

# Westernite

Official Publication of District 6 of the Institute of Transportation Engineers

July–August 2004 Vol. 58 No. 4

## President's Message

After 300 days and 10 months, my term as President of ITE District 6 came to a rewarding end in Sacramento, thanks to a great Annual Meeting hosted by the Northern California Section. Bob Grandy and Steve Brown did an outstanding job of organizing events and people, and I greatly appreciated their support and contributions to ITE this year (as well as the entire Local Arrangements Committee, listed later in this issue).



Randy McCourt

### Strategic Plan

The most enduring effort of the last year has been the development of a strategic plan for the District. I would like to share with you the outcome of the Board's discussions on development of a Mission Statement and goals. The work on this plan will continue this year as we align our current program, volunteer positions, action items, and funding with these goals. This will be work in progress through the year, so please do not hesitate to call on any District 6 Board member to share your ideas about the vision of ITE in District 6 and our role in

*(Continued on page 4)*

## What's In This Issue

WesternITE RoundUp	2
District 6 Awards for 2004	3
Board Meeting Highlights	5
Section and Chapter Activities	10
California P.E. Update	13
Positions Available	14

## Look, Ma, No Loops!

### Replacing In-Pavement Inductive Loop Detection with Video Detection

Robert L. Kenny, P.E. (F)

This article relates the experiences of a municipality that recently converted many actuated signals from in-pavement loops to video detection. It provides information on specifications and recommended procedures for a conversion project, and guidelines based on the experience of the author managing a project to install over 1,000 cameras in two years. It also provides information that can be used to assess issues related to the conversion, including costs and other useful features of video detection. The experience noted in this article could help other agencies avoid difficulties and obtain better performance at lower cost.

### Introduction

Colorado Springs, Colorado, and the surrounding area, has a population of approximately 500,000 and serves as a major center of activity for much of southern Colorado. The climate (at an elevation of over 6,000 feet) causes severe conditions for roadway maintenance and in-pavement loops. The temperature can vary 50 degrees between day and night. During the fall, winter and spring, the road surface experiences frequent freeze-thaw cycles that reduce the life of typical in-pavement loops to five years or less, resulting in an average failure rate annually of 20% of the detector loops. The signal system of the greater Colorado Springs metropolitan area includes 465 signals, 45 of which operate in a fixed-time mode (in downtown). Geometrics of the remaining 420 intersections vary across the jurisdiction from one lane on each approach to intersections of two six-lane

facilities with right-turn and dual left-turn lanes in each direction, requiring from two to 48 loops per intersection. With an average of 24 loops per intersection, the system depended on over 10,000 loops prior to the video project. The loop failure rate resulted in a need to replace an average of 2,000 loops annually, costing over \$1,000,000 each year. However, as is typical of many cities, the maintenance budget has not kept up with demand. Therefore, service levels have been dropping, to the point where some loops were not repaired for a period of over two years.

In-pavement loop failures place a constant call on the approaching cross street or left-turn phase regardless of actual traffic present. This results in a significant reduction of intersection efficiency and capacity, and interferes with effective use of traffic-responsive timing plans. The "phantom" calls also generate negative phone calls from irritated motorists, especially during off-peak times. As volume-to-capacity ratios on many arterials exceed 85% and both congestion and accidents were increasing, City staff initiated research to find ways to increase efficiency of the roadways, especially at signalized intersections. In addition to typical transportation system management (TSM) improvements (e.g. adding turn lanes, acceleration/deceleration lanes), the City identified the need to find a cost-effective solution to the loop failure issue that would reduce maintenance costs and allow the City to devote these resources to other improvements.

### Project Initiation

Various solutions have been considered by many agencies to replace failing loops—microwave detection, pre-formed loops placed under pavement, use of modified installation techniques and/or materials, and video detection. Since

*(Continued on page 8)*

# WesternITE Round-Up

## Tips from Around the District



San Francisco/Bay Area Section

### Bay Area Approves 'Regional Measure 2' to fund Transportation Improvements

Voters in the Bay Area have once again stepped up and expressed their desire to continue funding transportation improvements. Regional Measure 2 (RM2), which increases tolls at the seven state-operated Bay Area bridges from \$2 to \$3, was approved by Bay Area voters in March 2004 when the majority of voters in six of seven Bay Area counties voted in favor of the measure. It became effective July 1, 2004, and will result in about \$125 million annual revenue.

RM2 will fund about \$1.51 billion for 36 capital projects and \$1.63 billion for transit operations over the next 35 years. The measure was originally proposed by the state legislature as Senate Bill 1926. The Metropolitan Transportation Commission, which serves as the Bay Area's Metropolitan Planning Organization, took the lead with administrating the program and narrowing down a wish list of about \$5 billion worth of requested projects for the measure. Projects were selected based on their benefits and nexus with the collected tolls.

RM2 was conceived to improve both vehicular and transit networks by reducing traffic delays at key bottlenecks in the bridge corridors, providing new transit options, providing convenient and seamless connections between various transit services, enhancing transit safety, and closing gaps in the carpool lane network. Unlike many other measures, RM2 further increases the sustainability of projects by funding operating costs in addition to the capital costs.

Major projects to be funded by RM2 include:

- Expansion of the ferry network by increasing the frequency of existing service and providing service to new locations such as South San Francisco, Richmond, Berkeley/Albany, and Marin County.
- BART service expansion, including the extension within Fremont to

### RM2 funding allocation

BART and other rail	32%
Express Bus investments	28%
Ferry service expansion	21%
Freeway bottleneck improvements	8%
Transit hubs	7%
Connectivity projects	3%
Bicycle/pedestrian/transit access	1%

Warm Springs, a rail connection into Oakland International Airport, and eBART in eastern Contra Costa County.

- Rail service over Dumbarton Bridge connecting Caltrain on the Peninsula with existing East Bay rail services such as BART, Capitol Corridor, or ACE.
- A new commuter rail service in the US 101 corridor in Marin and Sonoma Counties.
- Amtrak Capitol Corridor Improvements in along Interstate 80.
- San Francisco MUNI Third Street Light Rail and Embarcadero Historic Street Car Expansion.
- Expansion of the regional express bus service by providing new and more frequent transbay bus service, new suburban bus connections to BART stations, and new park and ride lots.
- Traffic bottleneck relief projects, such as Contra Costa: Eastbound Interstate 80 carpool-lane gap closure at Carquinez Bridge, improvements to the Interstate 80/680 interchange at Cordelia, and US 101 improvements at Greenbrae interchange in Marin County.
- At the Caldecott Tunnel on SR 24, construct a fourth bore, with two lanes and a shoulder.
- Commission a study to analyze ways to increase transit service on westbound State Route 24.
- Seismic strengthening of the transbay BART tunnel.
- Expansion of Car Share, TransLink, and other commuter services.
- Creation of a new transit hub in downtown San Francisco that will connect transbay buses with a Caltrain

downtown extension, BART, MUNI, and future high-speed rail.

*Contributed by Mark Spencer*



## Border Section

This November's election will include a County-wide ballot measure for a 40-year extension of the TransNet program, San Diego's half-cent sales tax for transportation improvements. Similar to other Counties in California, the proposition will require a two-thirds vote to pass. The TransNet extension is similar to the current program in which funds are split between state highways, local roads, and transit.

The Border Section's Highway Capacity Task Force recently published a report on traffic simulation in the San Diego area and beyond. The report includes a survey of local public agencies, as well as public agencies throughout District 6, on the types of traffic simulation models that are currently in use. A copy of the report is available in the WesternITE website under the California Border Section.

Also in traffic simulation news, Caltrans recently published a simulation guide. A copy is available at the following website: <http://www.itc-world.com/library.html>. An FHWA simulation guide is also in development, but was not yet published at the time of this article.

On July 19, the middle section of State Route 56 was opened, providing a direct freeway connection between I-5 and I-15.

Construction is currently underway on two other major transportation improvements in the San Diego area: the State Route 125 toll road from the international border to State Route 54, and the Mission Valley east extension of the San Diego trolley.

Bids were recently accepted for construction of the Sprinter rail line. This upcoming improvement will provide diesel rail passenger service on a line running from Oceanside to Escondido.

*Contributed by Erik Ruehr*

# District 6 Awards for 2004



*Jenny Grote receives the Outstanding Web Site award on behalf of the Arizona Section*



*The winners of the James H. Kell Student Competition: Chris Cherry, Julianna Gonzalez, Leo Espelet, and Laura Stanley*



*Eric Maya receives the Undergraduate Student of the Year award*



*Cathy Leong receives the Windiest and Wisest Scribe award*



*Traffic Jam, the winning Traffic Bowl team*

Lifetime Achievement Award	Wes Pringle
Individual Achievement Award	Tom Larwin
James H. Kell Student Competition	Julianna Gonzalez, Cal Poly Pomona Leo Espelet, San Diego State University Laura Stanley, Montana State University Chris Cherry, University of California, Berkeley
Student Paper Award	Emily Drennen, San Francisco State University, "Economic Effects of Traffic Calming on Urban Small Businesses"
Student Chapter Award for Best Student Chapter Report	Montana State University Honorable Mentions: UNLV, University of Wyoming
Outstanding Educator	Peter J. Clark, Cal Poly Pomona
Outstanding Undergraduate	Eric Maya, Cal Poly Pomona
Outstanding Graduate Student	Trevor Iman, Montana State University
Wayne T. Van Wagoner Award (for best paper by a District 6 member published in ITE Journal)	Paul Box, Paul Basha; "A Study of Accidents with Lead vs. Lag Left-Turn Phasing," ITE Journal, May 2003
Annual Meeting Best Paper Award	Paul F. Brown, "Relentless Traffic Demand Meets its Match in Isolated Corridors"
WesternITE Editorial Award (for best paper by a District 6 member published in WesternITE)	Kent Kacir, Chris Brehmer, David Noyce; "Findings and Recommendations of NCHRP 3-54: Evaluation of Traffic Signal Displays for Protected/Permissive Left-Turn Control," July/August 2003
Wisest and Windiest Scribe Award	Cathy Leong, Hawaii Section
Section Activities Award	Southern California Section
Membership Award for: Highest Number Gain Highest Percentage Gain	Washington Section Hawaii Section
Outstanding Web Site Award	Arizona Section
Traffic Bowl	First Place: Traffic Jam Second Place: Southern California Section Third Place: Intermountain Section
Remote-Control Car Race Competition	Owner/Sponsor: Steve Hofener Driver: Ruben Peña



*Wes Pringle and his family accept the Lifetime Achievement Award*

## Wes Pringle Receives District's Lifetime Achievement Award

Wes Pringle, longtime District 6 member, District Administrator for the past 10 years, and the 2000 recipient of the Burton Marsh Distinguished Service award, was presented with the District 6 Lifetime Achievement Award at the Sacramento meeting. Wes had the following statement:

"I appreciate receiving the Lifetime Achievement Award, and want to thank ITE District 6 and all its members. My service to ITE has been more enjoyable than work. I have had an opportunity to meet and work with many members, and have benefited in many ways, both professional and personal. My family has also enjoyed my participation and we have made many lasting friendships.

"I would encourage all members and especially younger members to be active. You will find that the benefits far outweigh the effort involved. The secret is to have fun doing the work, and ITE is an organization that is friendly and has fun. An example is the Traffic Bowl. Thanks again to ITE and especially all the members that I have had the pleasure of working and knowing over the years."

## President's Message

(Continued from page 1)

enhancing our profession. Please see the draft mission statement on this page.

### Data Collection Fund Update

All five universities completed their data collection efforts on time and several delivered summaries to our members at the Sacramento Annual Meeting. The data will be placed on the *WesternITE* web site under "News" for those that are interested in the efforts completed by the students. These data sources should be viewed as seed data for others to continue research and complement with other studies to help us all build a better understanding of our profession. So if you are interested in bicycle clearance times at signalized intersections (UC Davis found 12 to 14 feet per second was a useful number for bicycle speed), vehicle occupancies in new HOV lanes (Utah found that HOV lanes carried 2.4 persons per vehicle and general purpose lanes carried 1.1 persons per vehicle), parking demand at universities prior to LRT (they found 0.32 vehicles parked per student/faculty/staff member at peak times on the San Diego State University campus), queuing and delay at a rail crossing approaching an Interstate freeway prior to a pre-signal installation (after data to be collected this fall), or how much people slow down when speed trailers are present versus when the trailers are taken away (Montana State's data shows the percentage of motorists driving more than 5 miles per hour over posted speeds plummet with the trailer in place, but rebound quickly when the trailer is taken away), please go to the District 6 web site

and look over the data that has been collected. My thanks to the students for an outstanding effort.

### Call for Nominations and Award Candidates

It's not too early to be considering leadership and accomplishments of ITE members. I will be chairing the 2005 District 6 nomination committee, and would like you to forward any names (including your own) of people interested in serving as an officer (Secretary-Treasurer or International Director) to your Section/Chapter Past President. I will be working with them to coordinate our nomination process for the 2005 elections, and you should express interest to them by October. Candidates for the individual achievement and lifetime achievement awards should also be brought forward to your Section's or Chapter's Past President. The Past Presidents will be assisting me in developing the list of people that we should consider for this recognition in Kalispell, Montana, next year at our Annual Meeting.

### Status of District 6 Finances/Dues Increase

While District 6 is in an enviable position financially at this time, with reserves that meet operational targets, the completion of the strategic plan now points us in clear directions. We have spent the last two and a half years developing and testing student initiatives. This demonstration process indicates an unmistakable trend—student support is making a difference, attracting more and better students to transportation. One simple indicator—involvement in our annual meeting—has rocketed from less than 10 to 80 in Sacramento, and these are young people that are being hired by our agencies and firms in record numbers.

Student/faculty initiatives require financial support to be effective. We conducted this demonstration project in student initiatives programs have the most long-lasting value. Student chapter travel support, the data collection fund, and task-oriented funding (creation of historic CDs for our *WesternITE* and Annual Meeting compendiums) have all proven very successful. And our work is not done yet in the challenge to attract the best and brightest to transportation.

The District 6 Board has been very patient financially in developing approaches to fund these programs, utilizing the stability of our financial position and reserves to help underwrite these initiatives. By testing the approaches to find out which investments produce the best results, we can assure our members that any long-term funding support is well-worth the investment. We have now reached that point. There are clear signals that our programs are producing the results that our profession needs to thrive in the future.

## Draft Mission Statement for District 6:

**Mission/Vision:** Our members are making their communities a better place—safer, more efficient and livable—through meaningful careers in transportation.

### Goals

**Student Initiatives:** Encourage, support and provide opportunities to attract retain and develop the most talented students into transportation professionals.

**Career Development:** Provide opportunities for professionals to advance their transportation career development by promoting the growth of mentoring and professional liaison programs in the District and engaging young professionals into Institute activities.

**Technical Excellence:** Generate opportunities and support for the development of technical excellence in the profession.

**Social/Networking:** Create a platform for the transportation professional to interact outside the work environment to share information and create relationships that are both profession and family friendly.

**Promoting the Profession:** Enhance the transportation profession by increasing awareness of accomplishments, recognizing professional achievement and developing better skills to communicate with the public frequently, effectively and proactively.



Thank you to the Local Arrangements Committee for one of the best District 6 meetings ever! Pictured here: Julie Townsend, Board liaison; Dan Yau, Finance Chair; Bob Grandy, Co-Chair; Steve Brown, Co-Chair; Bruce Griesenbeck, Technical Chair; Fran Halbakken, Family Activities Chair; Todd Greenwood, Registration Chair; Randy Foust, Hotel Chair; and David Yatabe, Vendor Exhibit Chair. Not pictured: Sarah Brandenburg, Traffic Bowl; Marie Girardot, Vendor Liaison; and Alan Telford, Golf Event Coordinator.



Three "Johns" and a "Jean" (pronounced "John") enjoy the Getting Acquainted reception in the exhibit hall

At our January mid-year meeting, the Board will be looking to establish long-term funding to offset the costs of the most successful programs. While there are a range of options, a dues increase is clearly an alternative that will be considered seriously. Since 1993, our District 6 dues

have been \$20 per year. I want to encourage you to contact your Board members this summer and fall and voice your opinion regarding your ideas for funding alternatives and if you have concern regarding a dues increase. A \$2 increase would raise \$7,000 to \$8,000 annually and would fund the successful student programs we have established.

As for the future, it is in good hands if we continue looking forward and not standing still. I am thankful to have Zaki Mustafa replace me as ITE District 6 President for the coming year. I believe you will find that he has some exciting ideas about how we can move our student programs forward from this beachhead of accomplishment, and I plan to fully support his initiatives.

#### One Final Thank You

It has been a great year serving ITE

District 6, and I would like to thank all of you for supporting me in my term as President. I thank my family for all their support this past year, and I look forward to a *little* more time with them this year.

As new leadership for ITE emerges, I want you all to know that if you inspire one person in this profession, you have had a huge impact. Let me tell you about Eric Maya. Eric is a Cal Poly Pomona student that did not have a life long dream to be a transportation engineer or planner, but through his education has become attracted to transportation and was our Outstanding Undergraduate Student Award winner this year. He told me that he wanted to be just like me. I would be proud if he sees the positive contributions of service, the passion for transportation and love of my family that I have tried to share with others this year. I know if he does, I have done my job.

## Annual Board Meeting Highlights

On Sunday, June 20, 2004, President Randy McCourt led a day-long meeting of the Board with great success. The meeting started at 10 AM and ended just after 5 PM and was held at the Sheraton Grand Hotel in Sacramento, California. All Board members were present, with 35 attendees at the meeting, including guest Steve Hofener, International President of ITE.

Throughout the day, reports and presentations were received by the Board from the following meeting attendees on the various activities occurring within District 6 and at the International level:

Steve Hofener (International President), Tim Harpst (International Vice President), International Vice President candidates Rich Romer and Tom Clausen, Wes Pringle (outgoing District Administrator), Jenny Grote (incoming

District Administrator), John Kerenyi (*WesternITE* Managing Editor), Jennifer Rosales (Career Guidance Chair), Karen Aspelin (Technical Chair), Steve Sasaki (Membership Vice Chair), Walt Stringer (Legislative Chair), and Walter Okitsu (California Traffic Engineering Registration Chair).

Reports were also received from the Local Arrangements Chairs for forthcoming meetings. Bob Grandy reported on the status of the Sacramento meeting. At the time of his report there were 265 full-time registrations, with 80 student registrations. LAC reports were also received from Michael Sanderson (2005 Kalispell, Montana meeting), and Cathy Leong (2006 Hawaii meeting).

The Board received presentations from the Arizona Section (Sarath Joshua) and the Colorado/Wyoming Section (Nate Larson, John LaSala, and Alex Ariniello) to host the 2009 District 6 Annual Meeting. The Board awarded the meeting to the Colorado/Wyoming Section, to be held in the city of Denver, Colorado.

Other key

highlights of the meeting included:

- Under the leadership of Randy McCourt, the Board followed up on progress made since our Mid-year Meeting to define a District 6 Strategic Plan which includes the development of a mission statement and goals for the District. *[Please see Page 4—Ed.]*
- The Board approved a second Lifetime Achievement Award for each of the next five years. This action was passed in response to the need to recognize many outstanding leaders within District 6.



Ken Ackeret, District 6 Secretary-Treasurer

### Your new Board

The officers for the year 2004-2005 were announced as follows:

- Zaki Mustafa, President
- Ken Ackeret, Vice President
- Dalene Whitlock, Secretary-Treasurer

Also, Rory Grindley was elected to the International Board, and his term will begin at year's end.



Three teams eagerly await the next challenging Jeopardy-style "answer" at the Traffic Bowl

- The Advisory Committee has been busy the last few months updating the District's charter and bylaws. The Board passed actions to have our International Director Ray Davis forward a petition to the International Board of Directors to amend the District 6 Charter with the Board-accepted bylaw revisions.
- District Administrator Wes Pringle presented his review of Student Chapter Charter/Bylaws for the Cal Poly Pomona and Ca Poly San Luis Obispo student chapters, which were approved by the Board. In addition, the Board approved updates to the Southern Arizona Chapter Charter and Bylaws, as well as the California Border Section Bylaws.
- Technical Chair Karen Aspelin recommended that the District 6 Board establish a second Section Activity Award to recognize smaller sections and chapters. One award would be made to sections/chapters with membership at or above 300, and another to sections/chapters with membership below 300. Each would receive a certificate and \$200. The highest-rated activity report would be sent on the International competition.

Karen's recommendation was accepted by the Board.

- The San Diego State University Student Chapter was recognized by the Board for its completion of the WesternITE Preservation project. They now have available for sale a two-CD set containing scanned newsletters from 1950 to 2003. Contact the student chapter at [sdsu\\_ite@hotmail.com](mailto:sdsu_ite@hotmail.com) for details.
- Steve Sasaki reported on behalf of our Membership Chair, David Butzier. The Washington Section had the greatest numeric increase in membership, and the Hawaii Section had greatest percentage increase.

Ken Ackeret presented a draft fiscal year 2004-05 budget to the Board. During the Board discussions, the following items were reviewed:

- The projected income/expenses of the Kalispell 2005 meeting.
- Increase in awards budget.
- *WesternITE* publishing budget based on 16-page issues.
- Increased International Director travel budget for the Australia Annual Meeting in 2005.
- Increased Student Initiatives budget.

A draft fiscal year 2004/05 budget with potential expenses in excess of income by \$4,450, was approved by the Board, and was subsequently approved by the membership at the Annual Business Meeting on Tuesday, June 22.



*The Cal Poly Pomona student chapter explores the California State Railroad Museum during Monday evening's social outing*



*A group of students and professionals enjoy a live band in downtown Sacramento after the awards banquet*

*Right: The Sacramento meeting collage was prepared by Zaki Mustafa*



*If you missed the Synchronex hospitality suite, you missed an Elvis karaoke duet (above) and Rock Miller singing a Blondie song.*



*These satisfied-looking diners are enjoying a barbecue dinner in the California State Railroad Museum*



## Feature Article

(Continued from page 1)

frequent changes in lane configuration (such as minor widening for left turn lanes, converting to dual lefts, etc.) requires a system that can be modified easily and inexpensively, in-ground alternatives were eliminated for consideration. With the improvements in video detection technology in the past 10 years, the City tentatively chose video as the best system to replace the loops. During late 2000, a few intersections were converted for evaluation, and in April of 2001 the City advertised a procurement for what has become one of the largest video detection projects ever.

The equipment and installation were separated into two different bids because the City wanted control over what equipment was provided and who would do the work. Often a signal contractor will have an exclusive working relationship with just one supplier who sells or promotes just one brand of equipment, so labor rates could dictate the equipment used. The City was careful to review equipment options and write the specification to manufacturers that met stated needs and provided features for future uses, and let all the contractors bid on installation separately.

For the equipment supply bid, performance (functional) specifications were used instead of specific hardware specs (which generally relate to one vendor's product and exclude others). Colorado Springs did, however, have two hardware-based conditions: First, the video image processor (VIP) had to install directly into a type 332 cabinet's input file, because the City's older cabinets did not have room for any adapters or "black boxes." Second, all the intelligence must be in the VIP, in the cabinet, using "dumb" cameras. This condition was

### About the Author:

**Robert Kenny** is a Senior Traffic Engineer with the City of Colorado Springs, Colorado. He has 30 years of state and municipal transportation engineering experience in Colorado and New Mexico. He is a registered professional engineer in Colorado, and obtained his Civil Engineering degree at Colorado State University. He is a Fellow of ITE.



included because the rapidly changing video camera industry will improve the detection abilities in the future, and the City wanted to be able to switch out cameras now and in the future without having to change any of the in-cabinet video processing equipment. There were also concerns about being tied to any one brand of camera for replacement and the associated equipment replacement cost.

The equipment bids were opened in April 2001, and the low bidder was the west coast importer of Traficon equipment, Kar-Gor, Inc., from Salem, Oregon. The equipment purchase contract included cameras, brackets, dual- and single-camera input VIP units, wireless remote cameras (1000' range), "Viewcom" communication modules (allowing modules to communicate with the traffic operations center), software, training and support. A two-year warranty, including free upgrades during the warranty period, was included per the contract requirements. Combination video cabling, with power, focus, zoom, heater, and video signal in one cable, was purchased separately.

Two local contractors who had previously worked on signals were pre-qualified, then required to send personnel to training conducted jointly by Traficon (for the installation of the equipment), and by City signal maintenance technicians on how they wanted wiring done in the cabinets. The contractors were used for the initial installations on a "time and materials" basis. However, a significant amount was saved on the second and later groupings by adding additional contractors and having them bid for the installation. Labor was bid as a "lump sum" for each of five groupings of intersections, each group made up of eight to 12 intersections, for a total of 45 to 50 intersections in each phase. The lump sum bid included bucket truck usage, a licensed and unlicensed installer, miscellaneous materials and supplies, and traffic control. Installation details were provided to the bidders using a site survey for each intersection, which was provided two weeks prior to bidding.

Using the broken-loop list, and complaints from the public, intersections were prioritized and put into bid groups by geographic area. This method was well-received by the contractors, as they would be solely responsible for the traffic control, equipment, labor and minor materials for the entire set of intersections, and if they miscalculated too high or too low on any one intersection, it would not have such a significant impact on their total profit or costs for the group. Each intersection was reviewed in the field to create a small



Video image processor, installed in controller cabinet

drawing, or site survey, identifying phases in recall versus actuated, each camera location, and phases for the camera input, along with any other required work, such as addition of street lights or conduit replacement.

Since each group of intersections was treated as a separate contract, more than one contractor could be working at the same time, if they split the bids. As it turned out, that was usually the case, with one contractor getting 2 or 3 groups each time. They were given 28 calendar days to complete installation, which seems fast, but after the initial group, none of the contractors had a problem with meeting the schedule. The City estimates that competitive bidding saved \$2,000 to \$3,000 per intersection, or approximately \$1,000,000 over the entire project. Because procurement of the necessary equipment was completed prior to the construction bid, the installation went relatively quickly, with an average of two days per intersection.

Installation was followed up by the City's two-man video tech crew to fine-tune the installation using a 19" high-resolution monitor from inside a custom-built video van. Originally the contractors set up the cameras, but during the project, the City found that it obtained better results using its own forces to fine-tune the installation. The aim and focus of the cameras was adjusted, detection zones were configured, output assignments were checked, and intersection-specific features (such as delay for right-turn lanes, extension, or different time-of-day configurations) were implemented.

Costs of video conversion varied, based on type of intersection (span wire versus mast arm), number of cameras (from one to eight) and additional work required, such as adding street lighting. Over the past 401 intersections completed, the average cost for all materials, equipment, and installation labor, not

## Feature Article *(continued)*

counting City staff time, has been slightly over \$13,000 per intersection, with an average of 3.2 cameras per intersection. This cost is lower than other agencies typically report, but it is based on a very large group of intersections. However, it does include the extra costs of a custom-built video van, an additional bucket truck, and various testing equipment. Significant savings have occurred by bidding video cable directly, keeping the labor and equipment bids separate, and using City forces to do the fine-tuning. Prior to using this procedure, costs on the initial 15 test intersections were approximately \$22,000 per intersection. By committing to a large project, and following these procedures, the total project with 420 actuated intersections will be completed for about \$5.6 million, compared to the \$10 million estimated cost based on the initial intersections using the traditional method of bidding video installation with the contractor providing everything.

Upon completion, maintenance is expected to cost approximately \$200,000 per year, based on the observed two-year failure history, thus saving \$800,000 annually when compared with the cost of repairing loop failures. Over the past two years, the City has experienced a maintenance rate of about five percent for video (compared to 20% for loops), including all causes of service call, including collision knock-downs as well as equipment failure. The 5% failure rate per year is composed of 0.67% failure of video image processors (four per 600), 1.5% failure of cameras (15 per 1000), and a little over 2% caused by wind or traffic accidents. This a significant reduction in service needs compared to loops, and has resulted in greatly improved level of service

### Sign of the Times



*Sign spotted in front of All Saints Episcopal Church, Carmel, California, by Brent Ogden, Korve Engineering*

to the public, and has improved capacity and reduced delay.

### Tips for Successful Installation

Installing video detection at over 400 intersections has taught us that video installation is as much art as science—camera placement cannot follow set standard layouts. Absolutely every camera location at every intersection must be established during a field investigation to visualize what the camera will “see.” It helps significantly if the person creating the site survey has a background in video or still photography along with traffic engineering, so they can visualize the scene from a variety of camera placements, and will be aware of the lighting conditions expected over the course of a year. Intersection lighting is very important, as it can affect the auto-iris in many cameras. The vertical angle of each camera is important and must consider the position of the sun, taking into account seasonal variations. Mast arm locations generally perform better, as often span wire poles are shorter and placed further off the traveled roadway, creating more difficult viewing angles. Low mounting heights result in cameras installed nearly horizontally, which can lead to more snow or rain on the lens, and cause more glare, especially at night, from approaching headlights on wet surfaces. Many trouble calls are from the camera being blinded by the sun, for only a few minutes, and for just a few days in the spring and fall, but remains an issue that needs to be solved. In many cases, problems can be addressed by increasing camera height for a better vertical angle. “Side shooting” can solve some difficult angles, although this should be done with care, as large trucks in the opposite direction travel lane can “swamp” the camera image, eliminating detection calls.

Large horizontal angles can cause problems when vehicles in one lane block or put in a false call in another lane. Worn, polished and shiny pavement, especially at night and in wet conditions, can allow reflections or glare from a vehicle to cause false calls in adjoining lanes. This is more likely if the camera chip does not control image bloom, or if the camera is shooting across a left-turn lane to detect through movements. Each intersection is a unique environment, and taking adequate time in the field to create an effective site survey is critical to the success of the project.

#### Guidelines

Guidelines the City uses during installation include:



*Two cameras mounted on same mast arm*

- Keep the camera as high as possible, and zoom in to avoid unnecessary background.
- Keep the view as straight-on as possible to eliminate occlusion by adjacent vehicles.
- Never have the horizon in the picture (or bodies of water, or other large reflective surfaces).
- Buy the best, highest-resolution black-and-white camera available, with a good-quality auto-iris lens.
- Use a fast CCD chip without smear, bloom or memory .
- Make sure the housing has internal heating (for cold climates).
- Buy or make hood extensions to eliminate sun glare and snow.
- Get a good monitor for set-up (19” minimum, high-resolution) and modify a van for video only.
- Include your signal techs in the project, but limit the setup to one person if possible.
- Instead of shooting across too many lanes, install additional cameras to eliminate occlusion.
- Make sure your supplier will provide training for your technicians, contractors and staff.
- Don’t over sell the project to politicians or the public—it replaces loops, it doesn’t fix bad signal timing!

A public-relations campaign is particularly important for such projects to educate the public about what you are doing and why. Even after creating a short public information video on the project for the local cable TV, the City still receives numerous calls related to privacy concerns and requests for archived video footage (which does not exist).

### Conclusions

After installing over 400 intersections, we firmly believe video was the right

**Feature Article (continued)**

choice to replace in-ground loops. The project has improved service to our citizens, reduced delay caused by broken loops, and reduced signal installation and maintenance costs. During construction projects, different “virtual loops” can be set up to match temporary traffic control plans when traffic has to be shifted. Special configurations, such as third-car actuation for left turn phases during off-peak hours, advance loops for volume-density, and other operations techniques can also be put into memory by time of day.

Staff has started to explore advanced features of the system, such as using the video for count loops set up independently of the phase detection loops, modules that allow communication from our Traffic Operations Center to the individual intersection over phone, fiber, or radio, for remote download / upload of different configurations, data access (pick up traffic counts), and other maintenance activities (confirm the camera is working, check for glare or false calls, and troubleshoot remotely). Colorado Springs now has more flexible, less expensive and more dependable detection for our actuated signals.

*Editor’s Note: The March-April issue contained an incorrect version of Table 1 for the feature article (“Re-Timing 218 Signals in the Denver CBD,” by John LaSala, Darrell Alston, and Michael Finocchio). The correct data are below.*

**Table 1: System-wide Measures of Effectiveness**

Performance Measures	Daily Benefits
Vehicle-hours of travel	<b>2,074-hour</b> reduction
Fuel consumption	<b>872-gallon</b> decrease
Time and fuel costs	<b>\$36,450</b> saved daily
Daily pollutant emissions	<b>2,329-pound</b> reduction

## Section and Chapter Activities

### Colorado-Wyoming Section

*April Meeting*

The April luncheon was held the morning of the 2<sup>nd</sup> in conjunction with the Spring Transportation Symposium. It was held at the Radisson Hotel Denver Stapleton Plaza. Excellent attendance included over 120 people for a number of technical presentations.



*May Meeting*

The May luncheon was held on the 7<sup>th</sup> in Aurora, Colorado, at the Radisson Hotel Denver Southeast. Section President, Allen Albers, presided over the meeting that was attended by over 110 members and guests including a number of candidates for local chapter, District 6, and International ITE offices.

Prior to the luncheon, an “ASSHTO/CDOT Signal Structure Policy Update” seminar was conducted by Dick Osmun, and a seminar entitled “Techniques for Transportation Professionals” was presented by Gene Putman.

The following candidates for ITE offices were present and made campaign speeches: Rich Romer, Kathy Harris, and Bob Grandy.

Al Pepper, a founding member of the

section, was in attendance for the luncheon. Mark Schaeffer presented the award for Transportation Professional of the Year to Lou Lipp, a long-time section member.

The Colorado/Wyoming Section contact is Allen Albers at the City of Lakewood, 303-987-7984; allalb@lakewood.org. Also, please visit our section’s website at [www.cowwite.org](http://www.cowwite.org).



*Bill Hange, Scribe*

- Honglong Li, Lyon Associates, Inc., has been appointed the new OMPO Citizen’s Advisory Committee representative.
- The ITE/DTS Engineer’s Week Display won the Presentation Award at the Engineer’s Week Banquet.
- ITE member Ted Kawahigashi was awarded the Lifetime Achievement Award at the Engineer’s Week Banquet.

The featured speakers were Director Cheryl Soon and Mike Oshiro from the Department of Transportation Services (DTS). Ms. Soon began her presentation by providing an update to the ongoing sidewalk widening project along Kuhio Avenue, which will provide six-foot sidewalks by narrowing existing vehicular lanes. Mr. Oshiro presented the Waianae Coast Emergency Access Road project, which will construct several roads to serve as emergency access. The roads will be designed to agricultural roadway standards with a 40-foot right-of-way and a 24-foot pavement width. Two roadways will be open at all times, with the remainder to be kept gated, to be opened only during emergencies.

*April Meeting Highlights*

The April luncheon meeting was held on the 20<sup>th</sup> at the State of Hawaii Department of Transportation’s conference room in Kapolei. The featured speaker was Hilarie Keehne, planner for Townscape, Inc., who spoke about the Keahole to



### Hawaii Section

*March Meeting*

The March luncheon was held on the 23<sup>rd</sup> at the office of Belt Collins in Honolulu. President Cathy Leong made the following announcements:

- Cheryl Yoshida, CH2M Hill, has been appointed the new HCES representative.

Honaunau Regional Circulation Plan prepared for the County of Hawaii. The plan, which was finalized in February 2003, provides recommendations that could help to alleviate existing and projected traffic conditions resulting from expected rapid population growth and land development, and the lack of affordable housing in the vicinity. The plan's primary conclusion was that the forecast travel demand cannot be accommodated without the construction of additional infrastructure. The plan includes short-term (TDM and TSM) and long-term improvements.



Cathy Leong, President



## San Francisco Bay Area Section

### March Meeting

The March meeting was held on the 18<sup>th</sup> at downtown San Francisco's Sinbad's Restaurant. The featured speaker was Rebecca Long, a legislative analyst with the Metropolitan Transportation Commission (MTC). Ms. Long's presentation, titled "Regional Measure 2: What is it? What is next?" provided an overview of the recently approved plan, including the major projects included in the measure and the next steps in implementing the plan. [Please refer to Page 2 for more information about RM2—Ed.]

### April Meeting

The April meeting was held on the 22<sup>nd</sup> at the ever-popular Silver Dragon Restaurant in downtown Oakland.

The topic for this year's student paper contest was "Regional Measure 2 in the Bay Area: what should be our top three priorities and why?" All contest entrants received an all expense-paid trip to this year's District 6 Annual Meeting in Sacramento. The winning paper was submitted by Luis Mejias, a graduate student at UC Berkeley's Transportation Engineering program, who was presented with a check for \$1,000 and the opportunity to present his paper to the

group. Luis' paper argued that the top three priorities of Regional Measure 2 (RM2) should be the Transbay Terminal, TransLink, and the BART Tube Seismic Retrofit. Luis successfully reasoned that these three projects would provide the most benefit to the area and thus should receive priority in receiving RM2 funding. Luis' winning paper can be read on our section website.

Patty Camacho, the student liaison for the Bay Area Section, kicked off the Students in Transportation Engineering and Planning (STEP) mentor program, which will match ITE members with local university students to encourage students to pursue their studies and provide guidance for their subsequent careers in transportation engineering. The program will provide formal and informal opportunities for the mentors and the mentees to interact and share experiences. All section members and local university students are encouraged to join the program by filling out and submitting an application by July 31, 2004. Applications and more information about the mentorship program can be found on our section website.

### May Meeting

The May meeting was held jointly with the South Bay Transportation Officials Association (SBTOA) at Su Hongs Restaurant in Palo Alto on the 20<sup>th</sup>. The meeting's theme was Intelligent Transportation Systems (ITS).

Jaime C. Maldonado, a senior program manager at Metropolitan Transportation Commission (MTC), and Syd Bowcott, with Iteris, presented the Bay Area ITS Regional Architecture, which will promote interfacing between ITS deployments in the region and will fulfill the FHWA's funding requirement that projects conform to a regional architecture.

Kevin Aguigi, a principal of DKS Associates, presented an overview of new and upcoming ITS technologies and applications. Featured technologies included:

- Signal controllers even more advanced than Model 2070 controllers.
- New advances in communications devices such as water/tape blocking in fiber optics, wireless Ethernet, 40Gbit Ethernet, power over Ethernet, and broadband over power lines.
- New advances in video systems such as CCTV cameras with built-in encoders, MPEG4 video compression, stereo cameras, solar powered

cameras, and new devices to keep birds from sitting on cameras.

- Transit technologies such as adaptive transit signal priority, predictive arrivals and departures, advanced collision warning systems, and fuel-cell buses.

For the latest news in the San Francisco Bay Area section, please visit our section's website at [www.westernite.org/Sections/SFBay\\_Area](http://www.westernite.org/Sections/SFBay_Area).



Sam Tabibnia, Scribe



## Central Coast Section

### April Meeting

The April meeting was held on the 13<sup>th</sup> at the Golden China Restaurant in the City of Ventura. A total of 35 people attended. The featured speaker, Jeff Heald, is an attorney that specializes in representing public and private agencies with regard to traffic and transportation lawsuits. Jeff has 20 years of experience in defending cities, counties, and other public agencies in lawsuits. Jeff explained why attorneys sue public agencies, and discussed several examples.

### May Meeting

The Central Coast Section is supporting the re-establishment of the California Polytechnic State University ("Cal Poly") San Luis Obispo ITE student chapter. The section met May 11<sup>th</sup> at San Luis Obispo City Hall, convenient to the campus, and was joined by five student leaders from the fledging student chapter. Professor Eugene Jud, the featured speaker, described a proposal for implementation of the University's master circulation plan. The University has committed itself to sustainability in its future expansion plans and associated circulation improvements. The primary challenges in achieving sustainability include provision of non-motorized transportation facilities, smart parking management, but most importantly, development of a new "mobility culture."

The meeting concluded with a brief panel discussion about ways the Section might foster the development of the

## Section and Chapter Activities (continued)

Student Chapter. Suggestions included technical presentations, career coaching, scholarships, field trips and future joint meetings.

*Richard Marshall, Scribe*



## New Mexico Section

### April Meeting

In April, the New Mexico Section attended the New Mexico Paving Conference held in the City of Las Cruces. This annual conference is a well-attended event attracting transportation engineers both from the public and private sides. Topics included bridge design and monitoring, Intelligent Transportation Systems, project funding, and environmental processes.

### May Meeting

During the May meeting, the First and Second Place winners of the Student Paper Contest was presented. Dr. Jerry Hall, from the University of New Mexico, sponsors the competition each year in his CE 482/582 class. The students select and research a project. At the end of the term, the papers are presented before a panel. Award recipients are selected based on the complexity of the project, the depth of research, technical approach and presentation. This year, the First Place winner was Jonathan Niski for his paper on Traffic Sign Recognition, and the Second Place winner was Marcella Jaramillo for her paper on Challenges in Implementing a Traffic Signal. The award for First Place was \$100.00 and Second Place was \$50.00.

Nevin Harwick, the chair of the technical committee formed to develop suggested language to present to the State legislature for adoption into law to change current language addressing the operation of "T" intersections, gave an update on the

progress of the project. Current statutes from 17 other states have been compiled and distributed for the review of the committee members. The committee will be meeting in June to review and discuss these statutes and begin developing suggested language.

*Tom Blaine*



## Southern California Section

### March Meeting

The March meeting was held jointly with the California Border Section on the 19th at the Laguna Cliffs Marriott Resort Dana Point. Approximately 90 people, including ten students, attended the meeting.

The mini-workshop consisted of four programs. Erik Ruehr, from VRPA Technologies, presented "The Use of Traffic Simulation Models in District 6." Mr. Ruehr presented a history of capacity analysis, compared methods, and presented advantages and disadvantages. Dave Sorenson, from Kimley-Horn and Associates, described the use of Synchro and SimTraffic. Mike Calandra, Senior Research Analyst for SANDAG, described the use of CORSIM. Ron Milam, from Fehr & Peers Associates, described the use of VISSIM.

The luncheon speaker was John Fisher, Assistant General Manager of the City of Los Angeles Department of Transportation (LADOT), who presented ten tips for engineers survive the political environment.

### April Meeting

The April meeting was held jointly with the Orange County Traffic Engineering Council (OCTEC) at the Buena Park Radisson Hotel. This month's meeting consisted of ITE annual student chapters presentations followed by a special elementary school presentation and the technical session. Approximately 90 people, including 60 students, attended the meeting.

Three ITE student chapters presented

the results of their traffic engineering research. The first-place recipients (\$500 prize) were Hui Lai, Mariano Pineda and Anurag Singh of Cal Poly Pomona, who created a working signalized intersection in the laboratory. The second-place recipients (\$300 prize) were Suleyman Tuna and Diego Aguirre, representing California State University Los Angeles, who presented "Evaluation of Community Dial-A-Ride Transit Service in Arcadia, California." The third-place recipient (\$200 prize) was Charlene Hwang, from U.C. Irvine, who presented an overview of traffic impact analyses. An honorable mention (\$100 prize) was awarded to Alicia Yang, also from U.C. Irvine, for research related to a roadway design project.

Following the student chapter presentations, students from Pio Pico Elementary School in Santa Ana presented their work on traffic safety, including alternatives to improve pedestrian safety near school zones. The Section awarded a Certificate of Appreciation to each of the students and their advisor.

The feature presentation was entitled "Continuous Flow Intersections," and was presented by Mr. Francisco Mier of ABMB Engineers, Inc. Mr. Mier explained the CFI concept, which removes left-turn traffic from the main intersection by having left turners make their turn several hundred feet before the main intersection.



*Co-scribe Sunil Rajpal*



*Co-scribe Joaquin Siques*



*Pio Pico Elementary School students present the results of their work to the Southern California Section*

## California P.E. Board Approves Sunrise Process for Traffic Engineers

At their April 22nd meeting, the California Board for Professional Engineers and Land Surveyors adopted a set of recommendations regarding the future of the nine title-protected non-practicing disciplines, including traffic engineering. The key recommendation is that the nine title-protected disciplines should go through a legislative sunrise process at the same time to determine whether each specific discipline should be converted to a practice act, or eliminated. The overall intention is to discard the current two-tiered split of engineering disciplines between the nine titles and three practices (civil, electrical, and mechanical engineering.)

Opposition came from the Consulting Engineers and Land Surveyors of California (CELSOC) and the Professional Engineers in California Government (PECG.), who presented a joint position against the recommendations. CELSOC and PECG argued that none of the titles should be upgraded into practices, and that traffic engineering should be converted into a practice authority within civil

engineering. Under their plan, a traffic engineer could only obtain the traffic engineering title after obtaining the civil engineering license first, and then passing a traffic engineering exam.

In my statement to the Board, I noted that many traffic engineers enter the profession by way of electrical engineering or other non-civil engineering fields. By forcing new traffic engineers to first become civil engineers, the result would be an unnecessary reduction in the number of traffic engineers. Furthermore, California would be out of step with Oregon, whose current traffic engineers obtained their PE license without having to first get a civil engineering license.

The Board discarded PECG and CELSOC's position, and voted in favor of forwarding all nine of the titles to the legislature to undergo a sunrise process. That sunrise process is expected to begin later this year. Those titles that fail to be upgraded will be eliminated. Traffic engineering is widely perceived to be one of the titles most likely to upgrade. A legislative bill in 2005 would, hopefully,

upgrade traffic engineering into a practice. The bill would also allow for overlap among all the disciplines, so that a traffic engineer may perform tasks currently reserved only for civil and electrical engineers.

The next challenge will be defining what parts of traffic engineering should require a license. At the very least, a registered traffic engineer would be allowed to perform the traffic-related tasks that currently require either a civil or electrical engineering license, such as design of traffic signals, lighting, guardrails, barriers, delineators, and speed humps. But the sunrise process will also decide whether tasks that currently require no license, such as traffic capacity analysis, striping plans, work site traffic control plans, speed zone surveys, and traffic signal timing, would require a P.E. to perform the task. I encourage District 6 to begin a discussion on this matter soon.

*Walter Okitsu, ITE District 6 Chairman on California Traffic Engineering Registration*



*Walter Okitsu*

## Tom Larwin Receives District's Individual Achievement Award



*Tom Larwin and his wife receive the Individual Achievement Award*

Tom Larwin was awarded the District 6 Individual Achievement Award at the Sacramento meeting. He expressed his thanks for the award and recounted that his service to ITE started as a student chapter member 40 years ago at the University of Illinois. He urged members to continually search out ways to be active in service to ITE, and that there are numerous avenues available. Tom chose to be active on several technical committees and

rose to leadership positions with the Coordinating Council. He concluded by noting that he felt the "benefit-cost ratio" for his ITE service was far greater than 1.0. In other words, the benefits received from the close personal and professional friendships he has developed with other ITE members, plus the knowledge and experience obtained through these contacts and the various ITE work efforts, far exceeds his contribution of volunteer time.

# Positions Available

## CITY OF LANCASTER, CALIFORNIA

*Associate Traffic Engineer*—Salary: \$5,103 - \$7,019mo. City paid PERS (2@55) + .7% PARS; City contributes amount equal to 12% of employee's salary to deferred compensation plan; 96 hrs. administrative leave; 9/80 schedule.

The incumbent performs professional engineering work in planning, design, inspection and administration of public works projects with emphasis on traffic engineering projects; and provides technical and functional supervision over technical engineering staff. Duties include preparing traffic engineering plans and studies; designing common traffic engineering structures; preparing quantity and cost estimates and bid packages; administering contracts and researching project design requirements.

*Requirements:* Bachelor's degree with major course work in civil engineering and/or traffic engineering; three years professional level municipal or related experience, including one year recent experience in traffic engineering and/or traffic safety analysis; possession of either a valid Civil Engineer Certificate of Registration or licensure as a Traffic Engineer issued by California State Board of Registration.

Position open until filled. Phone: (661) 723-6000. Job flier and City application available at Lancaster City Hall, 44933 Fern Avenue, Lancaster, CA 93534 and on City's website: [www.cityoflanasterca.org](http://www.cityoflanasterca.org) EEO

## TYLIN INTERNATIONAL/CCS

**T.Y. Lin International/CCS** is a multi-disciplined civil and structural engineering firm providing a full spectrum of engineering services for bridge and transportation projects. T.Y. Lin International is an Equal Opportunity Employer.

**Title:** *Senior Transportation Planner*  
*Job Requirements:* Requires a BS or BA in planning or civil engineering. A minimum of 10+ years experience in transportation planning, traffic modeling, and/or traffic analysis is required,

including traffic forecasting, site traffic & access analyses, and traffic improvement planning experience. Additionally, the successful candidate should possess knowledge of alternatives analysis, travel demand forecasting, and the NEPA/CEQA process. Must have technical expertise with computer programs for traffic forecast modeling and transportation operational analysis. Proven ability to manage multiple projects in varying stages of development and staff management skills highly necessary. Excellent analytical, written, and verbal communication skills are required for building relationships with clients. Strong interpersonal skills to manage and coordinate project team members and mentor technical staff a must. AICP, T.E., or P.E. a plus.

*Job Locations:* Sacramento, CA (Ref #1888SAC) and Bay Area, CA (Ref #1889BA)

Please email resume with cover letter to: [hr\\_recruiting@tylin.com](mailto:hr_recruiting@tylin.com)

**Title:** ITS Studies Project Manager (Reference #1891SJ)

*Job Requirements:* Requires a BS or BA in planning, civil engineering or related field. A minimum of 10+ years experience in transportation, ITS studies, and/or regional studies is required, including multi-agency client work, familiarity with FHWA procedures, and local agency needs. Additional knowledge of transportation planning and/or traffic engineering is highly desired. Must have technical expertise with computer programs for ITS analysis, including Turbo Architecture. Proven ability to manage multiple projects in varying stages of development and staff management skills highly necessary. Excellent analytical, written, and verbal communication skills are required for building relationships with clients. Strong interpersonal skills to manage and coordinate project team members and mentor technical staff a must. AICP, T.E., or P.E. a plus.

*Job Location:* Assigned primarily to San Jose, CA office with possible time split between Sacramento, CA and Miami, FL offices.

Please email resume with cover letter to: [hr\\_recruiting@tylin.com](mailto:hr_recruiting@tylin.com)

## NORTH CAROLINA DOT

*Transportation Engineers*—NCDOT's PDEA Branch (Raleigh, NC) seeks transportation engineers for project management, engineering and environmental (NEPA) analysis, and public involvement in accordance with a newly approved organizational structure.

Both entry level and advanced engineering positions area available. Job postings are anticipated during summer of 2004 and will be posted at <http://apps.dot.state.nc.us/personnel/jobvacancies/> Information regarding the NCDOT PDEA Branch may be found at [www.ncdot.org/planning/pe/](http://www.ncdot.org/planning/pe/)

For further information regarding job postings, contact Sandra Corbett at (919) 733-7844, ext. 202, or [sbcorbett@dot.state.nc.us](mailto:sbcorbett@dot.state.nc.us).

## WILSON & COMPANY

Wilson & Company is seeking professionals at several levels with specific experience and interest in traffic engineering and transportation planning to be a part of our growing practice in Colorado, Arizona, and Southern California.

*Senior Traffic Engineer/Senior Transportation Planner*—The ideal candidate must have skills in managing transportation engineering and/or planning projects, traffic operations analysis, travel demand forecasting, traffic simulation, and traffic engineering design. In addition to technical skills, the ability to work independently and provide oversight on engineering and planning tasks and a clear aptitude for effective verbal and written skills is required. We are seeking individuals with a minimum of eight (8) years of experience. Applicants must possess a bachelor's degree in Civil Engineering, Urban Planning or a related field.

*Traffic Engineer/Transportation Planner*—The ideal candidate must have skills that include traffic operations analysis, travel demand forecasting, traffic simulation, and traffic engineering design. Required computer skills include the ability to use traffic operations analysis tools, modeling programs and simulation software. In addition to technical skills, the ability to work independently with some

**Tell them you saw  
their ad in WesternITE!**

# Positions Available

supervision and a clear aptitude for effective verbal and written skills is mandatory. We are seeking individuals with a minimum of three (3) years of experience. Applicants must possess a bachelor's degree in Civil Engineering, Urban Planning or a related field.

Submit resume via e-mail to Marlo Grabzstul at [www.marlo.grabzstul@wilsonco.com](mailto:www.marlo.grabzstul@wilsonco.com), mail to 999 18th Street, Suite 2600, Denver, Colorado 80202, or fax to (303) 297-2693. Visit our website at [www.wilsonco.com](http://www.wilsonco.com) for additional information about the Company.

## LLG ENGINEERS

Linscott, Law & Greenspan, Engineers (LLG) is an established traffic and transportation engineering firm with offices located in San Diego, Costa Mesa, Pasadena, and Las Vegas. Over the past 37 years, our firm has provided engineering solutions for over 6,000 projects including traffic impact studies, Project Study Reports, Project Reports, roadway alignment studies, demand management studies, parking studies, traffic signal designs, signing/stripping plans, and traffic control plans.

LLG currently has an opening for a Traffic Engineer/Transportation Planner to join our team in the San Diego office. The position requires a bachelor's degree in Civil Engineering, Urban Planning or a related field and between 1–5 years of professional experience in the transportation field. Experience preparing traffic impact studies is required.

LLG offers excellent salaries and benefits, quarterly profit sharing bonuses, and a very enjoyable working environment. For further information please visit our website at [www.llgengineers.com](http://www.llgengineers.com) and, if interested, fax or email your resume to

John Keating's attention at:  
Linscott, Law & Greenspan, Engineers  
1565 Hotel Circle South, Suite 310  
San Diego, CA 92108  
Fax: 619-299-7041  
Email: [keating@llgengineers.com](mailto:keating@llgengineers.com)

## BAKER ENGINEERING

*Director of Transportation*—Four-year degree; BS in engineering; MS in engineering or MBA preferred; 20 years professional engineering and mgmt experience; 5 years minimum experience in dept. or group mgmt. (including financial, staff, client, project principal and project mgmt. assignments) Utah P.E. required.

*Summary:* Position is Dir. of Trans. Svcs for Baker's SLC office; recent mgmt experience and strong relationships with UT Dept of Transportation and Valleywide transportation agencies and groups; mgmt, growth and development of Transportation staff; managing, planning and design of transportation systems including highways, bridges and transit systems; responsible for financial performance and project principal roles; active and visible within local professional and political communities. Excellent written and oral communications skills as well as mentoring leadership skills, strategic planning, proposal and business development.

Please e-mail resume to [jzimmerman@mbakercorp.com](mailto:jzimmerman@mbakercorp.com) for consideration, EOE, A/A, Drug free workplace

## CITY OF FREMONT, CALIF.

*Associate Transportation Engineer*—Annual salary \$70,083–\$94,910 DOQ—Working under the direction of the Senior Transportation Engineer, the Associate Transportation Engineer will be primarily responsible for the design, operation and maintenance of the City's signal system infrastructure to ensure the most effective and efficient operations. Open until filled. Please visit our website [www.fremont.gov](http://www.fremont.gov) for more information about this position and how to apply.

## PARSONS BRINCKERHOFF



*Traffic Engineer*—Parsons Brinckerhoff in Seattle, Washington is looking for Traffic Engineers with a minimum of 5 years of

experience. BS in Engineering (Civil/Electrical) required. P.E. highly desirable. Responsible for traffic analyses, traffic signal operations, report preparation and preparation of plans, specifications and estimate packages for traffic signals, illumination systems, ITS systems, signing and striping. Responsibilities will also include project management, providing direction and technical guidance to lower level engineers and marketing. Must have good organizational and communication skills, and the ability to work well in a team environment.

For confidential consideration, please forward cover letter and resume to:

L. Hawkins  
Parsons Brinckerhoff Quade & Douglas  
999 Third Avenue, Suite 2200  
Seattle, WA 98104-4020  
206.382.5222 (fax)  
[hawkinsla@pbworld.com](mailto:hawkinsla@pbworld.com)  
No phone calls please.  
EEO M/F/D/V



*Traffic Engineers*—CH2M HILL is committed to moving the Northwest into the future! Put your talents to work in the delivery of innovative transportation projects in Oregon and Washington.

Responsible for transportation planning and traffic engineering including geometric conceptual layouts, traffic studies, travel demand modeling, and signal operation systems analysis utilizing traffic software programs. You will assist in managing transportation planning and traffic projects; provide quality control, mentor junior staff, and participate in business development activities.

Requires BSCE, PE registration (or eligible to obtain PE within a year), with 4+ years Traffic Engineering work history.

## Don't forget...

The latest Positions Available ads are always on our Web site!



(510) 763-2929

155 Grand Avenue  
Suite 400  
Oakland, CA 94612

Offices in:  
Oakland  
Los Angeles  
San Jose  
San Bernardino  
Irvine  
Riverside  
San Diego  
Salt Lake City, UT

**Traffic  
Engineering**  
**Civil  
Engineering**  
**Transportation  
Planning**  
**Rail / Transit  
Services**

For Job Opportunities, Visit [www.korve.com](http://www.korve.com)

# Positions Available

Effective task management skills, and ability to mentor junior staff helpful. Must possess strong communication skills and be team-oriented.

To apply, indicate job code [Bellevue, WA: 3955BR; Portland, OR: 5822BR] and submit your resume to [careers@ch2m.com](mailto:careers@ch2m.com). Visit our web site at [www.ch2m.com](http://www.ch2m.com). EEO/AA

**Transportation Planner**—CH2M HILL is committed to moving the Northwest into the future! Our engineers, planners, and scientists act as environmental stewards while helping governments provide modern mobility for moving people and products safely. We need your talents to deliver innovative transportation projects and help our clients build a better world.

You will lead diverse teams in identifying innovative technical solutions for a variety of transportation planning projects in the greater Northwest. Responsibilities include quantitative and qualitative analyses for interchange area and access management, corridor planning, travel demand forecasting, traffic & safety analysis, environmental documentation and regional transportation planning. You may participate in business development activities and mentor junior staff.

Position requires a bachelor's degree in engineering, planning or related field and 8+ years of progressively responsible work history in transportation planning technologies and analytical techniques. Must be familiar with EMME2, TModel, GIS, Corsim, Synchro or Vissim analysis tools. Transit, bike, pedestrian and NEPA experience helpful. Top candidate will have excellent verbal and written communication skills, team-orientation, and able to effectively plan and participate in public meetings. Working knowledge of Oregon and Washington DOT and local agencies desired. AICP or PE certification preferred.

In addition to excellent benefits (including stock options, incentive pay, tuition reimbursement, and more!), CH2M HILL offers the opportunity for personal and professional growth, challenging projects, and the latest technology. To apply, indicate job code 5845BRBR and submit your resume to [careers@ch2m.com](mailto:careers@ch2m.com). Visit our web site at [www.ch2m.com](http://www.ch2m.com). EEO/AA employer

## CITY OF COLORADO SPRINGS

**Traffic Engineering Manager**—Salary Range: \$7,092 - \$8,865 monthly—The beautiful and fast-growing city of Colorado Springs (Colorado's second-largest city) is seeking a strong and accessible leader with a collaborative, multi-disciplinary approach for this position. Manage traffic planning, transportation design, and improvement of intermodal surface transportation. The Division has a 2004 budget of over \$4.8 million and 56 full-time employees; major objectives include participating in the development of long- and short-range transportation plans that form the basis for infrastructure program decisions, and continuing the development of the Intelligent Transportation System using innovative and advanced technologies. You'll incorporate intermodal transportation alternatives and environmental and land use relationships; analyze impacts of transportation changes on neighborhoods and traffic management; and manage congestion, safety and incident management and ITS operations. Requires a Bachelor's in traffic, transportation or civil engineering or a related field; five years' increasingly responsible professional traffic engineering experience including two years' management and/or high-level supervisory responsibility. Desirable qualifications include Master's in transportation or civil engineering, public administration or a closely related field; PE registration; PTOE certification. For more information and to apply, go to [www.springsgov.com](http://www.springsgov.com). Please apply before August 10, 2004.

## WILBUR SMITH ASSOCIATES

Wilbur Smith Associates' San Francisco and Salt Lake City offices are seeking Assistant Transportation Planner/Engineers. This position involves providing technical support for a variety of studies including multi-modal corridor studies, transportation modeling, bicycle/pedestrian studies, parking, rail and transit projects, and traffic studies in California and elsewhere. Project responsibilities will include transportation planning, travel demand modeling, traffic analysis, corridor studies, and transit planning. This individual will work under the supervision

of a Project Manager. The assignment will involve participation in all facets of project work, from data collection and spreadsheet development; to modeling, analysis, and report writing.

### Requirements:

A BS or MS in Transportation Planning/Engineering or related field is desired. Two to three years' relevant experience is desired. Familiarity with computer models and tools such as HCS, NCAP, TRANSIT-7F, Synchro, CORSIM, TP-Plus, TRANSCAD, EMME-2, and/or Traffix is desirable. Should have excellent communication and organizational skills, and be prepared to take initiative and work independently.

Please email resume to [whurrell@wilbursmith.com](mailto:whurrell@wilbursmith.com). Visit our website at [www.wilbursmith.com](http://www.wilbursmith.com) for additional information about the company.



**CHS Consulting Group**

**Transportation Planner/Engineer (Full-time)**—CHS Consulting Group, a fast-growing transportation planning and engineering firm in SF and Oakland CA, has immediate openings for one mid to senior level transportation planner and one mid to senior level traffic engineer positions. Candidates should have at least 5 years experience with strong analytical, computer, written, and communication skills. Candidates with experience in HCS, EMME2, TP+, SYNCHRO, CORSIM, and VISSIM are preferred. The ideal candidate for the traffic engineer's position should be a licensed TE or CE in the State of California or is capable of obtaining the license in the near future.

We have a number of exciting projects

## Positions Available Ads:

To place your ad, e-mail your ad to [john.kerenyi@kimley-horn.com](mailto: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](http://www.westernite.org). More information is available on our Web site.

## Positions Available *(continued)*

currently underway, including areawide planning studies, traffic analysis, signal design projects, traffic engineering studies,

and EIRs. We offer competitive salary and benefits.

Send resume and cover letter to CHS Consulting Group, 500 Sutter Street, Suite 216, San Francisco, CA 94102 or email to or fax to (415) 392-9788. Any question regarding this offer, please call Ms. Williams at (415) 392-9688. EOE

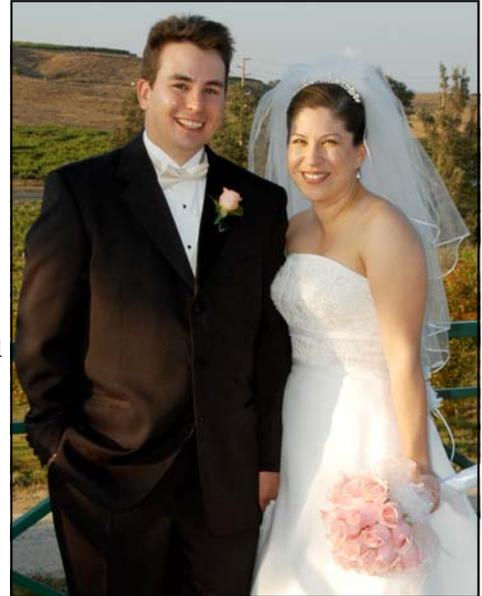
### CITY OF ORANGE, CALIFORNIA

*Associate Civil Engineer, Traffic*—\$5,377 - \$6,896/mo plus xint benes. Reqs 3 years resp traffic or civil eng exp, Bach deg in eng. & regis as a prof traffic or civil eng in Calif req. Resumes not accepted in lieu of applic. Call the City of Orange Job Line at 714-744-7262 for app or visit website at [www.cityoforange.org](http://www.cityoforange.org). Apply by 08/26/04. EOE

## Editor's Corner

On May 22<sup>nd</sup>, Cindy and I “tied the knot” at a winery in Temecula, California, and then spent a wonderful two weeks out of town getting some rest after all the months of working to make the wedding happen. But, as our pastor said, the work has just begun; we now have to work a whole lifetime to make our marriage a success. But if the past two months are any indication, it should also be very enjoyable and rewarding too! After all, when you know you’ve found the right person, deciding to spend the rest of your lives together isn’t a difficult decision to make.

Thank you to all of you who have congratulated us after seeing our engagement announced in last September’s *WesternITE*. I had no idea so many of you actually read all the way to the back of this newsletter!



## Legislative Update



Walt Stringer,  
District 6 Legislative  
Committee Chair

At the Federal level, negotiations between the House and Senate began during June, with the intent of reconciling variations between the competing versions of the TEA-21 reauthorization, with continuing resolutions maintaining existing funding levels for now.

The Conferees agreed upon numerous minor non-controversial items. The key unresolved issues relate to overall funding and the status of donor states’ funding guarantees. Discussions will continue until the annual summer recess, at least. For a side-by-side comparison of the two versions, try this website: <http://www.fhwa.dot.gov/reauthorization/sidebyside.htm>.

In California, the May state budget

status update (known as the “Revise”) surfaced an interesting and beneficial proposal to “thaw” certain transportation funds this summer, and in the future replace virtually all the transportation revenue lost to the state General Fund, by utilizing one-time up-front Indian Tribe gaming revenues (a percentage of which goes to the state), which are expected to increase under a new agreement signed in late June. The May proposal would provide \$383M for transportation capital projects, with \$184M available to the State Highway Account for STIP projects, and \$36M to the Public Transit Account, plus another \$163M for Traffic Congestion Relief Program projects, which have been frozen for a year and a half thus far. The Governor’s office also has floated a poorly-received TCRP prioritization proposal, which would have the effect of reprioritizing projects that are already funded, but have not actually received funds due to the freeze



imposed by the state. It may be a moot proposal, however, since at press time, a Conference Committee voted to appropriate \$335M to fund TCRP allocations, and with \$163M already available, approximately \$500M will be available once the “freeze” officially ends, and this amount is expected to restart all past TCRP-funded projects which have had funding allocations on hold for up to eighteen months.

Hopefully, a final report will be provided in the next column, but it is good to finally report a likely positive outcome to the lengthy funding freeze experienced since late 2002.

## COMMERCIAL SUPPLIERS

### COUNTS UNLIMITED

Traffic data collection specialists serving Southern California. Manual, machine counts of types customized to your needs: Speed, Classification, Volume • Radar • Travel • Video  
Barbara N. Sackett, President  
Tel (909) 247-6716 Fax (909) 924-8604

### TRAFFIC RESEARCH & ANALYSIS, INC.

Specializing in all types of traffic data, including machine and manual counts, speed, classification, video logging, road inventory, GIS mapping, and GPS data collection.  
DBE CERTIFIED  
Susan Medland (866) 840-1500 email: susan@tra-inc.com  
Traci Stevens (916) 772-0872 email: traci@tra-inc.com  
With offices in Arizona, California, and Colorado.

## PROFESSIONAL SERVICES

### ABRAMS ASSOCIATES TRAFFIC ENGINEERING

Traffic Planning & Engineering • Development Services • Litigation Consulting  
2815 Mitchell Drive, Suite 120  
Walnut Creek, CA 94598  
(925) 945-0201 FAX (925) 945-7966  
Web: www.abramsassociates.com

### ADVANTEC CONSULTING ENGINEERS, INC.

ITS • Communications • Systems Engineering • Traffic Engineering • Signal Design • Traffic Control • Traffic Impact Studies • Parking Studies (DBE/MBE)  
21700 Copley Drive #350, Diamond Bar, CA 91765  
(909) 860-6222 FAX (909) 860-6722  
www.advantec-usa.com info@advantec-usa.com

### ALBERT GROVER & ASSOCIATES

Signal System Design • Coordination • Operations • Impact Studies • Modeling • Design/Build • Parking & Access • Inspection • Implementation  
211 E. Imperial Highway, Suite 208  
Fullerton, CA 92835  
(714) 992-2990 FAX (714) 992-2883

### AUSTIN-FOUST ASSOCIATES, INC.

Traffic & Civil Engineering • Transportation Planning • Traffic Signal Design • Parking Analysis and Design  
2020 North Tustin Avenue  
Santa Ana, CA 92705-7827  
(714) 667-0496 Fax (714) 667-7952

### BOYLE ENGINEERING CORPORATION

Transportation & Traffic Engineering • Highways • Structures • Transit Signals • Traffic Control  
1501 Quail Street  
Newport Beach, CA 92660  
(949) 476-3300 Fax (949) 721-7141

### BKF ENGINEERS

Traffic Engineering • Signal Design • Traffic Impact Studies • Geometric Design • Parking  
540 Price Avenue, Redwood City, CA 94063 (650) 482-6300  
San Jose, CA (408) 467-9100  
Walnut Creek, CA (925) 940-2200  
Pleasanton, CA (925) 396-7700

### BUCHER, WILLIS & RATLIFF CORPORATION

Providing Innovative Solutions Since 1957  
Transportation Planning • Traffic Engineering/Operations • Transportation Engineering • Bridges/Structures • Municipal Engineering  
Seattle, WA (206) 448-2123

### CAMBRIDGE SYSTEMATICS, INC.

A National Leader in Transportation Planning • Travel Demand Forecasting & Analysis • Freight Modeling & Planning • ITS & CVO Products & Services • Transportation & Land Use Analysis • Transportation Finance  
Oakland, CA (510) 873-8700  
Seattle, WA (425) 837-1450  
Cambridge, MA (headquarters) (617) 354-0167  
www.camsys.com

### CARTER & BURGESS, INC.

Comprehensive transportation planning and engineering:  
Denver, CO (303) 820-5240  
Las Vegas, NV (702) 938-5600  
Los Angeles, CA (818) 784-7585  
Phoenix, AZ (602) 263-5309  
Salt Lake City, UT (801) 355-1112  
Oakland, CA (510) 465-8400

### CATALINA ENGINEERING, INC.

Traffic Engineering • Roadway Design • Research • Traffic Operations • Civil Engineering • ITS  
180 W. Magee Road, Suite 140  
Tucson, Arizona 85704  
(520) 544-4067 FAX (520) 544-9616  
www.catalinaengineering.com

### CHS CONSULTING GROUP

Transportation Planning • Transit Planning, Operations & Design • Traffic Operations • Traffic Signal Systems  
Design • ITS • Traffic Engineering/Traffic Safety • MBE/DBE  
500 Sutter Street, Suite 216 • San Francisco, CA 94102  
San Francisco, CA 415/392-9688 Fax 415/392-9788  
Oakland, CA 510/272-9597 Fax 510/272-0792  
www.chsconsulting.net

### CK ENGINEERING, INC.

Traffic Engineering - Operations, Studies, Designs • Street/Highway Design • Roadway Lighting • Parking - Studies/Layout • ITS - Toll Systems, Port of Entry • Municipal Engineering • Construction Management  
16448 North 40th Street, Suite A  
Phoenix, AZ 85032-3337 (602) 482-5884  
www.ckengr.com (602) 482-2885 FAX

### CRAIN & ASSOCIATES OF SOUTHERN CALIFORNIA

Traffic Engineering • Transportation Planning  
2007 Sawtelle Boulevard, Suite 4 • Los Angeles, California  
90025 • 310 473-6508 • Fax: 310 444-9771

### ROBERT CROMMELIN & ASSOC., INC.

Consulting Traffic Engineers, Experienced in Traffic Engineering Evaluation and Testimony as part of Litigation  
73-255 El Paseo, Suite 9 (760) 568-6838  
Palm Desert, CA 92260 FAX (760) 568-9850  
RCTraffic@aol.com

### CTS ENGINEERS, INC.

Traffic • Transportation Planning & Design • ITS • Transit Facilities • Highways • Bridges • WBE/DBE  
Washington Oregon  
1412 112th Avenue NE Ste 102 3300 NW 211th Terrace  
Bellevue, WA 98004-3760 Hillsboro, OR 97124  
(425) 455-7622 (503) 690-8080  
FAX (425) 462-1374 FAX (503) 645-5930  
cts@ctsengineers.com hstein@ctsengineers.com

### DARNELL & ASSOCIATES, INC.

Transportation Planning • Traffic Engineering & Design Services • Traffic Control Signal Systems • Impact Studies • Bikeways • Parking • Air Quality Analysis  
1446 Front Street, Suite 300  
San Diego, CA 92101  
(619) 233-9373 FAX (619) 233-4034

### DAVID EVANS AND ASSOCIATES, INC.

People in Motion, the DEA Team!  
In 20 offices throughout the west  
Transportation Directors:  
Claudia Hirschev, P.E. Ron Anderson, P.E.  
Bellevue, Washington Portland, Oregon  
(425) 519-6500 (503) 223-6663  
Transportation • Land Development • Water Resources • Energy  
www.deainc.com

### DKS ASSOCIATES

Traffic and Transportation Engineering and Planning • Intelligent Transportation Systems  
Oakland CA (510) 763-2061  
Offices in: Phoenix, AZ; Irvine, San Jose, and Sacramento, CA; Tampa and Tallahassee, FL; Portland, OR; Seattle, WA  
Web page: www.dksassociates.com  
email: rts@dksassociates.com

### DOWLING ASSOCIATES, INC.

Traffic Engineering • Transportation Planning • Research • Traffic Software • Computer Models  
180 Grand Avenue, Suite 250 (510) 839-1742  
Oakland, CA 94612 Fax: (510) 839-0871  
www.dowlinginc.com

### ENTRANCO, INC.

Full-service planning, design, and environmental services for Traffic and Transportation projects. Offices in Bellevue and Olympia, WA; Boise, ID; Phoenix and Tucson, AZ; & Helena, MT  
For information call 1-800-454-5601  
www.entranco.com

### FEHR & PEERS ASSOCIATES, INC.

Traffic Engineering • Transportation/Transit Planning • Parking • Signal Design • Bikeway Studies  
Denver, CO (303) 296-4300  
Lafayette, CA (925) 284-3200  
Reno, NV (775) 826-3200  
Roseville, CA (916) 773-1900  
San Francisco, CA (415) 369-0425  
San Jose, CA (408) 278-1700  
Salt Lake City, UT (801) 261-4700

### HEXAGON TRANSPORTATION CONSULTANTS

Transportation Planning • Traffic Engineering • Travel Demand Forecasting • Traffic Simulation • Traffic Operations • Environmental Impact Studies • Traffic Impact Studies • Parking Studies • Transit Studies • Signal Design  
40 South Market Street, Suite 600  
San Jose, CA 95113 (408) 971-6100

### HIGGINS ASSOCIATES

Traffic Engineering • Signal Operations • Comprehensive Transportation Planning • Geometric Design • Signal Design • Parking  
1335 First Street, Suite A, Gilroy, CA 95020  
(408) 848-3122 Fax: (408) 848-2202  
email: info@kbhiggins.com

### HNTB CORPORATION

Transportation • Traffic • Planning • Bridges • Airports • Highways • ITS  
200 E Sandpointe Avenue, Suite 200  
Santa Ana, CA 92707  
Phoenix (602) 528-4300  
Denver (303) 839-8300  
Seattle (206) 455-3555  
Las Vegas (702) 365-9334  
www.hntb.com

### ITS ENGINEERS & CONSTRUCTORS, INC.

Intelligent Transportation Systems • Traffic Engineering • Traffic Control Systems • Transportation Planning • Design/Build Specialists • Communications  
Phoenix, AZ (602) 943-2525  
Salt Lake City, UT (801) 281-9695

### JONES & STOKES

Transportation Planning • Air Quality and Noise Studies  
Oakland, CA (510) 433-8962  
Sacramento, CA (916) 737-3000  
Los Angeles, CA (213) 627-5376  
Phoenix, AZ (602) 256-6662  
Bellevue, WA (425) 822-1077  
Other offices in Portland, OR; San Francisco, San Jose, Irvine, San Diego, CA; Las Vegas, NV; Salt Lake City, UT  
www.jonesandstokes.com

### KAKU ASSOCIATES, INC.

Traffic Engineering • Transportation Planning • Parking  
1453 Third Street, Suite 400  
Santa Monica, CA 90401  
(310)458-9916 FAX (310) 394-7663

### KATZ, OKITSU & ASSOCIATES

Traffic Engineering • Transportation Planning • Signal Timing • ITS • GIS (DBE)  
1055 Corporate Center Drive, Suite 300  
Monterey Park, CA 91754 (323) 260-4703  
San Diego, CA (619) 683-2933  
Tustin, CA (714) 573-0317  
San Bernardino, CA (909) 890-9693

### KIMLEY-HORN AND ASSOCIATES, INC.

Traffic Engineering • Transportation Planning • ITS • Communications • Software • Civil engineering  
Regional offices in: San Diego, Orange, Los Angeles, Long Beach, Pleasanton, Oakland, Sacramento, CA; Las Vegas, Reno, NV; Tucson, Phoenix, AZ; Denver, CO  
Regional Headquarters: Phoenix, AZ (602) 944-5500  
www.kimley-horn.com

### KORVE ENGINEERING, INC.

Traffic Engineering • Transportation Planning • Civil Engineering • Land Development • Multimodal Facilities • Rail Planning  
155 Grand Ave., Suite 400, Oakland, CA 94612 (510) 763-2929  
Offices in Los Angeles, Salt Lake City  
www.korve.com

Save for your  
RFP lists!

**LANCASTER ENGINEERING**

Traffic and Transportation Engineering • Light Rail • Traffic Control • Traffic Impact & Planning Studies  
Union Station, Suite 206, Portland, OR 97209  
(503) 248-0313 FAX (503) 248-9251  
email: LanEngr@aol.com

**LEE ENGINEERING, LLC.**

Traffic Engineering • Transportation Planning • ITS  
3033 N. 44th Street, Suite 375  
Phoenix, AZ 85018 (602) 955-7206  
www.leeengineering.com email: info@lee-eng.com

**LSC TRANSPORTATION CONSULTANTS, INC.**

Transportation Planning • Traffic Engineering • Transit Planning & Facilities • Signal/Roundabout Design • Resort Planning • Parking  
Tahoe City, CA (530) 583-4053  
Denver, CO (303) 333-1105  
Colorado Springs, CO (719) 633-2868

**LIN CONSULTING, INC. (DBE/MBE)**

Traffic, Civil, and Electrical Consulting Engineers  
ITS Design • Signal • Lighting • Studies • GIS  
21660 E. Copley Drive, Suite 270  
Diamond Bar, CA 91765 (909) 396-6850  
www.LinConsulting.com FAX (909) 396-8150  
dwl@LinConsulting.com

**LINSCOTT, LAW & GREENSPAN**

Engineers & Planners • Traffic • Transportation • Parking  
Costa Mesa, CA (714) 641-1587  
Pasadena, CA (626) 796-2322  
San Diego, CA (619) 299-3090  
Las Vegas, NV (702) 451-1920

**LOCHNER**

Transportation Planning • Traffic Engineering • Land Use Planning • Signal Design • Traffic Impact Studies • Parking • Highways • Bridge Design and Inspection • Environmental Studies • Corridor Planning • Public Involvement • Construction Engineering and Inspection  
H.W. Lochner Engineers and Planners  
5908 Yellowstone Road  
Western U.S. Offices:  
Cheyenne, WY 82009 (307) 632-9646  
Bellevue, WA (425) 454-3160  
Salt Lake City, UT (801) 262-8700  
Portland, OR (503) 586-0100  
Boise, ID (208) 336-2983  
Big Fork, MT (406) 837-6878  
bgreene@hwlochner.com

**LSA ASSOCIATES, INC.**

Transportation Engineering and Planning • Parking Studies • Capital Project Development  
20 Executive Park, Suite 200 Irvine, CA 92614  
P (949) 553 0666 F (949) 553 1670  
tony.petros@lsa-assoc.com  
Riverside, CA (909)781-9310  
Ft. Collins, CO (970) 494 1568  
Pt. Richmond, CA (510) 236-6810  
Berkeley, CA (510) 540-7331

**MCCARTHY ENGINEERING, INC.**

Traffic Engineering • Impact Studies • Parking Designs • Land Development • Bikeway Design • Traffic Operations • Traffic Calming • Litigation consulting and testimony  
737 Orchard Drive, Paso Robles, CA. 93446  
805-238-9585; 805-237-8556 FAX  
email: mac@tcsn.net

**MINAGAR & ASSOCIATES, INC.**

ITS Planning, Engineering & Deployment • Signal System Design, Coordination & Timing • Traffic Engineering, Transportation Planning  
6 Venture, Suite 315, Irvine, CA 92618  
(949) 727-3399 FAX( 949) 727-4418  
email: minagarf@minagarinc.com  
www.minagarinc.com

**MIRAI ASSOCIATES**

Transportation Planning • Traffic Engineering • Travel Demand Forecasting • Growth Management  
19110 Bothell Way NE, #202, Bothell, WA 98011  
(425) 415-0905 FAX (425) 415-0935  
www.miraassociates.com

**THE MOBILITY GROUP**

Transportation Planning • Transit Planning • Parking • Traffic Planning & Engineering • Management  
18301 Von Karman, Suite 580, Irvine, CA 92612  
(949) 474-1591 Fax (949) 474-1599  
www.mobilitygrp.com

**NBCE, INC.**

Traffic Engineering • Transportation Planning • Civil Engineering • Surveying & Mapping • School Facilities Engineering  
17501 E. 17th St, Suite 270, Tustin, CA 92780  
Tel. (714) 573-9999 Fax (714) 573-9877  
www.nbceinc.com

**OLSSON ASSOCIATES**

Traffic Engineering/Operations • ITS • Traffic Studies • Signal System Design • Transportation Planning • Lighting • Landscape Architecture and Urban Design  
Phoenix, Arizona (602) 748-1000  
Denver, Colorado (720) 962-6072  
www.oaconsulting.com

**ORTH-RODGERS & ASSOCIATES, INC.**

Traffic/Highway Engineering & Design • Transportation Planning • Environmental Science/Planning • Municipal Services  
SOUTHWEST OFFICE Ph: (702) 233-4060  
1140 N Town Center Dr, Fax: (702) 233-4560  
Ste 190 www.orth-roddgers.com  
Las Vegas, NV 89144 Principal: Richard T. Romer, P.E.

**P&D CONSULTANTS, INC.**

Specializing in Surface Transportation and Airport Engineering • Western Region: Orange, San Diego, Ontario, Pasadena, San Francisco, CA; Las Vegas, NV  
Lew Garber, P.E. (714) 835-4447  
www.pdconsultants.com

**PAT NOYES & ASSOCIATES**

Public Process Design & Facilitation • Neighborhood Traffic Management • Traffic Incident Management Programs  
1566 County Rd. 83 • Boulder, CO 80302  
(303) 440-8171 www.patnoyes.com  
e-mail: pat@patnoyes.com

**PENFIELD & SMITH**

Transportation Planning • Traffic Engineering • Parking • Civil Engineering • Surveying • Land Use Planning  
PO Box 98, Santa Barbara, CA 93102  
Santa Barbara, CA (805) 963-9532  
Santa Maria, CA (805) 925-2345  
Camarillo, CA (805) 981-0706

**RBF CONSULTING**

RBF Provides Comprehensive Transportation Planning • Traffic Engineering • Design Services • Highway Design • Traffic Signal Systems  
Twelve offices located in California, Arizona, and Nevada  
(800) 479-3808 www.RBF.com

**RICK ENGINEERING COMPANY**

One City Blvd. West, Suite 1285 • Orange, CA 92868  
(714) 939-1440 Fax: (714) 939-1441  
www.rickengineering.com  
San Diego • Orange • Riverside • Sacramento • Phoenix • Tucson

**RK ENGINEERING GROUP, INC.**

Transportation Planning—Traffic Engineering  
Acoustical and Transportation Demand Management Studies  
20201 S. W. Birch Street, Suite 250  
Newport Beach, CA 92660  
(949) 474-0809 Fax (949) 474-0902  
www.rkengineer.com

**ED RUZAK & ASSOCIATES, INC.**

Traffic & Transportation Engineering • Consulting for Litigation  
10061 Talbert Avenue., Suite 200 Fountain Valley, CA 92708  
(714) 964-4880 FAX (714) 964-7219  
999 Green Street, Ste 1103, San Francisco, CA 94133  
(415) 929-8745

**SIEMENS ITS**

A business unit of Siemens Energy & Automation, Inc.  
Project Management • ITS Strategic Planning • ITS Design • Systems Integration • Communications Network Analysis and Design • Operations and Management  
2030 Addison Street, Suite 640, Berkeley, CA 94704  
Phone: 510.540.7659 Fax: 510.540.7612  
Los Angeles 626.294.9255 Tucson 520.290.8006  
Salt Lake City 801.269.9068 Portland 503.624.7635  
www.itsiemens.com

**TRANSCORE**

Traffic Engineering/Operations • Traffic Control Systems • Transit • Parking • Highway Design • Roadway Lighting • Environmental Forecasting • Travel Forecasting • Transportation Planning • ITS • Toll Systems • CVO • Port of Entry Systems  
9480 Carroll Park Drive, San Diego, CA 92121  
(858) 826-3400  
www.transcore.com Offices nationwide.

**TRANSPORTATION MANAGEMENT SERVICES**

TSM/TDM Planning • Management • Evaluation  
234 E. Colorado Blvd., Suite 400  
Pasadena, CA 91101 (626) 796-3384  
FAX (626) 796-2425 TMS85@aol.com

**THE TRANSPO GROUP**

Traffic Engineering • Transportation Planning  
11730 118th Ave NE, Ste 600 176 S Stevens St, Ste 200  
Kirkland, WA 98034 Spokane, WA 99201  
(425) 821-3665 (509) 462-0606  
www.thetranspogroup.com

**TRANSTECH ENGINEERS, INC.**

Traffic Engineering • Transportation Planning • Construction Management • Highway Design • Municipal Engineering  
624 Brea Canyon Road  
Walnut, CA 91789 (909) 595-8599

**T.Y. LIN INTERNATIONAL/CCS**

Traffic Engineering • Transportation Planning • Highway Planning and Design • Structural Engineering and Inspection • Intelligent Transportation Systems • Traffic Signal Design & Timing • Construction Traffic Handling • Program/Construction Management • Serving Clients Throughout the Nation  
2290 N First St, Suite 102 Tel (408) 544-2477  
San Jose, CA 95131 Fax (408) 544-2478  
www.ccsoffice.com

**URBAN CROSSROADS, INC.**

Transportation Planning • Impact Studies • Traffic/Acoustical Engineering • Transportation Modeling • GIS • TDM  
41 Corporate Park, Suite 300  
Irvine, CA 92606  
(949) 660-1994 FAX (949) 660-1911  
www.urbanxroads.com

**URS**

Transportation and Transit Planning, Traffic Engineering, Civil/Structural Engineering Design  
Denver (303) 293-8080  
Phoenix (602) 371-1100  
Portland (503) 224-4706  
Salt Lake City (801) 904-4000  
San Diego (619) 557-0580  
Seattle (206) 727-3367  
Santa Ana (714) 835-6886  
Tucson (520) 887-1800

**VRPA TECHNOLOGIES, INC.**

Certified DBE/MBE  
Traffic Engineering • Transportation Planning • ITS • Modeling • Signal Systems • Parking • Environmental Assessments  
Fresno, CA (559) 271-1200  
San Diego, CA (858) 566-1766

**WASHINGTON GROUP INTERNATIONAL**

Traffic Engineering • Transportation Planning • Signal Systems • Signal Timing • ITS • Environmental Studies • Corridor Planning • Transit/Rail • Tollways • Civil/Roadway • Structural  
720 Park Blvd, P.O. Box 73, Boise, ID 83729  
Tel: (208) 386-5000 • Fax: (208) 386-5180  
Offices: Irvine & Oakland, CA; Denver, CO; Las Vegas, NV; Dallas & Houston, TX; Bellevue, WA; Cheyenne, WY

**ALBERT A. WEBB ASSOCIATES**

Traffic Engineering and Design • Transportation Planning • Highway Design • Environmental Documentation  
3788 McCray Street Phone (909) 686-1070  
Riverside, CA 92506 Fax (909) 788-1256  
www.webbassociates.com

## Professional Services Directory Listings:

To place or modify your ad, send an e-mail to [pkoonce@kittelson.com](mailto:pkoonce@kittelson.com). The deadline is the 28th of the previous odd-numbered month. The cost is \$6.00 per line, with a minimum cost per ad of \$100.00. Ads are also posted on our web site at [www.westernite.org](http://www.westernite.org). More information is available on our Web site.

## District 6 Officers for 2004 - 2005

### WHITLOCK & WEINBERGER TRANSPORTATION

"W-Trans," a certified DBE/WBE  
Traffic Engineering • Transportation Planning • Designs for Livable Communities • Municipal Services • Pedestrian Safety/Planning • Traffic Calming • Roundabouts • Traffic Signal Design/Timing  
Santa Rosa, CA www.w-trans.com (707) 542-9500

### WILBUR SMITH ASSOCIATES

Traffic Engineering • Transportation Planning • Rail • Highways • Transit • Parking • Traffic Signals • ITS • Bicycle and Pedestrian Planning • TSM  
San Francisco, CA (415) 495-6201  
Los Angeles, CA (213) 627-3855  
Salt Lake City, UT (801) 363-3955  
Seattle, WA (425) 821-4887  
Tempe, AZ (480) 775-4344  
www.wilbursmith.com

### WILLDAN

Engineers and Planners • Traffic Engineering • Transportation Planning • Complete Municipal Services • Revenue Management  
2125 E Katella Ave #200  
Anaheim, CA 92806-6073 (714) 940-6300  
Regional Offices in Anaheim, Las Vegas, Los Angeles, San Bernardino, San Diego, Phoenix, Pleasant Hill, Sacramento and Ventura

## Call for Abstracts for 2005 District 6 Annual Meeting



Abstracts are now being accepted for the 2005 District 6 meeting; details are available at [www.westernite.org](http://www.westernite.org). Abstract submittals should be 250 words maximum in PDF or Microsoft Word®

format, and must be received by January 14, 2005. Submit abstracts on topics listed on the District 6 web site to Robert Marvin, Technical Chair for the 2005 Annual Meeting (email [marvin@enginc.com](mailto:marvin@enginc.com) or postal mail:

Annual Meeting Abstracts  
c/o Robert Marvin  
Marvin & Associates  
1260 S. 32nd St. West  
Billings, MT 59108

### President

Zaki M. Mustafa, P.E.  
City of Los Angeles  
221 N. Figueroa St., Suite 300  
Los Angeles, CA 90012  
(213) 580-5361  
[ZakiM@earthlink.net](mailto:ZakiM@earthlink.net)

### Vice President

Ken Ackeret, P.E., Ph.D., PTOE  
Kimley-Horn and Associates, Inc.  
1050 E. Flamingo Road, Suite S210  
Las Vegas, NV 89119  
(702) 734-5666  
(702) 735-4949 fax  
[ken.ackeret@kimley-horn.com](mailto:ken.ackeret@kimley-horn.com)

### Secretary-Treasurer

Dalene J. Whitlock, P.E., PTOE  
Whitlock & Weinberger Transp.  
509 Seventh Street, Suite 101  
Santa Rosa, CA 95401  
(707) 542-9500  
(707) 542-9590 fax  
[dwhitlock@w-trans.com](mailto:dwhitlock@w-trans.com)

### Past President

Ransford S. McCourt, P.E., PTOE  
DKS Associates  
1400 SW Fifth Avenue, Suite 500  
Portland, OR 97201  
(503) 243-3500  
(503) 243-1934 fax  
[rsm@dksassociates.com](mailto:rsm@dksassociates.com)

### Managing Editor

John A. Kerenyi, P.E., PTOE  
Kimley-Horn and Associates  
2100 W Orangewood Ave  
Suite 140  
Orange, CA 92868  
(714) 939-1030  
(714) 938-9488 fax  
[john.kerenyi@kimley-horn.com](mailto:john.kerenyi@kimley-horn.com)

### District International Director

Ray Davis, PE, PTOE  
City of Belmont  
1070 Sixth Avenue, Suite 306  
Belmont, CA 94002  
(650) 595-7459  
[rdavis@ci.belmont.ca.us](mailto:rdavis@ci.belmont.ca.us)

### District International Director

Pat Noyes  
Pat Noyes & Associates  
1566 County Road 83  
Boulder, CO 80302  
(303) 440-8171  
[pat@patnoyes.com](mailto:pat@patnoyes.com)

### District International Director

Rock Miller, P.E., PTOE  
Katz, Okitsu & Associates  
17852 E. Seventeenth St, Suite 102  
Tustin, CA 92780  
(714) 573-0317  
(714) 573-3172 fax  
[rmiller@katzokitsu.com](mailto:rmiller@katzokitsu.com)

### District International Director-Elect

Rory Grindley, P.E., PTOE  
Pierce County Public Works & Utilities Department  
2401 S. 35th Street, Room 150  
Tacoma, WA 98409  
(253) 798-7250  
(253) 798-3661 fax  
[rgrindl@co.pierce.wa.us](mailto:rgrindl@co.pierce.wa.us)

### Technical Editor

Peter J. V. Koonce, P.E.  
Kittelton & Associates  
610 S.W. Alder St., Suite 700  
Portland, OR 97205  
(503) 228-5230  
(503) 273-8169 fax  
[pkoonce@kittelton.com](mailto:pkoonce@kittelton.com)

### District Administrator

Jenny Grote, P.E., PTOE  
City of Phoenix Street Transp. Dept.  
200 W. Washington St, 6th Floor  
Phoenix, AZ 85003-1611  
(602) 262-7597  
(602) 495-0336 fax  
[jenny.grote@phoenix.gov](mailto:jenny.grote@phoenix.gov)

### International Vice President

Tim Harpst, P.E. PTOE  
City of Salt Lake City  
349 South 200 East, Suite 450  
Salt Lake City, UT 84111  
(801) 535-6630  
(801) 535-6019 fax  
[tim.harpst@ci.sl.c.ut.us](mailto:tim.harpst@ci.sl.c.ut.us)



Local Arrangements Committee Chair:  
Michael Sanderson, P.E., PTOE  
Engineering, Inc.  
1260 S. 32nd St W  
Billings, MT 59102  
(406) 656-5255  
(406) 656-0967 fax  
[msanderson@enginc.com](mailto:msanderson@enginc.com)

### Webmaster

Jon Pascal  
The Transpo Group  
11730 118th Avenue NE  
Suite 600  
Kirkland, WA 98034-7120  
(425) 821-3665 x 230  
(425) 825-8434 fax  
[JonP@thetranspogroup.com](mailto:JonP@thetranspogroup.com)

*WesternITE* newsletter is the official publication of District 6 of the Institute of Transportation Engineers. Its purpose is to share information on transportation topics between members and to communicate to members the activities of District 6. Articles relating to these purposes are always welcomed and may be sent to either editor. The opinions, findings, techniques and specific equipment cited by individual authors of *WesternITE* newsletter articles do not constitute the endorsement of same by *WesternITE*. Reprint of any newsletter material (except if copyrighted) for the purpose of sharing technical information is permissible given that proper reference and the above paragraph accompany the reprint.

**Westernite**  
[www.westernite.org](http://www.westernite.org)

ITE District 6  
c/o John Kerenyi  
Kimley-Horn and Associates  
2100 W Orangewood Avenue, Suite 140  
Orange, CA 92868

Dated Material - Time Value

NON-PROFIT  
ORGANIZATION  
US POSTAGE  
PAID  
LOS ANGELES, CA  
PERMIT # 32365

### Change of Address:

To change your mailing address information, please visit [www.ite.org](http://www.ite.org), or call, fax, or mail changes to:

Institute of Transportation Engineers  
1099 14th Street, NW, Suite 300 West  
Washington, DC 20005-3438  
(202) 289-0222 / Fax: (202) 289-7722