



Transportation Research Center

Annual Report: Calendar Year 1998

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Background

The University of Nevada, Las Vegas Transportation Research Center (TRC) was established in 1988 initially as the Nuclear Waster Transportation Research Center. In 1991, its name was changed to the Transportation Research Center. Housed in the Howard Hughes College of Engineering, since its inception, TRC's activities have included participation by a number of faculty from the Departments of Biological Sciences, Civil and Environmental Engineering, Electrical and Computer Engineering, Geo-sciences, Mechanical Engineering, and Public Administration. To date, the TRC has involved over seventy undergraduate and graduate students in over seventy sponsored projects conducted at the center. The contracts for the projects received by the center over the last 10 years amount to about \$4.5 million. These projects have supported a wide range of sponsors including several federal, state and local government agencies and a few from the private sector. The center also has benefitted from two generous grants from the TRW Foundation. In addition, the center has hosted several workshops, training sessions, and conferences.

The following are the mission, goals, and focus of the TRC.

Mission

Promote and Conduct Transportation Research and Educational Activities.

Goals

- Develop and Maintain a Nevada-based Center For Multi-modal Transportation Research and Policy Analysis.
- Educate And Prepare Students For Careers In Transportation.

Focus

Education and Applied Research to Support Transportation Systems Life Cycle. The typical life cycle includes Policy Making, Planning, Design, Operations, Construction, and Maintenance & Rehabilitation Activities.

Location

The TRC is physically located in the Thomas Beam Engineering complex with a laboratory-cum-office suite in Room 363 of the "B" building. Additionally, faculty, staff and students associated with the TRC have other offices in the "A" and "B" buildings of the Howard R. Hughes College of Engineering.

Personnel

The following individuals worked at or participated in activities of the TRC during a part or all of 1998. The faculty members hold tenure track positions with academic departments at UNLV.

Faculty:

Barbara Luke, Ph.D.
 Mohamed Kaseko, Ph.D.
 Shashi Nambisan, Ph.D. (Assistant Director until July 1998, Director since August 1998)
 Ed Neumann, Ph.D., P.E. (Director until July 1998)
 Srinivas Pulugurtha, Ph.D., Assistant Research Professor (from September 1998)
 Walter C. Vodrazka, Ph.D., P.E.

Professional Staff:

Erin Breen, B.A., Director, Safe Communities Partnership
 Robert Puterski, M.A., Transportation Systems Analyst (from March 1998)
 Justin Rasas, M.S.E., Transportation Systems Analyst (until March 1998)
 Walter C. Vodrazka, Jr., M.S.C.E., Transportation Systems Analyst (from March 1998)

Students:***Undergraduate Students:***

Michael Bradford (BSE - Civil Engineering)
 Don Durgin (BSE - Civil Engineering)
 Tomasita Leyba (BSE - Civil Engineering)
 Russell McNaught (BSE - Civil Engineering)
 Tom Miller (MSE - Civil Engineering) (until May 1998)
 Kim Neyrinck (BSE - Civil Engineering)
 Dana Thompson (BS - Nursing)

Graduate Students:

Zhenzhong Cui (MSE - Civil Engineering)
 Mehmet Okuyan (MSE - Civil Engineering)
 Ranjit Menon (MSE - Civil Engineering)
 Tom Miller (MSE - Civil Engineering)(from June 1998)
 Chang Hwan Park (MSE - Civil Engineering)
 Brian Sequiera (MSE - Mechanical Engineering)
 Jyothi Tallapragada (MSE - Civil Engineering)
 Mrunalini Venigalla (MS - Computer Science)
 Kaizad Yazdani (MSE - Civil Engineering)
 Srinivas Pulugurtha (Ph.D. - Civil Engineering)

SUMMARY OF ACTIVITIES IN 1998

Faculty, staff and students at the TRC work on a wide range of topics and projects. These include efforts that are akin to those undertaken by traditional academic programs as well as non-traditional efforts and projects. The Safe Communities Partnership project undertaken by the TRC is a non-traditional project. Its mission is to further the pursuit of improved safety on the transportation network. The focus of its products is on continued outreach and technology transfer to stakeholders, and not so much in peer reviewed publications, conference presentations and technical reports. This program is discussed next. It is followed by a summary of activities of the TRC for the calendar year 1998. This summary includes the following categories:

publications, presentations and conference activities, sponsored research projects and grants, professional society activities, supervision of graduate student thesis/dissertation, and honors and awards. (NOTE: this reflects outcomes and products of the efforts of individuals associated with the TRC. Many of these activities benefited from financial support from sources outside the TRC related funds. The faculty members were also associated with academic departments. Thus, items with their involvement would also be reflected in reports submitted by their respective departments).

SAFE COMMUNITIES PARTNERSHIP

The Safe Community Partnership is made up of representatives from forty local agencies and programs in the urbanized Clark County area. The focus of the group is to identify the most pressing traffic safety issues in Las Vegas and develop countermeasure programs to address these needs.

What makes the Partnership unique is that injury prevention is the primary goal, which contributes to the more traditional reduction in traffic fatalities. Each year the TRC provides crash data to the members, along with data from member agencies such as the Trauma Center and the County Coroner. Members then choose topics to focus on in the coming year. In 1998 the program topics were: Aggressive Driving, Pedestrian Safety, Occupant Protection and Teen Drivers.

Programs and presentations were developed for each of these topics during the year. The Aggressive Driving committee developed the "Drive Friendly, Courtesy is Contagious" Campaign which is seen around town on bumper stickers and parking lot signs. Plans in the next quarter focus on getting the funding to put the message on CAT buses and billboards. Clark County Traffic Management also helped us out by placing the message on the flashing signs on the variable message sign on the Desert Inn Super-Arterial.

The Teen Driving committee works with Clark County Family and Youth Services (CCFYS) on a program that Safe Communities developed and drafted CCFYS to adopt. The program targets teen drivers who have been given citations for serious offences. Judges "sentence" offenders to complete the program which takes the young driver to different community partners such as UMC Trauma Center, B&E Auto Auction and defense driving school along with classroom instruction and an impact panel with participants who have serious stories to share. At the end of the education portion of the program which lasts three weeks, the participants must complete 36

hours of community service. This program is the first in the nation and we are trying to make it a national model.

The Pedestrian Safety committee has worked on several projects during the year. This is the topic that takes us into the schools most often. We have worked with elementary and middle school students to try to teach them pedestrian safety issues such as how to judge the speed of an approaching vehicle, how to safely cross a street at the intersection, at a marked crosswalk and at unmarked areas in the road. We recruited a partner in the 89101 and 89128 zip codes to do pedestrian safety in Spanish, and now when you walk down the sidewalk painted messages remind pedestrians to practice safe crossing. In September we held a large event for national "Walk Our Children to School Day". All of the major local television, radio and print media participated, with two of the local TV affiliates going live from the event all morning and one going live from the school at lunchtime.

The Occupant Protection committee has planned an event to teach seat belt safety which will be held at the Boulevard and Meadows Malls in the Spring. The committee has been working on the "Primary Seat Belt" law, developing materials for law makers. Currently the committee is finishing a child safety seat usage survey to measure our compliance in Clark County for seat usage. We also held a community event last year to demonstrate the number of seats in use that have been recalled. We crushed 25 seats that we had taken out of cars at community check-up events throughout the year in a unit lent to us by Silver State Disposal that compacts trash. Again, all of the major local media outlets were there and two stations went live at noon from the event.

The Partnership sponsored our annual community awards in addition to participating in numerous community events throughout the year. The Chamber of Commerce partnered with us and gives us coverage every month in their publication "Business Voice". Ms. Breen, the Director of the Partnership, has also appeared in programs on several local TV stations and radio stations to discuss various aspects of the Safe Communities Partnership.

Ms. Breen participates in the PAYBAC program for the Partnership office of the Clark County School District (CCSD). We worked with the Distance Education Department for CCSD and the County Traffic School to develop the curriculum for a new 30 hour course for beginning drivers.

SUMMARY OF OTHER ACTIVITIES AND OUTCOMES (listed in reverse chronological order. Technical reports produced for projects are not listed).

1. Publications

Peer Reviewed Publications

- S. K. Sathisan and Nanda Srinivasan. *Evaluation of Accessibility of Urban Transportation Networks*. the Transportation Research Record Number 1617, Transportation Research Board, National Research Council, National Academy Press. Washington, D.C. October 1998. pp. 78-83.
- Ohene, F.A. and Kaseko, M. S., *System Selection, Benefits, and Financial Feasibility of Implementing an Advanced Public Transportation System*, Transportation Research Record

UNLV Transportation Research Center, 1998 Annual Report Page 5

Number 1618, Transportation Research Board, National Research Council, National Academy Press. Washington D.C., October 1998.

- S. S. Pulugurtha and S. S. Nambisan. *A Methodology to Estimate Time Dependent Origin-Destination Trip Tables*. Proceedings of the 1998 International Computing Congress, American Society of Civil Engineers, Boston, MA. October 1998. pp. 801-810.

Newspaper Guest Editorial

- E. Breen. Guest editorial. *Graduated Licensing and the Dangers of Teens Behind the Wheel of a Car*. The Las Vegas Review Journal. Las Vegas, NV. April 19, 1998.

Conference Publications (based on peer reviewed abstracts or extended abstracts)

- E. M. Parentela and S. K. Sathisan. *An Evaluation of Emergency Preparedness for Hazardous Materials Transport*. In *Risk Analysis*, J. L. Rubio, C. A. Brebbia and J-L. Uso Editors. Proceedings of the First International Conference on Computer Simulation in Risk Analysis and Hazard Mitigation (Valencia, Spain). WIT Press, Boston, Southampton, England. October 5-7, 1998. pp. 147-156.
- R. T. Romer and S. K. Sathisan. *A Systems Approach for Level of Service Analysis for Pedestrians*. Proceedings of the 68th Annual International Meeting of the Institute of Transportation Engineers, Toronto, Canada. August 9-12, 1998. On CD-ROM.
- K. W. Ackeret and S. K. Sathisan. *Influence of Driver Behavior On Saturation Flow Rates at Signalized Intersections*. Proceedings of the ITE District 6 Annual Meeting. San Jose, CA July 5- 8, 1998. pp. 56-61.
- N. Srinivasan and S. K. Sathisan. *Quantification and Analysis of Transportation System Accessibility*. Proceedings of the Transportation, Land Use and Air Quality: Making the Connection Conference, Sponsored by the American Society of Civil Engineers. Portland, OR. May 17-20, 1998. pp. 208-217.
- S. K. Sathisan and J. P. Rasas. *On the Allocation of Census Data to Traffic Analysis Zones for Travel Demand Forecasting*. Proceedings of the Transportation, Land Use and Air Quality: Making the Connection Conference, Sponsored by the American Society of Civil Engineers. Portland, OR. May 17-20, 1998. pp. 414-423.
- Sproule, W. J., Neumann, E. S., and Lynch, S. W. *Automated People Movers VI - Creative Access for Major Activity Centers*, Proceedings of the Sixth International Conference on Automated People Movers, ASCE, April 9-12, 1997 (published April, 1998).
- Neumann, E. S. *CAD in the Civil Engineering Curriculum: Have We Come Full Circle?* Proceedings of the Pacific Southwest Section of the American Society for Engineering Education 1998 Conference *Educating Engineers for 2000 Plus*, Harvey Mudd College, Claremont, CA, March 18-19, 1998, pp. 91-104.
- R. Puterski. *Using GPS and GIS to Determine Average Travel Speed for Network Modeling*, Proceedings of the Eight Annual Nevada State GIS Conference, Orleans Hotel, Las Vegas, NV, January 14-16, 1998.

2. Presentations and Conference Activities

Conferences and Workshops Hosted

Traffic Safety Conference. Co-sponsored by the National Highway Traffic Safety Administration, the Transportation Safety Institute and Nevada Office of Traffic Safety. It included presentations on all different aspects of traffic safety from national leaders in the field. Eighty five individuals, mainly from Nevada, registered for the conference. Palace Station Hotel and Casino, Las Vegas, Nevada. November 17 and 18, 1998. The costs of this conference were underwritten by the Transportation Safety Institute. They covered the expenses for speakers from Seattle, San Francisco, San Diego, Los Angeles, Carson City, Sacramento, Palo Alto and the District of Columbia, as well as room costs and food for the two day event. The conference included presentations on various aspects of traffic safety from national leaders in the field.

1998 Fall Transportation Conference. In its fifth year, this conference is jointly sponsored by TRC and the local chapters of the ASCE and ITE. Moyer Student Union at UNLV, Las Vegas, NV. Over one hundred individuals from Nevada, and several western states, and from other parts of the U.S.A. participated in this conference. October 2-3, 1998.

“InterChanges: Focus on Transportation Research and Education.” An outreach event showcasing transportation Research and Education programs at UNLV. Sponsored by the Associate Provost for Research, the College of Engineering, and the Transportation Research Center, UNLV. Over sixty individuals, included elected officials, members of the University’s Board of Regents, transportation professionals from the private and public sectors, and the media representatives participated in the event. Howard R. Hughes College of Engineering, UNLV, Las Vegas, NV. Oct 1, 1998.

Exhibits/Displays at Conferences

GlobeEx/Nevada Future Technical Innovations Roundtable. Sponsored by the Nevada EPScoR Program. Moyer Student Union, UNLV. Las Vegas, NV. October 26, 1998.

American Public Works Association’s International Congress and Exposition. *Explore - Beyond the Neon*. Las Vegas Convention Center and the Las Vegas Hilton. Las Vegas, Nevada, September 14-16, 1998.

“InterChanges: Focus on Transportation Research and Education.” Howard R. Hughes College of Engineering, UNLV, Las Vegas, NV. Oct 1, 1998.

Presentations, Session Moderations, and Posters (Listed in reverse chronological order; if all the authors did not make the presentation, the presenter’s name is underlined)

Neumann, E. S. *The Biomechanics and Physiology of Walking*. At the Las Vegas Safe Communities Partnership Meeting, Las Vegas, Nevada, November 17-18, 1998.

Breen, E. *Crash Dynamics*. At a four day Child Passenger Safety Conference, hosted by the Clark County Safe Kids Coalition, Las Vegas, Nevada. October 28 - 31, 1998. This talk was to explain the importance of occupant protection devices, by going through the stages of a crash. It also covered the ways that different devices work, and how they save lives in a crash.

- S. S. Nambisan. *Transportation Management and Intelligent Systems*. Session Moderator. The 1998 International Computing Congress, American Society of Civil Engineers, Boston, MA. October 18-21, 1998. (Invited Participation).
- S. S. Pulugurtha and S. S. Nambisan. *A Methodology to Estimate Time Dependent Origin-Destination Trip Tables*. International Computing Congress, American Society of Civil Engineers, Boston, MA. October 18-21, 1998.
- R. Puterski. *Using Sliders in Dialog Designer*, a workshop at the Southern Nevada ESRI Users Group Meeting, Las Vegas, NV, October 12, 1998
- E. M. Parentela and S. K. Sathisan. *An Evaluation of Emergency Preparedness for Hazardous Materials Transport*. In Risk Analysis, J. L. Rubio, C. A. Brebbia and J-L. Uso Editors. First International Conference on Computer Simulation in Risk Analysis and Hazard Mitigation (Valencia, Spain). WIT Press, Boston, Southampton, England. October 5-7, 1998. pp. 147-156.
- W. C. Vodrazka. Session Chair. At the 1998 Fall Transportation Conference, held at UNLV, Las Vegas, NV. The conference is jointly sponsored by TRC and the local chapters of the ASCE and ITE. October 2-3, 1998. (Invited Participation).
- R. Puterski. *Using GPS and GIS to Determine Average Travel Speed for Network Modeling*. At the 1998 Fall Transportation Conference, held at UNLV, Las Vegas, NV. October 2-3, 1998.
- M. S. Kaseko. Session Chair. At the 1998 Fall Transportation Conference, held at UNLV, Las Vegas, NV. October 2-3, 1998. (Invited Participation).
- Nambisan, Shashi S., Robert Puterski, Tom Miller and Chang Hwan Park. *Internet Applications Project*. At the 1998 Fall Transportation Conference, held at UNLV, Las Vegas, NV. October 2-3, 1998.
- W. C. Vodrazka, Jr. *Small Urban Area Travel Model Performance, Twenty Years Later*. At the 1998 Fall Transportation Conference, held at UNLV, Las Vegas, NV. October 2-3, 1998.
- S. S. Nambisan, E. S. Neumann, E. Breen and R. Puterski. Organized an outreach forum titled "InterChanges: Focus on Transportation Research and Education." Hosted by the Associate Provost for Research and the Howard R. Hughes College of Engineering, UNLV. Oct 1, 1998.
- R. T. Romer and S. K. Sathisan. *A Systems Approach for Level of Service Analysis for Pedestrians*. 68th Annual International Meeting of the Institute of Transportation Engineers, Toronto, Canada. August 9-12, 1998.
- S. S. Pulugurtha, "Evaluating Ground Holding Policy Implications in Real-Time Using Genetic Algorithms", Paper Presented at the 25th International Air Transportation Conference, Austin, Texas, June 14-17, 1998 (Received Best Student Paper Award)
- N. Srinivasan and S. K. Sathisan. *Quantification and Analysis of Transportation System Accessibility*. Transportation, Land Use and Air Quality: Making the Connection Conference, Sponsored by the American Society of Civil Engineers. Portland, OR. May 17-20, 1998.
- S. K. Sathisan and J. P. Rasas. *On the Allocation of Census Data to Traffic Analysis Zones for Travel Demand Forecasting*. Transportation, Land Use and Air Quality: Making the Connection Conference, Sponsored by the American Society of Civil Engineers. Portland, OR. May 17-20, 1998.

- J. S. Ridilla and S. K. Sathisan. *A Decision Support Tool to Estimate Life Cycle Costs of Heavy Haul Transport*. Eighth International High Level Radioactive Waste Management Conference, Las Vegas, NV. May 11-14, 1998.
- S. S. Pulugurtha, S. K. Sathisan and N. Srinivasan. *Evaluating Transit System Accessibility Using GIS*. Geographic Information Systems in Transportation '98 Symposium, Sponsored by American Association of State Highway and Transportation Officials, Salt Lake City, UT. April 20-22, 1998.
- R. Puterski. Session Moderator, *Transit Applications*, Geographic Information Systems in Transportation '98 Symposium, Sponsored by American Association of State Highway and Transportation Officials, Salt Lake City, UT. April 20-22, 1998. (Invited Participation)
- S. S. Pulugurtha and S. K. Sathisan. *Estimating Time Dependent Origin-Destination Trip Tables for Intelligent Transportation System Applications*. "Public/Private Partnerships for ITS," the Third Annual ITS Nevada Chapter Conference, Las Vegas, NV March 30-31, 1998.
- Neumann, E. S. *CAD in the Civil Engineering Curriculum: Have We Come Full Circle?* The Pacific Southwest Section of the American Society for Engineering Education 1998 Conference *Educating Engineers for 2000 Plus*, Harvey Mudd College, Claremont, CA, March 18-19, 1998.
- N. Srinivasan and S. K. Sathisan. *Evaluating Accessibility of Transportation Networks*. Eighth Annual Nevada GIS Conference Las Vegas, NV January 15-16, 1998.
- Ohene, F.A. and Kaseko, M. *System Selection, Benefits, and Financial Feasibility of Implementing an Advanced Public Transit System*. The 77th Annual Meeting of the Transportation Research Board, National Academy of Sciences. Washington, DC, January 11-15, 1998.
- S. K. Sathisan and Nanda Srinivasan. *A Framework for Evaluating Accessibility of Urban Transportation Networks*. The 77th Annual Transportation Research Board Meeting, National Academy of Sciences. Washington, D.C. January 11-15, 1998. Paper Number 981356.

3. Sponsored Research Projects and Grants (listed in reverse chronological order)

- Development of Internet Applications for Transportation System Management. Sponsored by Clark County Department of Public Works and the University of Nevada Las Vegas, Las Vegas, NV. November 1998 - October 1999. PI: Shashi Sathisan Nambisan. \$53,869. Students: Chang Hwan Park, Tom Miller. TRC staff members Dr. Srinivas Pulugurtha and Bob Puterski are also presently working on this project. The objective of this project is to develop Internet applications for the Clark County Department of Public Works to enable them to disseminate information regarding their roadway design, construction and maintenance projects.
- Safe Communities Coalition/Partnership. Sponsored by the Nevada Office of Traffic Safety. October 1998 to September 1999. PI: Edward Neuman. \$84,819. Erin Breen is the primary individual working on the project that seeks to develop educational, enforcement and engineering strategies to enhance safety on the transportation network in Clark County. She is assisted, as needed, by various undergraduate and graduate students, and by other professional staff.

Grant for Enhancing Transportation Education and Research Programs at UNLV. Grant from the TRW Foundation, Cleveland, OH. September 1998. PI: Shashi Sathisan Nambisan - \$30,000. This grant is to support upgrade existing equipment, acquire new equipment and to support research efforts related to Transportation.

Evaluation of Mid-block Pedestrian Crash Patterns. Sponsored by the Nevada DOT. PI: Neumann, E. S.; \$68,727; co-PI: Puterski, R.; 8-06-98 to 2-28-99 (Extension to 6-30-99 Requested). The objective of this project is to collect and analyze data pertaining to crashes (including factors influencing such crashes) on the roadways involving pedestrians with special focus on those that occur at mid-block locations. Kim Neyrinck, an undergraduate student, provided assistance on the project.

Pedestrian Traffic Flow Analysis. Sponsored by Barbary Coast. PI: Shashi Sathisan Nambisan. \$4,924. April - June 1998. This project involved collecting and analyzing data related to pedestrian traffic flows and patterns. Walt Vodrazka, Jr., a TRC staff member worked on this project. Graduate Students who provided assistance are: Ranjit Menon, Chang Hwan Park, Srinivas Pulugurtha and Kaizad Yazdani. Undergraduate Students who worked on the project include Tomasita Leyba, Tom Miller, and Russell McNaught.

Evaluation of Pavement Marking Materials Performance and Specifications for Clark County Roads. Sponsored by the Clark County Regional Transportation Commission, Las Vegas and the University of Nevada Las Vegas, Las Vegas, NV. April 1998 - June 2000. PI - Mohamed Kaseko; \$240,341; co-PI: Shashi Nambisan. Walt Vodrazka, Jr., a TRC staff member is assisting on this project. Graduate Students providing assistance for the project: Zhenzhong Cui, Ranjit Menon, Tom Miller, Chang Hwan Park, Jyothi Tallapragada. Undergraduate Students providing assistance for the project: Mike Bradford, Donald Durgin, Tomasita Leyba and Kim Neyrinck. The objective of this project is to evaluate the performance of various pavement markers and markings that involves vendors, contractors and the public agencies. The evaluation will be based on field measurements as well as laboratory tests.

Development of GPS Capabilities for Professional Practice, Research and Education/ GIS and Internet Applications for Transportation. Sponsored by Clark County Department of Public Works and the University of Nevada Las Vegas, Las Vegas, NV. February 1998 - June 1999. PI: Shashi Nambisan \$192,948. Co-PI: Barbara Luke. Students: Chang Hwan Park, Tom Miller. Dr. Srinivas Pulugurtha and Bob Puterski, TRC staff members are also presently working on this project.

An Evaluation of Maintenance and Rehabilitation Costs of Road Networks in Counties and Incorporated Municipalities in Nevada. Sponsored by the Nevada State Legislative Counsel Bureau, Carson City, NV. November 1997 - July 1999. PI: Shashi Nambisan \$250,000; Co-PI: Ed Neumann. Zhenzhong Cui, a graduate student, is working on the project. Walter Vodrazka Jr., a TRC staff member is presently working on this project. Les Dunn, is working as a consultant to support efforts on this project.

Development of Operational and Management Programs for Traffic Infrastructure management Systems (TIMS) for Clark County. ACE+3 Student Internship/Fellowship Program. Sponsored by Clark County Department of Public Works, Las Vegas, NV. May 1997 - March 1999. (PI \$18,377). Kaizad Yazdani (MS program - Transportation Engr) is working on this project. He is assisted by Mrunalini Venigalla, a graduate student in Computer Science. Brian Sequiera, a graduate student in Mechanical Engineering, worked on this project for a short while. The principal focus of this year's efforts (this project is a

continuation of the ACE+3 program initiated last year) is to develop decision support tools for the management of pavement markers and markings used by the CCDPW.

An Assessment of Pavement Marking Materials Performance Specifications for Clark County Roads. Sponsored by the Clark County Regional Transportation Commission, Las Vegas, NV. October 1997 - January 1998. (PI - Mohamed Kaseko; \$19,734; co-PI: Shashi Sathisan). Justin Rasas, who is in the Ph.D. program and who also is a TRC staff member, and Russell McNaught, Tom Miller, and Tomasita Leyba (CE Undergraduates) who worked on this project during the spring 1998 semester. The objective of this project was to identify existing specifications used by the various agencies responsible for constructing and maintaining roads in Clark County, Nevada; to identify factors that affect the performance and functional life of various types of pavement markers and markings; and to develop a test plan to evaluate the performance of various pavement markers and markings that involves vendors, contractors and the public agencies.

Traffic Crash Data Analysis. This is co-operative arrangement between the Nevada Department of Transportation (NDOT) and the TRC. NDOT periodically (a few times a year) provides the TRC crash report data for crashes that occurred on the roadways in Clark County. TRC staff and students incorporate these data into a database maintained by the TRC. Then, the TRC responds to requests received from Consultants (routed through NDOT staff in Carson City) to perform analyses of crashes at intersections of interest to the consultant. Typically, these are related to Traffic Impact Studies performed by the Consultants. The Consultant is billed for the efforts. So, this project is self supporting. The turnaround time for requests forwarded to TRC has been less than two weeks which is significantly shorter than what the response time would have been had the previous procedure of having NDOT staff perform the analysis been in place. PI: Ed Neumann.

4. Professional Society Activities and Public Service (listed by individual)

Erin Breen

Member, American Public Works Association

Member, National Association of Female Executives.

Member, Las Vegas Chamber of Commerce.

Member, International Association of Business Communicators.

Member, Board of Directors, Safe Kids Coalition.

Member, Board of Directors, Las Vegas Little Theater.

Member, Board of Directors, Community Food Bank.

Mohamed S. Kaseko

American Society of Civil Engineers (ASCE)

Member, Transportation Committee, ASCE Southern Nevada Chapter: Activities included: Organizing the 1998 Annual Fall Transportation Conference, jointly sponsored by ASCE, ITE and TRC.

UNLV Transportation Research Center, 1998 Annual Report *Page 11*

Institute of Transportation Engineers (ITE)

Member, Scholarship Committee, Nevada Chapter.

Faculty Advisor, ITE, UNLV Student Chapter. The chapter's annual report submitted to the ITE District 6 (covering the geographic region of 13 western states) earned an "honorable mention" in the student chapter competition for activities in the academic year 1997-1998.

American Society of Engineering Education (ASEE)

Member, organizing committee for the 1999 ASEE PSW Annual Meeting to be hosted by UNLV College of Engineering. The meeting will be held in Las Vegas, March 19-20, 1999.

ITS – America, Nevada Chapter

Committee member, Annual Conference organizing committee for 1998.

Member, Project Steering Committee for the Las Vegas Area Freeway Management System (Since July 1998). The project involves high level design of a multi-million dollar freeway management system for the Las Vegas area, using Intelligent Transportation Systems (ITS) components. Project being managed by NDOT.

Shashi Sathisan Nambisan

ASCE Air Transport Division

Appointed Chair of the Planning Committee effective October 1, 1998.

ASCE Urban Planning and Development Division

Education Committee: Serve on the Control Group.

ASCE Urban Transport Division

Completed three years of service as the News Correspondent for ASCE News - submitting articles for publication in the news column for monthly publication in the ASCE News.

Appointed Chair of the Planning Committee effective October 1, 1998.

Planning Committee: Served on a steering committee for a specialty conference ("Transportation, Land Use and Air Quality Planning: Making the Connection") that was held in Portland, OR in May 1998. Participated in several telephone conferences regarding the development of the technical program.

ASCE Nevada Chapter

Served on the Steering Committee for the Fifth Annual Transportation Conference held in Las Vegas, NV (October 2-3, 1998).

American Society for Engineering Education (ASEE)

Completed service (September 30, 1998) as the Chair of the Pacific Southwest Section which includes 41 Universities that offer Engineering Programs in Arizona, California, Hawaii and Nevada. Chaired a meeting of the Executive Board of ASEE/PSW in Sacramento, CA on March 19, 1998 and presided over the banquet and awards ceremony on March 18, 1998.

ITE Nevada Chapter

Technical Program Co-Chair, 1999 International Annual Meeting and also the District 6 Annual Meeting to be held in Las Vegas, NV (August 1999). Participated in bi-monthly meetings of the Local Activities Committee to plan for the Conference, in the review of abstracts and development of program with the Annual Meeting Technical Program Committee for the meeting.

ITS America Nevada Chapter

Participated in the Third Annual Transportation Conference held in Las Vegas, NV (March 30-31, 1998)

Robert Puterski

URISA (Urban and Regional Information Systems Association)

Program Committee Chairman, Nevada State Geographic Information Society - 1998 Annual Conference

Edward S. Neumann

Chair, TRB Committee A1E14 New Transportation Systems and Technology.

Chair, ASCE Committee on Automated People Movers, Urban Transportation Division.

Control Group, ASCE Committee on Automated People Mover Standards.

Associate Editor, Journal of Advanced Transportation (Put Together a Special Issue on APMs)

Member of Scientific Committee for APM99 Sponsored by the Society of Danish Engineers and ASCE.

Walter C. Vodrazka,

Member, Committee on Construction and Maintenance of Highways. Highway Division. American Society of Civil Engineers (ASCE).

ABET Visitor Representing ASCE.

Faculty Advisor, UNLV Student Chapter.

Board Member (Immediate Past President), Nevada Society of Professional Engineers.

Member, National Society of Professional Engineers

Faculty Advisor, Nevada Beta Chapter of Tau Beta Pi National Engineering Honor Society.

Walter C. Vodrazka, Jr.

American Society of Civil Engineers

International Student Model Bridge Building Competition Committee Member: Arranged for meeting rooms, outdoor accommodations, audio/visual equipment, tours. Hosted by UNLV, May 1998.

Local Student Model Bridge Building Competition Committee Member. Attended monthly meetings since August of 1998, in charge of tours, rooms, audio/visual equipment. To be held in February, 1999 at UNLV.

Board Member, ASCE Nevada Section - Board/Student Chapter Liaison. Attend monthly meetings to promote a close relationship between the Professional and Student Chapters.

UNLV Transportation Research Center, 1998 Annual Report Page 13

ASCE Student Chapter Staff Advisor. Provide guidance and help to the student chapter. Attend Monthly luncheons (second Thursday of the month).

Institute of Transportation Engineers

Member, Local Arrangements Committee Member, 1999 International Annual Meeting and also the District 6 Annual Meeting to be held in Las Vegas, NV (August 1999). Participated in bi-monthly meetings of the Local Activities Committee to plan for the Conference, in the review of abstracts and development of program with the Annual Meeting Technical Program Committee for the meeting. June 1998 - present.

Other Service Activities

University of Nevada, Las Vegas. College of Engineering and College of Sciences. Science and Technology Day. Presented a laboratory session on Transportation. Several TRC students, staff and faculty participated in the event. November 1998.

Boy Scouts of America. Boulder Dam Area Council. Organized and presented four sessions at Engineering Merit Badge workshop. At the Howard Hughes College of Engineering. Presenters: Mohamed Kaseko, Tom Miller, Chan Hwan Park, Walter Vodrazka, and Walter Vodrazka, Jr. August 1998.

ASCE Bridge Building Competition. Conducted a technical tour shop for participants at the competition. Several hundred students from Elementary, Junior and High Schools from Clark County participated. Presenters included Tomasita Leyba, Tom Miller, and Russell McNaught. February 1998.

5. Graduate Students Advised & Graduated

Pulugurtha, Srinivas S. Topic: *Modeling Temporal Variations in Travel Demand for Intelligent Transportation Systems*. August 1995 - May 1998. Ph.D. Advisor: Shashi Sathisan Nambisan

6. Honors and Recognitions

Tom Miller

1998 Section Scholarship from the Inter-mountain Section of the Institute of Transportation Engineers. (Cash award of \$750).

Kim Neyrinck

Won the 1998 Scholarship from the Nevada chapter of the Institute of Transportation Engineers. (Cash award of \$750).

UNLV Student Access Merit Scholarship, 1998-1999.

G. C. Wallace Scholarship, September 1998. (Cash award of \$1,000).

Shashi Sathisan Nambisan

Received commendation as *Correspondent Worthy of Special Commendation* award for exemplary service in pursuit of news of the American Society Civil Engineer's Urban Transportation Division. August 1998.

Srinivas Pulugurtha won the “best paper award” in the Student Paper Competition sponsored by ASCE in connection with the 25th International Air Transportation Conference held at Austin, Texas, June 17-20. ASCE covered his travel, lodging and conference registration expenses and in addition give him a cash award of \$1,000.