

Paul Andrew Balmacund
Transportation Systems Planner/Modeler
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Years of Experience

25+ years

Expertise

Transportation Systems Planner/Modeler with experience in macro highway and transit systems planning/modeling and traffic operations microsimulation modeling for transportation engineering projects, and Transportation-GIS

Education

City University of New York, Master of Urban Planning degree (Urban Transportation Planning), 1989:
Urban Planning part of degree done at Hunter College, CUNY
Transportation Planning/Engineering part of degree done at City College, CUNY
University of Guyana, BA (Applied Geography/Urban Planning), 1983

AECOM Work Experience/Projects:

(Newark, NJ) 4/2010 – 11/2010, 4/2014 – Feb 2017

- Promote and market AECOM's Transportation Planning and Traffic Engineering services to various Department of Transportation and Metropolitan Planning Organizations in the NYC/NJ area
- Team member helping to develop strategies to increase AECOM's share of transportation planning services by promoting cutting-edge technology
- Team member responding to RFPs
- Team member preparing technical scope of services for transportation
- Supervised and trained junior staff on technical procedures
- Supervised/performed complex transportation demand modeling services for new roadway feasibility studies using various state-of-the-art software
- Performed transportation impact modeling services for Goldman Sachs, Asia
- Presented project reports at client meetings

NYSDOT R-11, Hunts Point Truck Access Study (December 2016 – Feb 2017)

Lead transportation modeler responsible for re-calibrating the SEHP, NYMTC's BPM-based, Bronx county travel demand models to provide inputs for Aimsun traffic operations microsimulation. These models will be used for evaluating proposed ramp re-configurations along the Bruckner Expressway in the Hunts Point area, in addition to the conceptual 'Sheridan Boulevard'

Port Authority of NY&NJ, Howland Hook Roadway Access Marine Terminal Improvements (April 2015 – Oct 2016)

Lead transportation modeler responsible for developing/calibrating detailed macro travel demand models for Staten Island County in NYC to provide inputs for Vissim traffic operations microsimulation. These models will be used for evaluating proposed, new, Interstate access from I-278/Goethals Bridge to the Marine Terminal.

NYCDOT, Brooklyn-Queens Expressway (I-278) Preliminary Analysis of Travel Demand (September-October 2015)

Lead transportation modeler responsible for preparing preliminary analysis of travel-demand through the BQE corridor using the NYMTC MPO's BPM regional highway transportation model system

NYSDOT, R-11, Cross-Bronx Expressway Bridge Rehabilitation from Morris Avenue to Sheridan Expressway Phases I-IV (June 2014 – October 2015)

Lead transportation modeler responsible for developing/calibrating NYMTC's BPM-based, I-95 corridor macro travel demand models to provide inputs for Paramics traffic operations microsimulation. These models were used for evaluating proposed connector roads during construction alternatives and their value as future permanent fixtures

NYSDOT, R-11, West Shore Expressway HOV Lane Concept Level Analysis (September 2015)

Lead transportation modeler responsible for assessing a new concept-level HOV Lane option on the West Shore Expressway and extension of the existing the Staten Island Expressway HOVL. The MPO's NYMTC's BPM-based macro model was used for the analyses.

Hunter New England Health District, Maitland, NSW Australia, New Maitland Hospital Project Traffic Assessment Study, (August-September 2014)

Performed macro model subarea trip-table extractions for several future year networks using the strategic, long-range Lower Hunter Transportation Model. Output trip-tables from the models were subsequently used as inputs for Paramics traffic operations microsimulation

NYSDOT, R-10 Sagtikos State Parkway/Sunken Meadow State Parkway Operational Performance Study: between Southern State Parkway and NY25A (April 2014-November 2014)

Lead Transportation modeler responsible for BPM regional modeling of highway/transit alternatives and the extraction of subarea network matrices. TransCAD was used as the modeling platform. Output trip-tables from the models were subsequently used as inputs for subarea modeling and Vissim traffic operations microsimulation

Goldman Sachs Asia, Vrindavan Technical Village Traffic Assessment Study (Sept 2010 – Oct 2010)

Senior transportation planner/modeler for the Analysis of Traffic and Access Conditions for Sector 3 of Vrindavan Technical Village, Bangalore, India. TransCAD was used as the modeling platform. The project was done for Goldman Sachs, Bangalore, India

NYSDOT R-11, NYC Bronx Arterial Needs Study (BAN) Major Investment Study (April 2010 – Nov 2010)

Lead transportation modeler responsible for developing NYMTC's BPM-based subarea and corridor macro travel demand models to evaluate a continuous, east-west, connector-road system along the I-95 Cross-Bronx Expressway corridor in Bronx county NYC. TransCAD was used as the modeling platform. Output trip-tables from the models were used as inputs for Paramics traffic operations microsimulation

Work Experience with HDR Engineering (NYC, NY) 12/2009 – 2/2010

NYCDOT, Bus Rapid Transit (BRT) Project for First and Second Avenues in NYC. (Dec 2009 – Jan 2010)

Performed NYMTC MPO BPM macro modeling diversion impacts from proposed BRT project on First and Second Avenues in Manhattan, NYC. TransCAD was used as the modeling platform.

NYCDOT, 59th Street Bridge Area Subarea Modeling in NYC (Feb 2010)

Performed NYMTC MPO BPM Subarea modeling and extraction of trip-tables for KLD Associates to perform AIMSUN traffic operations simulation. TransCAD was used as the modeling platform.

Work Experience with URS Corporation (NYC, NY) 5/2000 – 6/2009 (URS is now an AECOM Company as of October 2014)

- Supervised a small transportation modeling staff of approximately two to three planners/engineers;
- Monitored project financials and prepared cost estimates for planning/modeling (budgets);
- Performed necessary QA/QC checks on transportation modeling projects;
- Team member helping to develop strategies to increase URS' share of transportation planning services by promoting cutting-edge technology
- Team member responding to RFPs
- Team member preparing technical scope of services for transportation
- Supervised and train junior staff on technical procedures
- Supervised/performed complex transportation demand modeling and traffic engineering services for new and roadway rehabilitation feasibility NEPA environmental impact studies, and toll road revenue studies, transit studies, etc using various state-of-the-art software
- Presented project reports at client meetings and at public meetings

Key URS Corporation Projects

LADOT, Baton Rouge Loop Toll and Revenue Study, Baton Rouge, Louisiana. (2007-2009). Senior Transportation Modeler. Performed the Phase 1 modeling of several 80 to 100 mile-long tolled, highway loop alternatives around the city of Baton Rouge, LA for the development of estimates of toll-road users and revenue for future years. The TransCAD modeling platform was implemented.

NYSDOT, Reconstruction of the Henry Hudson Parkway Circle at 79th Street, Manhattan Study, NYC, New York (2009). Senior Transportation Modeler. Performed the diversion modeling and developed the diversion volumes for the closure scenarios of the off and on ramps of the SB HHP at 79th Street. The NYMTC Regional BPM model was used as an aid in the study.

NYCEDC, Willets Point Development Plan Access Modification Study, Queens, NYC (2009). Senior Transportation Modeler. Traffic demand modeling analysis to facilitate NYSDOT and FHWA Design approval for the proposed access modification at the Van Wyck Expressway, near Exit 13. The NYMTC Regional BPM model was used as an aid in the study. A key aspect of the study was the transfer of BPM-type macro modeling results to the Paramics microsimulation platform. TransCAD was used as the modeling platform.

Southern Connector Association, Southern Connector Toll and Revenue Study, Greenville, South Carolina (2007). Senior Transportation Modeler responsible for the development of estimates of toll-road users and revenue for several future years. The TransCAD modeling platform was implemented.

NYSDOT R-11, Reconstruction of the Bruckner Expressway (I-278)/Sheridan Expressway (I-895) and Commercial Access to the Hunts Point peninsula preliminary Design and Environmental Impact Statement (EIS), Bronx, (2003-2009): Senior Transportation Modeler responsible for all aspects of the travel-demand modeling and evaluation of several project alternatives, including new interchange alternatives and the demapping of an Interstate roadway. The TransCAD-based transportation modeling is based on the state-of-the-practice regional, multimodal NYMTC Best Practice Model (BPM) System for the New York City Metro area. This is the first major application of the BPM for EIS modeling in the NYC metro area. The modeling systems are comprised of several highway modes, separately, such as autos, commercial vans, and trucks. Several cutting-edge technical procedures such as highway multi-modal, multiclass origin-destination (O-D) estimation for travel validation purposes were applied.

The modeling also supported the transfer of subarea networks and trip-tables for Paramics related microsimulation modeling of alternatives.

NYSDOT, R-11, Cross Bronx Expressway/Bronx River Parkway Interchange TSM Study, (2005): Senior Transportation Modeler responsible for the development of detailed vehicle-class, turn-by-turn, validated models of a complex sub-corridor interchange network. TransCAD software and O-D estimation procedures were implemented. The validated auto and truck trip-tables were used as inputs into the VISSIM traffic simulation software for the evaluation of several TSM-type alternatives.

NCDOT, I-40/I-77 Interchange Study, North Carolina (2005): Senior Transportation Modeler responsible for the development of detailed vehicle-class, turn-by-turn, validated models of a complex interchange network. TransCAD software and O-D estimation procedures were implemented. The validated auto and truck trip-tables were used as inputs into the VISSIM traffic simulation software for the evaluation of several interchange and collector-distributor road network alternatives.

NYSDOT, R-11 NY Staten Island Expressway (SIE) Traffic Operations Study, (2004-2005): Senior Transportation Modeler responsible for Y2010, Y2015, and Y2020 long-rang travel-demand modeling of several ramp rehabilitation and re-configuration schemes along the SIE Corridor from Renwick Ave to the Verrazanno Bridge. NYMTC BPM TransCAD and TRANPLAN software were applied. Prepared forecast balanced-volume maps for all alternatives for input into the VISSIM traffic simulation software.

Elevated Transportation Company, Seattle Popular Transit Plan Ridership Forecasts for the Seattle Monorail Project, Washington (2002-2003): Project Modeler, prepared ridership forecasts for several monorail route alternatives analyses. The Seattle Sound Transit Model was used within the EMME/2 and ENIF multimodal modeling software environment.

NYCEDC, NY The Fresh Kills Landfill Traffic Planning Study, Staten Island, (2002): Senior Transportation Modeler responsible for forecasting traffic diversions to evaluate alternative roadway networks of potential roadway links across the Fresh Kills Landfill that will complement the existing Staten Island arterial highway system. The modeling systems developed for the SIEMIS were used as the platform for the Tranplan-based network modeling.

NYSDOT, R-11 NY Staten Island Expressway Corridor – Major Investment Study, Staten Island (SIEMIS), (2000-2002): Senior Transportation Modeler responsible for all aspects of long-range travel demand modeling for this MIS study in one of the most congested travel corridors in NYC. Performed complex highway and transit modeling of project alternatives, incorporating a variety of state-of-the art tools such as Trip-table estimation, Tranplan assignment algorithms, Destination- mode choice modeling, and a land-use feedback model (NYSIM). NYSIM was the first application of this type of model in NYC. The alternatives evaluated included network system packages of HOV Lanes, Bus-only Lanes, Mixed-use Lanes, Truck Climbing Lanes, Collector-Distributor roads, and Priority Control Ramp Entry for Buses and HOVs.

Key Projects with Other Firms

KPMG Consulting (NYC, NY) (is now an AECOM Company as of 2004)

- Supervised a small transportation modeling staff of two planners
- Supervised/performed complex transit transportation demand modeling services for new commuter rail feasibility NEPA environmental impact study

MTA NY, **The Metro North Hudson Line Extension MIS/EIS Project, and the Penn Station NYC Access Study (1998-1999)**: KPMG Senior Consultant for MTA study. Performed the re-calibration of the NY MTA's Regional Transit Forecasting Modeling (RTFM) System using TransCAD software and Fortran routines. This system was developed to test several alternative scenarios of commuter-rail extensions and operations for both projects.

Suburban Mobility Authority for Regional Transportation (SMART) **Detroit Suburban Bus Litigation Support Analysis, Detroit (1999)**: KPMG Senior Consultant responsible for the performance of complex ArcView GIS analysis of bus service distribution in relation to industry location and demographic data to determine service characteristics for various segments of the urban and suburban markets of the Detroit population. This was done for SMART Transit (Detroit) based on pending DOJ litigation.

Paragon Associates (Sayreville, NJ)

- Senior transportation consultant responsible for major traffic signal re-timing project in City of Newark, NJ
- Performed several traffic engineering operation simulation studies
- Team member promoting and marketing company's services and responding to RFPs
- Team member preparing technical scope of services for projects

City of Newark, NJ **Newark Traffic Signal Timing Optimization Project, (1998)**: Paragon Associates. Transportation Modeling Consultant for City of Newark study. Provided traffic engineering services for the development of new signalization timing-plans for four (4) plan-periods. This involved a network of 82 intersections. This project was one of the first and the largest use of SYNCHRO/SIMTRAFF software, at the time, in the USA.

NYSDOT, R-11 **Safety/Mobility Study: SB Van Wyck Expressway to North Conduit Avenue to WB Belt Parkway, New York, NY (1998)**: Paragon Associates. Transportation Modeling Consultant for a study for the New York State Department of Transportation. Performed comprehensive traffic engineering alternatives analysis using HCS, and SYNCHRO/SIMTRAFF micro-simulation software for signal timing optimization and coordination.

NYSDOT, R-11 **Rehabilitation of 12 Bridges on/over the Grand Central Parkway, New York, NY (1998)**: Paragon Associates. Transportation Simulation Consultant for this New York State Department of Transportation project. Performed comprehensive M&PT Traffic Engineering Analysis for project. Used HCS and Synchro/Simtraf for micro-simulation.

City of Newark, NJ **Newark ITS Early Deployment Plan Development, Newark, NJ (1998)**: Paragon Associates. Transportation Modeling/GIS Consultant for the City of Newark study. A GIS for transportation was developed, in ArcView, as a tool to identify critical transit and roadway corridors

experiencing recurring and non-recurring congestion. ITS elements in existing, design, and planning stages were identified.

NJ Transit. NJ, M&PT Traffic Study for the Hudson Bergen Light Rail Transit System, New Jersey (1998): Paragon Associates. Transportation Simulation Consultant for NJ Transit project. Performed traffic engineering analysis for several areas where segments of the LRT corridor traversed. Used HCS and Synchro/Simtraf for micro-simulation.

Konheim & Ketcham Associates (NYC, NY) (Company ceased operations in 2006)

- Senior transportation consultant responsible for and performed major travel demand modeling and traffic simulation for projects in New York City for private and public organizations

Columbia Hospital, NYC Columbia Presbyterian Medical Center, New York, NY (1998): Konheim & Ketcham Associates. Transportation Simulation Consultant for curb access study to facilitate CEQR approval of expansion of the New York Presbyterian Hospital. Developed Synchro/Simtraf and CORSIM traffic operations models to evaluate localized impacts of street re-circulation alternatives, approach routes, and signal design.

NYSDOT, R-11 NY Grand Central Parkway and Brooklyn Queens Expressway, New York, (1998): Konheim & Ketcham Associates. Traffic Modeling Modeling Consultant. Member of team which developed CORSIM and Synchro/Simtraf models of the Grand Central Parkway corridor from the complex interchanges with the BQE to the Triborough Bridge including several intersections with local arterials. The models were used to assess existing geometric and traffic problems and to evaluate potential solutions.

NYCDOT, NY Queens Boulevard Bridge (QBB) Reconstruction Project, Queens (1997-1998): Konheim & Ketcham Associates. Travel Demand Modeling Consultant responsible for the development of a NYC-wide TRANPLAN subarea highway network model to analyze bridge-closure scenarios of the QBB to the Queensboro Bridge. Developed and utilized SYNCHRO/SIMTRAF networks for intersection signal optimization and network simulation.

Urban Research Center, Hunter College, City University of NY (NYC, NY) 5/1996 – 4/1997

NYCDOT Highway Trips Characteristics Database Project (1996-1997): Transportation Modeling Consultant to the Urban Research Center, Hunter College, CUNY for NYCDOT travel-demand modeling study. Participated in development of a NYC-wide Highway Traffic Modeling System (TransCAD platform) for NYCDOT. Managed the transportation modeling components and prepared the Project Report.

New York State Department of Transportation Region 11 (NYC, NY) 6/1989 - 4/1996

- Senior transportation planner responsible for all in-house travel demand modeling, and also technical reviews of consultant modeling projects
- Senior transportation planner responsible for several traffic engineering studies for HOV-lane feasibility and traffic capacity analyses, and the development of several geographic information systems (GIS) applications

Senior Transportation Analyst, Planning and Development Unit, R-11, NYSDOT (1989-1996).

- Responsible for all in-house travel demand modeling, and also technical reviews of consultant modeling projects (eg. Gowanus Expressway project, Kosciuszko rehabilitation, etc.)
- Responsible for GIS-T activities of Unit. Prepared GIS-TIP application, Bridge Information System application (BIN-GIS), using ArcView, Mapinfo, TransCAD
- Prepared several in-house traffic studies for HOV-lane analyses, and traffic capacity analyses

New York City Department of City Planning (NYC, NY)

Transportation Planning Intern and Part-time Planner, Transportation Planning Division, NYC DCP (1988-1989).

- Performed goods movement and service vehicle surveys and analyses

Transportation Modeling Computer Skills

- Advanced-level working application skills utilizing macro-model software such TransCAD, and EMME/2
 - Advanced-level working application skills utilizing the NYMTC regional BPM modeling system
 - Intermediate-level working application skills utilizing Synchro, Corsim
 - Intermediate-level working application skills utilizing microsim-model software such as Paramics
 - Completed a Beginners Paramics 5-day Training Course at URS Corporation
 - Beginner-level working application skills utilizing microsim-model software such as Vissim, Aimsun, DynusT, and TransModeler (developer of TransCAD).
- Attended July 2008 TransModeler training by developer, Caliper Corporation, in Boston.

Other Skills

Business Development, Project Management, Project Report and Proposal Preparation