NUTC Hosts First Annual Tech Day

The Nevada Urban Transportation Center (NUTC) hosted its first annual “Tech Day” at the Thomas T. Beam Engineering Complex at the University of Nevada, Las Vegas on June 23rd, 2008. The purpose of the event was to showcase the project progress and present the interim results to the local agencies and stakeholders. Government agencies, private consultants, and University researchers were invited to the event.

Over 30 participants attended the Tech Day. Participants came from organizations, such as, Nevada Department of Transportation, Nevada Office of Traffic Safety, Regional Transportation Commission of Southern Nevada, Cities of Las Vegas, North Las Vegas, Nevada Motor Carrier Association, and private consultants. Research presentations were divided into two sessions: technical presentations and interactive sessions. During the technical presentation session, each project team made Power Point® presentations. During the interactive session, each of the UTC sponsored project prepared posters and brochures for distribution to the guests and explained their research. The event also included lab tours and exhibition of research equipment.

In addition to the NUTC sponsored projects, selected research projects from the Transportation Research Center and the Safe Community Partnership were also displayed. They included: FHWA Sponsored Pedestrian Safety Program, GIS Based Safety Analysis System for the Southern Nevada, and GIS Based Infrastructure Data Collection and Management Tool.

Another objective of this event was to provide a setting for the NUTC researchers and agencies to interact with each other. The researchers came away with a better understanding of the attending organizations’ concerns and needs. Similarly the visitors achieved a better understanding of the diverse capabilities of the researchers and their investigative resources. This was a great venue to discuss pressing transportation issues and research opportunities that might be of mutually beneficial.
Address from the Co-Director

Ken Peck, Ph.D. - Co-Director

NUTC is structuring the process that will be used to select the second year of research projects and their funding levels. A precursor activity to this endeavor, which is the Project Review of the 2007 UTC Research Projects, has been completed. Also, a Project Advisory Board is being selected that will be providing guidance to the UTC throughout this endeavor. When the details of the process have been completed there will be a posting of this process on the UTC website for your access, http://crosswalk.tre.unlv.edu, and an email distribution to those of record on the UTC email list. If you received an email notice of the UTC Open Monthly Meeting, then you are on the email list which we will be using. If you wish to be added to or removed from this email list, please, contact Vinod Vasudevan at vinod.vasudevan@unlv.edu.

NUTC currently has significantly reduced new matching funds for the second year of activity. This could change for the better, which would be great, however the UTC will go forward with its current resources. We are anticipating a great second year and are looking forward to working with our sponsors, the researchers, and all our transportation colleagues.

Safe Community Partnership: An Outreach Program at the NUTC

Ms. Erin Breen, Director of Safe Community Partnership at the NUTC

Safe Community Partnership (SCP) is an outreach program based in the NUTC. This program has been completely funded by the Nevada Office of Traffic Safety. Some of its recent activities are discussed here.

Safe Community Partnership wound down the school year with a well deserved trip to Disneyland for the winning teams in the second annual “PACE Yourself Safe Driving Campaign.” In all 60 teens and chaperones boarded a bus to “The Happiest Place on Earth” for two fun filled days. PACE is an acronym for Prevent Automobile Crashes Everyday, the goal of the program is to have teens educate teens.

The process began in January when the call went out to high schools, civic groups, church groups, and driving schools to encourage teens to form teams of 4 or 5 students and guide them to develop a traffic safety message in whatever creative medium they chose. Entrants then spent a day at the Las Vegas Motor Speedway going through the Driver’s Edge program and a modified “driving relay” to earn points.

The driving points along with their entry scores determined the winners who went to Disneyland. The real winners are teens and other drivers who have been educated through the campaigns developed by these talented teens. This year’s winning public service announcement was aired on the CW and My LVTV for the months of May and June. The second place finisher was also aired on the stations. The CW also awarded the winning team with a $2,000 bonus.

The winning slogan was developed into a bus shelter campaign and has been seen in shelters around the valley for the summer. The winning poster will be distributed to all area schools to launch the 2009 campaign in November. Other projects have also been distributed to schools for educational purposes.

There are lots of partners who make this program work and the Nevada Department of Public Safety, Office of Traffic Safety funds the project yearly. All teenage drivers are encouraged to check out this program for the 2009 season. The only requirements are that the participants hold at least a learner’s permit and that they are under 21 years old. More information is available at (702) 895-1780.

Partnership members also gathered several times over the summer at different sites for “The Hundred Days of Summer Safety” which officially kicked off the Saturday before the last week of school and ended Labor Day weekend. This project encompassed all areas of childhood safety. The kick off event at J.M. Ullom Elementary school brought out students, parents and neighbors for chances to win bikes, helmets and car seats. Every child who attended was fitted with a new bike helmet.

For adults the Partnership highlighted several aspects of safe driving over the summer, most notably anti drinking and driving campaigns which were promoted along with law enforcement under the “Joining Forces” umbrella at two press conferences over the summer, one for July 4th weekend and one for Labor Day.

Some of the outreach materials from SCP
Developing Guidelines for Access Management in Las Vegas

Dr. Mohamed Kaseko and Dr. Hualiang Teng, NUTC & Dept. of Civil Engineering

Overview
Las Vegas is a rapidly developing area where existing roads may reach their capacity quickly after they are open to the public. The traditional solution for years has been to add lanes to reduce congestion. This solution is not very feasible when there are no sufficient funds for construction and for purchase of required additional right of way. Also, there may be no sufficient land available for the additional right of way. The more effective solution is better management of accesses.

Although Nevada DOT has access management (AM) guidelines, they don’t address all aspects, for example spacing of median openings. So the guidelines to be developed will address the local access needs that are not well addressed in the state or national guidelines.

Objective and methodology
The objective of the study is to develop guidelines on access management for the Las Vegas area. Specifically, this includes the development of recommendations for AM features such as optimum spacing between signalized intersections, the number or density of driveways and median openings for land use access. Recommendations will also be evaluated for corner clearances, traffic circulations in commercial subdivisions, and for use of frontage roads. The key to developing these guidelines will involve tradeoffs between traffic mobility, safety and access to land use.

Two approaches are used in evaluating the impact of AM features on traffic safety, speeds and access. One is based on field data, and the other is based on microscopic simulation. In the first approach, field observational data such as travel time and speed data derived from GPS and crash data from Nevada DOT and the Regional Transportation Commission of Southern Nevada (RTC) will be used to evaluate, using statistical models, the relationships and impact of the AM features and adjacent land use characteristics on traffic mobility, safety and access. In the second approach, similar analysis will be used but using microscopic traffic simulation models that will be developed for the study. By conducting sensitivity type of analysis, the optimal spacing can also be derived. In addition to the investigation of spacing, the effectiveness of some typical access management strategies such as street corner circulation system and frontage roads will be analyzed using simulation models.

Preliminary Results
Two main databases have been developed for the study. The first database consists of street segments with variables such as number of lanes, speed limits, operating speeds, traffic volume, and number of crashes. The second database consists of intersections with variables such as the available corner clearances, approach lanes, approach volume, and crashes. Several statistical models are being evaluated. The following is one of the resulting preliminary models that relates safety to some of the AM features, i.e.,

\[ cpvmt = e^{3.622 - 0.282 \cdot \text{sigspace} + 0.007 \cdot \text{driveden} - 0.201 \cdot \text{medtype} + 0.050 \cdot \text{lanes}} \]

where

- \( cpvmt \) - crashes per million vehicle miles of travel
- \( \text{sigspace} \) - signal spacing in thousand feet
- \( \text{driveden} \) - driveway density in number per mile
- \( \text{medtype} \) - type of median, 1 for raised, 0 for lane
- \( \text{lanes} \) - number of through lanes in the segment

This model indicates that street segments with bigger signal spacing and raised medians have lower crash rates, while higher density of driveways reduces traffic safety. Similar preliminary results have been obtained for corner clearances indicating, as expected, that the larger the corner clearances, the safer the intersection in terms of crashes per thousand vehicles. The results are presented graphically below. Additional analyses that relate traffic speeds and mobility with the AM features are also underway.
News from the Center

Safe Community Partnership at the TRC held press conference to encourage safe driving over July 4th holiday in Las Vegas, NV.

Safe Community Partnership at the TRC prepared data and information from partners for the Statewide Pedestrian Assessment in Reno, NV.

Safe Community Partnership at the TRC introduced Nevada Seat Belt Coalition and companion web site to educate Nevadans about the importance of passing standard enforcement of the seat belt law.

NUTC researchers received grant to from Nevada Office of Traffic Safety to develop guidelines to estimate nighttime seat belt usage rates.

NUTC researchers developed a GIS based Safety Analysis Tool for the Southern Nevada.

Visit us on-line at:
www.trc.unlv.edu

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Some of the Key Partners of the NUTC
Regional Transportation Commission of Southern Nevada - www.rtesnv.com
Nevada DOT - www.nevadadot.com
Nevada Office of Traffic Safety - ots.state.nv.us
RTC - FAST - www.nvfast.org
Clark County Public Works - www.accessclarkcounty.com/pubworks/