	Year	Specialization
Pennsylvania State University	BS	1992	Civil Engineering
Shippensburg University	BS	1992	Applied Physics
Loyola College of MD	MBA	1999	Business Administration

Active Registration

Year first registered	**1997:** PA #PE051687E, MD #22541; **2007:** NC #032824 **2013:** VA # 0402052045, WV # 020318; **2020:** DE #24664, DC #PE922979, GA # PE038435, MT # PEL-PE-LIC-72012; **2021:** FL #92527, NJ #24GE05680200
Disciplines	Registered Professional Engineer

Other Experience and Qualifications

Andy has a diverse range of experience in transportation planning and design, and he is a nationally recognized expert in innovative intersection/interchange planning and design. He has served in leadership positions on more than 300 projects involving analyses, designs, and peer reviews of diverging diamonds (DDIs), continuous flow intersections, J-turns, roundabouts, and superstreets. His experience includes managing dozens of open-ended assignments for TCRPC, PennDOT Districts 5-0, 8-0 & BOPD; MDOT SHA Districts 2, 3, 4, 5, 6, and 7; OHD; DelDOT, GDOT, and VDOT. His recent experience includes consultant project management for District 5-0 under agreements E01460 and E02297 and task management for Agreements E03030, E03424, E03518, E04312, and E04729 (Lemoyne Bottleneck & Cameron Street).

Through E01460, Andy completed the following PennDOT training programs related to Project Delivery: WelcomHome/ Deltek Open Plan (Intro and Intermediate); Public Involvement for Small Projects Workshop; Project Closeout Overview; MPMS Maps; Contract Management/PS&E Overview; Section 106 Update; Construction Cost Estimating; MPMS IQ; DM-1 Series: Linking Planning & NEPA; and Pub 93 Policy & Procedures for Managing Consultant Agreements.

**All projects referenced were completed with previous employer*

TCRPC On-Call (2020-2025); Harrisburg, PA. Kittelson has supported numerous safety initiatives for TCRPC since 2020, including the projects below. Andy has served as the contract manager for the duration of the contract.

HSIP Project Selection: The purpose of this task is to gather input from the community, local agencies, and multidisciplinary partners to understand safety concerns specific to each jurisdiction and identify roles and support needed for implementing recommendations from the Safety Action Plan. Subtasks involved developing a community engagement strategy and conducting Safety Working Group (SWG) meetings. The SWG consists of nearly 30 participants representing cities, boroughs, and townships, county and local emergency responders, Pennsylvania State police, local police departments, AAA, and PennDOT.

Harrisburg Downtown Circulation Study: Kittelson led a study investigating the feasibility of a two-way conversion and road diet along Market Street between the Lemoyne Bottleneck on the West Shore and Cameron Street in downtown Harrisburg. To make Market Street a two-way facility, Kittelson used both Synchro and Travel Demand Modeling to understand current vehicular operations in the study area and evaluate potential changes to the roadway network.

Kittelson coordinated extensively with ongoing planning and engineering efforts throughout the Harrisburg area to evaluate the future road network as a whole and ensured the following projects were considered in the analysis: the Lemoyne Bottleneck road diet in Lemoyne/Wormleysburg, the Market Street Bridge reconstruction, the Market/Cameron Street intersection improvements, and the Susquehanna Regional Transportation Authority transfer center relocation. Kittelson also completed a robust analysis of the two-way conversion and potential impacts on the parallel street network and on transit access. After the feasibility of the conversion was determined, Kittelson developed a planning-level cost estimate for improvements to Market Street that Tri-County Regional Planning Commission and City of Harrisburg can use to obtain funding. Andy served as the project principal for this task.

HATS SS4A Support and TCRPC SS4A-Funded Safety Action Plan: Kittelson developed Pennsylvania's first Safety Action Plan under the Safe Streets and Roads for All (SS4A) program. Andy assisted TCRPC planning personnel in researching the SS4A grant criteria, meeting with FHWA representatives during the pursuit stage, and compiling the grant application. Following the grant award, Andy assisted in setting up the SS4A work orders.

E04729 WO#2 Lemoyne Bottleneck; Lemoyne, PA. Kittelson led the alternative development, analysis, and public engagement to redesign the four-lane corridor in Lemoyne to improve mobility and safety for pedestrians, cyclists, and motorists. Kittelson developed the public and stakeholder engagement strategy, including two interactive stakeholder working sessions with PennDOT, the corridor municipalities, emergency services, the MPO, and others, and in-person and virtual public meetings to present refined design alternatives to a broader audience. Kittelson recently completed preliminary engineering for the project and is progressing the Final Design. Andy is serving as the contract manager and project principal for the effort.

Miami-Dade TPO Intersection Safety Analysis for HSIP Funding; Miami-Dade County, FL. The Transportation Planning Organization (TPO) advanced three intersections for Safety Program funding in 2021. Andy provided technical support and QA for operational and safety analyses, Intersection Control Evaluation (ICE) studies, concept development, cost estimating, and benefit/cost evaluations to support the HSIP applications for three mini roundabouts. All three mini-roundabouts were selected by FDOT to receive HSIP funding.

Water Street Bicycle and Pedestrian Boulevards; Lancaster, PA. Kittelson is leading the design of a mile-long bicycle and pedestrian boulevard through downtown Lancaster on Water St. Andy serves as project principal, providing QA/QC for roadway and traffic deliverables, including plans and cost estimates, and project delivery support for PennDOT policy and procedures.

Lancaster Eastbound and Westbound Connectors; Lancaster, PA. Kittelson is leading the planning and design for a separated bike lane network providing east/west connectivity through the City of Lancaster. As project principal, Andy is providing QA/QC for roadway and traffic plans and estimates.

City of Harrisburg North 2nd Street Multimodal Project; Harrisburg, PA. Andy served as the Contract Manager for the Open End and Project Principal for 16 tasks involving a range of complete street projects – with the overall goal of converting N 2nd Street to two-way operations. The new 2nd Street, which opened to traffic in Fall 2022, was completely transformed, reconnecting neighborhoods on both sides of the road, slowing vehicular traffic throughout, and recreating a pedestrian and bicycle-friendly environment. ***Geoffrey Knight, the City's Planning Director, noted that "the project has been one of the most, if not the most, transformative transportation projects we've had during my decade-plus tenure with the City. It's certainly worthy of accolades and recognition."*** ** previous employer*

SR 116 Road Safety Audit (E03030), PennDOT District 8-0, Adams County, PA: This project involved a road safety audit along 4.9 miles of SR 116 in Hamiltonban Township, Carroll Valley Borough, and Fairfield Borough in Adams County under Agreement E03030. Andy was the Project Manager responsible for performing the crash analyses, conducting audit meetings, and developing conceptual schematics, presentations, and reports. The principal challenge was sifting through corridor-wide crash data to identify patterns and hotspots and develop low, medium, and high-cost recommendations. These recommendations had to address corridor-wide and intersection-specific issues within the three-day RSA meeting schedule. Andy's team also developed two concepts for the SR 116/Sanders Road intersection following two serious crashes that occurred after the RSA meetings. ***The study team received Exceeded Expectations ratings for this assignment.*** ** previous employer*

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

Resume # 2 Kittelson & Associates, Inc.

Name Glenn Rowe, PE **Title** Senior Principal Engineer

Primary Responsibilities

Project Principal

Years Experience:	**With This Firm**	7	**With Other Firms**	35

Education

Institution	**Degree(s)**	**Year**	**Specialization**
Pennsylvania State University	BS	1984	Civil Engineering

Active Registration

Year first registered 1993 | PA #044407E

Discipline Registered Professional Engineer

Other Experience and Qualifications

Glenn is a leader in the transportation industry, having managed large organizations and filling leadership positions throughout his career. He served as an executive board member for the American Association of State Highway and Transportation Officials (AASHTO) Subcommittee on Highway Transportation and Subcommittee on Traffic Engineering. He also chaired the Northeast Association of State Transportation Officials (NASTO) Subcommittee for Highway Transport. Glenn has direct experience overseeing highway programs and leading initiatives associated with highway capacity, safety, traffic operations, autonomous and connected vehicles, access and oversized load permits. Glenn also has implemented or revised numerous statewide policies and regulations.

Kittelson & Associates, Inc. (2018-Present). Most recently, Glenn joined Kittelson & Associates, Inc. as a Senior Principal Engineer, where his 35 years of PennDOT expertise has played a critical role in providing the practitioner's perspective on all deliverables. Glenn's work for Kittelson is outlined below:

PennDOT E03983 Highway Safety Improvement Plan. Pennsylvania did not meet the Federal safety performance targets for calendar year 2018. Therefore, Kittelson is developing a HSIP Implementation Plan that describes actions the State will take to meet its subsequent targets. The HSIP Implementation Plan must:1) Identify roadway features that constitute a hazard to road users. 2) Identify highway safety improvement projects on crash experience, crash potential, or other data-supported means. 3) Describe how HSIP funds will be allocated, including projects, activities, and strategies to be implemented. 4) Describe how the proposed projects, activities, and strategies funded under the HSIP will allow the State to make progress toward achieving the safety performance targets. 5) Describe the actions the State will undertake to achieve the performance targets.

PennDOT E04664 WO3 Develop a PennDOT Traffic Academy. Glenn is in the process of creating a training program that will provide attendees with a core understand of the roles and responsibilities of the District Traffic Units and Highway Safety and Traffic Operations. This one week class will be entirely organized by Kittelson.

PennDOT E04664 WO4 Highway Safety and Traffic Operations Training Program. Glenn is leading the development of a comprehensive training program designed to address the training needs of the District Traffic Units and Central Offices' Highway Safety and Traffic Operations Division. This program will analyze the training gaps, opportunities, schedule and budget this statewide program.

PennDOT E03514 Traffic Calming Chapter for the DM2. Glenn provided support for the writing PennDOT's "*Design Manual 2*", Chapter 18 *Traffic Calming*. The intent of the Chapter is to replace the Traffic Calming Handbook (Publication 383). This assignment required extensive outreach with several local municipalities include the City of Pittsburgh, Philadelphia Lancaster and Harrisburg as well as LTAP for their input and guidance.

City of Lancaster Water Street Pedestrian and Bicycle Boulevard; Lancaster, PA. Kittelson is leading an active transportation project in Lancaster that will provide north/south and east/west connections throughout the downtown. This bicycle/pedestrian boulevard on Water St. involved looking at existing traffic and roadway conditions and developing concept plans for improvements. Walnut St. has been constructed, and Glenn served as the project's principal.

FHWA Work Zone ITS (2019). Glenn instructed classes for Minnesota, Arizona, and Tennessee DOTs on how to use a FHWA Work Zone ITS decision tool. The decision tool strategically determines when and how to implement a variety of technologies on highway work zones for improving safety and reducing congestion.

Forensic Transportation Expert (2018-2019). Glenn has conducted several engineering analyses of highway crashes as part of clients' motions before the court or during negotiations. Clients have included the Pennsylvania Attorney General's Office in defending the PennDOT and private law firms in non-DOT related cases.

EXPERIENCE PRIOR TO KITTELSON

PennDOT Central Office (1984-2018). For 35 years, Glenn worked at PennDOT in progressively responsible roles. His experience at PennDOT included overseeing highway safety programs for the Federal Highway Administration Highway Safety Improvement Program and National Highway Traffic Safety Administration. Throughout his time at PennDOT, Glenn occupied the following roles:

- Chief–Highway Safety and Traffic Operation (2014-2018)
- Chief–Traffic Engineering and Permits (2011-2018)
- Chief–Transportation Operations (2009-2011)
- Acting Director–Bureau of Highway Safety and Traffic Engineering (2008-2009)
- Chief–Traffic Engineering (2005-2008)

PennDOT District 8 Traffic

- District Traffic Engineer (1998-2005)
- Assistant Traffic Engineer (1988-1998)
- Traffic Engineer (1984-1998)

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

Resume # 3 Kittelson & Associates, Inc.

Name Edward (Ed) Myers, PE **Title** Senior Principal Engineer

Primary Responsibilities

Quality Manager

Years Experience:	**With This Firm**	25	**With Other Firms**	17

Education

Institution	**Degree(s)**	**Year**	**Specialization**
Pennsylvania State University	BSCE	1983	Civil Engineering

Active Registration

Year first registered **1991**: PA #041141-R; **2005:** NY #083343; **2010:** WV #018657

Disciplines Registered Professional Engineer

Other Experience and Qualifications

Ed has over 35 years of experience in all facets of highway design, traffic engineering, arterial and freeway planning and design, innovative intersections planning and design, and—more recently—transformational technologies. Ed has managed and directed several innovative projects for PennDOT, such as roundabouts, Intersection Control Evaluation, and FREEVAL implementation. He has also been involved in the planning, design, and implementation of bikeshare facilities in four cities across the US. Ed also served as a project principal for a study of Johns Hopkins University student use with their Lyft/SafeRide program.

PennDOT FREEVAL; Harrisburg, PA. As part of an on-call contract with the Pennsylvania Department of Transportation (PennDOT), Ed is managing a task to develop PennDOT-specific customizations of the FREEVAL software tool for freeway facility analysis. The FREEVAL tool has been developed as part of the *Highway Capacity Manual* (HCM), 6 Edition and is a Java-based tool that implements the HCM freeway facility and freeway reliability methods. For this task, the team is developing a statewide segmentation database to use with the FREEVAL tool, developing Pennsylvania default values for use with the tool, and customizing the FREEVAL interface for PennDOT. The work order further includes detailed documentation and support for use of the tool, the development of PennDOT-specific case studies and outreach materials, and high-level overview presentations of the new tool to each District. Training may be requested through a future work order.

PennDOT E03983 PennDOT Safety and Traffic Operations Open End; Statewide, PA. Under this contract, Ed is managing a task to develop a PennDOT-specific customization of the FREEVAL software tool for freeway facility analysis. The FREEVAL tool has been developed as part of the *Highway Capacity Manual (HCM) 6th Edition* and is a Java-based tool that implements the *HCM* freeway facility and freeway reliability methods. During this task, the team is developing a statewide segmentation database to use with the FREEVAL tool, developing Pennsylvania default values for use in the tool, and customizing the FREEVAL Interface for PennDOT. The work order further includes detailed documentation and support for use of the tool, the development of PennDOT-specific case studies and outreach materials, and high-level overview presentations of the new tool to each District. Training may be requested through a future work order.

PennDOT E03983 HSIP Implementation Plan; Statewide, PA.. Kittelson is leading a task to evaluate PennDOT's HSIP program and make recommendations to improve its effectiveness. The project will lay the framework for future safety initiatives based on the effectiveness of the current HSIP program and crash trends in Pennsylvania in recent years.

Ultimately, the team will seek to establish a stronger link between activities that identify safety needs, such as network screening and the allocation of HSIP funds. Ed is the quality control manager for this effort.

E04239 2019/2020 HSIP Program, PennDOT District 6-0. Ed was the project manager responsible for completing Intersection Control Evaluation Forms for two intersections each on Castor Ave. and Chichester Ave. Additionally, Ed's team prepared concept sketches at all four locations and supported the public involvement for each corridor.

PennDOT E03399 SR 22 Juniata St. Intersection Alternatives Analysis; Hollidaysburg, PA. Ed is serving as the project manager for this project in Hollidaysburg, Pennsylvania. Through the planning phase, the team explored eight alternatives for a triangle of intersections formed by SR 22, Juniata Street, and Allegheny Street. The intersection is complicated by three closely spaced intersections, two bridges (one of which is historic), and an active freight railroad. The selected alternative will look to incorporate automated traffic signal performance measures (ATSPM) technology to help the intersection operate more effectively at all peak periods of the day.

PennDOT E03514 Roundabouts and Innovative Intersection Support Services; Statewide, PA. Ed has led three contracts for PennDOT related to roundabouts and innovative intersections. The alternative intersections have included peer reviews and feasibility studies for diverging diamond interchanges as well as superstreets, medina U-turns, J-turns, and quadrant roadways. Specific policy guidance includes the following tasks:

- As project principal, Ed directed the development of a Pennsylvania statewide policy for reviewing intersection controls at three stages of the project development process. The purpose of the policy is to help ensure that innovative intersection treatments are appropriately explored at the right time in the project development process. In addition to roundabouts, the policy incorporates other treatments, such as jughandles, median U-Turns, R-CUTS, etc.
- Pennsylvania Statewide Safety Review of Roundabouts—This study also looked at ped/bike treatments and impacts of large and oversize/overweight vehicles.

City of Harrisburg N Second Street Two-Way Conversion—Multimodal Traffic Study; Harrisburg, PA. To promote economic development and slow vehicle traffic along 2nd St. in downtown Harrisburg, Kittelson is working with a multidisciplinary team to investigate the feasibility of converting this major one-way arterial into two-way operation. The multimodal network study includes detailed multimodal traffic operations analysis across the entire downtown area, assessing impacts along the study corridor, and addressing potential traffic rerouting and diversion concerns caused by removing auto capacity and reconfiguration of a major street. The team is developing preliminary and final designs for the corridor. Likely changes will include curb extensions, bike facilities, upgraded traffic signals, reconstructed ADA ramps, lane reductions, and on-street parking enhancements. Ed is overseeing this effort as project principal.

New York City Bikeshare; New York, NY. Kittelson is working with CitiBike in New York City to develop and submit bikeshare station siting drawings for Citi Bike's 130 expansion program across all five boroughs. As project principal, Ed leads the team that has developed design plans for over 200 stations as part of Citi Bike's expansion into Harlem, Queens, and Brooklyn in addition to adding new stations in Manhattan. As part of the project, Kittelson has helped to streamline the station planning process to get stations launched and operational sooner and with fewer obstacles to implementation.

City of Boston Neighborhood Slow Streets; Boston, MA. Kittelson is leading the project team in this initiative, which allows neighborhoods to apply for traffic calming efforts. For each selected neighborhood, Kittelson performs traffic calming planning and analysis, including meetings with the community to understand concerns about traffic in the neighborhood. Following the meetings and analysis, team members identify and design projects to slow traffic on neighborhood streets. Kittelson works with the Boston Transportation Department to advance projects through design and construction, typically moving from planning to design in 12 to 18 months. Once projects are constructed, Kittelson leads an evaluation to determine what effect the projects have on traffic volume and speed, which can result in changes to the design and informs planning for future neighborhoods. Working through the Neighborhood Slow Streets Program, Kittelson helps implement life-saving street design while improving the comfort and quality of life in City of Boston's neighborhoods. Ed oversees this contract as the project's principal.

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

KITTELSON & ASSOCIATES

Resume # 4

Name Jeffrey R. Riegner, PE, AICP, PTOE, RSP$_1$ **Title** Senior Principal

Primary Responsibilities

Project/Task Manager (multimodal design, safety)

Years Experience: **With This Firm** 3 **With Other Firms** 31

Education

Institution	Degree(s)	Year	Specialization
University of California, Berkeley	MS	1991	Transportation Engineering
University of Delaware	BS	1990	Civil Engineering

Active Registration

Year first registered	**1995:** PE DE #9840; **1996:** PE PA #PE-050789-E; **1996:** PE NJ #24GE04007100; **1999:** AICP #15314; **2000:** PE MD #25603; **2000:** PTOE #498; **2014:** PE AL #34190; **2015:** PE TX #120954; **2017:** PE VA #0402058166; **2018:** PE NC #046847; **2019:** PE GA #PE045228; **2020:** PE DC #PE922853; **2023:** RSP$_1$ #1080
Disciplines	Transportation Engineering and Planning

Other Experience and Qualifications

Jeff has over 30 years of progressively responsible experience in wide-ranging multimodal transportation planning and design projects. He is a trusted advisor to public sector transportation clients, helping them meet ambitious, accelerated strategic goals. Jeff is a nationally recognized expert in complete streets and bicycle and pedestrian facility planning and design, with a proven ability to manage and successfully complete challenging and highly complex projects on time and within budget. Furthermore, Jeff is an effective presenter and collaborator, creating long-term relationships with agencies, elected officials, and the public.

TCRPC HATS SS4A Safety Action Plan; Harrisburg Metropolitan Area, PA. Kittelson developed an SS4A-funded safety action plan for the Tri-County Regional Planning Commission (TCRPC), which serves Dauphin, Cumberland, and Perry Counties, including Harrisburg, Pennsylvania and its suburbs. The firm organized and facilitated a safety working group to guide comprehensive existing conditions analysis, identification of spot-specific and systemic safety improvements, and development of concept designs for priority sites. The resulting plan has resulted in more than $1 million in SS4A supplemental planning and design funding. Jeff was the project manager for this effort, leading all tasks and serving as the primary point of contact with TCRPC.

PennDOT BOMO E04834 Highway Safety and Traffic Operations Division–Safety Open-End, Vulnerable Road User Safety Assessment; Statewide, PA. Kittelson held an on-call contract with the Pennsylvania Department of Transportation Bureau of Maintenance and Operations (PennDOT BOMO) leading comprehensive traffic safety programs across the Commonwealth. These tasks included the Strategic Highway Safety Plan, District Highway Safety Plans, vulnerable road user safety programs, and highway safety network screening. Jeff had two primary responsibilities under this contract. First, he led the development of District Highway Safety Plans for each of PennDOT's 11 engineering districts. These plans included the determination of District-specific emphasis areas, systemic safety analysis, and identification of candidate safety project locations. Second, he led the state's Vulnerable Road User Safety Assessment. High-risk areas for walking and bicycling were identified throughout the state based on crash history, equity considerations, and land use. Both spot-specific and systemic safety recommendations were developed in consultation with a variety of interested parties.

Erie SS4A Safety Action Plan; Erie, PA. Kittelson developed an SS4A-funded safety action plan for the City of Erie, which the City has chosen to frame as a Vision Zero plan. Erie is experiencing an alarming upward trend in pedestrian and bicyclist fatalities and serious injuries, and consistently experiences more than 1,000 total crashes each year. To address these issues, Kittelson organized and facilitated a safety working group and completed existing conditions analyses, including development of a high injury network. The firm also led a comprehensive public participation process and development of improvement recommendations. Jeff served as the project manager for this effort.

DVRPC & PennDOT District 6-0 Route 291 Road Diet Study; Delaware County, PA. Route 291 feels like a highway through a community. Kittelson worked with Delaware County, Delaware Valley Regional Planning Commission (DVRPC), the City of Chester, PennDOT, and several other municipalities and agencies to identify solutions for reducing crashes along Route 291 and making it a corridor to safely walk, bike, and live along. The team's priorities were to build upon the many plans and studies already performed and to elevate the voices of marginalized communities that have been excluded from planning processes in the past. The study resulted in a $2.5 million Reconnecting Communities grant award for implementation. Jeff served as project principal.

Dover Kent County MPO Downtown Dover Pathways Study, Dover, DE. Kittelson developed a plan to implement the active transportation recommendations of the 2023 Downtown Dover Strategic Master Plan. Specifically, opportunities to make low-stress walking and bicycling connections among two college campuses, Dover Air Force Base, and various downtown destinations were evaluated. Jeff served as project principal, overseeing the project team and serving as a point of contact with the MPO and Downtown Dover Partnership.

WILMAPCO Claymont Area Master Plan; New Castle County, DE. Kittelson, with RHI as a subconsultant, is leading an update to the 20-year-old Claymont Transportation Plan. The team is working with planning partner agencies to develop and evaluate a suite of land use and transportation scenarios to establish the future vision for Claymont as a sustainable, vibrant town center. Jeff is the team's project manager, serving as primary point of contact with New Castle County, WILMAPCO, and other agencies.

Delaware DOT Transportation Planning Practices, Statewide, DE. Jeff led multiple on-call transportation planning services on-call contracts for DelDOT for a previous employer. Currently, as a subconsultant, Kittelson is supporting DelDOT in a reimagination of its transportation planning practices, leading from project ideas through development of the agency's Capital Transportation Program. Most notably, Jeff has worked closely with DelDOT and Delaware's MPOs to streamline processes and facilitate greater cooperation. He is also researching options for how to provide transportation planning services in Sussex County, the state's only county without an MPO.

Shamokin SS4A Safety Action Plan; Shamokin, PA. Kittelson developed an SS4A-funded safety action plan for the SEDA-COG metropolitan planning organization on behalf of the City of Shamokin. Addressing transportation safety issues is a critical component of the City's revitalization efforts. One unique component of Shamokin's safety concerns is an abundance of off-highway vehicles, both from the nearby Anthracite Outdoor Adventure Area and from local residents. Kittelson organized and facilitated a safety working group and completed existing conditions analyses, including development of a high injury network. The firm also led a comprehensive public participation process and development of improvement recommendations. Jeff served as the project principal for this effort.

Dover Kent MPO On-Call Planning Studies; Dover, DE: Jeff led an on-call agreement for various planning tasks. Assignments included air quality modeling and reporting, a county-wide truck study, a transload facility study in Harrington, a traffic study in Magnolia, and the development of a combined bicycle and pedestrian plan for the City of Dover. **Previous employer*

Complete Streets & Shared Use Pathways; Howard County, MD: Jeff led an on-call agreement for planning and design of walking and bicycling facilities. He oversaw low-stress bicycle facility feasibility studies on Broken Land Parkway and through the Hickory Ridge neighborhood. Supported implementation of the County's Complete Streets policy, including leading a thorough rewrite of the County's Design Manual Volume III (Complete Streets and Bridges), adopted in February 2022. **Previous employer*

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

Resume # 5 Kittelson & Associates, Inc.

Name Laura Ahramjian, AICP **Title** Associate Planner

Primary Responsibilities

Project/Task Manager (transit planning, public involvement)

Years Experience: **With This Firm** 7 **With Other Firms** 10

Education

Institution	Degree(s)	Year	Specialization
University of Pennsylvania	MCRP	2008	Urban Design Concentration
New York University	BA	2006	Metropolitan Studies & Urban Design

Active Registration

Year first registered **2018:** #028941

Disciplines American Institute of Certified Planners

Other Experience and Qualifications

Laura is an accomplished transportation planner and urban designer who has been leading complex multimodal projects throughout the northeast region for more than 17 years. A hallmark of her work is effectively coordinating among federal, state, and local agencies, stakeholders, and communities to resolve conflicts and lay the groundwork for successful implementation of projects. Laura's areas of expertise include complete street corridors, safety action plans, bike route and trail feasibility, neighborhood traffic calming, transit-oriented development and land use planning, and urban design/streetscape guidelines. She also has extensive experience developing active transportation policies for PennDOT and the City of Philadelphia.

TCRPC Harrisburg Downtown Circulation Study; Harrisburg, PA. Laura led a study to investigate multi-modal operations along Market Street between the Lemoyne Bottleneck on the West Shore and Cameron Street in downtown Harrisburg. The study determined the feasibility of converting Market Street into a two-way facility in downtown Harrisburg and reducing the number of lanes on the Market Street Bridge just west of Harrisburg. During the existing and future conditions traffic analysis for the corridor, Laura balanced the current and projected needs of single occupancy vehicles with transit operations, emergency services, and providing safe multimodal facilities. Laura also coordinated with multiple stakeholders for the project, including the client, Tri-County Regional Planning Commission, PennDOT District 8, the City of Harrisburg, and the regional transit agency. Through proactive engagement with these key stakeholders, she was able to reach consensus on the feasibility the two-way conversion and road diet.

TCRPC SS4A-Funded Safety Action Plan; Harrisburg Metropolitan Area, PA. Kittelson developed an SS4A-funded safety action plan for the metropolitan planning organization serving Dauphin, Cumberland, and Perry Counties, including Harrisburg, Pennsylvania and its suburbs. The firm organized and facilitated a safety working group to guide comprehensive existing conditions analysis, identification of spot-specific and systemic safety improvements, and development of concept designs for priority sites. Laura developed the public engagement strategy for the plan and led the development of public-facing materials for the plan open houses.

PennDOT E04729 Lemoyne Bottleneck Improvements; Harrisburg, PA. Kittelson is leading preliminary and final design and public engagement for the redesign of a four-lane state route in Lemoyne, Pennsylvania, to improve multimodal accommodations and safety for all road users. As public engagement lead, Laura led two collaborative stakeholder working sessions with PennDOT, the corridor municipalities, emergency services, and the MPO during the alternatives

development process to hear community and stakeholder concerns and then identify roadway alternatives that respond to those concerns. Laura also led and developed graphically engaging display materials for a widely attended public meeting to present design alternatives and gather feedback. The outreach resulted in stakeholders, community members, and PennDOT selecting the road diet alternative to progress into preliminary and final design.

Multimodal and Safety Planning Implementation; Lancaster, PA. Kittelson is leading concept and preliminary/final design for several projects that were identified in the City's Active Transportation and Vision Zero plans. Laura led the planning and concept design phases of Water Street Bicycle/Pedestrian Boulevard and continues to lead public engagement as it progresses into final design. She led an evaluation of bicycle route alternatives for the Eastbound Connector and a series of public meetings to gather feedback on the Eastbound and Westbound separated bike lanes. Laura also led public engagement activities for the Plum Street mini-roundabout. Throughout these projects, Laura used an interactive public engagement approach to guide conversations with community members and reach consensus on facility designs.

DKCMPO Downtown Dover Pathways Study; Dover, DE. Kittelson is implementing the active transportation recommendations of the 2023 Downtown Dover Strategic Master Plan. Specifically, opportunities to make low-stress walking and bicycling connections among two college campuses, Dover Air Force Base, and various downtown destinations are being evaluated. The team participated in an a three-day design charrette to identify ways that a new street design on Loockerman Street in downtown could address multimodal safety and comfort, tie together existing and planning land uses, and spur new development on a key commercial corridor. Laura facilitated discussions with key stakeholders including Dover public works, planning, and police departments, DelDOT, and business owners to identify adjustments to the Loockerman Street typical section. These discussions resulted in a balanced design that maintains needed on-street parking and existing tree canopy, while also widening sidewalks and improving the pedestrian realm.

NCHRP 1036: Guide for Roadway Cross Section Reallocation; Nationwide. Kittelson led the research team to develop NCHRP 1036: Guide for Roadway Cross Section Reallocation. The guide presents implementable, user-oriented guidance to support projects reallocating roadway cross-sections. The guide and accompanying decision-making framework enable practitioners to understand the full impact of roadway cross-section tradeoffs and evaluate choices based on a broad set of transportation, social, environmental, and economic outcomes. Laura wrote the chapter summarizing the different opportunities to change a street's cross-section, how a cross-section should be evaluated to determine the need for changes, and what changes would be most appropriate to create minimally safe facilities for all users.

PennDOT BOPT E04112 Pennsylvania Active Transportation Plan; Statewide, PA. Kittelson was a member of a multidisciplinary team that developed an active transportation plan for PennDOT Bureau of Public Transportation (BOPT). The Plan identifies a statewide vision and goals to guide bicycle and pedestrian planning and implementation, as well as a series of recommendations to achieve the vision and goals. Laura led stakeholder coordination during development of the Plan, which required a targeted, comprehensive approach to getting feedback from diverse areas of the State in a timely, cost-effective manner. She led multiple regional meetings across the state using a combination of in-person and online polling to facilitate attended input on the Plan vision and goals and determine key issues. Laura also oversaw the analysis to identify bicycle and pedestrian priority areas (BPPAs) throughout the state to guide project prioritization and developed a How-To Guide for local jurisdictions and performance measures to track implementation of the Plan.

City of Harrisburg I-83 Pedestrian and Bicycle Facility Improvements; Harrisburg, PA. Laura led the evaluation and subsequent recommendations to expand and enhance the City's bicycle network in conjunction with PennDOT's I-83 Widening Project through the City of Harrisburg. Kittelson analyzed the existing and future bicycle and pedestrian network in the study area and made recommendations for multimodal improvements at the 13th Street, 17th Street, 19th Street, and Paxton Street crossings of I-83. Laura used best practices for designing separated bicycle and pedestrian facilities to improve user comfort and create a more inviting pedestrian realm. As a result of the study, the crossings constructed as part of the I-83 Widening Project will be designed to accommodate future bicycle and pedestrian facilities on those roadways. This will facilitate greater multimodal connectivity between the Southside, Allison Hill, and downtown Harrisburg neighborhoods and maximize the benefits of this large infrastructure investment.

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

KITTELSON & ASSOCIATES

Resume # 6

Name Pete Jenior, PE, PTOE **Title** Associate Engineer

Primary Responsibilities

Project/Task Manager (Safety, congestion management)

Years Experience: **With This Firm** 18 **With Other Firms** 0

Education

Institution	Degree(s)	Year	Specialization
Georgia Institute of Technology	BSCE	2005	Civil Engineering
Georgia Institute of Technology	MSCE	2007	Civil Engineering

Active Registration

Year first registered	**2013:** PE PA, #PE81515; PE DC #PE907323; **2011:** PE MD #40804; **2014:** PE MA #50962, PE VA #402054506; **2016:** PE FL #81832; **2020:** PE OH #PE85537; **2012:** PTOE #3259
Discipline	Registered Professional Engineer, Professional Transportation Operations Engineer

Other Experience and Qualifications

Pete has participated in a variety of transportation engineering and planning projects in Pennsylvania, including roundabout design and operations analysis and *Highway Safety Manual*-related work for Central Office, traffic analysis and design for Districts, and workshop instruction. Pete served as the development lead of FHWA's four Alternative Intersection Informational Guides and developed PennDOT's Web ICE Tool.

TCRPC Safety Screening; Harrisburg, PA. Pete assisted TCRPC to conduct a cost-effective safety screening for all state-owned and locally-owned roadways within their three-county area that can be updated more regularly than the PennDOT Central Office's network screening (approximately every four years). This will enable TCRPC to apply safety funding more effectively by better identifying and understanding the location and nature of safety issues.

TCRPC HSIP Project Selection; Harrisburg, PA. Pete reviewed a list of planned projects in the Tri-County Regional Planning Commission (TCRPC) area at various stages of the project development process. The review determined which projects contained safety-related improvements and which would have favorable benefit/cost ratios. Pete prepared Highway Safety Manual (HSM) analyses for each project, which were subsequently used in HSIP applications submitted to TCRCP and District 8-0 for consideration by PennDOT Central Office. Kittelson's analysis successfully secured HSIP funds for several projects that are now advancing.

PennDOT E04834 Highway Safety and Traffic Operations Division Safety Open-End; Statewide; PA. Kittelson holds an on-call contract with the Pennsylvania Department of Transportation (PennDOT). Pete manages work orders focused on the HSM and other safety topics including the following:

Statewide Highway Safety Network Screening: Pete was project manager for a team of six firms that conducted statewide safety network screening. The team conducted HSM analysis for 8,000 intersections, 8,000 road segments, and 7200 interchange-related sites statewide. The expected frequency and severity of crashes was computed with customized spreadsheets developed by MBI and powered by event-triggered macros that applied SPFs and computed if there is potential for safety improvement at the sites. The project included data automation from statewide databases, manual collection from PennDOT Video Log and Google Earth, collection of 1100 traffic counts, notification that data collection was occurring via letters mailed to 587 municipalities, and development of spreadsheet tools for HSM

applications. Field studies and targeted crash data reviews of the segment and intersection in each county with the highest potential for safety improvement were conducted as well. All freeways and ramps statewide were inventoried and then analyzed, which informed the section of several hundred freeway and ramp sites for full HSM analysis. The results were mapped in GIS. The purpose of the project was to identify sites that Districts can study further and develop HSIP projects for.

HSM *Analysis Review and Support:* SPFs and CMFs are used by Districts for alternatives analysis, HSIP project applications, and design exceptions. Kittelson reviews HSM analysis and supporting reports and memos that are submitted to Central Office when questions or unique analysis conditions arise and provide technical support for PennDOT's HSM tools, including updates to address errors and bugs.

HSM *Training Course Update and Delivery:* Pete performed a complete overhaul of PennDOT's 1.5-day HSM training course, which included developing new modules and example problems that attendees solve the HSM A and B Tools and the CMF Clearinghouse during a computer portion of the course. He co-instructed a pilot course and has delivered over a dozen 1.5-day HSM courses for PennDOT through prior contracts.

Publication 638A Safety Performance Analysis Methods Manual (SPAMM) Update: Pete updated the chapter that presents the freeway and ramp SPFs from Chapter 18 and 19 of the HSM Supplement and provides Pennsylvania-specific guidance on their use.

HSM *Network Screening Video:* Pete led production of a video describing PennDOT's Highway Network Screening Process. The video included customized animations, markups of screen shares, and professional narration that described highly technical safety analysis concepts in a matter suitable for a wide range of transportation planners and engineers without safety backgrounds.

PennDOT E05210 US 220 Safety Study; Bedford, County, PA. Kittelson conducted a safety study for US 220, a 17.5-mile rural two-lane corridor in Bedford Township, under HSIP funds. In the span of four years, there were 131 reported crashes on US 220, ranging from Narrow Lane to the SR 3021 Underpass. Kittelson assessed crash data, driver behavior, and traffic operations as well as developed alternatives aimed at mitigating crashes. These alternatives encompassed a range of measures, including minor traffic operation adjustments, passing zone adjustment, shoulder upgrades, improved sight distance, enhanced signing, and road striping modifications. Pete served as the technical lead for safety analysis and a road safety audit conducted with PennDOT and other project stakeholders.

PennDOT E05498 District 5-0 SR 662 and Oley Turnpike; Berks County, PA. Pete led ICE analysis for this rural two-way stop controlled intersection. Key concerns included high speeds and poor intersection sight distance. Pete used the PennDOT ICE Tool, Highway Capacity Software, and the HSM A and B Tools to develop benefit/cost ratios of a traffic signal, all-way stop-control, and roundabout.

PennDOT E05104 District 4-0 HSIP Bundle; Lackawanna County, PA. Pete led ICE analysis for this highly-skewed, minor road stop-controlled T intersection. Key concerns included unclear priority at channelized turn junctions, major power lines, and environmental issues associated with a former gas station. Pete developed a spreadsheet to compute a single control delay value from the multiple channelized nodes that comprise this intersection.

E03983 *HSM* Freeway Calibration Bureau of Maintenance and Operations. As a subconsultant, Pete led Kittelson's work to calibrate the *HSM* crash prediction models for basic freeway segments, speed-change lanes, ramps, and ramp terminal intersections for use in Pennsylvania. The project prepareed a PennDOT version of the Enhanced Interchange Safety Analysis Tool (ISATe) spreadsheet containing calibration factors developed under this work order.

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

KITTELSON & ASSOCIATES

Resume # 7

Name Barbara Mosier, PE, PTOE **Title** Associate Engineer

Primary Responsibilities

Project/Task Manager (safety, freight planning)

Years Experience:	**With This Firm** 1	**With Other Firms** 18

Education

Institution	Degree(s)	Year	Specialization
Carnegie Mellon University	BS	2005	Civil Engineering & Public Policy

Active Registration

Year first registered	**2011:** PE MD #32993; **2019:** PE DC #PE921631; PE VA #0402061538; **2024:** PTOE #3784
Disciplines	Registered Professional Engineer, Professional Traffic Operations Engineer

Other Experience and Qualifications

Barbara is an experienced leader in traffic and transportation engineering who focuses on helping clients identify the right analysis and design approaches to advance and support their goals. She leads teams to provide technical excellence and accuracy in transportation planning, analysis, and engineering and is skilled in translating technical results into materials accessible to non-technical audiences in both spoken presentations and written material. Barbara's background in land development and traffic engineering has provided her with a deep understanding of the interplay of land use and infrastructure needs on corridors that serve multiple uses. She has led corridor studies and safety audits; provided small-area and master plan support; and overseen traffic analysis and delay calculations, traffic modeling, crash analysis, and parking studies. Barbara also has experience supporting land development projects and performing dozens of traffic impact analyses in jurisdictions across central Maryland and elsewhere, from major urban revitalization projects and large mixed-use developments to schools and retailers. She is skilled at presenting technical analysis work to a variety of audiences, making sure the traffic data helps tell the story of how the transportation system works for all users.

Dover Kent County MPO SR 1/SR 9 Truck Study; Kent County, DE. Kittelson assessed truck merging challenges on southbound SR 1 near the SR 9 interchange in Dover, Delaware, and evaluated the feasibility of converting the right shoulder of the southbound SR 1 to an auxiliary lane for trucks. Due to the site's limited access configuration, fully loaded trucks struggle to accelerate to highway speeds, creating safety and traffic flow concerns. Barbara is the project manager.

TCRPC SS4A Safety Action Plan; Harrisburg Metropolitan Area, PA. Kittelson developed an SS4A-funded safety action plan for the metropolitan planning organization serving Dauphin, Cumberland, and Perry Counties, including Harrisburg, Pennsylvania and its suburbs. The firm organized and facilitated a safety working group to guide comprehensive existing conditions analysis, identification of spot-specific and systemic safety improvements, and development of concept designs for priority sites. Barbara provided senior engineering support, and quality review for the final safety action plan report.

DDOT Vision Zero Conceptual Design Support; Washington, DC. Through the Vision Zero Traffic Safety Conceptual Design Support contract, Kittelson provides day-to-day technical support to the District Department of Transportation's (DDOT's) Vision Zero Division. As part of these services, Kittelson has completed road safety audits (RSAs) on three corridors, all included on the District's high injury network (HIN), developed by Kittelson. The RSAs include a 1.2-mile stretch of Southern Avenue SE, a 1.0-mile section of Marion Barry Avenue SE (formerly Good Hope Road SE), and a 1.1-mile portion of Florida Avenue NW/NE. The audits adhered to national RSA guidance, which Kittelson adapted to the District's multimodal environment. A multidisciplinary team, including District Police, WMATA staff, local elected officials,

pedestrian and bicycle council representatives, and FHWA staff, participated in the audits. Kittelson's work supported active bus priority and safety projects by providing a prioritized strategies summary list for all identified safety issues and possible strategies for addressing each, including the level of effort and potential safety benefits. Barbara provided senior engineering support addressing client feedback and helping advance identified strategies for implementation.

BCDOT Vision Zero Quick-Build Program; Baltimore, MD. Kittelson is working with the Baltimore City Department of Transportation (BCDOT) to identify eight neighborhoods that could benefit from quick-build traffic calming measures. The team has identified the neighborhoods, coordinated a series of neighborhood walk audits with local neighborhood groups, and developed outreach materials. Moving forward, Kittelson will be preparing designs for the quick-build treatments, including curb extensions, daylighting, and quick-build mini-roundabouts. Barbara led several of the eastern community field walks and is providing senior review for conceptual quick-build design.

Montgomery County Development Review; Montgomery County, MD. Kittelson provides on-call support to the Montgomery County Planning Department through a variety of task orders focused on supporting the county's multimodal approach to transportation review of development applications. Barbara is providing staff supplementation support for the Montgomery County Planning department reviewing development submittals for compliance with county Local Area Transportation Review Guidelines (LATR).

SHA Vulnerable Road User Assessment Update; Statewide, MD. Through our on call contract with SHA's Office of Traffic and Safety, Traffic Development and Support Division, Kittleson is leading the update to the state IAJA required Vulnerable Road User (VRU) Assessment. Barbara is serving as Kittelson's PM for this project, which includes analysis of the past five years of VRU involved crashes in the state to determine trends over time, as well as geographic patterns. The crash prevalence is combined with a GIS analysis of equity, latent active transportation demand and public input to identify areas of need. Corridors within those areas of need will then be identified and prioritized based on a multi-factor rating system for inclusion in the updated VRU Assessment report.

NCHRP 03-143 Toolkit for Pedestrian Crossings; National. Kittelson is leading the development of a framework for selecting pedestrian crossing treatment at unsignalized intersections and midblock crossings. Barbara is providing insight into practitioner experience with existing pedestrian crossing treatment guidance as a senior engineer on the project, participating inA the process of creating the draft framework based on literature review of existing guidance, a meta-analysis of prior studies and expert experience. She has also provided review and oversight of the intersection case studies used to test the proposed framework.

BCDOT Intersection Safety Studies; Baltimore, MD. As part of an on-call contract with Baltimore City Department of Transportation (BCDOT), Barbara led a safety and operational analysis at several city intersections identified as high crash locations. The work included crash data analysis, field observations and measurements, identification of safety and operational improvements for each location, and preparation of an assessment and recommendations memo. In some locations, conceptual designs recommending physical improvements were created. Barbara served as the project manager for this effort and oversaw all technical traffic analysis aspects of the work. Recommendations included bike lane markings, pedestrian access improvements, signal phasing adjustments, and signing and pavement marking changes. **Previous employment*

BMC The Port-2-Point Truck Routing Corridor Study; Baltimore, MD. Barbara was the deputy project manager of the Baltimore Metropolitan Council's (BMC) study on container truck access to the Seagirt Marine Terminal. The study focused on increased truck from traffic generated by the Tradepoint Atlantic site at Sparrows Point. The goal of the study was to identify the extent to which trucks are likely to use the partial interchange at I-695 for BMC and Broening Highway compared to Peninsula Expressway and local roads, and any mitigating actions that could be taken for the local road impacts. The results of the study were presented to the BRTB Freight Movement Task Force. **Previous employment*

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

Resume # 8

Name Kevin Kozain, PE **Title** Director, Stormwater & Civil/Site

Primary Responsibilities

Project/Task Manager (land use/environmental, stormwater management)

Years Experience:	**With This Firm**	16	**With Other Firms**	8

Education

Institution	**Degree(s)**	**Year**	**Specialization**
University of Pittsburgh	BS	1999	Civil Engineering Technology

Active Registration

Year first registered	**2007:** PE PA #PE075052; **2008:** CPESC #4855
Disciplines	Registered Professional Engineer, Certified Professional Erosion & Sediment Control

Other Experience and Qualifications

Kevin serves as project manager and senior engineer on Pennsylvania transportation improvement projects for NTM. His responsibilities include erosion and sediment (E&S) control design, drainage design, stormwater management design, National Pollutant Discharge Elimination System (NPDES) and waterway permitting, hydrology and hydraulic (H&H) analysis, and traffic control/construction phasing plan development. Kevin is proficient at performing designs according to PennDOT and PA DEP design standards and offers a background in land development design and traffic engineering. Kevin has provided calculations, construction plans, and specifications for grading and drainage, E&S control, stormwater management, highway geometry, pavement, and signage and has coordinated project designs with clients, utility owners, and project review agencies.

PennDOT Stormwater Design and NPDES Permits; Harrisburg, PA. As a contributing developer, Kevin helped develop this course that offers a comprehensive review of stormwater management concepts and design practices for highway applications. The course focuses primarily on design procedures and acceptable stormwater best management practices, as in PennDOT's design manuals. It provides step-by-step instructions for completing an NPDES permit and a post-construction stormwater management plan and narrative and provides valuable background on the NPDES permit process. It also reviews how the NPDES permit process relates to PennDOT's Antidegradation and Post-Construction Stormwater Management Policy (written by NTM) and how it can impact scope and schedule. Tasks included designing and developing class materials.

PennDOT Erosion and Sediment Control Design Course; Harrisburg, PA. As a contributing developer/lead instructor, Kevin helped develop this course that thoroughly examines E&S pollution control concepts and design procedures as they apply to PennDOT construction projects. The course provides the designer/engineer with the guidance and direction to evaluate the Department's E&S design options by addressing a broad range of issues related to design. The PennDOT Drainage Manual, PA DEP's E&S Manual, and other documents relevant to E&S are highlighted. The course also discusses changes to 25 Pa. Code 102 and how they affect PennDOT plans.

PennDOT Specialty Stormwater Services; Harrisburg, PA. Kevin worked on as-needed engineering to help PennDOT make programmatic decisions regarding drainage, stormwater management, and E&S control. Assignments have included developing Department-wide guidance on regulatory compliance, QA review of stormwater designs, assisting Districts with NPDES permitting, and participating in Pro Team or VEACTT meetings to help find the most cost-effective solutions for stormwater design. Kevin collaborated with several Districts on large projects to reduce or eliminate costly and maintenance-intensive stormwater management facilities from preliminary designs.

PennDOT E03755 Riverlands Study Implementation (Riverlands Part 2; Dauphin County, PA. Kevin was the project manager for NTM's services, which include hydrologic and hydraulic (H&H), waterway permitting, stormwater design, and NPDES permitting for the entire project. The project includes safety improvements like creating a limited access condition and a frontage road for commercial business as well as ramp improvements along 1.75 miles of the SR 0022/SR 0322 corridor in Dauphin and Perry Counties.

PennDOT E03423 Interstate 83 Reconstruction, Section 78 (Eisenhower Interchange); Swatara Township, Dauphin County, PA. Kevin is the project manager for the interchange reconstruction, highway and structure reconstruction, lane addition, and rehabilitation of the I-83 Eisenhower Interchange. NTM is completing a hydraulic analysis using the EPA SWMM model for the lining and replacement of approximately 7,000 LF of trunk storm sewer. The analysis includes two upstream conveyance systems connecting at the upstream end of the existing 8-foot by 7-foot box culvert. NTM is also conducting a drainage field view to visually assess field conditions and geophysical characteristics of off-site tributary areas, including karst features to help refine hydrologic flows as well as H&H studies for the preliminary engineering. In addition to the H&H tasks, NTM will be responsible for the E&S design and E&S Plan for the entire project, which includes five separate construction projects. Throughout this project, NTM has extensively coordinated with the USACE as part of their ongoing FEMA Flood Insurance remapping efforts for Dauphin County. Currently, NTM is working on the final E&S design and plan for Contract 1, which involves constructing a new interchange at the Harrisburg Mall as well as side road improvements that will help the flow of local traffic in and around the area of the Eisenhower Interchange.

PennDOT E03424 Main Street; Franklin County, PA. Kevin is the project manager for the SR 1006-005 Scotland Road project in Greene Township, Franklin County, a roadway safety improvement project with a bridge replacement over Mountain Run. NTM's tasks included drainage design and H&H analysis. A curb was added throughout the portion of the SR 1006 corridor that is located in the village of Scotland. The drainage design required extensive coordination with existing utilities to maintain connections as well as the Township-owned existing drainage system. The H&H evaluated the bridge replacement over Mountain Run and the Conococheague Creek floodplain encroachment due to roadway improvements.

PennDOT E03424 Route 34 Improvements; Perry County, PA. The SR 0034 Section 035 project involved a roundabout at the SR 0034/SR 0851/Pisgah State Road in Carroll Township, Perry County. NTM was responsible for the drainage design, H&H analysis, stormwater design, and the NPDES Permit. The stormwater design converted the impervious surface of an adjacent commercial property that was acquired as part of the project into a landscape restoration, non-structural stormwater control measure (SCM). The H&H evaluated a pipe replacement on an UNT to Sherman Creek and roadway widening in the floodplain due to the roundabout. The project was able to manage peak rate, volume, and water quality increases without any basin type CMS which will minimize future maintenance costs. Kevin was the project manager (Part 10,11,12).

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

KITTELSON & ASSOCIATES

Resume # 9

Name Alexandra Jahnle, PE, RSP_{2I} **Title** Associate Engineer

Primary Responsibilities

Project/Task Support (multimodal design)

Years Experience: **With This Firm** 12 **With Other Firms** 1

Education

Institution	Degree(s)	Year	Specialization
University of Virginia	BS	2012	Civil Engineering
Villanova University	MS	2019	Civil Engineering

Active Registration

Year first registered	**2020:** PE PA #PE090900; **2017:** PE DE #21141; **2021:** PE DC #PE923070; **2023:** PE MA #58106 **2021:** RSP_1 #800; **2023:** RSP_{2I} #157
Disciplines	Registered Professional Engineer, Road Safety Professional Level 1 & Level 2, Infrastructure

Other Experience and Qualifications

Alexandra is a versatile transportation engineer whose technical experience incorporates elements of planning, analysis, safety, and design components. She designs multimodal intersections from concept through the final design, implements traffic calming measures, and enhances safety for people who walk and bike. She has extensive working knowledge applying both the Highway Safety Manual (HSM) and Highway Capacity Manual (HCM) in traffic operations analyses, intersection control evaluations, design projects, and statewide screening applications. Alexandra has practical knowledge of modeling and design software, including AutoCAD, Synchro, SIMTraffic, ArcGIS, SIDRA, Highway Capacity Software, and Microstation.

PennDOT E03514 and E04921: PennDOT Design Manual 2: Traffic Calming Chapter; Statewide, PA. Alexandra was the project manager of the new "Traffic Calming" chapter of PennDOT's *Design Manual 2*. The chapter replaces PennDOT's *Traffic Calming Handbook* and provides users with background information, planning considerations, tools, guidance, and design considerations to implement traffic calming measures where there is a need to reduce vehicle speeds and enhance the safety of people who walk and bike. Alexandra led the development of the context-based toolbox for the chapter, which included definitions, typical applications, advantages and disadvantages, design considerations, and details of traffic calming treatments for implementation in different contexts.

Water Street Bicycle and Pedestrian Boulevard; Lancaster, PA. Kittelson is leading the planning and design of a mile-long bicycle and pedestrian boulevard through downtown Lancaster on Water Street. Kittelson completed the planning and concept design in 2019 and the preliminary design of the corridor in 2023 (Phase 2). Final design received NTP in 2024 and construction is planned for 2026. Water Street is part of Lancaster's high injury network and goals of the project include creating a multimodal north-south connector through the City, slowing traffic, and reducing crashes for all modes. As a task lead engineer, Alexandra converted Phase 1 concept designs into engineered designs, created public-facing intersection graphics to convey design improvements, and progressed the design through preliminary engineering. She is the project manager for the final design phase of the project. The on-street bicycle route will be enhanced by intersection improvements (curb extensions, raised crosswalks, Rectangular Rapid Flashing Beacons, ADA compliant pedestrian ramps), pavement markings, signage, speed humps, and lowering the speed limit to 20 MPH.

City of Lancaster Eastbound and Westbound Connectors; Lancaster, PA. The project aimed to create a safe and comfortable eastbound bicycle route in downtown Lancaster. The project included a robust public engagement plan

incorporating lessons learned from past engagements and connected the project to the planned future bicycle network in the City and the Region. As the engineer of record, Alexandra created concept designs, public facing graphics, and the final design of a parking separated bicycle lane. Proposed improvements included pavement markings, flexible-post delineators, slow-turn wedges, signage, and Rectangular Rapid Flashing Beacons.

City of Philadelphia Traffic Calming Program Review; Philadelphia, PA. As the project manager, Alexandra led the initiative to evaluate and improve the City's Traffic Calming resident request program. The project examined existing program challenges and identified process solutions through a review of comparable cities and best practice research. Program recommendations focused on system efficiencies, quick build improvements, and updated program guidance to fit the urban context. Throughout the project, she facilitated workshops with City staff to gain consensus on program recommendations. She built a prototype, tested, and helped implement the spatial analysis methodology to identify and prioritize eligible streets for the program.

City of Harrisburg North 2nd Street Two-Way Conversion - Multimodal Corridor Study; Harrisburg, PA. Kittelson led a traffic operations analysis in Harrisburg to investigate the multimodal impacts of converting North 2nd Street, a major arterial that supports heavy afternoon vehicle traffic, from one-way to two-way operations. As a project engineer, Alexandra used Synchro to conduct an existing and 2040 future conditions traffic analysis of three alternatives in the study area. The alternatives included curb-to-curb changes like road diets, protected bicycle facilities, and curb extensions. Alexandra developed conclusions in a final report and materials which explained the existing conditions, crash data, bicycle and pedestrian infrastructure, operational results, and alternatives for the public involvement component of the project. As a sub-consultant, Kittelson provided traffic design support services for subsequent task orders: North 2nd Street Two-Way Conversion – Preliminary Engineering and Final Design. She was the project manager for the project's traffic design support services phase. She led intersection control evaluation (ICE) assessments at eight intersections, including HSM analyses, and developed final signing and pavement marking plans for North 2nd Street.

City of Boston Neighborhood Safety and Multimodal Improvements Program; Boston, MA. Kittelson held an on-call contract with the City of Boston in support of its Neighborhood Slow Streets Program to develop innovative approaches to traffic calming. The program's goal is to slow vehicle speeds and reduce the number and severity of crashes on residential streets, lessen the impact of cut-through traffic, and add to residents' quality of life. Alexandra's involvement in the Neighborhood Slow Streets program spans more than five years. She was the lead task engineer for Grove Hall/Quincy Corridor, and Dorchester Unified Neighborhood (West). She was the project manager for the Lower South Street neighborhood. She planned and designed traffic calming improvements, created public facing content, and answered technical questions at virtual public meetings. PS&E design plans for these three tasks included: 110 speed humps, six raised crosswalks, 15 curb extensions, 32 ADA curb ramps, daylighting, signage, and pavement markings.

PennDOT E03983 and E04664: FREEVAL Tool Development; Statewide, PA. Alexandra was responsible for ArcGIS data conflation and processing for customizing the FREEVAL software tool for PennDOT. Kittelson segmented PennDOT Limited Access Facilities, developed HCM default values to be used in the tool, and created a PennDOT-specific FREEVAL interface. Alexandra tested the interface, wrote the user manual for the tool, and developed training materials for the tool. Version 2.0 of the tool included additional capabilities for segmentation customization and enhancements to the work zone interface and was released in early 2024. The project team also developed an updated web-based lane closure analysis tool (LaneEval) to interface with the future lane reservation system. Alexandra is the project manager of the next phase of this project.

PennDOT BOMO E04834: HSM Network Screening, Statewide, PA. Kittelson led a statewide safety network screening for PennDOT Bureau of Maintenance and Operations with support from Michael Baker International. *Highway Safety Manual* (HSM) analysis was conducted for thousands of intersections and road segments statewide to compute the expected frequency and severity of crashes. Studies of the segment and intersection in each county with the highest potential for safety improvement were conducted. All freeways, ramps, and ramp terminal intersections statewide were analyzed, and this informed the selection of several hundred freeway and ramp sites for full HSM analysis. Alexandra led the freeways and ramps task, and the ArcGIS data conflation and processing. The project included data automation from statewide databases, manual collection from PennDOT Video Log and Google Earth, traffic count collection, and development of spreadsheet tools for HSM applications.

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

KITTELSON & ASSOCIATES

Resume # 10

Name Abigail (Abby) Morgan, PhD, PE **Title** Principal Engineer

Primary Responsibilities

Project/Task Support: (freight planning)

Years Experience:	**With This Firm** 9	**With Other Firms** 9

Education

Institution	Degree(s)	Year	Specialization
Purdue University	PhD	2010	Civil Engineering
Washington University in St Louis	MS	2007	Civil Engineering
Washington University in St Louis	BS	2007	Civil Engineering

Active Registration

Year first registered **2015:** VA #402054388; **2016:** FL #81756

Disciplines Registered Professional Engineer

Other Experience and Qualifications

Abby leads technology deployments from planning to evaluation. She guides communities across the country in developing regional Technology Transition Plans. Abby has led or supported Connected and Automated Vehicle (CAV) deployment plans and technology transition plans in Alaska, Arizona, California, Florida, Ohio, Pennsylvania, and Texas. She led the mobility analysis for the U.S. DOT Connected Vehicle (CV) Pilot Deployment Program and Smart Columbus. As a Safety Standards Engineer with the National Highway Traffic Safety Administration (NHTSA), Abby developed federal motor vehicle safety standards and policy recommendations for advanced crash avoidance technologies.

Alaska DOT & PF Statewide Weigh-in-Motion Plan Update; Statewide, AK. Abby updated Alaska's statewide Weigh-in-Motion (WIM) plan in 2018. She assessed the state's freight characteristics, data collection needs, and federal reporting requirements. Abby led stakeholder interviews with the trucking industry, WIM vendor, and various divisions across the Alaska DOT and Public Facilities (AK DOT & PF) to understand the strengths and challenges of the existing WIM program. She identified barriers to data sharing across divisions, and the revised plan that Abby developed recommended a strategy to reuse existing equipment from decommissioned sites, plan for safety during temporary roadside inspections using Portable WIM sensors and make WIM data reports more accessible to all divisions in the Department.

VDOT Truck Parking Study Phases 1 & 2; Statewide, VA. Many states struggle to meet the demands for safe and legal truck parking spaces to support the growing freight and goods movement. Abby is the project manager leading the statewide truck parking study for the Virginia Department of Transportation (VDOT). She and her team are using GPS probe data with geospatial analysis to identify where trucks park for required mid-shift rests and overnight breaks and to differentiate legal vs. illegal parking locations. This study quantifies the truck parking need in Virginia, supports federal Jason's Law reporting requirements, and recommends strategies for using VDOT-managed facilities to increase truck parking capacity throughout the state.

FDOT District 4 Roosevelt Bridge Emergency Construction Freight Detour Evaluation; Stuart, FL. Abby led the truck detour review for FDOT District 4 after the US 1 Roosevelt Bridge was closed to trucks due to emergency repairs. This review involved site evaluations, AutoTurn analysis at key detour intersections, and recommendations of temporary and

permanent design modifications to address detour routing and maintenance of traffic to improve safety and operations during and after construction.

BMC CAV Integration for Local Governments; Baltimore, MD. For the Baltimore Metropolitan Council (BMC), Abby and her team developed a guidebook of feasible actions local agencies can take to plan for impacts of CAVs. The guidebook explains the impacts of CAVs on transportation, land use, partnerships and the planning process in the region. The guidance will help agencies understand what performance metrics to monitor and what investment or funding needs to anticipate in long-range planning. We created a user guide to help agencies implement near-term actions and an executive summary to explain the needs to elected officials and agency leaders. The project deliverables are available at baltometro.org.

USDOT/FHWA Connected Vehicle Pilot Deployment Evaluations; National. Abby managed Kittelson's independent mobility evaluations of all three of the United States DOT (USDOT) Connected Vehicle (CV) Pilot Deployment Programs in Tampa, New York City, and Wyoming for the Federal Highway Administration (FHWA). Abby was the technical expert who developed site-specific Analysis, Modeling, and Simulation (AMS) plans to use simulation tools to estimate potential future benefits of CV deployments.

FHWA Connected Vehicle Deployment Evaluation IDIQ–Smart Columbus Evaluation; Columbus, OH. Abby led the Analysis, Modeling, and Simulation (AMS) evaluation of Smart Columbus, the United States DOT (USDOT) Smart City Challenge deployment program in Columbus. She reviewed all 15 USDOT-funded Connected Vehicle (CV) applications (including integrated data, the connected vehicle environment, multimodal trip planning, and enhanced permit parking) to develop a mobility evaluation plan.

NCHRP Report 924: Foreseeing the Impact of Transformational Technologies on Land Use and Transportation; National. Abby was the project manager and lead researcher for the National Cooperative Highway Research Program (NCHRP) Project 8-117, which produced the first national guidebook on the impacts of transformational technologies on land use and transportation (NCHRP Report 924: Foreseeing the Impact of Transformational Technologies on Land Use and Transportation). Abby researched the anticipated impacts of transformations in automation, communication, personal mobility, and logistics.

Highway Capacity Manual Connected & Automated Vehicle Capacity Adjustment Factors Pooled Fund Study; National. Abby led the development of capacity adjustment factors for connected and automated vehicles (CAVs). Using simulation tools, her team modeled different levels of CAV performance and market penetration and wrote new CAV chapters for the Highway Capacity Manual.

NCTCOG Planning Process for Automated Transportation; Dallas/Fort Worth, TX. Abby and her team developed an Automated Vehicle Hosting Handbook for local agencies to prepare for deployments, a market analysis of emerging transportation technologies, a financial assessment of revenue impacts and funding sources, and K-12 lesson plans for students to learn about automation for the North Central Texas Council of Governments (NCTCOG). Abby's team was the first to apply the new AV capacity adjustment factors from the Highway Capacity Manual 7th Edition to the region's travel demand model to simulate three potential future technology scenarios. She led public engagement through virtual public meetings, focus groups, stakeholder interviews, and project advisory committee engagement. The project website is www.connectntxfutures.org.

NYSERDA Clean Transportation Roadmap & Clean Transportation Prizes; Statewide, NY. Kittelson supported the New York State Energy Research and Development Authority's (NYSERDA's) development of a Clean Transportation Roadmap. Kittelson recommended policies and strategies to improve system efficiency by reducing the use of internal combustion engine vehicles for passenger and goods movement trips, increasing the use of ZEVs and other more fuel-or emissions-efficient shipping methods, and reducing greenhouse gas emissions from vehicle miles traveled. We considered the different needs in urban, suburban, and rural areas. Abby presented these strategies to the New York State Climate Action Council's Transportation Advisory Panel (TAP). She later supported NYSERDA's Clean Transportation Prizes by providing technical support and guidance for applicants.

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

KITTELSON & ASSOCIATES

Resume # 11

Name Brianna Tutuska, PE **Title** Senior Principal Engineer

Primary Responsibilities

Project/Task Support (traffic analysis)

Years Experience: **With This Firm** 4 **With Other Firms** 2

Education

Institution	Degree(s)	Year	Specialization
Bucknell University	BS	2019	Civil Engineering

Active Registration

Year first registered **2025:** PA #PE097094

Disciplines Registered Professional Engineer

Other Experience and Qualifications

Brianna is a traffic engineer with a strong consulting background. She specializes in traffic signal design, signing and pavement marking design, work zone traffic control, roadway lighting, traffic modeling, safety analysis, and traffic studies. Brianna is proficient in using MicroStation, AutoCAD, ArcGIS, Synchro, VISSIM, and VISUM.

TCRPC HSIP Project Selection; Harrisburg, PA. Kittelson provided consultant support to Tri-County Planning Commission (TCRPC) in reviewing potential projects that could be selected for Highway Safety Improvement Program (HSIP) funds and preparing benefit/cost analysis and HSIP applications. As a traffic engineer, Brianna led the benefit/cost analysis of various projects in PennDOT District 8-0 for the TCRPC to determine which projects would be best suited to receive Highway Safety Improvement Program (HSIP) funds. Analysis was completed using *Highway Safety Manual* (HSM) methodology and PennDOT's Tool A (Existing Condition Analysis) and Tool B (Alternative Analysis) Excel workbooks. Brianna completed HSIP applications and helped produce a memo with the study findings.

TCRPC Harrisburg Downtown Circulation Study; Harrisburg, PA. Brianna worked with a team for the Tri-County Regional Planning Commission (TCRPC) to complete a study of the corridor to review vehicular and multimodal operations along Market Street between the Lemoyne Bottleneck on the West Shore and Cameron Street. An analysis or a potential two way conversion of the Market Street corridor was completed using travel demand modeling and synchro. Brianna completed the Synchro analysis of downtown Harrisburg for existing and potential future configurations. Transit travel times were also examined for existing and future conditions. She also acted as deputy project manager successfully managing others and presenting to the client.

PennDOT District 8-0 E04729 Cameron Street Resurfacing; Harrisburg, PA. As a traffic engineer, Brianna helped lead the traffic signal design for seven intersections along the Cameron Street corridor for preliminary engineering and design field view submissions. She also assisted with signing and pavement marking plans for the corridor and completed cost estimates for both plan sets. Brianna also performed a safety study for the corridor, which included crash data analysis and a *Highway Safety Manual* (HSM) analysis of the corridor that was completed using PennDOT's Tool A (Existing Condition Analysis) Excel workbook. She also helped with the suggested safety improvements for the corridor and intersections. Brianna also performed field work to determine problem areas along the corridor and observe traffic signal operations.

PennDOT BOMO E04834 PennDOT Highway Safety Manual Course Update; Statewide, PA. Kittelson is updating and facilitating Pennsylvania Department of Transportation Bureau of Maintenance and Operations' (BOMO) *Highway Safety Manual* (HSM) 1.5 day in person training course. As a traffic engineer, Brianna worked alongside others to update the

course material for PennDOT's *Highway Safety Manual* (HSM) training course. She developed example problems for participants using PennDOT's Tool A (Existing Condition Analysis) and Tool B (Alternative Analysis) Excel workbooks along with the CMF Clearinghouse. Brianna also updated numerous PowerPoint presentations and helped prepare speaker notes for all course sections. Brianna also helped to present the course in Fall 2023.

PennDOT HSTO, E04834 Traffic Academy; Statewide, PA. PennDOT's Highway Safety and Traffic Operations (HSTO) Division sought to develop a one-week Traffic Academy for staff throughout the Commonwealth involved in tasks related to highway safety and traffic operations. As a traffic engineer, Brianna helped develop presentations for various PennDOT Traffic Academy training sessions. Brianna worked as part of a team that coordinated closely with PennDOT Central Office. She also helped facilitate the Traffic Academy training, assisting with setup and taking notes on adjustments for future Traffic Academy trainings. Brianna prepared a Desk Manual with detailed instructions on how to run the Traffic Academy along with updating the presentations based on feedback from participants and instructors. She had facilitated the April Traffic Academy training and worked on additional updates for the future sessions.

PennDOT HSTO E04834 Utility Pole Burial Feasibility Study; Statewide, PA. Kittelson completed a feasibility study for the PennDOT Highway Safety and Traffic Operations (HSTO) Division to establish a utility pole burial pilot program. As a traffic engineer, Brianna helped rank priority utility pole crash sites using number of crashes, segment lengths, and traffic volumes. She then used PennDOT's Pennsylvania Crash Information Tool (PCIT) to pull detailed crash reports and maps at the top-ranked locations for further analysis.

PennDOT District 6-0 Minsi Trail Roundabout; Hilltown Township, PA. Kittelson is a major subconsultant under a $7M open-end involving Highway Safety Improvement Program (HSIP) projects in PennDOT District 6-0. One work order involves Preliminary Engineering for a rural, single-lane roundabout at the SR 113/Minsi Trail intersection in Bucks County, Pennsylvania. As a traffic engineer, Brianna helped produce the maintenance and protection of traffic plans for the construction of a roundabout at the intersection of Minsi Trail and Souderton Road. Plans included multiple stages of construction, and accompanying detour plans for each stage of traffic were developed, including separate truck detours when necessary.

PennDOT District 8-0 E04729 Lemoyne Bottleneck; Lemoyne, PA. Kittelson is leading alternative development, analysis, public engagement for the redesign of the 4-lane corridor located in Lemoyne, Pennsylvania. This project is working to reduce congestion and improve pedestrian safety along the roadway. As a traffic engineer, Brianna led efforts to complete a safety analysis of the project area, which included crash data analysis, a current conditions analysis using the *Highway Safety Manual* (HSM) that was completed using PennDOT's Tool A (Existing Condition Analysis) Excel workbook, and an analysis of the proposed alternatives using PennDOT's Tool B (Alterative Analysis). She also worked on an operations analysis of the project area using Synchro 11 software for the existing and proposed alternatives. Brianna performed field work and observed queuing, signal operations, and pedestrian accommodations for the site as well. She is continuing to work on this project as it moves into later stages of design.

Florida Department of Transportation, Safety Academy; Statewide FL. Brianna is working alongside others to update the Safety Academy training for the Florida Department of Transportation. This work includes updating PowerPoints, speaker notes, and a desk manual to include the most up-to-date safety information for Florida. The training covers multiple topics including crash analysis, safe systems approach, and site specific safety countermeasures.

MassDOT ICE Support; Statewide, MA. Brianna is assisting in the development of Intersection Control Evaluation (ICE) forms and training for the Massachusetts Department of Transportation (MassDOT). ICE forms are being updated as part of the overall ICE policy update. Brianna works alongside MassDOT including attending internal meetings, to help make changes to make the ICE process more efficient and user friendly. She is also updating the trainings for each of the ICE stages and is making recordings that can be used for online training.

PennDOT Network Screening, Statewide, PA. Brianna is working on the roundabout portion of the Pennsylvania network screening. This works includes compiling all the roundabouts in the state, collecting needed traffic counts and data, and performing Safety Performance Functions (SPFs) for each roundabout site. Brianna will then compared predicted crashes to the crashes that are currently being observed over a 5 year period to determine which locations are good candidates for safety improvements.

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

KITTELSON & ASSOCIATES

Resume # 12

Name Burak Cesme, PhD **Title** Associate

Primary Responsibilities

Project/Task Support (congestion management)

Years Experience:	**With This Firm**	9	**With Other Firms**	5

Education

Institution	**Degree(s)**	**Year**	**Specialization**
Northeastern University	PhD	2013	Transportation Engineering
Northeastern University	MS	2010	Transportation Engineering
Middle East Technical University	BS	2007	Civil Engineering

Active Registration

Year first registered N/A

Disciplines N/A

Other Experience and Qualifications

Burak has experience working on transportation research projects, addressing transportation emerging trends and technologies. As a transportation specialist, he is routinely involved in planning and designing traffic signal systems, developing microsimulation models, conducting mobility and congestion management studies, researching connected and autonomous vehicles, and leading operational analyses. For the National Cooperative Highway Research Program (NCHRP), Burak has led research projects on non-motorized users, performance-based management of traffic signals, *Highway Capacity Manual* (*HCM*) methodology updates, and connected and autonomous vehicles. Burak applies the knowledge gained through research activities to local transportation initiatives, establishing transportation facilities that are beneficial to communities economically, socially, and environmentally.

DDOT District Mobility; Washington, DC. Kittelson and the District Department of Transportation (DDOT) led a comprehensive assessment of the District's multimodal transportation system. Kittelson led the development, identification, and realization of new, cutting-edge tools for tracking progress, visualizing, and assessing impacts of various forms of congestion management. Burak assisted with the development of data-driven performance measures to evaluate, monitor, and quantify multimodal congestion and system performance. These metrics are available to the public through a website (www.districtmobility.org) and can help guide short-term transportation investments that will improve the transportation network for all users in the District.

FCDOT Lincolnia Community Business Center Transportation Analysis; Fairfax, VA. Kittelson applied rigorous analysis to help the Fairfax County Department of Transportation (FCDOT) clearly define the problems with their transportation network and develop solutions while preparing for the next wave of development. As project manager for the Lincolnia Community Business Center (CBC) Transportation Analysis, Burak helped the County develop solutions that can help support the Comprehensive Plan Update that the County is undertaking. Through rigorous analysis, including Synchro, Highway Capacity Manual (HCM), and VISSIM, Burak worked with the County to identify cost-effective approaches that can address traffic congestion while facilitating a more multimodal future transportation network.

PennDOT US 22 Juniata Street Intersection: SR 22/Allegheny Street/Newry Street Signal Performance Measures and Simulation Testing Using Software-In-The-Loop; Hollidaysburg, PA. Kittelson helped to prepare and evaluate alternatives for SR 22 and several neighborhood intersections serving the historic Hollidaysburg downtown. Burak

assisted the Pennsylvania Department of Transportation (PennDOT) with the implementation of automated traffic signal performance measures (ATSPM) at the study intersection. The project also includes testing a pre-signal operation to improve operations and safety at the railroad crossing using VISSIM's Econolite ASC/3 software-in-the-Loop (SIL) package.

City of Somerville Central Broadway Transit Signal Priority Implementation; Somerville, MA. Kittelson assisted the City of Somerville with the Transit Signal Priority (TSP) implementation at four intersections along the Broadway corridor. Burak was the task leader for this effort and developed signal timing strategies to improve bus speeds and reliability using both active and passive TSP tactics. The project also included implementation of protected turn phases and leading pedestrian intervals (LPI) to help improve pedestrian and bicycle safety along the corridor.

MTA Dedicated Bus Lanes; Baltimore, MD. Kittelson team members led a weekly collaborative virtual meeting between the Maryland Transit Administration (MTA) and Baltimore City Department of Transportation (BCDOT) staff to discuss the feasibility of over 20 miles of potential dedicated bus lanes. This effort required data analysis, concept design, stakeholder assessment, and curb use inventory for over two miles of corridor each week, on a rolling basis, throughout the summer and fall of 2020. The data analysis focused on evaluating key decision-making characteristics, including vehicle and bus speeds, bus frequency, vehicle volumes, average passenger loads, and traffic operations. Burak assisted with the bus AVL data analysis to identify segments that are major bottlenecks for buses.

MassDOT Complete Streets On-Call: Soldier's Field Road; Boston, MA. Burak developed signal timing plans for the Massachusetts Department of Transportation (MassDOT) that incorporates a queue jump signal for buses to help reduce bus delay at the intersection of Soldier's Field Road and Cambridge Street.

WMATA TSP Services; Washington, DC. Kittelson is assisting Washington Metropolitan Area Transit Authority (WMATA) with the monitoring and refinement of the transit signal priority (TSP) system in the District to increase TSP effectiveness and identify future intersections for TSP and queue jump implementation. Burak led the development of a screening framework to determine future locations that are suitable for TSP and queue jump implementation. Additionally, Burak helped WMATA with the agency outreach for possible expansion of TSP to other jurisdictions in the Washington, DC, region.

Arlington County Multimodal Performance Measures; Arlington County, VA. Kittelson is supporting Arlington County as they develop a multimodal signal timing optimization framework along with multimodal performance measures to enhance operations and safety at signalized intersections. The newly developed signal optimization method uses an "outcome-based approach" to signal timing, allowing Arlington County to develop signal timing based on the operating environment, intersection users, user priorities by movement, and operational objectives. Kittelson applied the developed framework and multimodal optimization method on the Route 29, N Glebe Road, and, recently, Ballston-Rosslyn corridors and developed new signal timings for approximately 110 intersections (40 signals for Glebe Rd/Rt 29, 71 signals for Ballston-Rosslyn). Additionally, the developed multimodal optimization methodology has been adopted by Arlington County and is currently being used on other corridors to improve multimodal operations and safety at signalized intersections and environmental health, equity, and other concerns. Challenge (if requested): Insufficient data collection may affect the reliability of signal timing optimization, as the available data may not fully capture current traffic patterns or multimodal usage conditions. Community feedback could entail iterative modifications to signal phasing and timing, potentially requiring additional resources or extending project deadlines. Additionally, unplanned construction events may impact field data collection for the before-and-after analysis. Burak is the project manager.

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

KITTELSON & ASSOCIATES

Resume # 13

Name Tara Hofferth, PE **Title** Senior Engineer

Primary Responsibilities

Project/Task Support (public involvement)

Years Experience:	**With This Firm** 4	**With Other Firms** 6

Education

Institution	Degree(s)	Year	Specialization
Drexel University	MS	2024	Urban Strategy
Lehigh University	BS	2015	Civil Engineering

Active Registration

Year first registered	**2020:** NC #049979
Disciplines	Registered Professional Engineer

Other Experience and Qualifications

Tara is a transportation planner/engineer passionate about working with communities to build equitable, sustainable access. Tara's work focuses on community engagement, corridor studies, multimodal network planning, and concept development. She started her career in structural engineering and was also a public servant with the City of Raleigh. As demonstrated below, Tara's work predominantly focuses on complete streets studies and implementation. She is actively involved in several Safety Action Plans across the state and in managing the design of traffic calming, pedestrian facilities, bicycle networks, and intersections throughout the region.

Dover/Kent County MPO Downtown Dover Pathways Study, Dover, DE. Kittelson was tasked with identifying improvements to Downtown Dover's bicycle and pedestrian network such that there are safe, reliable connections between key destinations and the Downtown core. As Project Manager, Tara conducted several workshops with community leaders and agency representatives and led the Kittelson team to develop thoughtful alternatives, clear concept graphics, and comprehensive written and visual documents. The team conducted a 3-day long charrette to help residents and business owners reimagine Loockerman Street, with the intention of contributing to the economic vitality and vibrancy of Downtown Dover.

WILMAPCO Claymont Area Master Plan, Claymont, DE. Tara is working with the Wilmington Area Planning Council (WILMAPCO) to identify multimodal improvements and connections along Philadelphia Pike and in the adjacent neighborhoods in Claymont. This includes evaluating a road diet and changes to intersection control. She is a deputy project manager, working closely with the RHI team and local community leaders to develop consolidated land use and transportation solutions that improve connectivity and contribute to prosperity in this working-class community.

DVRPC Route 291 Road Diet Study; Delaware County, PA. As the project manager, Tara worked with Delaware County, the Delaware Valley Regional Planning Commission (DVRPC), the City of Chester, PennDOT, and several other municipalities and agencies to identify solutions for reducing crashes along Route 291 and making it a corridor to walk, bike, and live along safely. Her priorities were to build upon the many plans and studies already performed and to elevate the voices of marginalized communities that have been excluded from planning processes in the past. She led the team to perform traffic, safety, and others analyses to evaluate a road diet and weigh complex tradeoffs.

State College Borough Next Generation Safety and Mobility Plan; State College, PA. This project aimed to guide State College's transportation investments over the next ten years and created a long-term working list of projects that address local and regional mobility issues. This plan built upon previous planning efforts in State College and by other

stakeholders and supports equitable transportation for the areas surrounding Pennsylvania State University. As the deputy project manager, Tara assisted with stakeholder and community engagement, oversaw the analysis of existing conditions, and managed toolbox and project development.

City of Lancaster Eastbound Connector; Lancaster, PA. This project created a safe and comfortable eastbound bike route in downtown Lancaster. The project included a robust public engagement plan and three public meetings and surveys. Proposed improvements included pavement markings, flexible-post delineators, slow-turn wedges, signing, signal modifications, and rectangular rapid flashing beacons (RRFBs). Tara helped facilitate four public meetings and several surveys as part of this effort. This robust engagement agenda helped the team refine concepts and develop solutions that responded to the specific needs of Lancaster residents.

PennDOT E04834 Highway Safety and Traffic Operations Division–Safety Open-End, Vulnerable Road User Safety Assessment; Harrisburg, PA. Tara managed an effort to systematically update pedestrian signal heads to countdown signals across Pennsylvania using the Special Rule Federal Funding. She also managed a team of analysts to update pedestrian signal head information in Pennsylvania Department of Transportation Bureau of Maintenance and Operations (PennDOT BOMO) Traffic Signal Asset Management System (TSAMS) database. Now, Tara is working with MPOs across the state to identify needs and strategies for improving vulnerable road user safety.

PennDOT E04834 Highway Safety and Traffic Operations Division–Safety Open-End, Safety Analysis; Harrisburg, PA. Tara assisted with Network Safety Screening across Pennsylvania. She also worked with PennDOT staff on the latest update to their Strategic Highway Safety Plan. She worked with the Tri-County Regional Planning Commission (TCRPC) to identify safety improvement tools within Cumberland, Dauphin, and Perry Counties. She worked with PennDOT Staff to develop a Network Safety Screening training video to aid planners and engineers with using the tool.

PennDOT BOMO E04834 Strategic Highway Safety Plan Update; Harrisburg, PA. Tara assisted with Network Safety Screening across Pennsylvania. She also worked with Pennsylvania Department of Transportation Bureau of Maintenance and Operations (PennDOT BOMO) staff on the latest update to their Strategic Highway Safety Plan. She worked with the Tri-County Regional Planning Commission (TCRPC) to identify safety improvement tools within Cumberland, Dauphin, and Perry Counties. She is also working with PennDOT Staff to develop a Network Safety **Screening training video to aid planners and engineers with using the tool throughout the state.**

PennDOT E04834 Vulnerable Road User (VRU) Safety Assistance; PennDOT Bureau of Maintenance and Operations, Harrisburg, PA. Tara managed an effort to systematically update pedestrian signal heads to countdown signals across Pennsylvania using the Special Rule Federal Funding. She also managed a team of analysts to update pedestrian signal head information in Pennsylvania DOT's (PennDOT) Traffic Signal Asset Management System (TSAMS) database. Tara worked with MPOs across the state to identify needs and strategies for improving vulnerable road user safety as part of the statewide VRU Assessment.

Erie Safety Action Plan; Erie, PA. Tara was a deputy project manager for this effort to develop a Safety Action Plan with the City of Erie funded by Safe Streets and Roads for All. The plan identified severe crash trends in the city and made recommendations for spot specific, systemic, and non-infrastructure solutions. In addition to the technical analysis, Tara played a key role in engaging Erie residents in conversations about transportation safety. She helped facilitate a Safety Working Group to develop the plan.

Kent County Safety Action Plan; Kent County, DE. Tara supported the Dover Kent Metropolitan Planning Organization (DKMPO) in developing a Safety Action Plan for Kent County. This plan focused on broader recommendations to address transportation safety, especially along major arterials in the region. This effort included a special focus on rural road driving. Tara and team developed a toolkit of countermeasures and identified non-infrastructure solutions for the MPO to pursue implementation funding.

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

KITTELSON & ASSOCIATES

Resume # 14

Name Yolanda Takesian **Title** Principal Planner

Primary Responsibilities

Project/Task Support (land use/environmental planning, transit planning)

Years Experience: **With This Firm** 22 **With Other Firms** 13

Education

Institution	Degree(s)	Year	Specialization
University of Pennsylvania	MS	1989	City Planning
Mount Saint Mary's College	BS	1979	Business Administration

Active Registration

Year first registered N/A

Disciplines N/A

Other Experience and Qualifications

Yolanda brings a deep understanding of ways to tap into people's experience of land-use patterns and transportation systems to connect their needs and aspirations to feasible transportation solutions. From place-based visioning to final plan making, Yolanda's work leading planning analyses, concept development, and effective public engagement supports not only the function and safety of transportation investments, but their contribution to economic development and healthy communities. Often facilitating coordination among agency decision-makers, Yolanda's projects produce common-cause and strategic action plans to align and leverage transportation with land use outcomes. Her planning and communications approaches have helped to create scores of consensus plans and built projects in city downtowns and neighborhoods, rural towns, and suburban corridors. Yolanda has developed planning processes for numerous departments of transportation and transit agencies. She has trained planners and engineers in pre-NEPA project development and effective public engagement. Her national practice is rooted in Maryland, where, while working for MDOT Transportation Secretary's Office and State Highway Administration, Yolanda oversaw groundbreaking community planning for system preservation design projects and transit-oriented development programs.

E03399 SR 22 (Juniata Street) Intersection Alternatives Analysis; Hollidaysburg, PA, District 9. Yolanda led the stakeholder engagement activities of an alternatives analysis for a critical link between SR 22 and downtown Hollidaysburg, working with Borough and PennDOT staffs to establish an advisory committee, identify and lead stakeholder interviews, and prepare messaging and engagement activities for broad community and public engagement. She helped the team develop performance metrics related to concerns heard in these various stakeholder and public forums that would be meaningful to advisors and PennDOT decision-makers. A preferred alternative was selected with broad stakeholder support and is now in design.

Silver Spring Township Comprehensive Plan; Silver Spring, PA. Yolanda led the preparation and presentation of the transportation element of the Township's Comprehensive Plan, guiding private development and public infrastructure investment. The effort introduced concepts and approaches to add more local streets with growth and development to create system redundancy, reducing reliance on major arterials and intersections; increasing local circulation options; and increasing bicycle and pedestrian safety, comfort and convenience.

E01243 PennDOT Smart Transportation; Statewide, PA. Yolanda's work in Pennsylvania includes PennDOT's Smart Transportation initiative to more fully integrate land use and transportation in the Commonwealth's roadway improvement program. She had a major role in facilitating communications between municipal, county, MPO, and

PennDOT staffs to revise transportation project identification, scoping, and development. She facilitated workshops and led communications with planners and engineers from throughout the Commonwealth to review and propose changes and reach consensus on each stage of the process, from regional long-range transportation planning through environmental permitting to project delivery. Her work raised and responded to issues such as resource limitations; early integration of local land use and economic development goals; the technical assistance needed to reduce environmental impacts; and integrating walking, bicycling, and transit improvements into various project types. Yolanda's efforts raised awareness of the mutual benefits, opportunities, and implementation necessity of early communication and collaboration.

Central Maryland Regional Transit Plan; Baltimore, MD. Yolanda is leading Kittelson's development of the Transit Readiness element of the Baltimore region's creation of a regional transit plan. A key aspect of transit movement in the region is the ability of its arterial system and existing rail stations to be transit-ready with walkable and bicycle/scooter friendly networks and transit supportive densities with urban design characteristics supportive of last-mile access. Kittelson's work is assessing corridor conditions, working with local land use and economic development agencies, and preparing the Plan's regulatory, capital program and incentive-based strategies to have both private development and public partners support transit-readiness goals of the plan tailored to the variety of contexts to be served within its 25-year planning horizon.

DCTA Transit and Transportation Planning Services; Denton County, TX. Yolanda is focused on the team's engagement activities for on-call services to Denton County Transportation Authority (DCTA), a local transit agency providing service to one of the fastest-growing counties in the United States. As part of DCTA's transition from traditional transit services to a mobility management provider, our team is engaging with transit stakeholders, understanding existing needs, and helping to identify new strategies that may take advantage of Mobility as a Service strategies. Yolanda is currently working with the team's Travel Training subconsultant to develop and execute a Training the Trainer Program for the social service agencies operating in the DCTA service area.

MDOT Statewide Bike & Pedestrian Master Plan; Statewide, MD. Working with the Maryland Department of Transportation (MDOT), Kittelson led a team to prepare Maryland's 2050 Bicycle Pedestrian Master Plan designed to significantly advance collaboration among local and state agency partners to integrate and build more complete systems for active transportation and shared mobility use. A key aspect of the effort was to identify ways the 2019 Plan recommendations and subsequent state initiatives like SHA's Context Driven and Complete Streets Policy could be reinforced to create the safe and complete multimodal networks and facilities envisioned. The plan's strategies include data, training and additional funding resources for engineering project managers, local planners and engineers, and system users to track needs and track and design new facilities. They also include best practice examples and introduced a bicycle target user Facility Selection Guide, and pedestrian funding priorities based on Short Trip Opportunity Areas, equity measurement models, and the presence of transit. As project principal and strategic advisor on the contract, Yolanda has also been supporting Kittelson preparation of MDOT's Complete Streets Guidance Audit and the training and preparation of MDOT's Complete Streets Implementation Plan. Yolanda was specifically involved in sections developed for the Motor Vehicle Administration's Highway Safety Office and Maryland's State Highway and Transit Administrations.

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

Resume # 15

Name Cedomir Jesic, PE **Title** Principal Engineer

Primary Responsibilities

Project/Task Support (stormwater management)

Years Experience:	**With This Firm**	4	**With Other Firms**	21

Education

Institution	**Degree(s)**	**Year**	**Specialization**
Portland State University	MS	2003	Civil Engineering
Portland State University	BS	1999	Civil Engineering

Active Registration

Year first registered **2002:** PE OR #60175; PE CA #64155; **2003:** PE WA #40122

Disciplines Registered Professional Engineer

Other Experience and Qualifications

Cedomir specializes in delivering stormwater infrastructure projects. He is a recognized expert in urban hydrology and hydraulics and has applied his expertise to create low impact design approaches with an emphasis on green stormwater infrastructure, including bio-retention facilities, rain gardens, vegetated rooftops, rain barrels, and permeable pavement. His experience includes watershed and stormwater management planning, water quality planning, best-practices design, riverine hydraulics, low impact design, underground injection control, and floodplain mapping. He has conducted hydraulic modeling and scour design for roadway bridges and culverts. In addition, Cedomir has a comprehensive understanding of floodplain, riverbank stabilization and wetland restoration, specifically with transportation projects. His strengths include hydraulic engineering, river and stream scour at bridges and highway structures, and design of countermeasures to protect roadways.

Ivy Street Pedestrian Improvements—Stormwater Design & Conveyance; Clackamas County, OR. As a subconsultant to Kittelson, Cedomir provided water resource engineering services for 3,200 feet of Ivy Street in Canby, OR. This involved designing water quality/quantity facilities and conveyance system, preparing a drainage report, and developing stormwater conveyance PS&E documents.

West Lane Road Frontage Improvements; Scappoose, OR. Along with Kittelson, Cedomir managed stormwater design for the West Lane Rd. frontage improvements. The stormwater conveyance system and water quality/quantity facilities were designed to accommodate the ultimate build out improvements on West Lane Road.

City of Scappoose Charles T. Parker Way; Scappoose, OR. Charles T. Parker Way was extended 1,200 feet to accommodate existing and future development activities. Cedomir led the stormwater design efforts. The project included w***ater*** quality design, public water main design, public gravity sanitary sewer design, sanitary lift station design, and sanitary force main design. Cedomir conducted hydraulic/hydrologic storm sewer modeling, water quality design, gravity sanitary sewer modeling/design, and sanitary lift station/force main analysis. **Kittelson was the prime consultant on this project, and Cedomir was a subconsultant at another firm.*

SE Johnson Creek Boulevard and 79th Place; Clackamas County, OR. Cedomir is managing the stormwater design of a traffic signal at the intersection of SE Johnson Creek Boulevard and SE 79th Place. The project will also include a new median from 79th to just east of SE 80th Avenue and curb ramp and sidewalk improvements. Stormwater improvements include modification of existing stormwater conveyance and construction of water quality/quantity facility.

Bilquist Elementary School Sidewalks; Clackamas County, OR. Cedomir is managing improvements to Webster Road from approximately Bilquist Elementary School to Roots Road. This project will construct sidewalks on both sides of Webster Road approximately from Bilquist Elementary to the Tri-Met stop at Roots Road. Existing shoulder bike lanes will be improved to approximately 8-foot buffered bike lanes. The north project extent will connect to Bixel Way crosswalk, which will be improved with illumination, ramps, and a central pedestrian refuge. The project length is approximately 1,325 feet and includes curbs, intersection ramps (approximately 14 new, 7 reconstructed), and stormwater conveyance and stormwater management.

Tiedeman Avenue Multimodal Plan; Tigard, OR. As a part of SW Tiedeman Avenue Corridor project, the team has analyzed existing traffic conditions, identified key issues and community priorities for the corridor, and developed sketch-level design alternatives to address the key issues. As a part of 30% design, Cedomir worked with the project team to develop a stormwater approach that meets Clean Water Services Design Standards. Stormwater solutions included three extended dry detention basins that provided water quality, flow control and hydromodifications.

223rd Avenue/Halsey Street Letter of Map Revision (LOMR); Fairview, OR. Cedomir managed water resource engineering services for 223rd Ave., which included preparing a LOMR to remove the 223rd Avenue/Halsey Street intersection from the 100-year floodplain. This work included hydrologic and hydraulic modeling of Fairview Creek, updating FEMA maps, and preparing and submitting LOMR application. **Previous employment*

Canby-Marquam Highway at Lone Elder Road Intersection Improvements; Clackamas County, OR. Cedomir was on a team to provide preliminary and final roadway and stormwater designs, construction cost estimates, identify all necessary environmental permits, identify right-of-way and easement acquisitions, and perform all services necessary to acquire environmental permits and right-of-way and easements. The tasks associated with this project include providing project management, surveying, environmental (wetlands), utility coordination, hydraulic analysis and stormwater design, traffic engineering and roadway design, right-of-way acquisition, final engineering design services and bid, and award assistance for the project. **Cedomir worked on this project with another firm, and Kittelson was part of the team as a subconsultant.*

Central Point and New Era Road Intersection Realignment; Clackamas County, OR. The intersection of Central Point and New Era Road experienced several fatalities and required safety improvements. Cedomir is serving as lead stormwater engineer for this project, which involves designing water quality/quantity facilities and conveyance system, preparing a drainage report, and developing stormwater conveyance PS&E documents. **Previous employment*

Hocken Street Bridge Replacement; Beaverton, OR. Cedomir led the project team to develop three alternatives, which included concept plans and construction estimates for each option, for the construction of a new bridge over Beaverton Creek. The team established existing storm system capacity and provided capacity analysis for future conditions. In addition, Cedomir worked with Pacific Habitat Services to enhance 750 linear feet of Beaverton Creek channel. This work included the removal of invasive species, reducing side slopes from 2:1 to 4:1, and installing native plantings and wood debris. **Previous employment*

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

KITTELSON & ASSOCIATES

Resume # 16

Name Emilie Albert, PE **Title** Senior Engineer

Primary Responsibilities

Project/Task Support (project delivery support)

Years Experience:	With This Firm	With Other Firms
	0.5	7

Education

Institution	Degree(s)	Year	Specialization
University of Cincinnati	BS	2016	Civil Engineering

Active Registration

Year first registered **2021:** PE PA #PE092945; PE DE #24227

Disciplines Registered Professional Engineer

Other Experience and Qualifications

Emilie has worked on a range of roadway and highway improvement projects with agencies like PennDOT, DelDOT, MD SHA, the Pennsylvania Turnpike Commission, and the City of Philadelphia Streets Department. With a passion for and strong background in modeling (Civil 3D and ORD), Emilie has been heavily involved in digital delivery and is interested in taking on the new industry challenges that will be coming with MALD (models as a legal document). Emilie also enjoys connecting with her peers through local organizations, including ASCE YMF, ASHE, and WTS.

PennDOT E05702 District 8-0 HOP; District 8-0, PA. For this project, Kittelson worked as reviewers on behalf of PennDOT. Emilie reviewed PennDOT District 8 HOP plans and provided comments in client EPS system.

VDOT D-B Roundabouts Bundle; Albemarle, VA. Kittelson is serving as a major subconsultant on a design-build team that is designing four roundabouts and a continuous Green-T intersection around Charlottesville, Virginia. Kittelson developed many of the alternative technical concepts (ATCs) presented at the propriety meeting and completed preliminary designs for all four roundabouts following NTP. Kittelson is also responsible for the final design and construction documents for one single-lane roundabout (Route 240/250) and one hybrid roundabout (Route 20/53). Emilie validated 60% model and completed model for 100% construction plans. She completed superelevation calculations, redesigned horizontal and vertical alignments for the roundabout to connect to newly designed VDOT bridge on the northern leg. Emilie is responsible for the design of the guardrail connection at the new bridge connection and appropriate grading.

Maryland SHA On-Call; Statewide, MD. Emilie provided on-call OpenRoads Designer support weekly to Maryland SHA transportation engineers. She reviewed 3D civil models and provided feedback/instructions to Maryland SHA on how to update/revise their models. Emilie participate in weekly CADD office hours to help SHA personnel with ORD software issues.

Pennsylvania Turnpike Commission Mahoning-Valley Toll Plaza Conversion to Roundabout; Lehighton, PA. Emilie was the lead Roadway Designer. Responsible for the development of multi-lane roundabout design and calculations, estimate, roadway model, and construction plan set using ORD. Other responsibilities include interdisciplinary coordination, design coordination with prime consultant, and working with client to meet design schedule. **Previous employment*

PennDOT Hill to Hill Bridge Reconstruction; District 5-0, PA. Emilie was a supporting roadway designer for the rehabilitation and partial widening of the Hill-to-Hill Bridge, including reconstruction of adjacent intersections and

connection roadways. Responsible for 90% design updates and finalizing MicroStation Inroads models. **Previous employment*

Amtrak Susquehanna Bridge Replacement; Havre De Grace, MD. Emilie was a supporting roadway designer for the Right-of-Way design and maintenance and protection of traffic. This project includes replacing an existing Amtrak railroad bridge with two new structures and new track alignments over the Susquehanna River with various improvements to Havre de Grace and Perryville, Maryland. **Previous employment*

PennDOT Montgomery County Bridge #6; District 6-0, PA. Emilie was the Roadway Task Lead. She designed guide rail and minor roadway improvements and coordinated across disciplines to submit on a tight schedule due to the bridge suffering damage from Hurricane Ida. **Previous employment*

PennDOT Tinicum Island Road Relocation; District 6-0, PA. Emilie was a supporting Roadway Engineer. She aided in 3D modeling and design of a proposed corridor adjacent to the Philadelphia International Airport in AutoCAD Civil 3D and created horizontal and vertical profiles, cross sections, typical sections, proposed surfaces, ADA ramp design, intersection grading, and AutoTURN analysis. Emilie also completed the engineering cost estimate and plans in accordance with the local and federal regulations. **Previous employment*

SEPTA Tasker-Morris ADA Accessibility; Philadelphia, PA. Emilie was the Roadway Task Lead. She designed a new bump out to make room for a new elevator to access the SEPT A Tasker-Morris Subway Station. She also designed, compiled, and submitted ADA design package to the Philadelphia Streets Department for two new ramps within the bump out. **Previous employment*

PennDOT SR 0001 – RC2; District 6-0, PA . Emilie was the lead Design Engineer tasked with designing the multistage Maintenance and Protection of Traffic Plans for the southern half of the RC2 widening project. The project called for the construction of four new bridges, a new on-ramp, and widening of the existing corridor. Emilie also designed work zones areas for each phase of construction and placed barrier and graded slopes to ensure the safety of motorists during each phase of construction. **Previous employment*

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

KITTELSON & ASSOCIATES

Resume # 17

Name Jon Crisafi, PE, PTOE **Title** Associate Engineer

Primary Responsibilities

Project/Task Support (traffic analysis)

Years Experience:	**With This Firm**	13	**With Other Firms**	0

Education

Institution	Degree(s)	Year	Specialization
Penn State University	MS	2015	Civil Engineering
Penn State University	BS	2009	Civil Engineering

Active Registration

Year first registered	**2020:** PE PA #PE091296; **2016:** PE DC #908869; **2017:** PE VA #0402058317; **2018:** PE MD #52998; **2020:** PE FL #89485; **2021:** PTOE #5072
Disciplines	Registered Professional Engineer; Professional Traffic Operations Engineer

Other Experience and Qualifications

Jon has expertise in traffic operations analysis, signal and roundabout operations and design, long-range planning, bicycle and pedestrian operations, and microsimulation. His areas of expertise are in signal design, including transit signal priority (TSP) and automated traffic signal performance measures (ATSPM) implementation, and microsimulation, including multi-resolution corridor modeling to small single intersections and roundabouts. Jon has contributed to a wide variety of projects as project manager, task manager, and designer/modeler within the DC, Virginia, and Maryland metropolitan area and actively supports traffic modeling and traffic signal design efforts in Florida.

PennDOT Lemoyne Bottleneck; Lemoyne, PA. For the Pennsylvania Department of Transportation (PennDOT), Kittelson is leading alternative development, analysis, and public engagement for redesigning the four-lane corridor in Lemoyne. This project is reducing congestion and improving pedestrian safety along the roadway. As a signals lead, Jon provided signal designs to accommodate the proposed alternatives at the main intersection of Market Street and Front Street, complicated by limited sight distances and challenging geometry.

DVRPC Route 291 Road Diet Study; Delaware County, PA. Kittelson is working for Delaware County through a Delaware Valley Regional Planning Commission (DVRPC) Transportation and Community Development Initiative (TCDI) grant to identify solutions for improving safety and providing multimodal connectivity along Route 291 in the City of Chester from Irving Street to Ridley Creek. The project team will also recommend trail completion and improvement in Ridley Township. Project priorities include building upon the many plans and studies already performed and elevating the voices of marginalized communities that have been excluded from planning and design processes in the past. As a traffic lead, Jon oversaw the traffic analysis, volume forecasting, and alternatives development for the proposed reconfiguration of Route 291, balancing the social and safety goals of the community with the mobility goals of PennDOT.

PennDOT US 22/Hollidaysburg Intersection Study Final Design Activities; Hollidaysburg, PA. For the Pennsylvania Department of Transportation (PennDOT), Kittelson helped prepare PS&E packages for the US 22/Allegheny Street/Juniata Street intersections serving the historic Hollidaysburg downtown. Jon worked as the lead designer on the traffic signal design, both temporarily during construction and final installation. This design effort required advanced design, timing, and phasing techniques due to the three individual intersections being configured in a closely spaced triangle just north of an active railroad crossing. The signal design effort required advanced phasing to accommodate movement from all approaches through at least two intersections for progression and safety and to actively

accommodate ADA pedestrian compliant signals and pushbuttons. Temporary signal design required accommodating multiple construction phases and included modifying existing signal structures, installing temporary signal equipment, and blending those structures and phasing to facilitate traffic effective flow during construction. Railroad pre-emption required particular attention as the three intersections are designed and controlled by a single traffic controller, requiring careful understanding of the advanced phasing to process traffic at the other two intersections not directly adjacent to the crossing. Every submission included plans, specifications, and quantities/cost estimates, as well as special provisions for specialty pole structures requested by the city and radar detection systems.

PennDOT US 22/Hollidaysburg Intersection Study; Hollidaysburg, PA. For the Pennsylvania Department of Transportation (PennDOT), Kittelson helped prepare and evaluate alternatives for US 22 and several neighborhood intersections serving the historic Hollidaysburg downtown. Jon worked as the lead traffic analyst on the alternatives analysis, investigating different means of mitigating a cluster of three intersections near downtown and adjacent to an at-grade railroad crossing. The analysis required generating nearly a dozen alternatives (and variants) to address safety, operations, and ped/bike connectivity. The analysis also helped improve wayfinding and railroad coordination. The project involved multiple stakeholder interviews and meetings as well as a public open house to identify a recommended alternative for advancing to preliminary design. Future work will include preliminary traffic signal design, including analysis of signal performance measures to provide guidance on signal timing, phasing, and coordination.

Maryland SHA OOTS TDSD Open-End Contract: MD 140/I-695 Interchange Study; Statewide, MD. As part of an open-end agreement, Kittelson provided a variety of services for the Traffic Development Support Division (TDSD) of the Maryland State Highway Administration's (SHA's) Office of Traffic and Safety (SHA OOTS). Jon served as project manager and senior modeler for the MD 140/I-695 Interchange Study, assessing the feasibility of converting an existing single-point interchange on the Baltimore Beltway to a diverging diamond configuration. The evaluation required conceptual design of the proposed diverging diamond interchange to assess potential fit and geometric feasibility and was used as a basis for guiding microsimulation model development. This model was used to assess traffic operations under future single-point and potential diverging diamond configurations. ***Microsimulation/Traffic Analysis/Alternative Intersections/DDI (Diverging Diamond Interchange)/Signal Timing and Phasing/SHA***

City of Lancaster Green-Light-Go; Lancaster, PA. Kittelson worked with the City of Lancaster to develop weekday AM, midday, PM, and weekend signal timing plans for approximately 90 signalized intersections. The objective of these plans is to enhance multimodal safety while serving vehicular needs in the network. During the signal optimization process, Kittelson first developed a screening methodology for Leading Pedestrian Intervals (LPIs) to identify intersections for LPI implementation. The incorporation of LPIs makes intersections safer, more efficient, and accessible for pedestrians. Additionally, to reduce pedestrian and cyclist delay and further accommodate active transportation, Kittelson developed several different coordination zones with varying cycle lengths rather than using the same cycle length for the entire network, which was the case for the existing conditions. Kittelson is using the Synchro software tool to conduct before-and-after analysis and analyze intersection operations. In addition to the Synchro evaluation, Kittelson will perform before-and-after travel time analysis post-implementation using the vehicle probe data. Jon served as a quality review lead for traffic signal timings and update revisions for traffic signal permit plans.

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

KITTELSON & ASSOCIATES

Resume # 18

Name Josephus (Joost) van Boekhold, PE **Title** Associate Engineer

Primary Responsibilities

Project/Task Support (traffic analysis/design)

Years Experience: **With This Firm** 1 **With Other Firms** 17

Education

Institution	Degree(s)	Year	Specialization
University of Delaware	MS	2006	Civil Engineering (Transportation)
Delft University of Technology (Delft, Netherlands)	MS	2004	Architecture
Avans University of Applied Sciences (Tilburg, Netherlands)	BE	1999	Architecture

Active Registration

Year first registered **2016:** MD #36696

Disciplines Registered Professional Engineer

Other Experience and Qualifications

Joost has experience in traffic engineering, coordinating, and managing highway and traffic design projects in various jurisdictions, e.g., Delaware, Florida, Virginia, District of Columbia, Pennsylvania, and Maryland. He oversees the design and development of roadways, roundabouts, traffic signals, signing and striping, roadway lighting, and traffic control plans. This work also includes the design of on street and off-street active transportation facilities and the preparation of reports, plans, quantities, and estimates using standard details and specifications, design manuals, NCHRP guideline documents, AASHTO Policies, MUTCD, and other local design criteria. He also developed and provided CADD training courses and provided on-site technical guidance and training to design staff. He served as the lead reviewer on pavement & rehabilitation projects and provided reviews of traffic engineering design plans for capital, pedestrian access route, and other consultant-led projects.

PennDOT District 8-0, E04729 Lemoyne Bottleneck Improvements, Cumberland County, PA. Kittelson is leading alternative development, traffic analysis, and public engagement for redesigning the four-lane corridor in Lemoyne. This project is reducing congestion and improving pedestrian safety along the roadway. A safety analysis of the project area was completed, including a crash data review and an HSM analysis. As Traffic Lead, Joost is providing the signing, striping, and TMP plans and overseeing the subconsultant work for the signal plan design.

PennDOT 6-0 E05150 Traffic Unit Support Services - Highway Occupancy Permit; Chester County, PA. Kittelson is providing HOP permit review services on this open-end agreement with PennDOT District 6-0. This work order focuses on driveway design, roadway geometry, Transportation Impact Studies, storm water calculations and design, signal design, fiber optic design, guiderail design, structures, and ADA ramp designs in Chester County. Joost provides permit reviews.

City of Lancaster Water Street Final Design; Lancaster, PA. Joost serves as the traffic lead for the final design of the Water Street Bicycle Boulevard, consisting of on-street and off-street bicycle and pedestrian improvements, which includes raised intersections, curb extensions, raised crosswalks, speed humps, ADA compliant facilities, rectangular rapid flashing beacon signals, and trail design for the City of Lancaster based on PennDOT standard specifications and details.

Osceola County, Buenaventura Boulevard Safety & Complete Street Improvements; Kissimmee, Osceola County, FL. As a major subconsultant, Kittelson assisted with designing safety and complete streets improvements along Buenaventura Boulevard between Simpson Road and Osceola Parkway in Kissimmee, Osceola County. Kittelson provided traffic design services for three traffic signal rebuilds, one pedestrian signal upgrade, four rectangular rapid flashing beacon signal designs, two of which are at multilane roundabouts, as well as signing and pavement marking, and roadway lighting plans. Joost was the traffic-lead overseeing the signal design plans.

DelDOT Pennsylvania Avenue Curb Ramp ADA Improvements; Wilmington, DE. As the lead traffic engineer, Joost developed signalization and signing, striping, and conduit plans for this pedestrian access routes project along a 1.65 miles section of Pennsylvania Avenue/Delaware Avenue between Rising Sun Lane and Adams Street, including the design of pedestrian signal equipment to ADA compliance for seven existing traffic signals and the installation of an Accessible Pedestrian Signal. Traffic signal operations and timesheet information for the impacted traffic signals was updated to NEMA standards. **Previous employment*

DelDOT I-495 Southbound Widening; New Castle County, DE. As a traffic engineer, Joost was responsible for developing signing, striping, and conduit plans, including the design of proposed traffic control devices for the 1,200-foot long extension of a second lane along the existing southbound I-495 ramp merging onto I-95 southbound. Joost coordinated temporary guide sign overlays with future proposed overhead guide sign panels for the SR 141 and I-95 Ramp Interchange project and the ongoing Left-Exit Sign Compliance project, as well as re-calibration of two (2) existing Real-time Traffic Monitoring Stations with the Delaware of Transportation's Transportation Management Center. **Previous employment*

FHWA 14th Street Bridge Corridor Environmental Impact Statement Study; Arlington, VA/Washington, DC. Joost collected travel time data within the study area, performed turning movement counts, gathered crash data, traffic signal timings, and observed traffic patterns. He developed a balanced traffic volume map for no-build and future build conditions using outputs from Washington Metropolitan Council of Governments' (MWCOG's) regional travel forecasting model and project traffic count data. Joost coded VISSIM micro-simulation models for corridor's roadway network, including freeway segments - high occupancy vehicle lanes, interchanges, bus-only lanes, signalized intersections, and transit priority timings at signalized intersections. He analyzed the different operational alternative options developed by the project team. Using HCS+ and SYNCHRO-SimTraffic software, Joost performed operational, safety, and crash data analyses. He devised a rating system to allow for ranking and comparison of the improvement alternatives based on its measures of effectiveness. He drafted the traffic sections of the Purpose & Needs and Environmental Impact Statement reports and presented methodologies of analyses and engineering results at steering committee, stakeholders, and at public involvement meetings. **Previous employment*

MD SHA MD 355: Old Georgetown Road to Maple/Chapman Avenue Phase 1 Design-Build; Bethesd,/Montgomery County, MD. Joost served as traffic engineer and designed and prepared final signing and pavement marking plans, including quantity and cost estimates, for grade separation of MD 355 and Randolph and Montrose Roads. He assisted with preparation of temporary signal plans. **Previous employment*

NPS Alexander's Point Bridge; Arlington, VA/Washington, DC. Joost served as traffic engineer and designed and prepared final and preliminary signing, pavement marking, and traffic control plans for construction of a new bridge with bike lane across Boundary Channel, connecting Columbia Island Marina Parking Area and Boundary Channel Drive in Arlington, VA. He inventoried all impacted National Park Service (NPS) guide signs. He also addressed review comments by different agencies and stakeholders involved, such as FHWA, NPS, and the Pentagon. **Previous employment*

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

KITTELSON & ASSOCIATES

Resume # 19

Name Like Liu, AICP, PMP **Title** Associate Planner

Primary Responsibilities

Project/Task Support (travel demand modeling)

Years Experience: **With This Firm** 10 **With Other Firms** 0

Education

Institution	Degree(s)	Year	Specialization
University of Florida, Gainesville	MS	2015	Civil and Coastal Engineering
Central South University (Changsha, China)	BS	2013	Transportation Engineering

Active Registration

Year first registered **2020:** AICP; PMP

Disciplines American Institute of Certified Planners; Project Management Professional

Other Experience and Qualifications

Trained as a civil engineer, Like Liu has developed deep knowledge and passion for transportation modeling and planning. She led and supported transportation projects by developing travel demand models, forecasting future transportation system dynamics, conducting mesoscopic or microscopic simulations, performing traffic operations analysis, developing mobility performance measures, evaluating network accessibility, estimating transit ridership, and preparing corridor studies. Like has been weaving through observed data and technical analysis to develop succinct project summaries that communicate benefits and costs effectively and clearly to the decision-makers and the public. She also obtained a keen ability to think through and solve complex issues without losing focus on the client interest, big picture, and community values, which results in practical solutions and quick implementations. She is familiar with programming languages such as C/C++, VBA, Python, and Matlab. Like uses her proficiencies in analysis software packages including Cube, VISUM, TransCAD, Aimsun, Tranplan, DTALite, VISSIM, TransModeler, CORSIM, SimTraffic, Synchro, SIDRA, Vistro, HCS, AutoCAD, MicroStation, ArcGIS, Tableau, Microsoft Access, and SQL Server.

Seminole County Old Lake Wilson Road Project Development & Environment Study; Seminole County, FL. Like led the future travel demand forecasting task to support the Old Lake Wilson Road PD&E Study on behalf of Osceola County to potentially increase capacity and improve safety along the study corridor. Like developed a subarea travel demand model based on CFRPM version 7, updated the land use and network assumptions near the study corridor, calibrated the subarea model to realistic travel patterns, and obtained the design-year annual average daily traffic (AADT) volumes.

FDOT Central Office Tracking Person Movement Vehicle Occupancy Factor Calculation; Statewide, FL. Like helped FDOT Central Office on a pilot study evaluating the new FHWA's approach for calculating Vehicle occupancy factor (VOF) for planning and policy-making purposes and to determine how to best utilize the new approach. Like supported reviewing FHWA methodology, data sources, and collected VOF data from all travel demand models in Florida.

North Central Texas COG Conduct a Planning Process for Automated Transportation; Regionwide, TX. Like supported the team at the North Central Texas Council of Governments (NCTCOG) to develop travel demand modeling scenarios using the regional models to understand the impact of CAV and identify policy indications. The modeling team was the first in the nation to apply the new AV capacity adjustment factors from the Highway Capacity Manual 7th Edition to the region's travel demand model to simulate three potential future technology scenarios. Land use, network, and trip tables

were adjusted accordingly to evaluate the potential impacts.

FDOT District 5 Interstate 75 Project Development and Environment Study; Districtwide, FL. Like developed a subarea travel demand model based on Florida's Turnpike Statewide Model in TranPlan to support the traffic forecasting task for the Interstate 75 PD&E study. She validated the network and land use in the existing year for a 40-mile freeway segment so the future congestion could be appropriately estimated. She also led the Origin Destination Matrix Estimation (ODME) processes and developed static private vehicle and truck routes for mic-simulation per the forecasted volume to streamline the VISSIM analysis.

Fairfax County DOT Seven Corners Transportation Improvements Phasing Study; Fairfax County, VA. Fairfax County Department of Transportation conducted a phasing analysis for the transportation improvements recommended in the Seven Corners Comprehensive Plan. Like helped with the evaluation of traffic operations for the study area by leading a multi-resolution modeling analysis using macroscopic, mesoscopic, and microscopic tools. Like developed the initial, static O-D demand table for the existing year using the Fairfax County Travel Demand Model. She imported the static demand table and the roadway network to VISSUM to reflect roadway conditions more accurately (e.g., links, turn bays, signals etc.). Origin-Destination Matrix Estimation (ODME) was conducted and calibrated to intersection turning movements. The roadway network and refined O-D demand table were then exported into VISSIM for microsimulation, with additional adjustments to the network (e.g., signal timing, car following model, reduced speed area, etc.). The VISSIM model was calibrated based on VDOT's standards.

Seminole County Mobility Fee Updates; Seminole County, FL. Like conducted the transportation impact fee review and update project for Seminole County in Florida. As part of the project, she redesigned the currently adopted travel demand model and performed sensitivity analysis for different household categories and employment centers. The results were used to update the parameters in the mobility fee calculations to reflect local travel characteristics, most recent travel patterns, current cost, growth trends, and revenue estimates from different tax sources.

Space Coast TPO 2045 Long Range Transportation Plan Update; Brevard County, FL. Kittelson assisted the Space Coast Transportation Planning Organization (TPO) in performing the 2045 LRTP update. Like led the travel demand model analysis to support the corridor strategic plans development. She prepared multiple network scenarios including the Existing plus Committed, Needs plan, and Cost Feasible plan and performed testing model runs. She summarized the traffic volumes, population, and employment for three 10-year time periods (2025, 2035, and 2045) to guide the needs analysis.

FDOT District 6 Strategic Miami Area Rapid Transit Plan Review; Miami-Dade County, FL. Like helped FDOT District 6 review three transit PD&E studies on NW 27th Ave., Flagler St., and Kendall Dr., which are part of the SMART plan. The tasks include reviewing the Methodology Letter of Understanding (MLOU), subarea travel demand model and calibration memo, Dynamic Traffic Assignment (DTA) model and calibration memo, micro-simulation models (VISSIM) and calibration memo, STOPS model and memo, Synchro models, volume development process, traffic and transit operation analysis, traffic diversion analysis, alternative analysis, and design traffic memo.

FDOT District 5 CFRPM Applications Improvement Plan; Districtwide, FL. Kittelson holds an ongoing contract to provide travel demand modeling support services for FDOT District 5. As part of that contract, Like worked on the evaluation of CFRPM v6.0 through the applications improvement plan. She led an analysis that incorporated the corridor-level financial analysis tool, TransValU, into CFRPM. Like conducted comprehensive evaluations for the CFRPM based on the potential project type such as roadway, transit, and ped/bike. Additional model update needs were discussed as well. She also assisted with other tasks such as platform upgrade (from Cube version 6.1 to 6.4) and minor model enhancement.

FDOT District 5 Ocala-Marion County TPO 2015 Socio-Economic Development; Marion County, FL. Kittelson holds an ongoing contract to provide travel demand modeling support services for FDOT District 5. As part of that contract, Like worked on scope development, data collection, and analysis for the Ocala/Marion County TPO 2015 SE data development. She reviewed typical SE data development procedures from FHWA and peer agencies. She also analyzed American Community Survey (ACS) data, Longitudinal Employer-Household Dynamics (LEHD) data, and parcel data from the County to refine the zone structure and employment data. The data will be applied to CFRPM v7.

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

KITTELSON & ASSOCIATES

Resume # 20

Name Mike Aronson, PE **Title** Senior Principal

Primary Responsibilities

Project/Task Support (travel demand modeling)

Years Experience: **With This Firm** 25 **With Other Firms** 17

Education

Institution	Degree(s)	Year	Specialization
University of California, Berkeley	MS	1982	Transportation Engineering
Cornell University	BS	1981	Civil Engineering

Active Registration

Year first registered **1992:** PE CA #48759

Disciplines Registered Professional Engineer (Civil)

Other Experience and Qualifications

Mike has more than 30 years of experience in all aspects of transportation planning and traffic operations analysis. He has managed transportation studies for general plans, major corridor studies, rail transit extensions, highway project development, and many types of development master plans. Mike has also developed and updated travel demand models using all major software programs and has led training programs in travel modeling and data analysis. He specializes in producing consistent results from complex transportation planning processes and clearly articulating those results in presentations and documentation.

SCAG Regional Bicycle Clearinghouse; Southern California Area. Mike prepared a white paper on best practices for modeling active transportation and associated health benefits and participated in developing the document, "Conducting Bicycle and Pedestrian Counts: A Manual for Jurisdictions in Los Angeles County and Beyond" for the Southern California Association of Governments (SCAG) Regional Bicycle Clearinghouse project. The document included modeling of active transportation within travel demand models, tools to forecast bicycle use outside of traditional models, uses of bicycle data for calibration and validation of modeling tools, and tools to evaluate the health benefits of increased active transportation mode share.

City of Glendale Land Use and Circulation Element Update/Transportation Impact Fee/SB 743 Implementation/Travel Demand Model Update; Glendale, CA. Kittelson is currently developing an updated circulation element for the City of Glendale and updating its citywide travel demand model. As part of this effort, Kittelson is also providing vehicle miles traveled (VMT) and transportation demand management (TDM) services.

City of La Verne General Plan Update and Environmental Impact Report; La Verne, CA. Kittelson developed the circulation and mobility section of the City of La Verne General Plan Update, which included mobility-related policies and objectives with respect to automobile, active transportation, transit and freight circulation, and on- and off-street parking. The Kittelson team estimated the net-new travel demand to result from different land use alternatives, including integration with the Metro Gold Line Station opening in La Verne in 2025. A key part of this effort was to determine transportation policies to facilitate access to the station area and identify roadway improvements needed to minimize the station's operational effects on the surrounding roadway network.

Contra Costa Travel Model Update and On-Call; Contra Costa County, CA. Kittelson staff have managed the updates, maintenance, training and on-call services for the countywide TransCAD travel demand model maintained by the Contra

Costa Transportation Authority (CCTA) since 2006. Mike manages the current contract, which has included an update and revalidation of the model to conform to MTC Plan Bay Area 2040, and a detailed review and update of road and transit project lists in support of the CCTA Transportation Expenditure Plan.

Redding Fee Updates; Redding, CA. Mike managed Kittelson's work providing travel demand modeling and traffic engineering support to the City of Redding for two cycles of updates to the City's impact fee program. Kittelson updated land use forecasts based on current development information and applied the Shasta County activity-based travel model to generate new estimates of future traffic volumes and potential road system deficiencies. Proportional responsibility for fee contributions was calculated based on dwelling unit equivalents (DUE) and the relative amounts of vehicle-miles of travel (VMT) contributed by each of four residential and eight non-residential land use categories. Kittelson also conducted a detailed analysis of household travel survey data to determine how to justify lower fees in the downtown area based on shorter trip lengths and higher use of non-auto modes.

City of Clovis Transportation Impact Guidelines and General Plan Amendment; Clovis, CA. Mike was the project principal for the updates to the Transportation Impact Study guidelines for the City of Clovis to incorporate VMT analysis per SB 743, and a subsequent General Plan Amendment to incorporate VMT impacts and mitigation. Mike has led tasks related to updating and adapting the Fresno COG activity-based model to provide VMT information that reflects existing and planned land uses in Clovis.

Vacaville General Plan Update and ECAS/Climate Action Plan; Vacaville, CA. Mike managed the transportation elements of the General Plan update, Energy and Conservation Action Strategy (ECAS)/Climate Action Plan and EIR for the City of Vacaville, including update of the city traffic model. In support of the ECAS, the updated travel model was applied to test the relative effectiveness of numerous transportation demand management strategies for reductions in vehicle-miles of travel (VMT) and greenhouse gas emissions (GHG).

Sonoma County Development Center Specific Plan Evacuation Analysis; Sonoma County, CA. Mike was project principal and travel forecasting lead to prepare an environmental assessment of potential wildfire evacuation impacts associated with the redevelopment of the Sonoma Development Center in the Sonoma Valley. Mike retrofit the Sonoma County travel model to include evacuation trips from selected areas, and reported differences in travel time to safe areas without and with the proposed development project. The study was completed in a very short time schedule to meet environmental document deadlines.

SCAG Regional Bicycle Clearinghouse; Southern California Area. Mike prepared a white paper on best practices for modeling active transportation and associated health benefits and participated in developing the document, "Conducting Bicycle and Pedestrian Counts: A Manual for Jurisdictions in Los Angeles County and Beyond" for the Southern California Association of Governments (SCAG) Regional Bicycle Clearinghouse project. The document included modeling of active transportation within travel demand models, tools to forecast bicycle use outside of traditional models, uses of bicycle data for calibration and validation of modeling tools, and tools to evaluate the health benefits of increased active transportation mode share.

Stanislaus Council of Governments Transit Model; Stanislaus County, CA. Kittelson updated the transit model components of the Model Improvement Program (MIP) Three County model within Stanislaus County. Mike completed a significant enhancement of the transit components on behalf of StanCOG, and updates included detailed survey analysis, corrections to bus route and stop coding, and complete recalibration of mode choice and transit assignment.

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

Resume # 21

Name Steven Baumgardner **Title** Senior Environmental Scientist

Primary Responsibilities

Project/Task Support (land use/environmental, stormwater management)

Years Experience:	**With This Firm**	6	**With Other Firms**	30

Education

Institution	**Degree(s)**	**Year**	**Specialization**
University of Pittsburgh	BS	1987	Geology

Active Registration

Year first registered N/A

Disciplines Qualified Professional under Maryland Forest Conservation Act

Other Experience and Qualifications

Steven has 36 years of experience both managing and conducting 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. Steven 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 Phase I Environmental Site Assessments and Section 4(f) evaluations. Other experience includes Maryland forest stand delineations and forest conservation planning, Chesapeake Bay Critical Area Environmental Assessments, Phase II Environmental Site Assessments, health and safety plans, and environmental assessments. Steven has worked in Pennsylvania, Maryland, New York, New Jersey, Ohio, and West Virginia.

PennDOT E05224 SR 0441 (Eisenhower Boulevard) Pedestrian Safety Improvements; Dauphin County, PA. Steven was responsible for investigating the proposed improvements to SR 0441, including completion of the CEE document.

PennDOT E04730 SR 0124 Intersection Improvements; York County, PA. Steven was the project manager for the environmental investigations of improvements to the intersection of SR 0124 and SR 2011 in York County. His responsibilities included managing completion of the scoping field view and alternatives analysis of environmental constraints.

PennDOT E03252 SR 0238 Intersection Improvements; York County, PA. Steven was the project manager for the environmental investigations of improvements to the SR 0238 and SR 4005 intersection in York County. His responsibilities included managing completion of the CEE document, wetland/stream absence memo, and threatened and endangered species clearance as well as conducting a Phase I ESA.

PennDOT E04732 SR 2029 Improvements; Lancaster County, PA. Steven was the project manager for the environmental investigations of the roadway improvements to SR 2021 in Lancaster County. His responsibilities included managing completion of the scoping field view and alternatives analysis of environmental constraints.

PennDOT E04732 SR 0741 Improvements; Lancaster County, PA. Steven was the project manager for the environmental investigations of the roadway improvements to SR 0741 in Lancaster County. His responsibilities included managing completion of the scoping field view and alternatives analysis of environmental constraints.

PennDOT E04731 SR 0030-040 Improvements; York County, PA. Steven was the project manager for the environmental investigations into the roadway improvements to SR 0030, Section 040, in York County. His responsibilities included

managing completion of the scoping field view and alternatives analysis of environmental constraints.

PennDOT E04731 SR 0030-150 Improvements; Franklin County, PA. Steven was the project manager for the environmental investigations of the roadway improvements to SR 0030, Section 150, in Franklin County. His responsibilities included managing completion of the scoping field view and alternatives analysis of environmental constraints.

PennDOT E03252 SR 8019 Southbound I-83 Exist 24 Ramp Improvements; York County, PA. Steven was the project manager for the environmental investigations of improvements to the southbound I-83 ramp improvement in York County. His responsibilities included managing completion of the CEE document, wetland/stream absence memo, and threatened and endangered species clearance as well as conducting a Phase I ESA.

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

PennDOT E04342 SR 274 over Montour Creek; Perry County, PA. Steven was the project manager and lead investigator responsible for the environmental investigations of the improvements to SR 274 bridge in Perry County. His responsibilities included 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.

PennDOT E04342 SR 850 over Trib to Sherman's Creek; Perry County, PA. Steven was the project manager and lead investigator for the environmental investigations of the improvements to SR 850 bridge in Perry County. His responsibilities included 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.

Pennsylvania Department of Transportation

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

Please include a brief resume of key persons within your firm:

Resume # 22

Name Lindsey Klein **Title** President

Primary Responsibilities

Project/Task Support (data collection)

Years Experience:	**With This Firm**	8	**With Other Firms**	10

Education

Institution	**Degree(s)**	**Year**	**Specialization**
University of Delaware	BCE	2006	Transportation Engineering

Active Registration

Year first registered N/A

Disciplines N/A

Other Experience and Qualifications

Lindsey is the president of Imperial Traffic & Data Collection, LLC (ITD), a full-service data collection firm. Lindsey has managed/delivered over 5,000 turning movement counts (TMC) to various clients in New Jersey, Pennsylvania, New York, and Delaware. All TMCs performed by Imperial were done with Miovision Scout Units (video camera) and Miovision artificial intelligence for data processing. Lindsey is responsible for setting up the job specifics, scheduling equipment and staff, and processing the data captured from the field. Miovision units have been deployed in various areas, including city blocks with heavy pedestrians and rural backroads. In addition to TMCs, Lindsey has overseen the installation, maintenance, and delivery of 1,200 Automatic Traffic Recorder (ATR) counts in the past 6 years. All ATR counts performed by Imperial have included single or bi-directional roadway volume, and some count locations also included vehicular speed, vehicle classification, or gap separation. Lindsey is proficient in TruTraffic 10.0 to collect speed and delay as a floating car. She is also familiar with importing and exporting TruTraffic and Synchro files to fine tune signal timings and offsets to maximize corridor progression. Lindsey has overseen 100 speed and delay projects for Imperial within New Jersey and Pennsylvania.

During her previous employment, Lindsay gained over 10 years of experience in traffic planning, traffic operations and signal design. She has designed traffic signal layouts, electrical wiring details, and developed traffic signal timing plans for the New Jersey DOT, PennDOT, and County jurisdictions. Lindsey has advanced knowledge of intersection equipment and a strong background in National Electrical Manufacturers Association (NEMA) phasing and sequencing for standard and complex intersections with two or three signalized intersection clusters. Lindsey can identify equipment inside a cabinet as well as inspect loop, vehicle detectors, and push buttons to see if they are working properly. She can also modify controller inputs with new timings, schedules, cycle lengths, and offsets, and she has experience updating the controller time clock as needed. Lindsey has worked with Econolite, Naztec, and Peek Controllers, which include NEMA TS/1 and TS/2 configurations. She has performed numerous capacity analyses for coordinated traffic signal systems and independent intersections using Synchro Version 8, SimTraffic Version 8, Highway Capacity Software, and Tru-Traffic Version 10.

PennDOT E04229 Signal Retiming Initiative; Montgomery/Bucks/Delaware/Chester County, PA. Lindsey was part of a team that worked to retime various corridors in Bucks, Montgomery, Delaware, and Chester counties. Lindsey is serving as the data collection task leader for the District 6-0 signal retiming contract and will oversee TMCs, automatic traffic recorder counts and speed and delay for the before/after conditions once retiming of a corridor is complete.

PennDOT E04268 I-81 & I-80 Bridge Program; Wilkes-Barre/Luzerne County, PA. Lindsey serves as a data collection task lead for three automatic traffic recorder counts and seven turning movement counts. Lindsey coordinated staff, scheduling

of equipment, placement of field units during deployments, and the formatting and delivery of count data.

PennDOT E04463 SR 309 and Center Valley Road/Saucon Valley Road; Lehigh County, PA. As part of a team, Lindsey has overseen the installation of 14 automatic traffic recorder counts, 9 TMCs, queue measurements at 6 signalized intersections, and the installation of 4 BlueTOAD wi-fi/MAC address readers. She also performed weave analyses of four segments to determine origin-destination of vehicles for three peak hours along the road network of SR 309 and Center Valley Road.

PennDOT E04557 LVTS Traffic Signals Upgrades; PA. As part of a team, Lindsey served as the data collection task leader for this adaptive open end contract. Working with PennDOT, the project team will assess a corridor and perform TMCs at selected intersections as well as provide weekly automatic traffic recorder counts at various locations along each corridor. Lindsey scheduled equipment and field staff for installation and maintenance while collecting TMCs and automatic traffic recorder counts. She will format and deliver all counts to the project team. Other work may include field inventories and signal observations.

DVRPC New Jersey Traffic Signal Retiming Initiative; Statewide, NJ. Lindsey is serving as the data collection project manager for this DVRPC-sponsored project with Burlington, Camden, Gloucester, and Mercer Counties in New Jersey. Imperial was a subconsultant to Taylor Wiseman & Taylor on the first contract and Iteris on the second. Lindsey has played a key role on this assignment by field inventorying 150 signal cabinets in Burlington, Camden, and Gloucester Counties to check the condition of controllers and hardware. She has overseen the data collection phase of the first project, including TMCs at 70 signalized intersections, 29 bi-directional ATR counts, and speed and delay runs along 7 selected corridors. Lindsey also assists with fine tuning corridor progression and performs speed and delay runs for final reports and to calculate methods of effectiveness (MOEs.

KITTELSON & ASSOCIATES