

Westernite

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Over the River and Through the Woods, to Sacramento This Road Goes

This month's technical article features Sacramento, the site of this year's District 6 Annual Meeting, to be held June 20-23.

Route Evaluation Using Computer Alignment Optimization Software

By Adrian B. Engel, P.E.

The Technology

Many of today's civil engineering disciplines have been enhanced by the use of complex computer programs. Advances in computerized structural analysis have enabled engineers to create innovative designs that were extremely time intensive to calculate by hand in the past. It is now possible to dynamically model contaminated ground water or bodies of water to expedite clean up of leaks or spills. Traffic engineers are able to more accurately model future traffic volumes over large complex networks with the aid of computer simulation. Until recently, roadway design and alignment selection has been accomplished using analog practices that haven't changed much in the last century. For the past two years, the author's employer has been teaming with Quantm Limited of Melbourne, Australia utilizing alignment optimization software, *Quantm*, to automate and refine route selection, preliminary roadway design and estimating.

The *Quantm* software enables a designer to evaluate thousands of alignment alternatives in the time it would take to lay out and estimate a handful with conventional techniques. Like other software applications, however, the output is only as good as the input. It uses a digital terrain model and design criteria gathered by the design team to perform thousands of calculations to optimize alignment options within the selected study area. The design constraints can be physical terrain features; regulatory criteria, like design speed or grade; or economic factors, such as right of way acquisitions; or environmental issues such as wetlands or archaeological sites. The input parameters required by the software are outlined below:

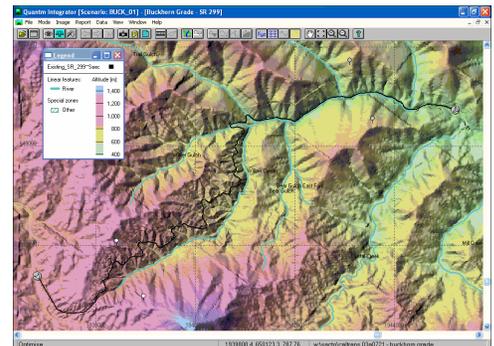
- *Digital terrain model:* The digital terrain model can be based on ground surveys, aerial surveys, or digital elevation models.
- *Geological types:* Geological types relate earthwork costs to soil properties by defining cut and fill slopes, batters/benches, excavation, borrow and haul costs.
- *Network geometry:* Network geometry includes starting and ending points by location, bearing and grade. Also included in the network geometry parameters are horizontal and vertical design values related to design speed.
- *Unit costs for roadway base and surfacing,*

and structure type: The unit cost

for roadway base and surfacing are estimated per linear meter. The costs for culverts are estimated per linear meter for each culvert size. Retaining walls are estimated by linear meter (foundation) and by square meter (wall). Bridge structures costs were estimated by linear meter of superstructure and by the area under the structure to account for substructure costs.

- *Linear features:* Linear features, such as existing roadways, railroads, streams,

(Continued on page 6)



Quantm digital terrain model for Buckhorn Grade

What's In This Issue

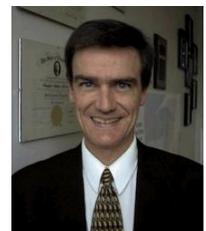
Smithsonian Features ITE Member	2
WesternITE Round-Up	3
International Director's Report	5
Intermountain Call for Papers	7
California T.E. News	15
New Citizen Brochures	17

President's Message

How Bright is Your Future?

I hope all of you enjoyed the holiday season and are ready for a great new year in 2004. It seems like each year brings more changes and challenges than the last year. Ken Ackeret and I were talking about technology (or lack of) when we got

out of school—things like slide rules, punch card decks, eight-track tapes and the 13-cent postage stamp. Neither of us would have jobs if that were all we used today. If we've learned anything in our careers, it's how to adapt to change—sometimes at a blistering pace. The euphoria of some



Randy McCourt,
District 6 President

(Continued on page 12)

Former District 6 Member Featured in *Smithsonian Magazine*

This article, from the October 2003 issue of *Smithsonian Magazine*, is re-printed with permission from the Smithsonian Institution, Beth Py-Lieberman, and Peter Koltnow. The subject of the feature now resides in Washington, D.C., but formerly was a member of District 6 of ITE. The Editor wishes to thank Harry Parker for bringing it to WesternITE's attention.

Loving the Highway Man

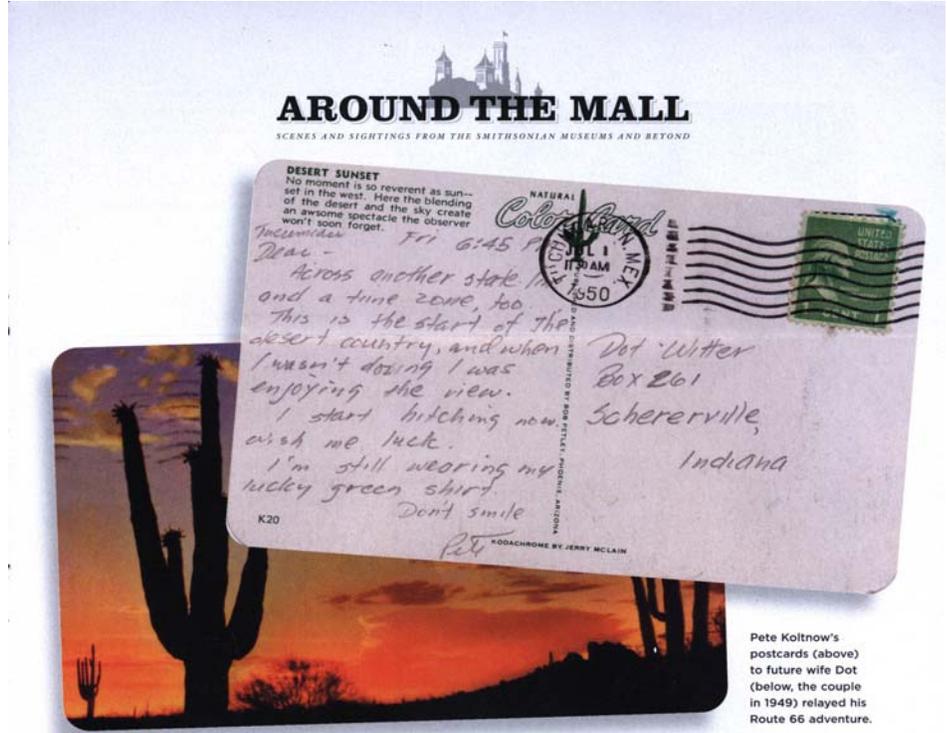
Six postcards from the summer of 1950 tell a tale of two sweethearts and an America on the move

Pete Koltnow is 74 years old, has been married 53 years, and has two daughters and six grandchildren, but when he talks about “wagging his thumb” to get a ride, a youthful sparkle shines in the old hitchhiker’s eyes.

It’s summer 1950, and Koltnow, a 21-year-old engineering student from Antioch College near Dayton, Ohio, is visiting his sweetheart, Dot Witter, who lives south of Chicago in Schererville, Indiana. Wearing his lucky green shirt, he kisses her goodbye. Before long, a postcard arrives in Dot’s mailbox: “Rides have been good, and although I saw you yesterday, I’m only 2 hours from the N. Mexico line.”

Koltnow had a job on an irrigation project waiting in Yuma, Arizona, but he had no money, so hitchhiking the 18-foot-wide, 2,448-mile-long Route 66 was the way to get there. During his three-day trip, he sent six cards to Dot, who kept them all. The postcard chronicle of their summer love story (they were married that fall) is one of several tales about that well-traveled road in a new exhibition, “America on the Move,” at the National Museum of American History. (Koltnow has been a Smithsonian volunteer since 1990.)

The young man was already a veteran of Route 66, having thumbed his way in 1948 some 10,000 miles from Ohio to Los Angeles, and back to Connecticut. The road had its surprises, like the hitch he shared with a sheet-covered corpse; it shuddered on the back seat with every bump of the highway. Or the Indy 500 driver who sped him—with great skill—through Missouri and into Kansas. “Name was Cecil Green and he told me he’d come in fourth,” recalls Koltnow. In another



Pete Koltnow's postcards (above) to future wife Dot (below, the couple in 1949) relayed his Route 66 adventure.

Loving the Highway Man

Six postcards from the summer of 1950 tell a tale of two sweethearts and an America on the move

PETE KOLTNOW is 74 years old, has been married 53 years, and has two daughters and six grandchildren, but when he talks about “wagging his thumb” to get a ride, a youthful sparkle shines in the old hitchhiker’s eyes.

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Memorabilia from the Koltnow's collection, as depicted in the *Smithsonian magazine*.

memorable ride, the driver, passing a slower car, refused to pull from the path of an oncoming truck, swerving only at the last second. Says Koltnow: “I can still see the little rust pits in the chrome on that truck.”

Koltnow became a highway engineer—kismet, perhaps. He retired in 1984 as president of the Highway Users Federation, an association of industries that depend on the nation’s roads. So when Koltnow’s 16-year-old grandson, Pete Valente, asked what’s changed about hitchhiking, “I told him, for one thing, the

Interstate System doesn’t allow it.” As for Dot, Koltnow says, “she wants to know how I can remember Indy driver Cecil Green from a thousand years ago and forget half of a two-item shopping list when I go to the grocer.”



The Koltnows today.

Beth Py-Lieberman

WesternITE Round-Up

Tips from Around the District

Colorado-Wyoming Section

Traffic Responsive System

The City of Westminster, Colorado, and the Denver Regional Council of Governments (DRCOG) recently completed implementation of a



traffic responsive control system. The program utilizes traffic counts from four video detection cameras used for selecting the most effective coordination and split pattern. Each camera controls the timing of one corridor, and is pointed downstream in order to effectively measure volume and occupancy. Measured improvements include a reduction in corridor travel time and vehicle emissions.

Pedestrian Crossing Warrants

Boulder has developed pedestrian crossing criteria corresponding with the specific type of crossing treatment. The type of treatment ranges from a crosswalk to grade separation. The warrants are primarily driven by pedestrian volume, while influenced by other factors such as available gaps, traffic volume, and type of pedestrians.

Additionally, the City of Boulder enacted a series of pedestrian crossing treatment enhancements intended to encourage vehicles to yield to pedestrians at unprotected crosswalks. The City worked with three devices:

- Raised crossings on right turn bypass islands
- Multi-colored signs in the street saying “State Law—Yield to Peds”
- Pedestrian-actuated flashing beacons embedded on gate-posted pedestrian signs.

In all cases, the devices resulted in substantial increases in vehicle driver compliance with the State Law and in several cases these treatments were able to be used in lieu of standard pedestrian signals. At the Awards Banquet in Seattle this past August, the City of Boulder received the ITE Pedestrian Safety award for this effort.

Upcoming Roundabout Conference

Roundabouts continue to win acceptance in Colorado as a viable means of traffic control. Following the installation of the first modern-style roundabout in Vail in 1995, approximately 125 modern roundabouts have been added. In addition to this number, twelve mini-roundabouts serve the primary purpose of traffic calming. In many cases, roundabouts have proven to be an effective and safe form of intersection. Mark your calendars, because in May 2005, TRB and the Colorado/Wyoming section of ITE will be hosting a roundabout conference in Vail. One of the many highlights of this conference will be discussions by international experts on roundabout planning and design.

Public Involvement Workshop

A public involvement workshop will be held in conjunction with the ITE Colorado/Wyoming section luncheon in Fort Collins, Colorado, on February 27, 2004. On the morning preceding the luncheon, Pat Noyes, who is a nationally acclaimed authority on public relations [and ITE International Board Member representing District 6—Ed.], will host a half-day workshop titled “Effective Conflict Management and Public Involvement.”

T-REX Project Nearly Half Done

T-REX, the mammoth \$1.7 billion highway widening and light rail expansion project along I-25 in Denver, is still on schedule for completion in late 2006, only five years after breaking ground in the autumn of 2001. As of July 2003, construction of T-REX was 42 percent complete. This mega-project will provide much-needed, multi-modal capacity to the southeastern metropolitan Denver area. The Regional Transportation District (RTD) is proposing a ballot initiative for November 2004. If it passes, the initiative, known as Fastracks, will expand the multi-modal infrastructure in the Denver metropolitan area. Proposed corridor enhancements consist of substantial expansion of light rail, plus the addition of commuter rail and bus rapid transit. In order to fund the expansion, voters in the district will be asked for permission to increase the sales tax rate. Light rail has been an increasingly popular form of alternative transportation in Denver. The

Southwest LRT opened in July 2000, and immediately exceeded ridership projections.

John LaSala, Technical Committee Chair



Central California Section

Transportation Tidbits

- Fresno Area Express will be conducting a two-day “Fresno Alternative Mass Transportation Pre-MIS Planning Charrette” in January 2004.
- The San Joaquin Valley Unified Air Pollution Control District Board of Directors meets 12/18/03 to consider volunteering for the Extreme Non-Attainment Designation in an effort to delay possible sanctions until 2010, as the eight counties (with possibly three additional mountain counties to be added) attempt to comply with medium-range air quality goals.
- The Fresno Council of Governments (COG) will be soliciting proposals to conduct a study to evaluate potential transit coordination opportunities

Schedule of Contributions

Issue (Deadline)	Sections/Chapters
Jan-Feb (Nov 25)	Colorado/Wyoming Oregon Central California
Mar-Apr (Jan 25)	Hawaii Northern California
May-June (Mar 25)	Central California Intermountain
July-Aug (May 25)	California Border San Francisco Bay Area
Sept-Oct (July 25)	Washington New Mexico Riverside/San Bernardino
Nov-Dec (Sept 25)	Alaska Arizona Central Coast

Please submit your contributions to the Managing Editor (contact information on last page).

WesternITE Round-Up

through the creation of a countywide agency, such as a Joint Powers Agency or transit district. In September, the Fresno COG applied for a Legacy Grant to fund the \$56,000 study. The Fresno City Council agreed last month to provide \$45,000 to get the process underway immediately.

- The Fresno County Transportation Authority has determined that they need to establish a comprehensive Public Education Program to express the accomplishments of their half cent, twenty-year sales tax initiative (1986) referred to as “Measure C.” The program is due to expire in 2006-07. The first attempt to renew the program for another 30 years failed in 2002. If all the parties can agree to an alternative proposal, the matter may be reconsidered in 2004 or 2006.
- Everyone in California waits for the release of the Environmental Impact Report for the proposed High Speed Rail Project that may connect Southern (L.A.), Central (San Joaquin Valley), and Northern (Bay Area) California. The release date has been postponed several times to date. It may yet be available in January 2004. The ballot measure for public support is still scheduled for November 2004.
- The third phase of the San Joaquin Valley Growth Response Study is developing a modeling tool to evaluate land use and transportation scenarios at the regional level. The study team intends to provide the Fresno COG with macro-level regional land use modeling tools that can be integrated with the Fresno COG’s existing travel demand transportation model via Geographic Information System (GIS) data. The integration of the two models will result in an additional planning tool that land use and transportation agencies can utilize as they plan for the central valley’s future. The acceptance of the software by the Fresno COG obligates it to utilize the models in support of growth response studies in Fresno County. The City of Fresno has agreed in a lawsuit settlement to utilize the models in analyzing their general plans, with the modeling being provided by Fresno COG staff.
- The Fresno COG, as the Metropolitan Planning Organization (MPO) for Fresno County, has received a request from the West Coast Transportation Systems Coalition to partner with state, federal, and private-sector leaders in developing a multi-state, efficient trade, travel and energy corridor system for the west coast. A number of issues associated with the project include: Identification of the west coast corridor system; a border-to-border management system; metropolitan freight mobility financing landside freight mobility; the future of freight mobility in gateway metropolitan areas; and green corridors: transportation serving quality of life.
- The Fresno COG was recently awarded a Caltrans Partnership Planning Grant in the amount of \$240,000 to undertake a freeway deficiency study for Fresno and Madera Counties. The primary purpose of the project is to study planned land use in combination with future transportation improvements within the cities and counties along the freeway corridors in order to determine which interchanges will be deficient by the planning horizon year of 2025. Consultant interviews were recently completed, with TJKM Transportation Consultants being selected for the contract.
- The Fresno County Rural Transit Agency has just taken delivery of 14 22-passenger compressed natural gas (CNG) vehicles to replace 20 14-passenger propane powered vehicles purchased in 1992. Its fleet will now consist of 37 CNG powered vehicles, two electric-battery-powered vehicles, and 13 gasoline-powered vehicles, in a continued effort to promote clean air alternatives.
- The City of Fresno has initiated a “free” vanpooling program for workers commuting to downtown Fresno. Seven 8-to-14-passenger vans are being leased immediately from Enterprise Car Rental to begin the program. The City will be utilizing \$300,000 of its “Measure C” funds to sponsor the program.
- California’s transportation agencies brace for further budget cut proposals by Governor Schwarzenegger as he attempts to balance the State’s Budget.

Jeffrey Webster

Oregon Section

Transportation Tidbits



- The Oregon Section of ITE will host the Quad Section Meeting (with Washington, Vancouver Island and Greater Vancouver Sections) on April 23-24, 2004 in Portland at the Governor Hotel. A significant technical program is planned, including joint programs with WTS and ASCE. For more information about this meeting go to www.oregonite.org
- Crosswalk safety has been a major focus in Oregon. Several communities have implemented enforcement programs with decoy officers to evaluate and enforce compliance with traffic laws. The programs include significant educational programs and evaluation. In the Oregon Police Chief, Fall 2003 edition, Chief Vern Wells of Independence, Oregon outlines their approach to addressing the enforcement program (soon to be on www.policechief.org). Use of video tape and using microphones on the decoys helped describe driver activities cars that did not stop for decoys in the crosswalks. They noted the many of those drivers were distracted in their vehicles (often writing, reading or talking on cell phones). A test prior to the start of the Independence program indicated that over 50% of drivers failed to stop for pedestrians in crosswalks; at the end of the project only 20% failed to stop. More information on this project can be obtained from any agency in Polk County, City of Hillsboro and City of Woodburn who implemented similar programs.
- The Northwest Transportation Conference will be held in Corvallis, Oregon on February 10-12, 2004. The theme of Partnerships in Transportation includes three concurrent sessions in design, planning, ITS and funding and key speakers including Peter DeFazio (US Representative), Jennifer Dorn (FTA) and Bruce Warner (ODOT Director). For more information go to www.odot.state.or.us/tddresearch/NWTC/

Randy McCourt

International Director's Report



Fall Board of Direction Meeting

The International Board of Direction (IBOD) met on October 31 and November 1, 2003 at ITE Headquarters in Washington, D.C. All three International Directors from District 6 (Rich Romer, Ray Davis, and I) were in attendance. Other District 6 members present included Past President Jenny Grote and Vice President Elect Tim Harpst, International Director-Elect Rock Miller, and Coordinating Council Chair Wayne Tanda. During the meeting on Friday, the Board had the opportunity to meet with representatives from the U.S. Department of Transportation and other organizations who presented updates on SAFETEA reauthorization and current efforts in the FHWA Office of Safety, as well as an overview of other activities at the national level.

Update on SAFETEA

Emil Frankel, Assistant Secretary for Transportation Policy, U.S. Department of Transportation, kicked off a panel discussion on the status of SAFETEA (the Federal transportation funding reauthorization) and issues surrounding funding sources. Mr. Frankel stressed the Department's commitment to a multi-year bill. Ruth Van Mark, Staff Director, U.S. Senate Environment and Public Works Committee, announced that a draft Senate Bill is available and the Committee is working on mark-ups. Floor discussion is scheduled for February. The Committee is looking at opportunities to guarantee donor states at least 90 percent return on funding levels. Issues have focused on streamlining and conformity in an effort to balance a range of perspectives. Kathy Zern, Minority Counsel, U.S. House Transportation and Infrastructure Committee, discussed the current efforts in the Committee, which is focused on developing a framework for funding. The theme of the House Committee's bill is improving the system. The proposed House bill increases the funding levels significantly over the levels in the D.O.T. and Senate versions of the bill in order to grow the existing program.

Safety Activities

George Ostensen, Associate Administrator for Safety, FHWA, provided

data on traffic safety trends and goals for improving the trends. Members of the FHWA Office of Safety staff presented key issues the Office is working on. These include a strategic approach to highway safety planning, partnering with transportation organizations, "Tools for Life" guidance documents, speed management, and road safety audits. Each of the staff stressed the importance of working with ITE. ITE International President Jack Freeman outlined ITE's activities and the Board discussed opportunities to work with FHWA to promote highway safety. One of ITE's current activities is developing safety training presentations, including intersection safety, that will be made available to members and learning institutes.

Serving All Users

Ann Canby, President of the Surface Transportation Policy Project; King Gee, Associate Administrator for Infrastructure, FHWA; and David Capozzi, Director of the Office of Technical and Information Services, U.S. Access Board, presented an overview of user needs. Ms. Canby began by explaining the Surface Transportation Policy Project is a coalition of organizations that include transit, bike, pedestrian, business, and smart growth advocates as well as local agencies. She noted that about a third of the U.S. population is too young, too old, or too infirmed to drive and we need to consider these users in our systems. Ms. Canby's question to the International Board of Direction was - how can we work together to use transportation to help develop quality communities? Mr. Gee talked about current Context Sensitive Solutions initiatives in FHWA. Environmental stewardship is one of the key pillars of the administration's program and Context Sensitive Design provides a structure for involving the public in addressing local and environmental needs. Mr. Capozzi outlined the role of the Access Board and the range of issues and programs they manage. He also discussed the status of the draft proposed rule for public rights-of-way. The proposed rule and numerous reports on accessibility are available on their website, www.access-board.org. These three speakers emphasized the need for collaboration between the three organizations and with ITE.

FHWA Initiatives

Richard Capka, Deputy Administrator, Pat Noyes and Bud Wright, Executive Director, discussed the administration's initiatives and priorities. The Vital Few is the focus of FHWA. This includes three areas of focus: safety, congestion relief, and environmental stewardship and streamlining. This includes operating our system more effectively in a way that is sensitive to the environment. FHWA is working to support SAFETEA reauthorization, which addresses more than funding; it also provides important programmatic and policy direction.

ITE Strategic Plan Initiatives

On Saturday, the Board continued to move the Institute's Strategic Plan forward by approving specific initiatives for 2004. The focus is currently on membership, communications, technical activities, and financial aspects. There are also a number of international activities proposed to enhance services and outreach in District 8 (outside the United States and Canada). One of the activities coming from the Strategic Plan in 2004 is a series of training materials being developed to support member training.

Budget Update

Vice President Steve Hofener presented an overview of the 2003 budget and some of the programs that were being moved forward to support the Strategic Plan. These programs include upgrades to the computer hardware and software, including the ITE website; updates of recommended practice; an operations video; the Latin America Initiative, including a new website in Spanish; and three training modules. These modules, funded out of the recently established Professional Development Fund, will cover what's new in the MUTCD, clearance intervals in signal time, and safety. Despite a budget that projected a deficit at the end of 2003, staff and the Board have worked to bring expenses down and the current projections show that expenses will not exceed revenues.

(Continued on page 13)

Feature Article

(Continued from page 1)

ivers, and overhead and underground utilities can be defined. These features can require a minimum or maximum clearance, forced to cross with a viaduct or tunnel, or ignored by the optimization.

- **Special zones:** Special zones can be defined for social, economic, constructability, or environmental reasons. The zones are associated with unit costs that add mitigation costs, right of way costs, or impact fees. Again, these zones can be ignored, forced to cross over or under with a structure or tunnel, or forced to avoid all together.

Each input parameter assigns an incremental cost to the alignment option. Most of the costs are related to earthwork, roadway structural section, and structures, but other costs from special zones may be included. The software catalogs all of the alignments by total cost.

Once the input parameters are defined, the engineer begins to create scenarios for alignment optimization runs. A scenario is the set of input parameters used for specific optimization runs completed by the program. Besides the network geometry and the terrain model, the design team can select which input parameters it wants influencing route selection in each scenario. By adding features incrementally, a relative impact can be associated with each design parameter. After a scenario is defined, the software then calculates alignment options based on the type of optimization selected.

The tasks within a scenario that the software can perform include an unseeded optimization, a total refinement of a previously developed alignment, and a realignment of an existing roadway. An unseeded optimization scenario generates

About the Author:

Adrian B. Engel, P.E., with Mark Thomas & Company, Inc., has been actively involved in incorporating new technologies into transportation related design. He received his degree in Civil Engineering from California Polytechnic State University, San Luis Obispo. Adrian is a member of ITE.



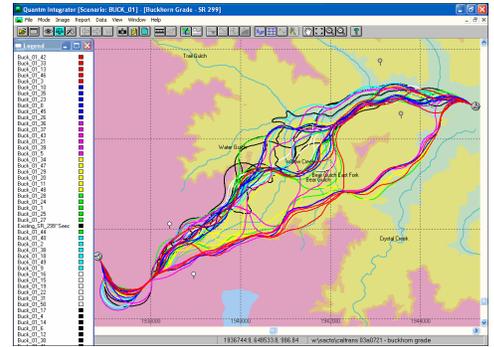
hundreds of alignments, but The software selects 50 of the lowest cost alignments. A total refinement scenario uses a predefined “seed” alignment or a user digitized “quick seed” alignment as a starting point for the optimization. This allows for a more concentrated effort in finding a more cost-effective horizontal and vertical alignment that is in close proximity to the selected alignment. The total refinement process produces 20 alignments for comparison to the “seed” or “quick seed” alignment. The realignment option is used to improve the geometrics of an existing alignment. The 20 alignments generated by a realignment operation will deviate as little as possible (horizontally and vertically) from the centerline of the selected linear feature while satisfying the defined geometric standards and other constraints.

Buckhorn Grade Project

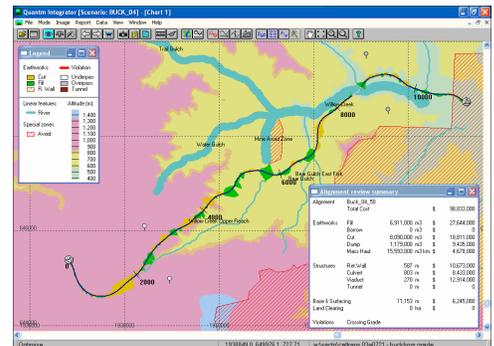
The northwest section of California is a mountainous and mostly rural area with long stretches of highway between towns. State Route 299 West is the principal arterial between the Northern Sacramento Valley and the coast. It is a route of economic significance, linking agricultural areas in the valley to the port in Eureka. The seven-mile section of highway 15 miles west of Redding, referred to as Buckhorn Grade, requires slow driving speeds and excludes large, interstate truck access. Originally constructed between 1923 and 1935, Buckhorn Grade closely follows the extremely steep, rugged terrain near the Shasta/Trinity County line. The current roadway is very narrow, with limited passing opportunities and few areas for emergency parking. This winding road also limits consistent response time to accidents and weather related problems. With traffic expected to double in this area over the next ten years the problems will only worsen.

During the past two years, 27 square miles of project study area was narrowed down to two alternative corridors using conventional route selection, engineering judgment, and conventional Computer Aided Design (CAD) software. Alignments from these two corridors were then used to determine preliminary environmental impacts by developing environmental study limit mapping. Caltrans initiated study on nine potential alignments within the two corridors, with three alignments being selected for further study when technological advancements in route

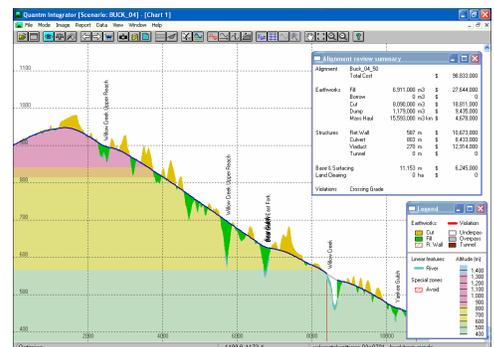
planning became available in the form of



Unseeded optimization for Buckhorn Grade



Review data for selected alignment (plan view)



Review data for selected alignment (profile view)

Quantm.

Working with Caltrans, the author gathered data about the existing terrain and design constraints, developed appropriate unit costs for the proposed project features, and determined design criteria based on the project’s need and purpose. The previously studied alignments were run through the software to calibrate the unit costs used to generate estimates by comparing the outcome to previous estimates. They were also used to determine potential improvements and cost savings that might result from refinement within the software.

The team then studied the results of

the optimization runs and made

adjustments to future scenarios based on desired objectives. The iterative process included ten scenarios resulting in literally hundreds of potential alignments; these potential alignments, which would take months to evaluate using conventional methods, were evaluated and refined in a two-week period. Further design refinements and testing took place over a subsequent one-month period. As the various scenarios were developed, earthwork volumes and costs were compared with estimates developed during the study of the original alignments, and were found to be within reason. The bridge and tunnel costs that were estimated by the software from the input data were independently checked to ensure reasonable results.

Many of the alignments created by the software closely followed the previous routes studied by Caltrans, validating their early efforts. Two previously unstudied corridors were identified and further evaluated as part of the optimization process. The new alignments will be analyzed by Caltrans to determine if they warrant additional detailed analysis and being carried forward in the route selection process. The environmental study limits will also be expanded if an alignment that is outside of the previously defined area is selected for further study.

One of the limitations of using *Quantm* for analyzing potential alignments was the difficulty in quantifying qualitative alignment characteristics. As an example, alignment alternatives on north-facing slopes have limited solar exposure during the winter; these alignments are susceptible to icing, creating additional maintenance cost and safety concerns. Even if a maintenance cost is placed on the north

facing slopes, it may not deter *The software* from selecting to route alignments along north facing slopes because the cost penalty for reasonable maintenance is not significant and driver safety cannot be accounted for quantitatively.

Additional use of the software as part of this project included supplementary sensitivity studies including limiting the maximum height of cut at the summit to facilitate stage construction, steepening the fill slopes in decomposed granite from 1:2 to 1:1.5, and reducing vertical alignment design standards. The purpose of these sensitivity studies was to determine the relative cost savings that might be achieved or additional costs that might be incurred by changing the design standards and constraints.

North/South Connector Project

The author is currently using *Quantm* to analyze the North/South Connector near Sonora, CA. The project corridor is a 5-mile long connection between State Route 108 and the town of Columbia. The goal of the project is to identify and prioritize feasible alternative routes that can meet the regional transportation needs of improved circulation, access, and safety.

One of the major components of the project will be public involvement, building consensus between all of the stake holders. The software will be a critical part of the consensus building process. It can analyze any alignment alternative that is suggested with an equal level of detail to any other alternative. All of the “what if” alignments suggested in the public outreach process, and more, can be quickly analyzed for cost, constructability, and functionality. A common complaint in controversial

projects is that the design team did not evaluate sufficient alternatives or did not do so in sufficient level of detail. By broadening the capabilities of the engineers and planners to evaluate many different alignments, feasible, publicly acceptable routes can be taken to the next step in the design process.

Conclusion

As roadway projects continue to become more expensive to design and build, more politically sensitive, and more strictly regulated environmentally, it is more difficult to define an acceptable alignment. *Quantm* is a tool that creates an economical opportunity to analyze more alternatives than ever before, relatively quickly and inexpensively. The flexibility of the software enables the design team to propose alternatives with various design speeds, slopes, retaining walls, bridges, and other constraints very quickly and cost effectively. By refining proposed alignments with the software, small design changes may be identified that have a large effect on the total construction cost. The software also allows the engineer to look “outside of the box” analyzing alternatives that may seem unrealistic at first glance, without adding significant cost to the project. Sensitivity analyses can be performed on any of the design criteria to help evaluate function versus cost. The public outreach process is improved by the ability to evaluate multiple scenarios for different stake holders. The author is excited to be using *Quantm* in an effort to deliver feasible, economical projects that can be built.



Call for Technical Papers for Intermountain Section Annual Meeting

To members and friends of ITE wishing to make a technical presentation at the annual meeting on May 21 - 22, 2004 in Jackson, Wyoming:

Abstracts are due March 31, 2004. Please submit a brief abstract to Scott Thorson, or contact Scott for details.

Submit to:

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Nevada Department of Transportation
1263 S. Stewart Street
Carson City, NV 89712
Phone: (775) 888-7567
Fax: (775) 888-7077
E-Mail: sthorson@dot.state.nv.us

Fundamentals of Traffic Engineering Class to be Offered in Fresno

The U.C. Berkeley Institute of Transportation Studies will teach “Fundamentals of Traffic Engineering” at the Fresno Holiday Inn (near the airport) on January 26-30. If you are interested in signing up, please contact Dana Oldknow at (510) 231-5671 or visit:

www.its.berkeley.edu/techtransfer/

Section and Chapter Activities

Hawaii Section



September Meeting

The September luncheon meeting was held on the 17th at the office of Belt Collins in Honolulu. President Cathy Leong announced that at the recent ITE Annual Meeting in Seattle, the Hawaii Section was awarded the Best Web Site Award and University of Hawaii Ph.D. candidate Lin Zhang was awarded the Best Student Paper Award.

The featured speaker was Dr. Leon James from the Department of Psychology at the University of Hawaii. Dr. James spoke about driver psychology and aggressive driving behaviors. He stated that over the years, the number of accidents have not increased, but this is due to better equipment and facilities rather than better driver behavior. As equipment and facilities become safer, drivers have a greater sense of safety which can lead to an increase in risk taking. He discussed how driver psychology and behavior relate to speed limits, traffic waves, traffic signs, and traffic calming. In addition, Dr. James discussed the recent trend in legislation to prohibit aggressive driving. He stated that they are difficult to enforce since the language used in these types of legislation is often subjective or vague. For more information regarding aggressive driving go to www.drdriving.org or read Dr. James' book *Road Rage and Aggressive Driving: Steering Clear of Highway Warfare*.

October Meeting

The October luncheon meeting was held on the 23rd at the office of Belt Collins in Honolulu. The featured speakers were Ken Schmidt and Mark Lierman from the City and County of Honolulu's Department of Planning and Permitting

(DPP). Mr. Schmidt, coordinator for the City's GIS system, began his presentation by explaining that the City's GIS system is called HoLIS or the Honolulu Land Information System. The system currently contains information such as land use, streams, roadways, utilities, and districts. Some of this information is available to the general public through the DPP's website, but most of the information in their system is intended for use by City agencies. Currently, they are working on integrating information about current construction projects, including project status, from the various City agencies, including the Board of Water Supply, into their system. Their three main goals for the future are to create a comprehensive data source, improve their services by streamlining information retrieval and eliminating redundancies, and generate benefits such as providing readily available information to aid in decision making. Mr. Schmidt then turned the meeting over to Mr. Lierman who described some of the other GIS systems on the mainland that they are looking at for features that could be incorporated the City's system.

Colorado/ Wyoming Section

September Meeting

The Section's September meeting was held at the Marriott SE in Denver on the 26th. New officers were installed by Pat Noyes. The new officers are:

- President: Allen Albers
- Vice President: Nate Larson
- Secretary/Treasurer: Will Johnson

Ron Hensen was presented a 25-year continuous membership award from ITE. Ron is a Principal with SEH in Boulder Colorado the former Transplan Engineering firm.

A survey of the members was made available to the membership to see what the interests were for the next year's projects, programs and activities.



Certificates were awarded to 39 members of the section who have worked on the T-Rex Project (I-25 SE Corridor) in Denver. Also, plaques were awarded to CDOT, RTD and SE Corridor Constructors; accepting for their respective entities were Gary Gonzales, Jerry Nerry, and Mary Kay Omaley. This project involved an average of 1,900 workers on an average day working on everything from light rail to ITS elements.

Jim Bumanglay and Gary Gonzales from CDOT gave presentations on the T-REX project and ITS for the T-REX respectively. This project is the state's second-largest construction project ever, second only to Denver International Airport. The construction cost estimate is \$1.67 billion.

Jim explained other significant components of the project. Newly constructed major project elements include 19 miles of double track for light rail extensions, 13 light rail stations, 6,000 parking spaces, 34 new light rail vehicles, 10 bridges, 1 major interchange, and 2 parking garages.

Gary gave the final cost estimate for the ITS portion of the project at \$11.6 million. Highlights of this important program component of the project will include 10 variable message signs, 48 CCTV locations, one highway advisory radio transmitter, information sharing for 30 users via the web, and a transit priority system involving 14 intersections in six jurisdictions.

November Meeting

Section President, Alex Ariniello, presided over the well-attended November luncheon. Alex thanked everyone for attending the seminar and luncheon, which was held at the Marriott South East Hotel in Denver. Prior to the luncheon a two-hour seminar was hosted by Dick Osmund from CDOT's Bridge Design Section. This seminar involved the new CDOT signal pole/mast arm specifications, which are based some controversial new AASHTO design specifications. John Sayer organized the technical session and thanked the presenters and all of the members who attended.

The highlight of the meeting was the presentation of a Lifetime Achievement



Colorado/Wyoming Section officers: Past President Alex Ariniello, Secretary-Treasurer Will Johnson, Vice President Nate Larson, and President Allen Albers; and District 6 International Director Pat Noyes

award that went to Jim Ritchey from the City of Lakewood Traffic Department. Jim has served as Traffic Operations Engineer for the City of Lakewood and served the Section for many years in various offices and capacities including time as president of the section. An attractive Colorado-Wyoming Section Lifetime Achievement wall plaque was presented to Jim by Alex.

Jim also had the honors of presenting the program for the meeting. His many years of work with traffic signal systems has been culminated in the latest signal NTCIP Signal System now in place in a new operations center in Lakewood. This system replaced a 20-year-old VMS. This latest project started in 1997 and is of modular design. It is a Trans Core Series 2000 Advanced Traffic Management System. To date, the city's contribution to the program has been \$2.5 million. The next phases of the program will use \$1.6 million in CMAQ money and spend \$1.1 million for fiber optic communications improvements.

December Meeting

A luncheon meeting for the members and guests of the Colorado/Wyoming Section of ITE was held on the 6th in Denver, Colorado at the Pepsi Center's Blue Sky Grille. The luncheon and program culminated a great year of ITE activities.

Upcoming events include a February 7th ski trip on the Ski Train to Winter Park, a vendor show on January 24th at the Arvada Center, and a regular meeting February 28th in Fort Collins.

This year's Transportation Symposium will be held in April in the Denver area and will be held jointly by Colorado/Wyoming ITE, the Women in Transportation Seminar (WTS), and ITS Rocky Mountain Chapter.

An update on PTOE registration program was presented by Allen Albers. There have been over 1,000 people

registered, with 27 new certifications awarded as a result of the exam held in October in Denver.

Dave Hattan and Gene Wilson awarded a Lifetime Achievement Award to Dick Bauman. Dick is now the Chief Engineer for the Northwest Parkway. This award is presented to outstanding section members for a lifetime of service and contributions to the Transportation community in the section and worldwide.

The program was presented by Jeremy Klopp, project manager for the Downtown Denver Multi-modal plan. Jeremy works for the consulting firm of Fehr and Peers. He presented an excellent program on the 110 block study area located near Union Station. The study area is very important to Denver and the region because it will be the main transportation hub that will experience a 43% increase in peak hour trips; 76% of the transit will arrive at Union Station by the year 2025.

Jeremy explained the modeling processes that were used as tools for the analysis in an area that includes the busy 16th Street Mall. The regional, Visum network model, and VISSIM models were used for analysis on the system, which includes over 160 intersections.

Please visit our section's website at www.cowwite.org.

*William A. Hange, Jr, PE,
Scribe*



Southern California Section



September Meeting

The September meeting was held on Wednesday the 17th at the Monterey Hill Restaurant in Monterey Park, and was attended by 71 members and 5 student members. Section President Erik Zandvliet welcomed and congratulated the new committee chairs. He also asked everyone present to choose a traffic sign that described themselves and explain the reason why. This led to some very

interesting answers!

The topic of this month's technical program was "In-Pavement vs. Overhead Flashing Warning Systems." Three outstanding technical discussions were presented.

Monica Suter, Senior Civil Engineer for the City of Santa Ana, presented "Video Detection for Passive Detection at In-Pavement Flashing Crosswalks." Ms. Suter's presentation compared different types of pedestrian detection at crosswalks with in-pavement flashing lights. She explained how video detection for system activation had certain benefits, such as the ability to determine directional pedestrian movement from a variety of angles, as well as its overall flexibility, passive detection capability and vandalism resistant features. She emphasized that adequate lighting and minimizing the effect of shadows are important factors in improving video detection. Roadway pavement condition and profile are other aspects that also require attention when installing in-pavement flashing lights.

Bahman Janka, Transportation Administrator for the City of Pasadena, presented "In-Pavement vs. Overhead Flashing Warning Systems, or Both?" He is also the Second Past President for the Section (2000-2001). Mr. Janka began his presentation by discussing the individual characteristics of in-pavement and overhead flashing lights. He observed that during the day, it is difficult for drivers to observe in-pavement lights. Thus, in locations where there are high volumes of pedestrians during the day, particularly at school zones, the use of both warning systems is highly recommended. Mr. Janka also noted that combining both systems dramatically raises the attention of drivers at night over any single method.

Low Gluesing, Vice President and Traffic and Transportation Division Manager at Willdan, presented "In-Pavement Flashing Lights to Supplement Standard Traffic Signal Controls at a Union Pacific Railroad Crossing." Mr. Gluesing explained the concept of the project, stating that a low-volume, low-speed railroad crossing in the City of Paramount was recently modified as part of a larger intersection improvement. Since the crossing went diagonally through a signalized intersection, secondary controls such as wayside horns, flashing beacons, lighted warning signs and red in-pavement flashing lights were used in lieu of crossing arms. Furthermore, the train is now treated as a vehicle served by a separate vehicle phase, and receives a green signal after

Section Activities

placing a call and waiting for normal completion of the current signal phase. Red flashing in-pavement lights are activated during a train crossing to define the diagonal track envelope in conjunction with lighted “train crossing” and “No Right Turn” signs mounted on the signal mast arms. The technical session ended with an extensive question and answer period for all speakers.

October Meeting

The October meeting was held on the 22nd at the Monterey Hill Restaurant. Mr. Yazdan Emrani, P.E., President and CEO, Advanced Infrastructure Management, Inc. presented GIS Applications in Engineering. Approximately 60 members, including 10 students, attended this meeting.

In his presentation, Mr. Emrani described the benefits of Geographic Information Systems in transportation engineering. GIS is not a CAD program to make maps; it is a system, which includes people, hardware, software, data and procedures to perform management, conduct analysis and present findings. The spatial data used in GIS can include various factors such as topography (georeference), socio-economic data and environmental data.

GIS applications can be found in many places. One simple example is through the Internet and sites such as Mapquest, which provides street maps and aerial photography to users. GIS can answer many questions including:

- What is it?
- Where is it?
- What has changed since?
- What special patterns exist?
- What if...?

The full function of GIS applications provides more than just maps. GIS applications can respond to knowledge-based queries and provide customized output to users based on the application developed.

Mr. Emrani discussed the many advantages of using GIS. GIS may be less expensive and more efficient than traditional data analysis techniques. GIS also allows for easy updates and maintenance to the database as well as the flexibility to create a variety of reports and maps. In addition, GIS allows for a quality graphic output that can be used to clearly present a message to the public or policy makers.

To close, Mr. Emrani provided

examples of GIS in traffic related studies, including speed surveys and traffic data storage. The software which was presented sported an easy-to-use graphical user interface and provided a clear representation of what data was available within the street network. In addition, the software allowed for site-specific reports to be created without a great deal of effort.

GIS is playing a greater role in transportation as more agencies move to this technology to retrieve data and conduct analysis. Mr. Emrani's presentation provided an overview of how



Co-scribe Sunil Rajpal



Co-scribe Joaquin Siques

GIS can improve the way transportation analysis is conducted and how they are presented.

San Francisco Bay Area Section



September Meeting

The first meeting of the season was held at the ever popular Silver Dragon Restaurant in beautiful downtown Oakland on the 18th. The meeting started with Randy McCourt, the incoming ITE District 6 president, presenting his 12-step action plan for the upcoming year. Just like all 12-step programs, the program would not be successful without help and participation of the whole District 6 community.

The keynote speaker was Steve Kinsey, the current chair of the Bay Area Metropolitan Transportation Commission (MTC). Mr. Kinsey is also chair of the Marin County Congestion Management Agency and a Marin County supervisor. He recently served as chair of the multi-agency committee that prepared the Smart Growth/Livability Footprint for the Bay Area. Mr. Kinsey's presentation was titled “Tension at the Top: Policy Choices in

Regional Transportation.” The presentation focused on the key policy and funding trade-offs that are under consideration for next 25-year Regional Transportation Plan (RTP).

One of the major issues considered in the RTP is the integration of land use and transportation decisions which has become more important than ever. Policy guidelines to address these issues are being developed. The integration of transportation and land use planning would require more collaboration between MTC and Association of Bay Area Governments (ABAG) to address such issues as providing a better housing/job balance and more affordable housing. The new RTP will also increase funding for the Transportation for Livable Communities (TLC) program which enhances and promotes alternative travel modes.

About 90% of transportation spending for the next 25 years has already been committed to either maintenance of existing infrastructure, new projects already in progress, or other projects specifically voted for by voters. Thus, only 10% of the 25-year transportation budget is available for new projects. As new projects are being considered for funding and prioritized, decision makers need to consider many factors. Among them are social justice, multi-modalism, livability, and smart growth.

There are many more new projects under consideration than funding is available. The major new funding mechanism under consideration is the 1\$ toll increase at the seven Bay Area toll bridges to fund capital expenditure, and to maintain and expand existing transit services. The major projects under consideration for funding with the toll increase are San Francisco Transbay Terminal, the BART tube seismic upgrade, rail on Dumbarton Bridge, and eBART in Eastern Contra Costa County. The regions voters will get a chance to vote on the toll increase. An increase in the gas tax was also considered but ultimately rejected.

The annual ITE Bay Area section golf tournament was successfully held on September 26 at the scenic Summit Pointe

Attention Scribes: Publication Deadline

The deadline for submitting Scribe reports is the last day of the odd-numbered month prior to the date of the issue. For example, Scribe reports are due by March 31st for publication in the May-June issue.

Golf Club in Milpitas.

October Meeting

The October ITE Bay Area Section meeting was held on the 16th at the Caltrans District 4 Headquarters in Oakland. Over 80 attendees heard guest speaker Jeff Morales, the current director of Caltrans. Director Morales' presentation, entitled "Status of Caltrans Projects and Budgets," discussed the impacts of the current economy on statewide transportation projects and budgets. Because of the current economic conditions, the main issue facing Caltrans is what infrastructure is needed and who will pay for it. Unlike most other states, especially on the east coast, California continues to grow. Thus, besides maintaining existing infrastructure, we need to construct new transportation facilities.

Director Morales also discussed the impacts of new technologies. Intelligent Transportation Systems (ITS) programs such as traveler information and central traffic management systems are enabling more efficient usage of existing systems and thus reducing the need for new infrastructure. Also, as Caltrans implements more efficient information systems throughout the organization, the overall efficiency is expected to increase.

Transportation spending in California has substantially increased over the last five years. Currently about \$10 billion worth of projects are under construction in California. Due to the recent massive budget cuts in the state, transportation spending is decreasing, and thus forcing Caltrans to be more strategic in choosing projects. Current priority is to keep everything that is already under construction going, maintain the existing infrastructure, and concentrate on safety and seismic improvement projects. Caltrans will also continue to work more closely with local communities in developing more context-sensitive designs and meeting local communities needs.

November Meeting

The November ITE Bay Area Section meeting was held on the 20th at the offices of the San Francisco County Transportation Authority (SFCTA). The meeting's theme was titled "Take this Project and Love It! Context-Sensitive Transportation Project Design in San Francisco." Project delivery through consensus building and debate of project details was discussed by SFCTA staff as pertained to specific projects.

Jose Luis Moscovich, the SFCTA director, started the meeting with an

overview of three specific projects being discussed: Octavia Boulevard/Central Freeway, Market Street, and Doyle Drive. Mr. Moscovich focused on the importance of knowing the project from inside and out. He also talked about how discerning all aspects and issues about a specific project facilities the complete implementation of a project while dealing with the general public and the various agencies involved.

The project presentations began with a discussion of the Octavia Boulevard/Central Freeway project by Paul Ward, SFCTA manager of Capital Projects. The Central Freeway was damaged in the 1989 Loma Prieta earthquake, resulting in permanent closure and demolition of several sections. The replacement Octavia Boulevard project has been rather controversial. In various forms, it has appeared on the City of San Francisco ballot four times. Voters have currently approved the project, which will create a Market Street freeway ramp, making travel from the freeway to the Fell/Oak Street couplet easier. SFCTA is currently working closely with neighborhood groups to balance the needs of commuters and local neighborhoods and to provide an aesthetically pleasing structure.

Maria Lombardo, the SFCTA's Deputy Director, talked about the Market Street Study. This is a new type of project for the SFCTA, for which all improvements are proposed to be in place within one to five years, and involving various travel modes. The project would use the existing right-of-way to implement easily constructed improvements such as prohibiting certain movements, signing, and striping. The project purpose is to improve flow and safety and reduce problems caused by the high automobile, transit, pedestrian, and bicycle traffic on this heavily traveled corridor. In addition, the project expects to improve the interaction between the various transportation modes.

Lastly, Lee Saage, a SFCTA project manager, talked about the Doyle Drive Project. Doyle Drive is the main access between downtown San Francisco and the Golden Gate Bridge, carrying about 90,000 vehicles on typical weekdays. As a result of heavy traffic and salt air exposure, the Doyle Drive structure has deteriorated and cannot be easily repaired. Narrow travel lanes and a lack of a median barrier and shoulders have contributed to the high number of accidents on this roadway segment. Mr. Saage discussed how SFCTA is working closely with the Presidio Trust to meet their specific needs as well as the needs of the City of San Francisco. The

project has been in the planning stages since the 1940s. The latest planning efforts started in the 1990s and SFCTA hopes to have the project completed by 2013. The project would provide a center median to eliminate head-on collisions, widen travel lanes, improve safety, provide direct access to the Presidio National Park, expand alternative mode access, improve aesthetics and views, and implement ITS measures for toll collection and vehicle and transit operations. The project involves several federal, state and local agencies and requires consensus among all the stakeholders.

Washington State Section

October Meeting

Section
President Gary
Costa (City of
Issaquah)



opened the well-attended October 21 luncheon meeting as attendees completed their social period. The venue in October was the Coast Bellevue Hotel. Gary noted that the Student Chapter was becoming very active and introduced the Chapter's president. He reviewed the parameters of the Section's new student mentoring and student shadowing endeavors. Any members interested in participating with a student in these programs were urged to contact the Section officers.

Attendees were treated to a presentation on the status of one of the State's most important highway improvement projects, the I-405 Congestion Relief & Bus Rapid Transit Project. Patty Rubstello (WSDOT) provided an update and overview of the overall project and specifically a status report on the initial phase, intended to fix congestion hotspots in Renton, Bellevue, and Kirkland, with some additional through capacity and interchange enhancements. With \$485.1M allocated by the new 5-cent gas tax package to the initial portions of the overall project (estimated at \$10.8B), many specific components are already identified and moving toward construction in 2007. Initial construction includes one additional lane approaching the I-405/SR 167 interchange, one additional lane each direction between SE 8th and I-90, and a replacement of the Wilburton Tunnel. One northbound lane would be built from NE 70th to NE 124th, and an additional southbound lane built

Section Activities

from SR 522 to SR 520. A staff of 75 is currently involved with moving the initial design-build project forward.

Patty noted that the benefit/cost ratio for the I-405 project is very high. Population in the corridor is expected to grow from 564,391 (1997) to 760,000 by 2020. Jobs will grow from 408,000 to 552,724 in the same time frame. Based upon these figures, congestion would be expected to increase by 56%. With mobility already marginal today, the I-405 capacity improvements are seen as vital to the economic vitality of the greater community.

Karl Westby (HDR) reviewed the traffic modeling efforts being employed as the project managers consider alternatives. He noted that multiple tools were being used, including CORSIM for 120 local street intersections, and the largest Vissim freeway model so far attempted anywhere in the United States. Carl reviewed some of the difficulties encountered in the endeavor.

The overall project will involve the entire corridor, spanning 30 miles and involving over 25 interchanges. The EIS has been completed, a preferred alternative has been selected, and a Federal Record of Decision has been recently achieved. There is a regional consensus on the master plan and vision for the project to build the worst first, build logical segments, provide a modal balance, minimize the construction impacts, and to improve the adjacent environment. Eventually, the full project would add two lanes each direction to I-405. It would add Bus Rapid Transit between Lynwood and SeaTac. There would eventually be nine new transit centers in the corridor, a 50% increase in transit service, 5,000 additional park and ride spaces, 1,700 new vanpools, and improvements to local arterials.

November Meeting

November's meeting was the annual joint Dinner Meeting with the Washington ASCE chapter at the Yankee Diner in Ballard on November 12. Randy Sleight opened the Joint ITE/ASCE Dinner

meeting by welcoming the 89 ITE and ASCE members.

Section President Gary Costa (City of Issaquah) introduced the new Co-Chairs of the Student Mentoring Committee, Bob Herman (Herman Traffic Engineering), and Darek Jarzynski (City of Bothell). During registration, \$116 was donated for student dinners and for the Student Mentoring Program. Another \$116 was collected in raffle tickets, with half of the money won by Eric Sill (H.W. Lochner, Inc) as the prize, and the other again going to the Students. The total funds generated for the Student Mentoring Program amounted to \$174, split between ITE and ASCE.

As part of the Student Mentoring Program, two volunteers, Vic Bishop of TP&E and Randy Sleight of Snohomish County, shared their "How I Got There" story describing their mentor during the beginning of their profession. Both stories were wonderful experiences of how two professional people found their way to where they are today and who was an important factor in their success.

David M. Schwegel, of Barghausen Consulting Engineers, reported on the Puget Sound Engineering Council Events and Board of Registration happenings. David indicated that the Puget Sound Engineering Council (PSEC) has many upcoming events that you can check out at their website located at <http://www.pseconline.org/>.

After the enjoyable pot roast dinner, Mr. Rob McKenna, King County Councilmember, provided the feature presentation, the proposed Regional Transportation Investment District (RTID) and its package of projects. Authorization to form this regional transportation financing district was provided by ESSSB 6140, covering King, Pierce, and Snohomish Counties. Rob explained that the RTID Planning Committee consists of all 25 Council-members from King, Pierce, and Snohomish Counties—directly accountable to voters for RTID results. A seven-member Executive Board is presently preparing a draft plan for the Fall 2004 ballot.

One of the motivators for district

formation is to keep revenues on the County level. With King, Pierce, and Snohomish Counties are getting back less than 70 cents on every State gas tax dollar collected, it will be difficult to achieve sufficient revenues to enable the region to catch up with its transportation needs, even with the recent state-wide five-cent gas tax increase. Support from the rural areas and smaller counties to subsidize the urbanized region would also not be a realistic alternative. With RTID, the Puget Sound region would keep its funds raised and would control allocation.

Candidate RTID projects would compete under the performance criteria of congestion reduction, safety enhancement, air quality, with capacity, delay, freight mobility, and benefit/cost considerations. The ballot measure itself will include detailed cost estimates for each transportation project. The RTID is required to report annually to the public on status of each project's costs, expenditures, revenues and construction schedule, and on progress towards performance criteria.

Councilman McKenna shared that the RTID funding sources being studied by the Executive Board are as follows: 0.4% Sales Tax, \$50 or \$75 Vehicle License Fee, 0.3% MVET Anticipated funds generated over 15 years in the three county area would be \$14B. Additionally, toll revenues from the proposed SR520 High Occupancy/Toll (HOT) lanes could yield another \$700 million. Another 2.8-cent non-indexed local option gas tax could yield \$1.1 billion (bonded) across three counties, with \$500m in King County. Passage of the RTID by the voters would obviously generate funds to provide considerable transportation improvement projects.

With the details of the program having been presented, many excellent questions were asked with detailed responses provided. It was an excellent presentation with a timely and informative joint meeting.



Dave Alm, Scribe

President's Message

(Continued from page 1)

changes (like email) evolves into hope that more changes are forthcoming to manage the tide of communication (like eradicating spam). One constant with every new year

is making resolutions or plans for the future—the hope and visions that we can set for ourselves and our profession.

In January, the District 6 Board will be doing just that. On January 29-30 in Portland, OR at our mid-year board meeting, we will be setting out a strategic plan for our future. For a group that many

of our members struggle to understand, District 6 can play a constructive role in promoting our profession, sharing information, and developing our younger professionals—making sure we attract the brightest and best engineers and planners into transportation. All three of these roles are essential to our profession. I grew up in

President's Message

rural Oregon with numerous sons and daughters of loggers, fishermen, paper makers, lumberers, and cannery workers. Many of them figured those jobs would be there forever. I can tell you that some years later, they are not. Without a clear vision for your future combined with that of your profession—*together*—the future could deal some very harsh lessons. Without taking the time to build their professions, providing a clear vision of how to adapt to change, or being concerned about the future past the next paycheck, all those professions have withered in the past 25 years.

We have a great profession in transportation—one that allows us to make the world a better place every day we go to work. But I can assure you; our future will not be secure unless we plan to make it so.

I would encourage you all to consider how we can take the path to the future and strengthen our profession. I believe that path lies in the three areas I noted above:

- **Promoting our profession:** Making sure the public has a higher perception of transportation engineers and planners than they sometimes see only in newspaper articles or hearings.

- **Sharing information:** We work in a profession dominated by empirical information needs that cannot be met by one person, firm or agency. We must share information to advance our profession.
- **Developing young professionals** through initiatives that attract and retain the best and brightest in transportation. Please think about the future of our profession and share your thoughts with me this year and with the District 6 Board. As long as we keep looking to our future, change will be our asset rather than our assassin.

Coming Events

- All student chapters and section reports are due April 1. Since the Southern California Section and the Montana State University Student Chapter, both from District 6, won the international awards for best section activity report and best student chapter report, we have a legacy to live up to. We have placed the past reports on the District 6 web site for your review along with the sample report forms. Each student chapter receives \$100 for submission of their report, and the student chapter faculty advisors of those chapters will receive a \$150

voucher toward ITE International dues and free full registration (including meals) to the District 6 Annual Meeting. Section reports go to Karen Aspelin, and Student Chapter reports go to Jennifer Rosales. More details can be found on the District 6 web site at www.westernite.org.

- In case you missed it, the 2003 MUTCD came out in late November, and the FHWA has an outstanding Web site that is very easy to navigate (beats walking down the hall to grab the book). Go to mutcd.fhwa.dot.gov to find it. While most states will not have adopted this version yet, the web site is loaded with great information, including the changes from the millennium edition.
- Take the time attend a section/chapter meeting this winter. Many of the sections in District 6 have significant meetings in the winter and early spring, and these meetings are enhanced by your attendance.
- It is not too early to plan ahead for the District 6 Annual Meeting June 20-23, 2004, in downtown Sacramento. An outstanding technical program is planned with some new training opportunities for younger professionals.

International Director's Report

(Continued from page 5)

Nominating Committee Report

Past President Jenny Grote reported on the status of the Nominating Committee. The Board approved a motion to extend the process to bring candidates forward by the end of January in an effort to solicit additional interest from potential candidates. The current committee will continue to serve through that time. Vice President Elect Tim Harpst chairs the recently formed Leadership Identification Task Force to consider a number of leadership issues. The task force's charge includes consideration of potential barriers to members becoming candidates for various senior leadership positions. It is anticipated that they will make recommendations to the Board in March.

Current ITE Program Activities

ITE staff provided updates on current program activities. Shelley Row, Chief

Technical Officer, outlined the strategic emphasis areas. In transportation, operations, traffic signal systems and congestion management are important areas of focus. Under safety, intersection safety and pedestrian accessibility are key areas of interest. ITE is also involved in road safety audits and will continue to track these activities. Designing for all users is the third area of focus, including bike and pedestrian facilities planning and context sensitive design.

Aliyah Horton, Government Affairs Senior Director, provided an update on ITE policy activities. National legislative activities are documented weekly in ITE's Washington Weekly sent to ITE leadership and available on the website. ITE continues to communicate with congressional staff on TEA-21 reauthorization and monitor activities on Capitol Hill.

Eileen Erickson announced the availability of several new publications, including the Traffic Engineering Handbook for Latin America in Spanish, Neighborhood Street Design Guidelines, Making Intersections Safer, and, to be

released by the end of the year, Trip Generation and MUTCD 2003 Edition.

Upcoming Meetings

Please mark your calendars for the upcoming Technical Conferences and Annual Meetings:

- *Technical Conference:* March 28-31, 2004, Irvine, California (Theme: Intersection Safety)
- *Annual Meeting:* August 1-4, 2004, Disney World, Florida
- *Annual Meeting:* August, 7-10, 2005, Melbourne, Australia

If you have any questions about the Board's activities or any other questions about the Institute, please feel free to contact any of your District 6 International Directors. I would like to take this opportunity to welcome Rock Miller to the Board and thank Rich Romer for setting a high standard of service as a District 6 International Director. We will all miss his humor, insight and professional commitment to the Board.

Positions Available

CITY OF OAKLAND

Transportation Engineer

Salary: \$6,068.84–7,451.27 month;

Plus Excellent Benefit Package

37.5 hour work week

The incumbent performs complex and professional traffic engineering duties that include planning, designing and operation of transportation engineering projects, while exercising a high degree of independent judgment interpreting engineering plans and specifications, resolving technical problems and interacting with the public.

Three years of professional engineering experience in transportation or traffic engineering. Bachelor's degree in civil engineering, transportation or a closely related field. Requires a valid certificate as a registered civil or traffic engineer in the State of California.

Apply by: December 19, 2003. For an application, contact: City of Oakland, Office of Personnel, 150 Frank H. Ogawa Plaza, 2nd floor, Oakland, CA 94612-2019;

or download from: www.oaklandnet.com. Click on "City Jobs" and "How to apply."; or call: (510) 238-3112. AA/EOE

CITY OF SAN LUIS OBISPO, CALIF.

City Traffic Engineer—Salary \$5,240 - \$6,550/per month. Exceptional benefits including City paid 2.7@ 55 PERS retirement plan, flex scheduling (9/80), \$560 monthly contrib. toward health ins. plans, paid holidays, vacation and sick days, a Tuition Reimbursement Plan and much more. Under general direction responsibilities include the performance of complex professional and technical work in the design, project management, installation, maintenance and analyses of transportation planning and traffic control programs and new or modified traffic control devices.

EDUC/EXPER: Equivalent to grad. from a 4 yr college with major coursework in traffic, transportation or civil engineering and 3 yrs. of professional experience in design and construction and

management of traffic engineering projects or comb. of educ. and exper. Filing Deadline: 1/09/04 For the required application, contact: (805) 781 7250 or email: employment@slocity.org

AAE, INC.

Traffic Engineer—Position Available in Brea

AAE, Inc. is a dynamic and fast growing consulting engineering firm located in Southern California. We are currently seeking candidates with traffic engineering experience for our Brea office. Ideal candidates must have a Bachelor's degree in Civil Engineering or related field from an accredited college or university, possess a license (P.E. or T.E.) in the State of California and have a current valid California Driver's License.

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Interested candidates should send their resumes to AAE, Inc., ATTN: Human Resources, 601 Valencia Avenue, Suite 250, Brea, CA 92823. Information can also be found on our website at www.aaeinc.com.

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Tustin, San Bernardino, and San Diego offices. We have immediate openings for additional staff as indicated below.

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presentation skills are necessary. The applicant should also demonstrate familiarity with design analysis and project management administrative software tools.

Transportation Planner/Engineer in our San Diego and San Bernardino Offices: Position requires a bachelor's degree in Civil Engineering, Urban Planning or a related field, and desirably 1-3 years of professional engineering or planning experience. Ability to work independently with some consultation from supervisor, preparing budgets and recommendations, participating in professional organizations and client discussions. Preferred experience would include: project management, traffic analysis (including simulations), traffic design (including traffic signal, signing and striping, and street lighting design) and report preparation. Writing skills are a must.

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Please visit our website at www.katzokitsu.com for more information about the company and the positions. E-mail salary history with your resume and cover letter and address it to: Human Resource Department at employ-



ment@katzokitsu.com with the position in the subject line.

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http://www.metrokc.gov/ohrm/jobs/Environ_Engineer.htm

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To place your ad, e-mail your ad to john.kerenyi@kimley-horn.com. The deadline is the 28th of the previous odd-numbered month. The cost is \$1.50 per word, with a minimum cost per ad of \$100.00. Ads are also posted on our web site at www.westernite.org. More information is available on our Web site.

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California Tells Traffic Engineers to Transform Into a Practice... Or Else!

A multi-agency State of California task force is recommending the upgrade in the status of ten engineering disciplines, including traffic engineering, from title protection to regulated practices. However, the upgrade would require a politically difficult legislative process that could just as likely result in traffic engineering registration being eliminated. At their December meeting held in San Diego, the Task Force recommended that over the next few years, traffic engineering registration should either be converted to a practice, or disappear. Traffic engineering would not be allowed to keep its current title protection status.

The Title Act Study Task Force consists of legislative staff, the Department of Consumer Affairs, the Board of Professional Engineers and Land

Surveyors, and public members. According to their draft recommendation, over the next three to five years California should phase out its two-tier system of practice licenses and title-protected disciplines. Practice licenses are currently given to civil, electrical, and mechanical engineers. Traffic engineering is currently provided with only title protection. The Task Force's draft recommendation would have traffic engineering go through a "sunrise" process, in which the legislature reviews the potential public benefit or harm of allowing traffic engineers to practice. If the sunrise process concludes that issuing traffic engineering licenses would not create a public benefit, no new traffic engineering registrations would be issued by the state. But if the sunrise process is successful, traffic engineering registration

would become more useful to its holders.

Surviving the sunrise process in California would be difficult. Traffic engineers would have to find a supportive legislator to champion their cause and take on two major opponents: CELSOC (Consulting Engineers and Land Surveyors of California) and PECG (Professional Engineers in California Government.) CELSOC is an organization of consulting firms dominated by major civil engineering companies. PECG is a labor union of state employees. The chances for a traffic engineering practice license would improve if one of these organizations were to drop its opposition. PECG would be more likely to change its mind than CELSOC, because many PECG members are traffic engineers employed by



Walter Okitsu

(Continued on page 17)

Legislative Update



Walt Stringer,
District 6 Legislative
Committee Chair

In California, while there are no final answers yet, many budgetary questions are in the air and a California Transportation Commission appearance on December 11, by representatives of the new Governor, confirmed the fears of

both highway and transit interests that further budget reductions are likely. Keeping in mind that the state funding freeze has been in effect for one year, this appears to signal a multi-year trend that will likely defer those projects that are in the early stages, while projects well along in the pipeline will be completed, possibly using bridge financing.

At the federal level, Congress will soon depart for the Holiday recess, and transportation programs are being funded under continuing resolutions through

January 31. An Omnibus Appropriations bill is scheduled to be heard as soon as practical, with minor increases in most transportation programs. The House Transportation and Infrastructure Committee, in late November introduced HR3550 (TEA-LU), The Transportation Equity Act, A Legacy for Users. The bill represents a reauthorization of TEA-21 with \$375B proposed for all transportation modes over six years, a substantial increase from earlier proposals, and has focused funding programs for accessibility, smaller urbanized areas, and a "Transit in the Parks" demonstration for national parks with congestion. Security-related facility design and training would also be well-funded, and an increase of approximately \$100M per year would be available for ferryboat programs. As the bill is refined, more information can be found at www.house.gov/transportation. The Senate bill to reauthorize the highway side of TEA-21 is SB1702; it maintains the structure of earlier programs (except



for revisions to the environmental review process), with \$255B available over six years. Finally, in a procedural development, the Treasury Department asked the Transportation Department to suspend approvals of tax-advantaged leasing transactions for transit equipment, which historically has proven to be beneficial to capital project revenue for transit agencies. The issue revolves around a new trade sanction law, not the structure of the finance arrangement.

By the time this article is in print, most state legislatures in District 6 will be in session, and reports from Sections on state proposals are encouraged. Thanks to ITE Members and Section Legislative Chairs who send information on proposals and new laws in their area.

Access Management and Site Design

March 10-11, 2004, in Monrovia, California

How and where vehicles enter and leave the roadway strongly affects traffic safety and traffic operations on the site itself, in the street, and through nearby intersections. This course focuses on good practices for effective management of the many different types of access between the roadway and a specific site, including commercial, residential, and office sites. It provides a sound technical foundation for engineers and planners whose work involves them in designing or reviewing either access issues or on-site circulation plans.

Topics include:

- Effective access, driveway, and intersection design
- Drop-off/pick-up areas
- Safe design of conflict points and areas
- Drive thru facilities

- Queuing area and parking lot design
- Truck and transit access design
- Internal street configurations and controls
- Enhanced pedestrian and bicycle mobility and safety
- Emergency access
- Access management policies and practices
- Traffic mitigation fee programs and agreements
- Traffic thresholds and problem mitigation strategies
- Site plan and traffic impact studies for new development projects

What You Will Learn

The student will learn how to design and manage safe, efficient means to move traffic on, off, and around various types of business, commercial, and residential developments. Students will also learn how to prepare and use traffic impact studies for new developments.

Instructors

Nazir Lalani, P.E., Principal Engineer with the Traffic and Transportation Division of Ventura County Public Works, has won many awards in traffic engineering and has held positions in cities and counties. He is a former International President of ITE.

Philip Demosthenes, Access Program Administrator, Safety & Traffic Engineering Branch, Colorado Department of Highways, has been a leading national authority on access management, with extensive experience in access management training in several states. He has served on the TRB Committee on Access Management, and as Chair of the National Conferences on Access Management.

Workshop Registration and Fee

The fee for this course is \$200 for employees of California public agencies, and \$380 for all others. To register, please visit www.techtransfer.berkeley.edu or call (510) 231-5673.

California T.E. Title to Convert to Practice... Or Else!

(Continued from page 15)

Caltrans, the State DOT.

After going through the sunrise process, where by necessity many compromises would have to be made, the resulting TE license probably would allow its holder to perform the traffic-related design of fixed works that is currently restricted to either civil or electrical engineers. (Under current law, a traffic engineer's stamp on a traffic engineering plan that involves fixed works or electrical features is insufficient.) Aspects of traffic engineering that do not involve design of fixed works, such as traffic analysis and striping plans, would probably require no license. However, even such a watered-down practice license would be considered a victory for traffic engineers. For one thing, such a practice license would enable a traffic engineer registered in California to qualify for the PTOE certification.

Most ITE members would be in favor of this result. In a poll taken in 1997 by ITE's District 6, the great majority of members in California favored the

conversion of traffic engineering registration from title protection to a regulated practice. However, requiring traffic engineers to prove themselves worthy of getting a practice license puts the entire concept of state registration for traffic engineering in a do-or-die situation. A failure to get a legislator even interested in the subject could mean the end of TE registration.

California might be the scene of a "last stand" for traffic engineering registration. Oregon is discontinuing its traffic engineering examination. To become a traffic engineer in Oregon, you must first attain PE status through some other means, and then obtain ITE's PTOE certification.

The Registered Traffic Engineers of America (RTEA) was formed for the purpose of lobbying on behalf of traffic engineering registration. The RTEA has joined a coalition called the California Legislative Council for Professional Engineers (CLCPE), which includes societies representing electrical, chemical, fire protection, mechanical, control systems, and manufacturing engineers, as well as the NSPE's California branch. The CLCPE and the RTEA will fight the

requirement for a legislative sunrise of the title-protected disciplines, arguing that either our titles be upgraded or else things should remain the same. If that effort fails, the RTEA will present the best case possible during the sunrise process. CLCPE expects to undertake a major lobbying effort in 2004, and has made it clear that registered traffic engineers would be the biggest beneficiaries. For this reason, RTEA will be conducting a membership drive in the coming months to recruit more members. RTEA consists currently of only 100 members. In contrast, California has over 1500 registered traffic engineers. It costs \$50 per year to become a member. Although RTEA is not a part of ITE because of its lobbying activities, ITE's District 6 has endorsed RTEA's mission. Information on the RTEA can be found at <http://home.earthlink.net/~wokitsu/RTEA.html>. Contact Walter Okitsu at wokitsu@katzokitsu if you would like to join RTEA.

Walter Okitsu is President of the Registered Traffic Engineers of America. He is also President of Katz, Okitsu & Associates and Chair of the California Traffic Engineering Registration Committee of ITE District 6.

New Citizen Brochures Available

Over a period of about 10 years beginning in 1988, the City of San Buenaventura, California, developed a series of citizen informational brochures on a variety of topics. These were used to respond to citizen inquiries and at public meetings, workshops and forums. These brochures have been used by many agencies across the United States, Canada and throughout the rest of the world.

To provide improved customer service to residents and businesses, the Ventura County Transportation Department undertook a project to update the

brochures with the assistance of Katz, Okitsu and Associates. Several new topics were researched and added to the series, such as road drainage, access management, and road resurfacing. The series of 30 brochures comprehensively covers traffic engineering and traffic management fundamentals. They are designed to respond to as many questions as clearly as possible on a variety of topics. A standard tri-fold format is used for all brochures.

The brochures were also designed in such a way that Departments in other Ventura County Agencies can use them.

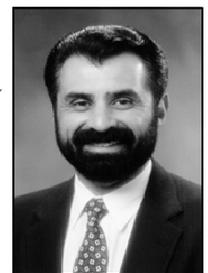
For example, the staff in the Planning Department of the Resource Management Agency will be able use the brochures on Traffic Impact Studies, Traffic Mitigation Fees, Sight Distance, Road Closures, Driveways and Sidewalks.

You can access the brochures at the following address: www.ventura.org/vcpwa/transportation/traffic.htm

If you have any questions about the brochures, please contact Nazir Lalani via email at:

Nazir.Lalani@mail.co.ventura.ca.us

Nazir Lalani



Editor's Corner

Have you noticed that attending ITE meetings is a habit? (A good one, I presume our readers would think.) The first few times you go, you don't really know anyone there. After a few trips, though, you look forward to

seeing your old ITE friends each time.

Please help your coworkers get into the habit of going by reminding them, carpooling with them, and otherwise encouraging them. We'll all be glad you did!



John Kerenyi

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