

HERBERT HIGGINBOTHAM

ASSOCIATE



Herbert has wide-ranging experience in transit operations planning and travel demand modeling for FTA Section 5309 New Starts and short and long-range transportation plans, and in designing customized automated applications for transit planning and analysis.

Employment History

Connetics Transportation Group, Inc.

2005-present
Associate

Manuel Padron & Associates, Inc.

2001-2005
Associate

Parsons Brinckerhoff Quade & Douglas Inc.

(Los Angeles, CA)
1999-2000
Engineer

Education

B.S., Chemical Engineering,
Virginia Polytechnic Institute
and State University,
Blacksburg, VA 1998

Publications

Custom Applications for Calculating
Transit Operating Statistics from
Travel Demand Forecasting Output,
by H. Higginbotham, 2007.

Mr. Herbert Higginbotham has over 10 years of transportation planning experience in transit service planning, travel demand forecasting, GIS development, financial analysis, and transit operations model development. He has developed bus and rail service plans for both short-term projects (COA, TDP) as well as long-range studies (AA, MIS, EIS), including several plans for FTA Section 5309 New Starts submittals. Mr. Higginbotham also has extensive experience forecasting travel demand with both regional and sketch models on a variety of platforms. Additionally, he has designed customized automated operating statistics and cost models, fare structure projections, and system planning applications. Representative projects include:

Exposition Corridor Phase 2 Alternatives Analysis/EIR – Los Angeles, CA

This AA/EIR for a transit capital investment in a Los Angeles transportation corridor investigated several build alternatives including improved rapid bus service, bus rapid transit, and light rail transit. Working with planners from Metro, Santa Monica Big Blue Bus, Culver CityBus, and LADOT, Mr. Higginbotham developed transit operating plans for each alternative, including a definition of alignments and service frequencies, associated feeder bus systems, and supporting physical facilities. He also coded the transit networks for use in Metro's regional transportation model and calculated operating statistics for each alternative. This included using Connetics' customized models for systemwide demand equilibration and headway adjustments to meet FTA New Starts guidance.

Silicon Valley Rapid Transit Corridor Project – San Jose, CA

The SVRTC project envisions bringing BART service south to downtown San Jose. Mr. Higginbotham has been part of the team through the MIS, AA, and EIS that has developed the operating plans and calculated operating statistics and costs for a full build and New Starts candidate project. Working with planners from SCVTA and BART, he has performed a variety of tasks, including run time estimates for the BART extension, bus and rail operating plans and stats development, transit demand equilibration, and GIS dynamic ridership mapping. Mr. Higginbotham also developed a BART trip assignment model that accurately assigns BART trips to individual routes and stations by time of day.

CCRTA Comprehensive Operational Analysis – Corpus Christi, TX

CTG conducted a COA of RTA's fixed route service that included a 100% weekday and weekend ride check, rider & non-rider opinion surveys, extensive public outreach and latent demand analyses, and the development of two future year plans. Mr. Higginbotham was heavily involved in all aspects of the project, from existing system and route profiles to market and demand analysis to new service recommendations. He also oversaw development of all GIS products for the project, including detailed system and route profile maps.

Monterey-Salinas Transit Fare Revenue Analysis – Monterey, CA

Monterey-Salinas Transit (MST) desired a new fare structure that could increase ridership and equity and was easy to use while maintaining their fare recovery ratio. Mr. Higginbotham conducted an analysis of MST's historical ridership and revenue trends to determine the factors and components that would lead to a more-desirable fare policy. He then constructed a multi-year fare model to forecast annual ridership, revenue, and farebox recovery for several fare structure alternatives, finally outlining a fare strategy for MST to reach their goals both in the near-term and the future.

Denver RTD Operating Statistics Model – Denver, CO

Like most transit agencies, RTD makes planning and operational decisions based on costs and statistics developed from travel demand forecasts. But the process of transforming raw forecast data into useful planning measures can take hours or even days. With the RTD OpStats model, data development takes only seconds. Mr. Higginbotham was a key part of the team that created a custom application that imports raw travel demand model output and applies adjustable parameters to calculate daily and annual bus and rail operating statistics. Developed in Visual Basic for the Microsoft Excel platform, the model relies on easy-to-use menus and buttons that leave the user free to analyze data rather than process it.

TRAVEL DEMAND FORECASTING:

LACMTA Model Development and Application – Los Angeles, CA

Mr. Higginbotham was responsible for implementing, calibrating, and validating LACMTA's original nested-logit mode choice transportation model. In addition to the model itself, he also enhanced and streamlined the process stream and select modules of the model, which uses TRANPLAN, FORTRAN, SAS, and C-shell components. Additionally, he has coded networks, run the model, and catalogued results for nearly a hundred LACMTA model runs.

Crenshaw/Prairie Corridor Major Investment Study – Los Angeles, CA

This Major Investment Study (MIS) for a transit capital investment in a Los Angeles transportation corridor investigated several build alternatives including improved rapid bus service, bus rapid transit, and light rail transit. Mr. Higginbotham generated operating plans and travel times for each alternative, including a definition of alignments and service frequencies, associated feeder bus systems, and supporting physical facilities. He also coded the highway and transit networks, ran the LACMTA model, and prepared and analyzed travel demand forecasting results.

Austin CMTA Light Rail Study – Austin, TX

For this light rail corridor study, Mr. Higginbotham worked on the TransCAD operating platform and with a nested-logit mode choice model to code highway and transit networks and conducted model runs and analyses for a variety of alternatives. The work included detail station and access coding and reporting and resulted in a comprehensive model process documentation manual.

COTPA Fixed Guideway Study – Oklahoma City, OK

The purpose of the Fixed Guideway Study was to identify future travel corridor needs and solutions for Oklahoma City's regional employment, housing, and activity centers. The study evaluated technology options for each corridor, such as bus rapid transit, light rail, commuter rail, modern streetcar, and HOV Lanes, among others. Mr. Higginbotham developed the operating plans and service characteristics, assisted in the development of a binomial logit-choice mode choice model using TP+ and the Cube platform, and calculated operating statistics for each alternative.

New Mexico DOT Multimodal Study – Santa Fe, NM

This study analyzed transportation needs and resources across the state of New Mexico, include automobile, local bus, intercity bus, commuter and regional rail, and air traffic. Mr. Higginbotham was charged with forecasting local transportation need and demand for 28 rural counties. Combining the best national practices with locally available data, he developed and calibrated sketch forecasting models that could predict need and demand for low-income, senior and disabled, and the general population.

Denver RTD Operating Statistics Model – Denver, CO

The process of developing accurate transit operating statistics can take hours or even days per alternative. With the RTD OpStats model, data development takes only seconds. Mr. Higginbotham was a key part of the team that created a custom application to import raw travel demand model output and apply adjustable parameters to calculate daily and annual bus and rail operating statistics. Developed in Visual Basic for the Microsoft Excel platform, the model relies on easy-to-use menus and buttons that guide the user through each step.

BUS SERVICE STUDIES:

CMRTA Comprehensive Service Plan – Columbia, SC

This extensive analysis of CMRTA included a COA, Park-n-Ride analysis, and Management Performance Review. Mr. Higginbotham worked extensively conducting the data analysis and public outreach necessary to create existing system and route profiles. He closely contributed to the development of three systemwide recommendation packages that bring a major transformation of CMRTA service to include express and flex-routes and suburban transit centers along with their local offerings. He also was responsible for the creation of a 25-year financial plan for the agency that details the phasing and funding of the future recommendations.

Transit Strategic Plan – Fort Collins/Loveland, CO

This strategic plan updated a previous plan for Fort Collins and included analysis of transit services in neighboring Loveland. The purpose of the plan was to perform an existing system line-by-line analysis and develop operating and financial plans for four future scenarios that included the introduction of BRT service. Mr. Higginbotham oversaw the development of system and route profiles for both systems, including all GIS products. Additionally, he crafted future year operating scenarios that included the introduction of new regional and express services and a fixed guideway BRT.

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SCT Transportation Development Plan Update, Santa Clarita, CA

Mr. Higginbotham acted as CTG project manager for this TDP update that included a thorough analysis of existing characteristics and deficiencies, investigations of the forecasts for future growth, and the creation of a multi-phased operating and financial plan that included fixed-route, flex-route, and demand response elements. In addition to project management and collaborative input into the plan elements, Mr. Higginbotham was principally responsible for conducting a ride check analysis of SCT's local fixed routes. He developed the schedules and forms to perform a 75% weekday/50% weekend ride check, and trained and supervised over twenty ride checkers collecting ridership and time-point data. He summarized data by route segment and time-of-day, providing a thorough graphical analysis of route profiles, maximum load points, key stops, and schedule adherence.

Exposition Corridor Phase 2 Alternatives Analysis/EIS – Los Angeles, CA

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CORRIDOR/NEW STARTS PROJECTS: