Bernard Ndeogo Issifu, ENV SP
Transportation Planner

Bernard Ndeogo is a transportation planner specializing in travel demand modeling at CDM Smith. With extensive experience in traffic engineering, operations, planning and safety. He has contributed to various projects, including traffic impact studies and active transportation plans. Recently, he developed National Electric Vehicle Infrastructure (NEVI) deployment plans for Oklahoma, Tennessee, and Mississippi under the Federal Highway Administration (FHWA) NEVI program, using his engineering, planning, and geospatial analytics skills to enhance the electric vehicle charging network. Bernard is proficient in SYNCHRO, VISSIM, AutoCAD, and ArcGIS Pro.

Transportation Planning

Transportation Planner/Travel Demand Modeler, In-House Consultant Ohio Department of Transportation, Columbus, Ohio 2023 - Ongoing.

Prior to CDM Smith

HNTB Inc.

Transportation Engineer. National Electric Vehicle Infrastructure (NEVI) Plan Update, Oklahoma, Mississippi, and Tennessee Department of Transportation (DOT), 2024. Bernard used ESRI ArcGIS products for mapping, visualization, and geospatial analysis of electric vehicle (EV) infrastructure. His work included extracting highway network data from the OpenStreetMap API, combining it with existing EV charging locations, and identifying optimal sites for EV charger deployment. Bernard played a crucial role in creating and updating ArcGIS Online maps to highlight gaps in the EV charging network and identify eligible sites for inclusion in the Notice of Funding Opportunity (NOFO) for contracting and bidding. His expertise in Excel, ArcGIS, and Python allowed him to automate geospatial data analysis and data management tasks, supporting the development of deployment plans for EV infrastructure in multiple states. He also provided high-quality static maps for requests for proposals (RFPs), facilitating decision-making during the NEVI planning process.

Transportation Engineer, San Bernardino Smart County Master Plan (SBCTA SCMP), 2024. Bernard was responsible for researching alternative fuels and sustainable transportation solutions and identified strategies to incorporate emerging transportation technologies into the county's transportation infrastructure. He also provided technical writing support to the development of San Bernardino Smart County Master Plan.

Ohio Research Institute for Transportation and The Environment (ORITE)

Graduate Student Researcher, Intersection Modifications Using Mini-/Modular-Roundabout Methods, Ohio DOT, 2021 - 2022. Bernard led driving simulation experiments to study driver behavior at mini-roundabouts and multilane roundabouts. He was responsible for documenting driver interactions and conducting surveys and interviews with participants before and after the simulations to gather data on their preferences, opinions, and perceptions of safety regarding roundabouts. Bernard also analyzed the collected data and compiled a comprehensive report summarizing the survey findings, contributing valuable insights into the effectiveness of roundabout designs.

Education

MS – Transportation Engineering Ohio University, 2023

BS – Civil Engineering Sciences, Kwame Nkrumah University of Science and Technology, 2018

Registration

Environmental Sustainability Professional (ENV SP) (#47322)

Software Languages

Python

Graduate Student Researcher, Investigating Implementation Potentials of Turbo Roundabouts in Nevada, Nevada DOT (NVDOT), Nevada, 2022 - 2023. Bernard used AutoCAD and AutoTurn to design multilane and turbo roundabouts, performing swept path analyses. He developed simulation scenarios to study driver behavior and automated data processing with custom Python scripts. Bernard applied statistical modeling using SPSS, STATA, and Python on survey, crash, and traffic data. He also designed experiments, conducted surveys, and authored project reports, presenting his findings at Ohio's Roundabout Conference and the Applied Human Factors and Ergonomics Conference.

Burton Planning Services

Transportation Planner Intern, Bicycle and Pedestrian Master Plan Implementation Plan, City of Worthington, Worthington, Ohio, 2023. Bernard contributed to the Active Transportation Implementation Plan by analyzing corridor conditions, street maintenance, and capital improvement programs. He used ArcGIS to perform crash data analysis, identifying high-risk locations for safety interventions. Additionally, he used AutoCAD/Civil 3D to design roundabouts and create conceptual designs for corridor improvement feasibility studies. Bernard also provided technical writing support for the Bicycle and Pedestrian Master Plan Implementation Plan, helping draft the final report submitted to the client.

Transportation Planner Intern, West Virginia Region 1 PDC Hazard Mitigation Implementation Plan, Ohio, 2023. Bernard conducted a comprehensive review of emergency shelters across the region to support FEMA's Hazard Mitigation Grant Program. He analyzed existing conditions of shelters and regularly communicated with city and county officials to assess the needs of various jurisdictions. Bernard also drafted a memo detailing the state of emergency shelters, contributing to the development of the Hazard Mitigation Plan Implementation Plan.

Transportation Planner Intern, PATH Connection at 14th Street West, City of Huntington, West Virginia, 2023. Bernard helped develop education and campaign materials for public involvement meetings with members of City of Huntington, WV as part of Path 14th St. West Connection project. He was also involved in public involvement meetings with locals and stakeholders to communicate design process, solicit programmatic components and gather feedback on proposed improvement alternatives from the community.

Transportation Engineer/Planner Intern Fehr and Peers

Traffic Operations/Planning Intern, SR-210 Victoria PA/ED, California Department of Transportation (CalTrans), California, 2022. Bernard developed a VISSIM microsimulation model to analyze freeway and intersection operations, supporting capacity analysis and design evaluations for CalTrans. He handled traffic operations for study intersections, forecasted future volumes, and documented the traffic forecasting methodology, including methods and assumptions for the analysis.

Traffic Operations/Planning Intern, City of Lake Elsinore, City of Chino General Plan Update, Chino, California, 2022. Bernard used StreetLight to extract average daily traffic (ADT) volumes, forecast future traffic, and identify deficient roadways. He applied Python to analyze Origin-Destination data for microsimulation and travel demand modeling on the SR-210 corridor. Bernard supported transportation plan updates by estimating ADTs with TransCAD, conducted fieldwork to gather data, and maintained an ArcGIS database of roadway geometries for both cities.

Traffic Operations/Planning Intern, Traffic Impact Studies, Cottage Industries Art Block Traffic Impact Assessments (TIA), Fillmore Industries TIA, Anaheim and Ball TIA, 2022. Bernard handled network coding and developed base and future year scenarios using traffic and signal timing data. He collected and processed traffic volumes, forecasted future volumes, and analyzed peak hour traffic conditions in Synchro to assess operational needs. Using the Institute of Transportation Engineers (ITE) Trip Generation Manual, he estimated trips from proposed developments and applied VISTRO for trip distribution and route assignment. Bernard also prepared comprehensive TIA reports, including level of service analysis and proposed improvement alternatives.

Traffic Operations/Planning Intern, Laguna Beach Parking Study, Laguna Beach, California, 2022. Bernard used StreetLight and ArcGIS to extract and analyze vehicle parking data, focusing on trip origins and destinations for inbound and outbound traffic. He cleaned and manipulated Origin-Destination data using Microsoft Excel and Python, creating a custom spreadsheet template for post-processing. Bernard also produced high-quality static maps to visualize parking utilization and trip patterns for internal communications and client deliverables.

Consulting Steel, Roads, and Concrete Engineers Ltd.

Civil and Structural Engineer, Tema, Ghana, 2018 -2020. Bernard analyzed and designed various buildings and warehouses for private and public clients. He performed structural analyses and designed multistory residential and industrial structures using extended three-dimensional analysis of building systems (ETABS), and he analyzed reinforced concrete and steel structures, producing construction drawings and engineering calculations for project reports. Serving as the main site supervisor, he ensured quality assurance and timely project execution while preparing progress reports for clients and senior engineers. Additionally, he was responsible for design calculations, construction drawings, and cost estimations for contract documents.

Professional Activities

Paper Reviewer and Friend of Committees, Transportation Research Board

Publications and Poster Presentations

Bhagat, S. R., Issifu, B. N., Destocki, D., Naik, B., & Eustace, D. (2024). Are Safety Corridors Effective in Mitigating Safety? An Ohio-Based Case Study Evaluating Their Effectiveness. Vehicles, 6(4), 1963-1974. https://doi.org/10.3390/vehicles6040096

Sarah El-Dabaja, Issifu, B., et al. “Drivers’ Education through eLearning and Exposure: An Opportunity to Increase Acceptance of Connected and Automated Vehicles” *Road Safety & Simulation Conference* (October 2024)

“Applications of Big Data in Safety Analysis.” *Institute of Transportation Engineers* (April 2023) [ITE Technical Brief: Applications of Big Data in Safety Analysis]

Issifu, B., et al. “*E*xploring Driver Behavior in Turbo Roundabout Design: Human Factors Study*” International Conference on Applied Human Factors and Ergonomics (July 2023)*

Issifu, Bernard Ndeogo. "Assessing the Feasibility of Implementing Turbo Roundabouts Using Driver Performance Factors" OhioLINK Electronic Theses and Dissertations Center. December 2023 [http://rave.ohiolink.edu/etdc/view?acc_num=ohiou1701964650330758]

Issifu, B., et al. “A Synthesis of Practice in the Use of Turbo Roundabouts*” Ohio Roundabout Conference Turbo Roundabout* (September 2021)