Data Management Group
Annual Report
2004

The Data Management Group is a research program located at the University of Toronto's Joint Program in Transportation and is made possible by the financial support of the funding partners:

City of Hamilton
City of Toronto
GO Transit
Regional Municipality of Durham
Regional Municipality of Halton
Regional Municipality of Peel
Regional Municipality of York
Toronto Transit Commission
Ministry of Transportation, Ontario

SUMMARY

The Data Management Group (DMG) administers the data files on urban travel contained in the 1986, 1991, 1996 and 2001 Transportation Tomorrow Surveys. Managing and providing access to the Transportation Tomorrow Surveys continues to be the most significant part of the Group's activities. Access to travel data is available in summary form on the DMG's web site, while detailed summaries can be formulated using an interactive data retrieval system (iDRS) over the Internet. Any individual signing an agreement form is provided unlimited Internet access and this sign-up procedure is available on-line. The procedure is reasonably complex, therefore the DMG staff compiled a user's manual in 2004, which is available on-line. During the year the funding agencies and their consultants together with the research community instigated 13,124 data queries during 2,142 computer sessions related to urban travel, which is down slightly from 2003.

The DMG also manages and provides access to a data base containing all the cordon counts undertaken by the funding agencies since 1975. The cordon count program counts vehicles, classified by vehicle type, for each direction on a selection of locations throughout the GTA during the daylight hours on a day in the spring. These data are made available to any individual requesting access and is administered in a manner similar to the TTS data. The DMG staff compiled a user's manual for CCDRS in 2004, which is available on-line. During the year the funding agencies and their consultants together with the research community instigated 2392 data queries during 631 computer sessions related to cordon count data, essentially the same number as in 2003.

During 2004, representatives of the funding agencies discussed the merits of completing the 20-year cycle of Transportation Tomorrow Surveys that have been conducted every five years since 1986. The funding agencies recommended a 2006 TTS and the DMG began planning for the survey, including a complete update of the software used to conduct the survey.

By the year 2004, all funding agencies and several local governments are full funding partners in the sharing of a computer system running transportation planning simulation software (EMME/2). The Greater Toronto Airports Authority joined the list of active users in 2004. An indication of the use of the shared resource is evident in the 7222 computer sessions activated by 17 different users in 2004.

The research nature of the DMG's activities is conducive to the development of other research projects. The research support that is made possible by the existence of the DMG include: access to the data bases, access to the EMME/2 network and modelling system, access to the EMME/2 software and technical support in the use of these data and software. In 2003, the result of this collaboration led to 5 undergraduate theses, 14 graduate theses completed or in progress and 16 technical presentations or publications.

INTRODUCTION

The Data Management Group (DMG) was established in 1988 on the basis of a proposal from the University of Toronto's Joint Program in Transportation for an autonomous research group with the following objectives:

a) establish a common, centrally-accessible database containing information on transportation activities, zone systems, transportation networks and land use activity,
b) provide a transportation data retrieval service to the participating agencies,
c) monitor the adequacy of available data and propose approaches for adding to or updating the data as mutually agreed upon by the agencies,
d) promote greater interaction between university researchers and practitioners in the field of urban transportation planning,
e) promote the communication of transportation information and data obtained or administered by the Data Management Group to interested agencies and to the public,
f) further the improvement of transportation demand analysis, research, and forecasting in the Greater Toronto Area.

The DMG has been guided by these objectives into its 17th year of continuous operation.

Program approval and funding of the DMG is the collective responsibility of members of the Transportation Information Steering Committee (TISC) with the following membership:

City of Hamilton
City of Toronto
GO Transit
Ministry of Transportation, Ontario
Regional Municipality of Durham
Regional Municipality of Halton
Regional Municipality of Peel
Regional Municipality of York
Toronto Transit Commission

Each participating agency appoints a member of their technical staff to the Transportation Research and Data Management Group (TRADMAG), which is a standing committee of TISC, and is responsible for coordinating the needs of the funding agencies and the activities of the research project.

This report provides a brief profile of the staff employed during the year and a description of the activities undertaken by the DMG under the headings of information processing, computer resources and technical support, published reports and related university research in the calendar year 2004.

STAFF AND LOCATION

The DMG is located in offices at;

Joint Program in Transportation
University of Toronto
Galbraith Building, Room 305
35 St. George Street
Toronto, Ontario M5S 1A4
Telephone: (416) 978-7282
FAX: (416) 978-3941

The Joint Program in Transportation provides administrative support through their Administrative Officer and Financial Manager, Lorine Jung.

Full-time Technical Staff in 2004

Susanna Choy, B.A.Sc. (Industrial Engineering), M.Eng. (Civil Engineering) University of Toronto, P.Eng.
Reuben Briggs, B.A.Sc. (Civil Engineering), M.A.Sc. (Civil Engineering) University of Toronto, P.Eng.
Martin German, B.Sc. (Computing & Information Science), University of Guleph

Urban Transportation Planning Interns in 2004

Rhys Wolf, B.A.Sc. (Engineering Science) University of Toronto
Daphne Lee, B.A.Sc. (Civil Engineering) University of Toronto

Computer Programmer (2006 TTS Software Re-write)

Michael O'Cleirigh, B.Computing (Computing & Information Science), University of Guleph

Summer Students in 2004

Tammy Fang Liu, B.Eng. (Planning and Transportation Engineering) Xi'an University of Architecture & Technology
Mark Siu, 2nd year undergraduate, Department of Civil Engineering, University of Toronto

Part-time Director

Gerald N. Steuart, Professor Emeritus, Department of Civil Engineering, University of Toronto

Data Management Groups Web Site

http://www.jpint.utoronto.ca/dmg/

INFORMATION PROCESSING

The term 'information processing' is used in this instance to describe a set of activities supporting the management, storage and distribution of urban travel information. The principle components of this information are the results of the Transportation Tomorrow Surveys and a collection of all Cordon Count surveys.

Transportation Tomorrow Surveys

Under the guidance of TISC, a series of urban travel surveys have been conducted every five years since 1986. The DMG administers the data files on urban travel contained in the 1986, 1991, 1996 and 2001 Transportation Tomorrow Surveys in the form of a set of relational databases with various methods of access. Direct access to the original files is restricted to DMG staff to ensure that information on a particular household cannot be identified. Data files on 1986 travel contain detailed information on 370,000 trips taken by 171,086 individuals residing in 61,453 households. The data files for the 1991 survey contain 157,349 trips taken by 72,538 individuals residing in 24,507 households. The data files for the 1996 survey contain 657,971 trips taken by 312,781 individuals residing in 115,193 households. The data files for the 2001 survey contain 817,744 trips taken by 374,182 individuals residing in 136,379 households. The increasing size of the databases reflects not only growth in the area but also an increase in the size of the area surveyed.

Originally, a staff member at the DMG processed every request for travel information and stored the results in a computer file that was then forwarded to the end user. More than ten years ago, staff at the DMG developed the text-based data retrieval system (drs) as the original method for external users to gain access to the data files and complete the data extraction themselves. This retrieval system was very effective when a modem was used as the principle method of remote access to the DMG's computer system. Over the past ten years, as the demand for travel data grew and the Internet became the preferred method of remote access, a data retrieval system specifically designed for internet access was developed (iDRS). The resources required to keep two systems operational are becoming too costly and the drs process was phased out. During the phasing-out period, all the attractive features of drs were incorporated into the browser-based iDRS.

Use of the iDRS access procedure has grown significantly since it was first released in 1998. The initial release was restricted to use by the funding agencies. As the DMG gained more experience with the procedure and continuous improvements were made, more users were allowed access. In 2002, the iDRS procedure was made available to any individual that requested access. The individual is required to sign an agreement form and system security is maintained by giving each user a unique login and password. This procedure has the added benefit that agencies outside the GTA plus Hamilton that participated in the 1996 and 2001 Transportation Tomorrow Surveys can access their data without the need to set up their own database system. Use of the system is

carefully monitored to be certain all users are given reasonable service. The system is currently providing excellent service to all users, consequently, in 2004 the DMG implemented an online procedure for requesting access to iDRS.

A majority of data requests processed by iDRS use one of the several zone systems that have been defined by the participating agencies over the years. In 2004, the DMG completed the task of assigning travel data for all TTS to the newly defined 2001 GTA zone system. The result is that users can trace historical trends using a consistent spatial definition.

The iDRS procedures are reasonably complex, therefore, the DMG staff compiled a user's manual in 2004. The manual is available to all existing and potential users at
http://www.jpint.utoronto.ca/PDF/doc102.html
Access through iDRS needs to be used in conjunction with the latest description of the data files, which is documented in the publication '2001 Transportation Tomorrow Survey: Data Guide', available at
http://www.jpint.utoronto.ca/PDF/doc96.html

Summary of Browser Based 'iDRS' Data Requests in 2004

Month	**Number of Data Queries**	**Number of Sessions**
January	725	168
February	823	189
March	1181	207
April	1504	174
May	1195	197
June	1043	161
July	702	164
August	724	102
September	981	221
October	1470	181
November	1284	238
December	1492	140
Total 2004	**13124**	**2142**

Total 2003	**16239**	**2695**

Browser Based 'iDRS' Users in 2004

BA Consulting Group
Candevcon Limited
Cansult Limited
Carleton University
Centre for Sustainable Transportation
City of Brampton
City of Guelph
City of Mississauga
City of Oshawa
City of Peterborough
City of Toronto
Cole Engineering Group
Dillon Consulting Ltd.
EarthTech Inc.
Entra Consultants
GO Transit
IBI Consulting Group
iTrans Consulting Ltd.
Lakehead University
Laval University
Lea Consultants
Marshall Macklin Monaghan Ltd.
McCormick Rankin Consultants
McGill University
Ministry of Transportation, Ontario
Paradigm Transportation Solutions
Poulos & Chung Ltd.
Price Waterhouse Coopers
Queen's University
Read Voorhees & Associates Ltd.
Region Municipality of Durham
Region Municipality of Halton
Region Municipality of Niagara
Region Municipality of Peel
Region Municipality of York
Ryerson University
Sernas Transtech
SNC-Lavalin Inc.
Tedesco Engineering
Tennessee Technological University
Totten Sims Hubicki Associates
Toronto Transit Commission
Town of Ajax
Town of Newmarket
Trimap Communications
University of Toronto
Viacom International Inc.
York University

Special Data Requests

The interactive procedures available with iDRS satisfy the majority of data needs. However, some data needs are too complex and require the intervention of an experienced analyst to formulate a custom query from the database. In addition, the DMG's staff can often help define the most relevant data for the problem at hand. Although special data requests are an important function, an objective of the DMG continues to be to reduce the number of such data requests in favour of users processing their request through iDRS. There were 7 special data requests from funding agencies and the research community in 2003 and this number increased to 10 in the year 2004. Brief descriptions of all special data requests in 2004 are contained in Appendix A.

Transportation Tomorrow Survey 2006

During 2004, representatives of the funding agencies discussed the merits of completing the 20-year cycle of Transportation Tomorrow Surveys that have been conducted every five years since 1986. All agencies expressed interest in conducting a TTS to correspond with the 2006 Census. Consequently, TISC asked the DMG to prepare a draft proposal for the conduct of a 2006 TTS and an estimated budget. The draft report recommended the survey be conducted using the same procedures as previous surveys with a significant update to the software used to record travel information and to manage the sample. TISC approved the recommended procedures and accepted the offer by the DMG to manage the study. TISC also approved extending an invitation to all jurisdictions that participated in previous surveys to participate in the 2006 TTS. Planning began in 2004 for a 5% sample taken from an estimated population of over 6 million people living in 2,900,000 households covering most of south-central Ontario. The survey would be conducted by telephone and expanded to represent the total on the basis of the 2006 Census.

Improvements to the software used by interviewers to record the travel information began in 2004. The concept is to develop a generic set of programs that can be used on the 2006 TTS and could be modified for application in other telephone surveys

Cordon Counts

The City of Toronto (then the Regional Municipality of Metropolitan Toronto) began collecting detailed information on the type and volume of traffic crossing selected points on the road system as early as 1975. The counting locations were selected such that screen lines or cordon lines could be defined and the counting program has continued every few years on a regular basis since that time. Subsequently, other Regions began similar programs. Given the number of Regions with a similar program, they began coordinating their count programs and defining a common set of definitions. In 1998, this cooperation made it possible for the DMG to assemble the most recent of such traffic counts in a common database structure and develop a Cordon Count Data Retrieval System (CCDRS). The CCDRS data files contain count information from 1975 in the City

of Toronto, from 1981 in Peel Region, from 1985 in Halton and York Regions and from 1989 in Durham Region.

The cordon count program counts vehicles, classified by vehicle type, for each direction on a selection of locations throughout the GTA during daylight hours on a day in the spring. Considering each direction and each year of a count to be a separate counting station, in 2004 there were 17,957 stations in the database. Some improvements to the database were undertaken in 2004, specifically, the Station descriptions available from the main page in CCDRS were updated to inform users of the counting method (ATR or Manual) used by each region. This reflects a growing trend in the use of automatic traffic recorders (ATR) by all agencies.

Issues associated with the appropriate method of access for users of the cordon count data are similar to those faced in the development of iDRS and access to the Transportation Tomorrow Surveys. At the time of investigating the potential access methods to this pooled cordon count database, the Internet was the preferred method of remote access, a data retrieval system specifically designed for Internet access was developed (CCDRS). The retrieval system must allow the analyst the flexibility to summarize information by any definition of the attributes contained in the database. CCDRS was made fully functional in 1999. For the first time, funding agencies were able to access the complete set of counts from all cordon count programs. During the early years while the software was being developed, access to CCDRS was restricted to staff associated with a funding agency. Interest in gaining access continued to develop and in 2003 access was granted to any individual completing the required agreement form. In a manner similar to iDRS, use of CCDRS is carefully monitored to be certain all users are given reasonable service. The system is currently providing excellent service to all users, consequently, in 2004 the DMG implemented an online procedure for requesting access to CCDRS.

Participating agencies are now using CCDRS as a tool in verifying their cordon count results. Some preliminary results of a 2004 Cordon Count were assembled in CCDRS in the calendar year 2004 and should be completed for all agencies in 2005. Access to preliminary results is restricted to the participating agencies. The CCDRS procedures are reasonably complex, therefore, the DMG staff compiled a user's manual in 2004. The manual is available to all existing and potential users at
http://www.jpint.utoronto.ca/PDF/doc104.html

Summary of CCDRS Data Requests in 2004

Month	Number of Data Queries	Number of Sessions
January	203	60
February	107	43
March	128	49
April	101	49
May	162	70
June	151	57
July	85	34
August	208	46
September	265	80
October	129	46
November	668	56
December	185	41
Total 2004	**2392**	**631**

Total 2003	**2439**	**642**

CCDRS Users in 2004

City of Brampton
City of Mississauga
City of Toronto
EarthTech Inc.
IBI Consulting Group
iTrans Consulting Ltd.
Lakehead University
Lea Consultants
McCormick Rankin Consultants
Marshall Macklin Monaghan Ltd.
Ministry of Transportation, Ontario
Poulos & Chung Ltd.
Region Municipality of Halton
Region Municipality of Peel
Region Municipality of York
University of Toronto

Special Data Requests

The interactive procedures available with CCDRS, in a manner similar to iDRS, satisfy the majority of data needs. However, some data needs are too complex and require the intervention of an experienced analyst to formulate a custom query from the database. In addition, the DMG's staff can often help define the most relevant data for the problem at hand. Only one such special data request from one of the funding agencies occurred in 2004. A brief description of the special data request in 2004 is contained in Appendix A.

COMPUTER RESOURCES AND TECHNICAL SUPPORT

The concept of a university research centre providing shared computer resources and technical support in the development and operation of a large-scale computer simulation of urban travel began as a small research initiative in 1989. By the year 2003, all funding agencies and several local governments had become full funding partners in the collective sharing of a computer system supporting three licences of the EMME/2 transportation planning simulation software. In 2004, an arrangement was made with the Greater Toronto Airports Authority to join the community of users of the shared computer resources. These agencies and consultants working for these agencies, share the operation of the EMME/2 simulation package on the DMG's computer system. At the present time, virtually all users access the system through an Internet connection. The research community at the University of Toronto owns an additional licence and is supported by the DMG. The DMG provides ongoing technical support to existing and authorized new users of the simulation software. At the same time, the DMG provides and supports the necessary resources for efficient operation of iDRS and CCDRS.

The shared computer system uses a version of the UNIX operating system. The DMG staff is aware that most of the users, both internal and external, are not familiar with UNIX and every attempt is made to simplify their experience on the shared system. In particular, the routine operations of copying, moving and deleting files is different and can lead to important files disappearing. The backup system used was completely revamped in 2004 with the addition of larger tape drives to support the larger disk drives now in use.

Computer Simulation Software (EMME/2)

Most of the external connections to the DMG's computer system are to run some aspect of the EMME/2 simulation software. A summary of connections to the system is given below as an indicator of the use of the shared software.

Summary of System Access in 2004

Month	Number of Sessions
January	749
February	641
March	816
April	505
May	595
June	647
July	596
August	510
September	682
October	629
November	527
December	325
Total	**7222**

DMG Sytem Users in 2004

City of Brampton
City of Mississauga
City of Oshawa
City of Toronto
Dalton Consulting
EarthTech Inc.
Greater Toronto Airports Authority
IBI Consulting Group
McCormick Rankin Consultants
Ministry of Transportation, Ontario
Region Municipality of Durham
Region Municipality of Halton
Region Municipality of Peel
Region Municipality of York
Totten Sims Hubicki Associates
Toronto Transit Commission
University of Toronto

In addition to maintaining the computer system and simulation software, the DMG provides technical support in the form of small projects that are intended to enhance the collective use of EMME/2. In 2004, the DMG collected all comments and concerns about the 2001 GTA network and incorporated them into a new release. The new release is available to system users and is called 2001 GTA Network Release 1.1. As part of this exercise, the DMG updated the coding standards used for the development of the 2001 GTA Network and published the results in Report 105 “EMME/2 GTA Network Coding Standard, 2001 A.M. Peak Integrated Road and Transit Network Release 1.0/1.1”, which is available on the DMG’s web site.

A new graphical interface (ENIF) is being developed by INRO, the developers of EMME/2. The release of this software and the potential for its use in conjunction with the shared EMME/2 resources at the DMG prompted several representatives of the funding agencies to request a local demonstration. On July 7th and 8th of 2004, the Data Management Group facilitated the conduct of an 'Introduction to Enif' course at the University to Toronto. The facility was held at the University of Toronto's St. George Campus and was given by instructors from the software developer, INRO Consultants. A total of 14 transportation planning professionals attended from provincial, regional and municipal planning departments as well as DMG staff.

DMG PUBLICATIONS

Publications generated by the activities of the DMG are placed on our web site in a format suitable for access and printing by the user. The following publications were created in the year 2004.

"EMME/2 GTA Network Coding Standard, 2001 A.M. Peak Integrated Road and Transit Network Release 1.0/1.1", Report 105, (September 2004)

"Cordon Count Data Retrieval System (CCDRS) Users' Manual", Report 104, (September 2004)

"Internet Data Retrieval System (iDRS) Users' Manual", Report 102, (April 2004)

"Data Management Group Annual Report 2003", Report 103 (May 2004)

UNIVERSITY RESEARCH

A portion of the funding provided to the DMG is allocated to unspecified research on topics related to urban transportation. In addition to these funds, the very research nature of the DMG's activities is conducive to the development of other research projects, some of which receive funding from other sources. The research support that is made possible by the existence of the DMG include: access to the data bases, access to the EMME/2 network and modelling system, access to software (ArcInfo, Oracle, SAS, etc.) and technical support in the use of these data and software.

Undergraduate Theses Completed in 2004

Li F.L.C., "Analysis of transit assignment parameters for various transit systems", B.A.Sc. (Toronto, Professor A. Shalaby)

Lam S., "Access walking distance to transit in the GTA", B.A.Sc. (Toronto, Professor A. Shalaby)

Fegan, D., "Modeling Truck Emissions on the Gardiner Expressway Using Planning Level Variables to Estimate Emissions", B.A.Sc. (Toronto, Professor E.J.Miller)

Ting, S., "Comparative Study on Energy and Emissions Models: EMITPP06 & CMEM", B.A.Sc. (Toronto, Professor E.J.Miller)

Weldon, W.M., "Using the TASHA Prototype to Model the Impacts of Household Location on the Transportation System", B.A.Sc. (Toronto, Professor E.J.Miller)

Graduate Theses Completed or in Progress in 2004

Austin, R., "Building Around Transit in the Restructuring Metropolis: Issues and Policy Options for the Warden Corridor Redevelopment", M.Sc.Pl., (Toronto, Professor E.J.Miller)

Carrasco, J., "Modelling Social Networks", Ph.D. (Toronto, Professor E.J.Miller)

Chowdhury, S., "Optimal Bus Service Design in Competitive Contracting", M.A.Sc. (Toronto, Professor A. Shalaby)

Habib, K.M.N., "Dynamic Activity-Based Modelling", Ph.D. (Toronto, Professor E.J.Miller)

Haroun, A., "Microsimulating Residential Housing Markets", Ph.D. (Toronto, Professor E.J.Miller)

Jacob, C., "Automated Inter-Agency Traffic Control Using Reinforcement Learning", Ph.D. (Toronto, Professor B. Abdulhai)

Kattan, L., "Dynamic Origin / Destination Estimation Using Parallel Genetic Algorithms", Ph.D. (Toronto, Professor B. Abdulhai)

Mohammed, A., "Modelling Transit Supply in the GTA", Ph.D. (Toronto, Professors E.J.Miller and A. Shalaby)

Riesen, E., "Assessment of the 'Station Car' Concept in the GTA", M.Sc.Pl. (Toronto, Professor E.J.Miller)

Roorda, M., "Activity-Based Household Travel Modelling Using TASHA", Ph.D. (Toronto, Professor E.J.Miller)

Shih, A., "Mode Split in the GTA: Long Range Temporal Trends and Underlying Travel Behaviour", M.A.Sc. (Toronto, Professor A. Shalaby)

Sousa, P. "Performance-Based Transit Funding", M.A.Sc., (Toronto, Professor E.J.Miller)

Tsang, F., "Accessibility and Economic Productivity", M.A.Sc., (Toronto, Professors E.J.Miller and C.A. Kennedy)

Wahba, M. M., "A New Modelling Framework for the Transit Assignment Problem: A Multi-agent Learning-based Approach", M.A.Sc. (Toronto, Professor A. Shalaby)

Reports, Publications and Presentations in 2004

Chung, E., and A. Shalaby, "Development of a Trip Reconstruction Tool for GPS-Based Personal Travel Surveys", CD proceedings of the 83rd Annual Transportation Research Board Meeting, Washington D.C., January 2004.

Doherty, S.T., E. Nemeth, M.J. Roorda and E.J. Miller, "Design and Assessment of the Toronto Area Computerized Household Activity Scheduling Survey", Transportation Research Records, Journal of the Transportation Research Board, No. 1894, 2004, pp. 140-149.

Haider, M. and E.J. Miller, "Modelling Location Choices of Housing Builders in the Greater Toronto Area", Transportation Research Records, Journal of the Transportation Research Board, No. 1898, 2004, pp. 148-156.

Jacob, C., and B. Abdulhai, "Seamless Multi-Jurisdictional Traffic Corridor Control Using Reinforcement Learning: Theoretical Framework and Early Results", In Review, Intelligent Transportation Systems Journal, 2004.

Johnston, S., and B. Abdulhai, "A Proposed Toronto Congestion Index: Measuring Congestion Using Speed Data", In Review, International Journal of Computer-Aided Civil and Infrastructure Engineering, 2004.

Miller, E.J., M.J. Roorda, M. Haider and A. Mohammadian, "Empirical Analysis of Travel and Housing Costs in the Greater Toronto Area", Transportation Research Record, Journal of the Transportation Research Board, No. 1898, 2004, pp. 191-201.

Miller, E.J., J.D. Hunt, J.E. Abraham and P.A. Salvini, "Microsimulating Urban Systems", Computers, Environment and Urban Systems, special issue, "Geosimulation: Object-Based Modeling of Urban Phenomena", Vol. 28, 2004, pp. 9-44.

Miller, E.J., "Simulating Cities: The ILUTE Project", presented at the Ontario Society of Professional Engineers Engineering the Healthy City Conference, Toronto, November 1, 2004.

Miller, E.J., "Microsimulating Urban Systems", presented at School of Geography and Geology and Centre for Spatial Analysis Seminar Series, McMaster University, October 6, 2004.

Miller, E.J. "Accessibility, Mobility and Urban Form", presented at The Natural City Conference, University of Toronto,. Toronto, June 23-25, 2004.

Miller, E.J., "TASHA: A Microsimulation Model of Household Activity/Travel Scheduling", invited presentation, Technical University of Berlin, Berlin, Germany, June 3, 2004.

Miller, E.J., "Integrated Land Use and Transportation Modelling in Canada", invited presentation, UFZ Centre for Environmental Research Leipzig, Leipzig, Germany, June 2, 2004.

Miller, E.J., "The State of the Art of Microsimulation in Canada - Research and Applications", invited presentation, University of Karlsruhe, Karlsruhe, Germany, May 27, 2004.

Reports, Publications and Presentations in 2002 (continued)

Miller, E.J., M.J. Roorda, M. Haider and A. Mohammadian, "An Empirical Analysis of Travel and Housing Costs in the Greater Toronto Area", presented at the 83rd Annual Meeting of the Transportation Research Board, Washington, D.C., January, 2004.

Salvini, P.A. and E.J. Miller, "Microsimulation Modeling for the Development of Sustainable Urban Systems: the ILUTE Model Operational Prototype", presented at the STELLA Synthesis Meeting, Focus Group 2: ICT, Innovation and the Transit System, Budapest, Hungary, April 22-23, 2004.

Tsang, F., A. Shalaby and E. Miller, "Improved Park-and-Ride Modeling: Capturing the Within-day Dynamics", CD proceedings of the 83rd Annual Transportation Research Board Meeting, Washington D.C., January 2004.

APPENDIX A SPECIAL DATA REQUESTS

In addition to the data requests that are served directly through the on-line interactive Data Retrieval System (iDRS) and the Cordon Count Data Retrieval System (CCDRS), the DMG staff processed the following requests in 2004.

Participating Agencies and Research Community

McCormick Rankin, retained by the City of Toronto, requested household, person, trip and transit records for households located within 400m from 9 specified subway stations, and for employment located within 400m from another 9 specified subway stations.

The Ministry of Transportation requested the total population and employment within an area of 350m surrounding the Finch Subway Station from the 2001 TTS database.

Household, person and trip records from the Town of Grimsby were provided to Darren Scott from McMaster University to support his research into the activity-travel behaviour.

The City of Toronto requested from the 2001 TTS database the number of riders using the St. Clair streetcar on each segment of transit trips. The total of riders on St. Clair streetcar regardless of the order of the routes was also extracted.

McCormick Rankin, retained by the City of Toronto for the North York Centre Development Activity Study, requested the auto driver trip matrices in the morning and afternoon peak period, broken down by trip purpose, using a user-specified zone system in the North York area.

2001 TTS trips made on GO rail or subway to Union Station, with walk egress to planning district 1 between 7:30am and 8:29am were provided to the City of Toronto. Trips in reverse direction in the afternoon between 4:30pm and 5:29pm were also provided.

Prof. Amer Shalaby requested 2001 TTS data for transit trips made in the City of Toronto for graduate student research.

The City of Toronto requested person data relating to GO Train trips made to Union Station from the 2001 TTS database.

The Inner City Health Research Unit, St Michael's Hospital requested household, person and trip data related to the City of Toronto from the 1991,1996 and 2001 TTS data, traffic zone maps for the TTS area and vehicle data from the 1991 1995 and 2001 Cordon Count data.

The City of Toronto requested trip data by mode from the 1991, 1996 and 2001 TTS datasets for an area around North York Civic Centre for the AM and PM peak periods.

The Regional Municipality of Peel requested Cordon Count data for the years 1981, 1983, 1985, 1987, 1989, 1991, 1993, 1995, 1998 and 2001.