

Cornelius Kofi Nuworsoo, Ph.D., AICP

EDUCATION

Ph.D. Transportation Engineering; University of California, Berkeley (May, 2004)

MCP Master of City Planning; University of California, Berkeley (May, 2002)

MS Transportation Studies; Morgan State University, Baltimore, MD (1986)

BS (Honors) University of Science and Technology, Ghana (1981)

PROFESSIONAL AFFILIATIONS

1. Certified Member #014250 – American Institute of Certified Planners
2. Member – Institute of Transportation Engineers (ITE)
3. Member – Transportation Planners Council of ITE
4. Member – Traffic Engineering Council of ITE
5. Member – American Planning Association

TEACHING & RESEARCH EXPERIENCE

Institution: Department of City and Regional Planning, Cal Poly State University

Location: San Luis Obispo, California

Teaching

Fall 2005 to Present: Assistant Professor of Transportation Planning and Coordinator of joint Masters Degree Program in City and Regional Planning & Civil Engineering.

Courses and Laboratories

#3

1. CRP 213: Population, Housing and Economic Studies (with Lab Activity)
2. CRP 214: Transportation and Land Use (with Lab Activity)
3. CRP 435: Transportation Theory
4. CRP 457: Geographic Information Systems Applications in Planning (with Lab)
5. CRP 516: Methods of Planning Data Analysis (with Lab Activity)
6. CRP 522: Community Planning Studio I (Practicum)
7. CRP 554: Community Planning Studio II (Practicum)

Supervision

#4

1. CRP 461: Senior Project I
2. CRP 462: Senior Project II
3. CRP 596: Graduate Student Professional Report
4. CRP 599: Graduate Student Thesis

Research

Summer 2006 - Present: Research in collaboration with faculty of Civil Engineering Department at Cal Poly San Luis Obispo and at Cal Poly Pomona. *EDAPTS Smart Transit System Cost Benefit Evaluation* for the California Department of Transportation, through Partners for Advanced Transit and Highways (PATH). While costs of “Smart Transit” features are straight forward to identify, benefits are not easily identifiable. This project identifies the costs and benefits of the Smart Transit features test-deployed at San Luis Transit. Not only is the benefit cost ratio to be determined, but also a methodology is to be developed for identifying them. Findings are to help decision-making in relation to wide scale deployment of Smart Transit features.

Peer Reviews

#4

1. Peer Review for Mineta Transportation Institute: “Neighborhood Crime and Travel Behavior: An Investigation of the Influence of Neighborhood Crime Rates on Mode Choice”, By Christopher E. Ferrell, Ph.D., Shishir Mathur, Ph.D. and Emilia Mendoza
2. Peer Review for Mineta Transportation Institute: “Beyond Uncertainty: Urban Models in Transportation and Air Quality Planning”, by Caroline J. Rodier
3. Peer Review for Mineta Transportation Institute: “Applying Smart Growth Principles and Strategies to Resolving Land Use Conflicts around Airports”, by Richard W. Lee et al.3.
4. Peer Review for Mineta Transportation Institute: “Can Consumer Information Tighten the Transportation /Land-Use Link? A Simulation Experiment” by Daniel A. Rodriguez et al.
5. Peer Review for Mineta Transportation Institute: “Transportation Financing Opportunities for the State of California” by Asha Weinstein et al.
6. Peer Review for New England University Transportation Center: “Strategies for Extending the Bicycle Network in Older Cities” by Norman

Grants and Contracts

#8

1. King City Community Plan project: Grant = \$5200; completed 2005/06
2. Armona Community Plan project: Grant = \$19,400; completed 2006/07
3. Desert Hot Springs General Plan Update: Grant = \$58,000; near completion 2006/07

Service

#10

1. Academic Senate, Cal Poly, San Luis Obispo
2. MCRP Committee, Department of City and Regional Planning

Institution: Institute of Transportation Studies, University of California at Berkeley
Location: Berkeley, California

Teaching

Summer 2005: Lecturer for the course, *Introduction to Urban and Regional Transportation*, jointly listed in the Department of City and Regional Planning and the Department of Civil & Environmental Engineering.

Summer 2004: Lecturer for the course, *Introduction to Urban and Regional Transportation*, jointly listed in the Department of City and Regional Planning and the Department of Civil & Environmental Engineering.

Spring 2004: Graduate Student Instructor for the course, *Transportation Finance*, jointly listed in the Department of City and Regional Planning and the Department of Civil & Environmental Engineering.

Spring 2000: Graduate Student Instructor for the course, *Introduction to Transportation Planning* in the Department of Civil & Environmental Engineering, lab instructor for the course.

Research

Summer 2004: Post-Doctoral Researcher, Institute of Transportation Studies. Research to develop an effective regional express bus transit system for the San Francisco Bay metropolitan region.

2001 to 2002: Research to assess the market for reverse-commute public transport services in the state of California

1999-2000: Research to estimate the extent to which commercial airlines include time buffers in their schedules in order to depict on-time performance. This estimate is essential in making accurate assessments of performance when improvements are implemented in the national airspace.

1986 to 1988: Research to develop design guidelines and methodology for establishing High Occupancy Vehicle (HOV) Lanes.

Institution: P.E. Review Extension Program, University of Maryland, Baltimore County
Location: Baltimore County, Maryland

Teaching

1999 – 2004: Part-time instructor in transportation studies and traffic analyses for candidates preparing to take certification exams to become Professional Engineers.

Institution: Center for Transportation Studies, Morgan State University
Location: Baltimore, Maryland

Teaching

Fall 1990 through fall 1992: Part-time lecturing in *Travel Forecasting* and *Basic Quantitative Methods* applied in Transportation Studies; student advising; and providing technical assistance in the form of quantitative analyses on departmental research projects.

Research

1991: Analysis to estimate market share potential for private sector reverse commute services between inner city neighborhoods in Baltimore and suburban employment centers

SELECTED PUBLICATIONS

Articles and Reports

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1. Cornelius Nuworsoo, Defining Sampling Districts for Household Travel Surveys: A Case Study of the Baltimore Metropolitan Area Paper Accepted for Presentation and Publication, the 86th Annual Meeting of the Transportation Research Board, January, 2007
2. Cornelius Nuworsoo, "Discounting Transit Passes", Access, The Magazine of Transportation Research at the University of California, vol. 26, Spring 2005, pp 22-27
3. Cornelius Nuworsoo, *Deep Discount Group Pass Programs: Innovative Transit Finance*, Berkeley Planning Journal, vol. 18, 2005
4. Cornelius Nuworsoo, Elizabeth Deakin and Aaron Golub *Analyzing the Equity Impacts of Transit Fare Changes: A Case Study of AC Transit*, Paper Submitted for Presentation at The 85th Annual Meeting of the Transportation Research Board, January, 2006
5. Cornelius Nuworsoo, *Cost per-User as Key Factor in Project Prioritization: A Case Study of the San Francisco Bay Area*, Paper Accepted for Publication and for Presentation at The 85th Annual Meeting of the Transportation Research Board, January, 2006
6. Cornelius Nuworsoo, "A Model to Minimize Non-Revenue Costs in Bus Transit Operations", prepared for TRB meetings, Jan. 1999; for publication in Transportation Research Record, 1999; presented at poster session at the ITE Annual Meeting, August 1999
7. Cornelius Nuworsoo, "Interim Congestion Management System Guidelines for the Baltimore region", Baltimore Metropolitan Council, October 1994
8. Cornelius Nuworsoo, "Congestion Management System Work Plan for the Baltimore region", Baltimore Metropolitan Council, September 1994
9. Cornelius Nuworsoo, "Central Light Rail Survey -- Methodology and Results", Baltimore Metropolitan Council, May 1994
10. Cornelius Nuworsoo, "Transit Evaluation of the Long Range Transportation Plan" (Technical Appendix), Baltimore Metropolitan Council, June 1993
11. Andrew Farkas, Cornelius Nuworsoo and Moges Ayele, "Market for Private Sector Reverse Commute Services", Prepared for The Urban Mass Transportation Administration, Washington, DC, Dec. 1991

12. Cornelius Nuworsoo and Adolf D. May, "*Planning On-Freeway HOV Lanes*", (Draft Final Report), prepared for the California Department of Transportation, June 1988.
13. Cornelius Nuworsoo and Adolf D. May, "*Planning HOV Lanes on Freeways: Site Selection & Mode Shift Prediction*", (Working Paper), prepared for the California Department of Transportation, February 1988.
14. Leonard Newman, Cornelius Nuworsoo and Adolf D. May, "*Design of Bus and Carpool Lanes: A Technical Investigation*", prepared for the California Department of Transportation, November 1987.
15. Leonard Newman, Cornelius Nuworsoo and Adolf D. May, "*Operational and Safety Experience with Freeway HOV Facilities in California*", prepared for TRB meetings, Jan. 1988; for publication in Transportation Research Record, 1988.

Theses

16. Cornelius Nuworsoo, "*Deep Discount Group Pass Programs as Instruments for Increasing Transit Revenue and Ridership*" A **Dissertation** submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Transportation Engineering, University of California, Berkeley, USA, May, 2004
17. Cornelius Nuworsoo, "*Measuring the Accessibility of Low-Income Central-City Residents to Suburban Job Opportunities: A Case Study of the San Francisco Bay Area*", A **Professional Report** prepared for the California Department of Transportation, University of California, Berkeley, USA, May 2002.
18. Cornelius Nuworsoo, "*Slurry Transportation, Potential for the Movement of Coal*", A **Thesis** submitted in partial fulfillment of the requirements for the degree of Master of Science in Transportation Studies, Morgan State University, Baltimore, Maryland, USA, June, 1986
19. Cornelius Nuworsoo, "*The Adequacy of Performance within the Hierarchy of Health Services in Ghana: A comparative study of Traditional and Western Medical Services*", A **Thesis** submitted in partial fulfillment of the requirements for the degree of Bachelor of Science in Planning, University of Science and Technology, Ghana, June, 1981

PROFESSIONAL EXPERIENCE

OVERVIEW

Cornelius Nuworsoo, AICP has 22 years experience in both transportation engineering and in urban and regional planning. He is a member of the American Institute of Certified Planners (AICP) and a full member of the Institute of Transportation Engineers. Formerly a senior transportation planner with the Baltimore Metropolitan Council, an MPO, he has extensive experience and expertise in the development of transportation master plans and in the application of travel demand modeling software. He played key roles in the development of the regional long-range

transportation plan, which involved the full spectrum application of the urban transportation planning process (UTPS) in the analyses to determine the long-term development of highway and transit infrastructure in the Baltimore metropolitan area. He performed similar roles in the development of the transportation master plans for the U.S. Department of Interior that involved the determination of the long-term transportation needs and the coordinated sets of improvements consistent with the social, environmental, and economic goals of 24 different communities in Colorado, Florida, and New Mexico. He has many years of hands-on application experience with such travel forecasting models as minUTP (at the Baltimore Metropolitan Council), TRANPLAN (in corridor analyses for the Delaware Department of Transportation) and TP+ (in the modeling for the 2012 Olympic bid for the San Francisco Bay Area).

The following are highlights of Cornelius Nuworsoo's relevant areas of experience and knowledge:

- Development of transportation master plans;
- Development of strategic transportation policy and financing plans;
- Travel demand forecasting by manual methods or simulation models;
- Traffic operations and capacity analysis including signal timing and coordination;
- Traffic impact analysis, safety studies and environmental assessment;
- Preliminary engineering studies.

EMPLOYMENT AND PROJECT DETAILS

Date: 1999-2005
Organization: De Lapide & Associates, Inc
Position: Principal Transportation Engineer & Planner
Location: Baltimore, Maryland, USA

Maryland Transit Administration -- Harford County Transit Improvement Plan

This project was conducted in 2002 in consortium with DMJD+Harris. Participated in the development of a short to medium term plan for transit service improvements in this area located in the northeastern section of the Baltimore metropolitan area. It involved forecasts of future travel volumes by public transit along various existing and proposed lines under alternative improvement scenarios.

Office of Infrastructure, Turner Fairbank Highway Research Center: A Study to Recommend Measures of the Benefits of Infrastructure RD&T.

Participated in the development of a performance-based framework for assessing the benefits of research programs and projects. The development of the framework involved several tasks including data collection and analysis, identification of performance measures, and development of the benefits assessment framework. The framework is structured into several parts with a set of performance measures addressing a specific set of objectives related to each part. For each performance measure, several, measurable surrogates were identified. Several data sources were also identified for use in the application of the performance measures. The assessment framework is designed to ensure that the performance measures are relevant, that

they capture all types of research activities, that they are objective enough to highlight the benefits and weaknesses of research programs and projects, and above all, that they are simple to understand and apply.

Federal Highway Administration -- Office of Legislation and Strategic Planning

The purpose of this ongoing project is to assist the FHWA Office of Legislation and Strategic Planning staff in developing a strategy to effectively implement the law reauthorizing TEA-21. The objectives are to scan a small number of states and Metropolitan Planning Organizations (MPO) to develop a better understanding of their organizational and institutional structure; to help summarize how decisions regarding the Federal-Aid Highway Program are made and by whom; to identify and prioritize highway issues in the states; and to design a study to inventory the remaining states. Of particular interest are ascertaining how each state utilizes the Federal-Aid Highway Program to advance the quality of life for the motoring public, improve highway safety, and amplify the economic benefits of mobility.

Date: 1999 - 2003
Organization: Institute of Transportation Studies, University of California, Berkeley.
Position: Researcher
Location: Berkeley, California, USA

San Francisco Bay Area -- Analysis of potential impacts of the 2012 Summer Olympic proposal on Transportation in the San Francisco Bay Area

This study was conducted in 2001 for the Bay Area Sports Organizing Committee (BASOC). It involved operational assessments of various “build” scenarios of the network of ground transportation that would serve the two-dozen proposed venues located throughout the Bay Area. The medium of analysis was the **TP+** software. The study determined that completing gaps in the existing network of HOV lanes and restricting them to vans and buses during the games would provide a fluid yet least expensive means of moving both athletes and spectators through the network.

Accra Metropolitan Area – Development of a Bus Rapid Transportation Plan for Accra

This study was conducted at the University of California Berkeley in 2000. A bus rapid plan was determined as most appropriate for Accra and was overlaid along several corridors across its metropolitan street network. Policy objectives, legislative mandates and institutional arrangements for its implementation were defined for the plan. A formal presentation of the plan was made to policy makers at the Ministry of Transport in Ghana during the summer of 2003.

San Francisco Bay Area -- Measuring the Accessibility of Low-Income Central-City Residents to Suburban Job Opportunities: A Case Study of the San Francisco Bay Area

This Professional Report was prepared for the California Department of Transportation in May 2002. It involved GIS mapping with **TRANSCAD** of the residential locations of low-income households and the locations of low-wage jobs in the Bay area. It used data from the metropolitan transportation planning agency on zonal travel times to calculate isochrones of travel times by both auto and transit from residences to jobs in various travel analysis zones. The analysis produced the following findings:

1. Low-income households were not only in central cities.
2. While it was important to address the transportation needs of central city dwellers to suburban job locations, it was equally important to address the general commute options for other low-income people who live outside the central city.
3. Thus the problem was much broader than just reverse commuting.

State of California -- The market for reverse-commute public transport services in the state of California.

Participated in this statewide research that defined the existing reverse-commute marketplace in California. The project identified and evaluated existing public transportation services in terms of their success and responsiveness in serving reverse-commute and job-access demands. It also examined unmet mobility needs; and it proposed policy initiatives and strategies that held promise for significantly improving reverse-commute services throughout the state. The study covered four major metropolitan areas of California (San Francisco Bay Area, Los Angeles, San Diego and Sacramento) and the Central Valley. (2001 to 2002)

A Review of Legislation that Enabled Financing of the Elaborate Transport Infrastructure in the USA: Lessons for Developing Countries

This study was conducted at the University of California Berkeley in 2002. It is widely recognized that a comprehensive transportation network with modal connections enhances efficiency and reduces costs to all users. Without any special attention, transportation would have to compete with other sectors of the economy for funding that comes from scarce and often inadequate revenue sources. In the United States, ingenious and innovative methods have been used to fund investments in transportation infrastructure. This study traced the evolution of legislation that enabled investment in the extensive network of transportation infrastructure within the United States. In so doing, the study sought insight into how the United States accomplished such a feat within a half century and identified lessons for developing countries.

State of California -- Research to develop design guidelines and methodology for establishing High Occupancy Vehicle (HOV) Lanes.

This series of studies were conducted for the California Department of Transportation. They dealt with such aspects of high occupancy vehicle (HOV) lanes as conceptual design of HOV lanes, operation of HOV lanes, and site selection and mode shift prediction in planning HOV lanes. (1986 to 1988).

Date: 1996 -1999
Organization: Whitman Requardt & Associates, LLP;
Position: Senior Transportation Planner & Traffic Engineer
Location: Baltimore, Maryland, USA

Delaware Department of Transportation -- U.S. 40 Corridor Study, New Castle County

This project was conducted for the Delaware Department of Transportation in 1999/2000. The study involved travel forecasting with **TRANPLAN** for future conditions. Select-link and sub-

area analyses were conducted to determine future peak hour turning volumes at 25 intersections along this 10-mile long corridor. Tasks included capacity analyses to determine future roadway improvement needs.

A string of related projects involved forecasting of future travel volumes for the SR 7 corridor. SR 7 intersects US 40. Tasks included the following:

- Derivation of turning volumes at intersections along the 5-mile section of SR 7,
- Determination of levels of use of a proposed interchange with US 1, an adjoining freeway, under various land use scenarios,
- Estimation of weaving volumes on the adjoining freeway.

Maryland Transit Administration – Northeast Bus Facility Location Feasibility Study

This project was conducted for the Maryland Transit Administration in 1998. The project involved the development of a procedure and its application in selecting the preferred sites from among a group of candidate locations in the Baltimore metropolitan area. Using data on existing operations, a model was constructed to estimate non-revenue operations costs due to deadhead and relief travels from alternative sites. The model was applied to determine the lowest cost sites among the group of candidate locations. Service routes were optimally allocated with the model among existing and proposed locations. Other parts of this project involved assessments of environmental conditions and land use compatibility of candidate sites with the existing built environment and conceptual layouts of the new bus facility.

Maryland State Highway Administration (SHA) -- MSHA High Accident Location Studies, District 5

This series of projects were conducted for the State Highway Administration of the Maryland Department of Transportation between 1992 and 1999. They involved field inspection of geometric alignments and traffic operation; analyses of accident records, collision diagrams and traffic volume data to determine root causes of recurring accident types; evaluation of signal phasing and change intervals; determination of potential solutions to rectifying problems and preparation of project reports. Sample projects include high accident intersection studies in Anne Arundel County (both signalized and unsignalized): a 6.3 mile high accident corridor on MD 468; high accident sections on MD 2, MD 4, MD 100 and MD 214; and several high accident intersections.

Maryland State Highway Administration (SHA) -- Arterial Corridor Studies for the Office of Traffic and Safety

This project was conducted for the State Highway Administration of the Maryland Department of Transportation in 1998. It involved field inspections of traffic operations and geometrics; travel time runs and spot speed studies; analyses of accident records, patterns and distribution of collisions; evaluation of signal settings including cycles, phasing, splits and change intervals; determination of causes of safety concerns; evaluation of signal progression and impediments to smooth traffic operations; determination of potential solutions. Projects include:

- The 6-mile, 15-signal corridor of MD 45 in Baltimore County; and
- The 2-mile, 6-signal corridor of MD 140 in Carroll County.

Delaware Department of Transportation -- Highway Safety Improvement Program

This group of projects was conducted for the Delaware Department of Transportation (DOT) in 1992/93. They involved the development of signal timing improvements to address recurring accident problems within three high volume corridors:

- *U.S. 13 New Castle County.* 11-signal, 5.9-mile section of divided highway
- *U.S. 13, Sussex County.* 4-signal, 1.5-mile section of a multi-lane highway.
- *DE 4, New Castle County.* 4-signal, 0.6-mile section of state highway.

Date: 1992-1996
Organization: Baltimore Metropolitan Council.
Position: Senior Planner
Location: Baltimore, Maryland, USA.

Baltimore Metropolitan Council – Development of the Long Range Transportation Plan

This project was conducted at the Baltimore Metropolitan Council in 1993. The development of the regional long-range transportation plan involved the full spectrum planning for long-term development of highway and transit infrastructure in the Baltimore metropolitan area. It comprised the demarcation of travel corridors across the metropolitan area and assessment of the deficiencies of transport capacity along them. In addition to highway improvements, an integrated transit network of heavy rail, light rail, commuter rail and bus services were coded and tested in the **minUTP** travel-forecasting model. Other tasks included cost modeling and forecast refinement to guide policy development. The patronage forecasts and estimated costs were used in rating and ranking various improvement proposals for the plan. Results helped in the selection and prioritization of recommended measures that were included in the financially constrained long-range plan.

Baltimore Metropolitan Council -- Development of Capital and Operating Cost Models for Rail and Bus Transportation

This project was conducted at the Baltimore Metropolitan Council in 1993 in the development of the public transport element of the regional long-range transportation plan. It involved conceptualization of the process and development of unit costs for appropriate cost and expenditure categories from previous data; construction of a spreadsheet model for estimating capital costs as well as operating and maintenance costs for various transit modes (heavy rail, light rail, commuter rail and bus). Targeted scenarios of transit operations were modeled to determine capital needs for at-grade and elevated infrastructure, stations and furniture, and vehicles. Annual operating expenditures to result from target levels of service were then assessed. Results entered into the adopted Long-Range Transportation Plan for the Baltimore region.

Baltimore Metropolitan Council -- Development of a Method of Refining Simulated Forecasts for Rail and Bus Transportation

This project was conducted at the Baltimore Metropolitan Council in 1993 in the development of the transit element of the regional long-range transportation plan. It involved the development of a procedure for “post-processing” of area-wide transit forecasts produced by regional simulation models to more accurately project transit demand on individual lines. While

simulation models produce total and corridor-wide transit ridership levels fairly accurately, individual line projections are often orders of magnitude off. This procedure was developed to use base year transit ridership and future year changes in service level, such as headway reductions, the additions of new stations, and the expansion of parking facilities, to predict future ridership. It was especially calibrated to capture that additional attractiveness of rail transit when introduced into a travel corridor. Results from this post-processing gained wide acceptance among MPO, transit agency and citizen groups resulting in the adoption of its output in the regional Long-Range Transportation Plan.

Baltimore Metropolitan Council -- Development of a Congestion Management Policy Process for the Baltimore Region

This project was conducted at the Baltimore Metropolitan Council in 1994 in response to the legislative mandate for urbanized areas that were in non-attainment for air quality to have a congestion management system in place. It involved the conceptual development of a process and work plan for preparing a congestion management plan for the Baltimore metropolitan area, including identification of data needs and sources, synthesis of possible solutions including transit, systems management, non-motorized, and highway capacity expansion strategies. GIS (Geographic Information System) applications in **MapInfo** enabled the mapping and display of existing and projected locations of congestion throughout the metropolitan area.

Baltimore Metropolitan Council -- Central Light Rail Patronage Study

The Baltimore Metropolitan Council and the Maryland Mass Transit Administration conducted this project jointly in 1993/94. The project involved development of the work plan; survey design, survey pre-testing and administration; data tabulation and summary with database programming; and illustration of results with spreadsheet summaries. The project report was prepared to outline origin and destination patterns as well as socioeconomic profiles of Baltimore's Central Light Rail patrons. Results revealed that patrons were not only the transit-dependent, but also middle-class workers who had alternative modes of transportation available to them.

Date: 1988 - 1992
Organization: A/E Group Consulting Engineers
Position: Transportation Planner / Traffic Engineer
Location: Owings Mills, Maryland, USA.

U.S. Department of Interior -- Community Transportation Master Plans, 1990, 1991, 1993

This series of projects involved the identification of individual, long-term transportation needs and development of coordinated sets of improvements that were consistent with the social, environmental and economic goals of 24 different communities in New Mexico, Florida and Colorado. Each project included comprehensive data collection of roadway usage, field surveys of the physical conditions of the infrastructure, interviews of officials in charge of key social and economic sectors of the community and community-wide public participation sessions. From these, future growth was projected, development policy guidelines were articulated and the needs for improvement in the infrastructure were determined.

Baltimore City Department of Transportation -- Boston Street Corridor Study

This project was conducted for the Baltimore City Department of Transportation first in 1988/89 and again later in 1998. This project involved the preparation of a design year traffic analysis for a three-mile arterial corridor in East Baltimore. The analysis effort included a license plate study of five parallel routes, trip generation and distribution for over thirty future development sites, capacity analysis for seven key intersections, and the evaluation of four alternative corridor improvement scenarios for design year conditions using **TRANSYT-7F** and a stochastic model. The final traffic report was included in the Supplemental EIS (Environmental Impact Study) for the corridor. Recommendations from this study are currently under implementation in this prime area located along a waterfront adjoining downtown Baltimore.

Baltimore City DOT - Port Covington Commons Transportation Plan

This project involved the full spectrum application of the Urban Transportation Planning Systems process from trip generation through assignment. It included highway capacity analyses of the internal and external street system serving this site that was proposed for 2 million square feet of commercial development. The study was documented with recommendations for types and timing of highway improvements.

General Services Administration - Suitland Federal Center Master Plan

This project involved assessment of the internal and external transportation, circulation and access, as well as on-site parking, for both existing and future conditions. The study identified the potential for expansion on site and the associated transportation impacts. Findings were entered into the Master Development Plan for this major employment center.

Date: Summer, 1988
Organization: Infrastructure Division, The World Bank
Position: Student Intern
Location: Washington, D.C.

Country Infrastructure Data Base

Participated in the collation of data on various types of transport infrastructure documented in World Bank records. Synthesized data into standard formats for the creation of an electronic infrastructure data base in **dBase**.

COMPUTER SKILLS

Familiarity with major computer software applied in Transportation including **TRANSYT-7F**, **MINUTP**, **TRANPLAN**, **TP+**, **PASSER II-90**, **HIGHWAY CAPACITY SOFTWARE (HCS)**, **SYNCHRO**, **FREQ8PL**, **SPSS**, **TRANSCAD-GIS**, and others

HONORS AND AWARDS

- University of California Transportation Centers Dissertation Grant, 2003-2004
- University of California Transportation Centers Fellowship, 1999-2000
- Gold, Silver and Bronze Medals, The Duke of Edinburgh's Award (1975, 1974, 1973)