

PRESIDENT'S MESSAGE

Did you ever get the sensation that something just happened, and yet occurred long ago, all at the same time? My year serving as President of District 6 is certainly feeling that way right now. It seems like only



Dalene J. Whitlock,
President

yesterday that I took the oath of office and wrote my first President's Message for WesternITE, and already I'm writing my last and counting down the days until I become the Past President. But at the same time, when I think about all of the trips made, members met, and actions taken, it seems impossible that it could only have been a year!

My highest priority this year has been our student initiatives, programs designed to encourage more students to major in traffic engineering, and getting donations for the Endowment Fund so that we can attract more candidates. I have heard several student paper presentations and met some of the students, and I'm really excited about these successes. The establishment of a new student chapter at UCLA was one of the highlights of my term.

In recent weeks the District has received numerous donations to the

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DENVER'S I-25 HOT LANES

The Colorado Department of Transportation (CDOT) and the Colorado Tolling Enterprise (CTE) changed the operation of the I-25 high occupancy vehicle (HOV) facility in the Denver area to high occupancy toll (HOT) lanes on June 1, 2006. The HOT lanes permit single occupant vehicles (SOV's) traveling on I-25, north of downtown Denver, to use the HOV lanes for a fee. Existing HOV users of the facility, including all carpools, vanpools, and buses, continue to use the facility free-of-charge. Only single-occupant vehicles pay a toll.

The I-25 HOV lanes were originally developed by CDOT and the Regional Transportation District (RTD) in the mid-1990s to serve express buses on two of RTDs busiest routes, and also to encourage HOV's. By 2003, HOV use of the facility had reached a plateau, with little traffic growth from year to year. While the adjacent general purpose lanes were serving nearly 240,000 vehicles a day, the two reversible HOV lanes were only used by about 10,000 vehicles per day, primarily during the inbound and outbound peak periods.

The I-25 HOV/HOT facility in the Denver Metro Region is a two-lane, reversible, barrier-separated facility extending north on I-25 from the Denver central business district (CBD) to approximately U.S. 36, with a direct access ramp (also reversible) to the U.S. 36 HOV lanes. The HOV lanes were operated by CDOT for over ten years and were very successful, carrying more people per lane in the peak hour than the adjacent peak direction general purpose lanes. The facility is open 20 hours a day, and closed only to reverse the facility direction. It operates southbound to Denver in the AM until 10 AM, and then the lanes are reversed to operate northbound starting at noon. The I-25 HOT lanes serve transit, carpools, vanpools, and motorcycles between the northern suburbs and Denver. Travelers to other destinations, such as the Denver Technological Center use the HOT lanes in peak periods to shorten overall travel times.

The HOT lanes, branded "Express Lanes," have been in operation less than one year. In April 2007, almost 81,000 toll-paying SOV's used the lanes, with revenues of \$160,000, almost double the initial projection for the 10th month. Currently more than 1,400 toll-paying vehicles are using the HOT lanes in the AM and PM peak periods.

The following elements of the project are shown in Figure 1 (page 2):

- I-25 north reversible HOT facility from 20th Street to north of U.S. 36 (6.5 miles)
- Downtown Connector (reversible) from I-25 to 19th/20th Streets in Downtown Denver (0.7 miles)
- U.S. 36 reversible HOT facility, connecting U.S. 36 HOV lanes to I-25 HOT lanes from Pecos Street to I-25 (1.0 miles)

HOT Lane Operations

To manage demand on the facility and to ensure free-flow travel speeds, variable tolls are applied by time of day, with higher tolls in more congested times. Additionally, all tolls are collected electronically. The toll rates currently vary from \$3.25 in the peak of the peaks, to 50 cents late night and weekends. Toll rates are based on a graduated fixed schedule. Toll rates are posted on a series of variable message signs, including signs on the downtown street approaching the entrance ramp. Toll rates are collected at a location in the vicinity of 58th Avenue with detectors mounted on an overhead gantry. HOV vehicles use the west lane and toll-paying vehicles the east lane as shown in Figure 2 (page 2). A wide enforcement area was constructed adjacent to the HOV lane to permit visual observation and enforcement of vehicle occupancy. Photo technology is used to identify toll evasion violators without transponders in the toll lanes. This is the only segment of the HOT lanes where HOVs and toll-paying SOV's are separated. Buses are permitted to use either lane.

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DENVER'S I-25 HOT LANES

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Objectives for the HOT lane conversion on I-25 included:

- Address short-term mobility needs on the North I-25 Corridor
- Ensure the long-term availability of high-speed facilities for carpoolers and bus riders
- Optimize the total number of persons that the built facilities carry each day

By agreement between CDOT, RTD, the Denver Regional Council of Governments (DRCOG), the Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA), the following policies were adopted to guide the implementation of the HOT lanes:

- **Priority of Use.** Buses are the highest priority for the I-25 HOT Lanes. The HOV facility was constructed by RTD with FTA funds and both RTD and FTA were concerned that bus operations not be adversely affected by the added HOT traffic. In order of priority:
 - Highest: Buses and other transit operations
 - Second: Vanpools and three-or-more person carpools
 - Third: Two-person carpools
 - Fourth: Inherently Low-Emitting Vehicles
 - Lowest: Single-occupant vehicles (toll-payers)
- **Electronic Toll Collection.** All tolls are collected by Electronic Toll Collection (ETC) technology. No toll booths

Figure 1



Figure 2



are used in the HOT Lanes. The ETC is fully compatible with that of the E-470 Tollway and Northwest Parkway, as required by the Colorado Revised Statutes.

- **Protection of Level of Service.** The I-25 HOT Lanes must preserve free flow speeds at all times. This policy corresponds with the hierarchy of use. If free flow speeds are degraded, tolls will have to be increased. SOV's may ultimately have to be excluded from the HOT Lanes.

Why Change

In operation for over ten years, the I-25 HOV Lanes have provided a significant time savings for users, in particular bus riders. With some 70 buses using the facility in the peak hour, the persons per lane of the HOV lanes exceeds that of the adjacent general purpose lanes on a per lane basis. Despite the success of the HOV facility for mobility and person throughput, the facility had significant excess capacity. In the AM Peak Hour, only 1,150 vehicles utilized the facility. At level-of-service C, the facility should be able to carry up to 3,000 vehicles per hour. In the PM Peak hour, 1,190 HOV vehicles and buses used the facility.

DRCOG forecast of HOV volumes for 2025 showed only 34 percent HOV growth between 2001 and 2025 (approximately 1,550 vehicles in the peak hour). This indicated that the HOV lanes would never approach their theoretical operating capacity. PB conducted extensive CORSIM operations simulation of HOT operations. The merge areas with the general purpose lanes were carefully examined, along with the impact of higher volumes on the downtown connecting street network. The controlling element of HOT use was found to be the ingress and egress points, which constrain the maximum potential load volumes. The ramp capacities are more critical than the actual capacity of the two-lane main reversible roadway.

HOT lanes operations on I-25 have provided an opportunity to more fully utilize the available capacity on the HOV lanes without compromising travel speeds or impacting the travel-times for buses,

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DENVER'S I-25 HOT LANES

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vanpools, or carpools.

Project History and Partners

The consideration of the HOT lane conversion for I-25 began in 1998 with an evaluation and feasibility study of HOT Lane options for the I-25 facility by a PB-led team (*Value Express Lanes Feasibility Study*), partially funded by the FHWA Value Pricing Pilot Program. Concluded in 2000, the initial study recommended the conversion of the I-25 HOV lanes to HOT lanes, citing considerable and consistent excess capacity in the HOV facility (upwards of 60 percent available capacity in the AM Peak Hour).

CDOT received \$2.8 million from FHWA under the Value Pricing Pilot Program to implement the HOT Lanes project. The HOV lanes are the first demonstration in the United States of value pricing directly into and out of a large central business district, with multiple ingress and egress points. A consultant team led by PB was selected by CDOT and commenced work in August 2003. Under a task order contract, PB developed concept plans, tested operations scenarios, and developed a concept of operation. Toll rates were evaluated to maintain travel speeds and revenue forecasts developed. The team conducted an extensive analysis of public attitudes regarding the proposed implementation including a series of focus groups. The focus groups showed concerns about the need for better enforcement as well as concerns about the traffic impacts on pedestrian movements in the downtown approaches. Environmental studies under NEPA included a detailed air quality analysis. In 2004, FHWA approved a documented Categorical Exclusion for the implementation of HOT lanes on I-25.

The initial design work for infrastructure improvements included contract modifications to an in-progress CDOT

construction contract, the “HOV Gates” project. The HOV Gates project was designed by CDOT to eliminate a single lane “pinch point” in the HOV lanes and to extend the lanes over a mile to north of the congested US 36/I-76 interchange. The contract modifications by PB included added overhead and variable message signs to display toll information, as well as changes in the barriers separating the HOV lanes from the general purpose lanes to provide room for an enforcement area.

Following on from the HOV Gates project, PB designed the toll collection gantry, added overhead signs, and traffic signal, signing and striping improvements for the downtown city streets at the exit and entry points. The E-470 Public Highway Authority, which owns and operates the E-470 toll road, was retained to design and install the electronic toll equipment. Fiber optic links connect with the E-470 operations center where the toll collection and violations monitoring and back office operations are handled. The same transponders for E-470 are used on the I-25 Express Lanes. Nearly 400,000 transponders have now been issued to drivers in the region. Leading up to the June 2006 opening, PB produced an information video on the HOT lanes which was picked up by all the local television stations. The video explained how the HOT lanes would operate and how drivers could obtain transponders. CTE also conducted an extensive marketing program.

Intergovernmental Agreements (IGA's)

To implement the operations of the HOT lanes, a series of IGAs were developed. In the policy area, an IGA was signed with RTD and FTA committing that travel times for buses would be maintained. This provides that traffic volumes will be controlled using variable tolls. Buses will continue to use the lanes toll free. A minimum peak period toll was established to

(Continued on page 5)

Figure 3

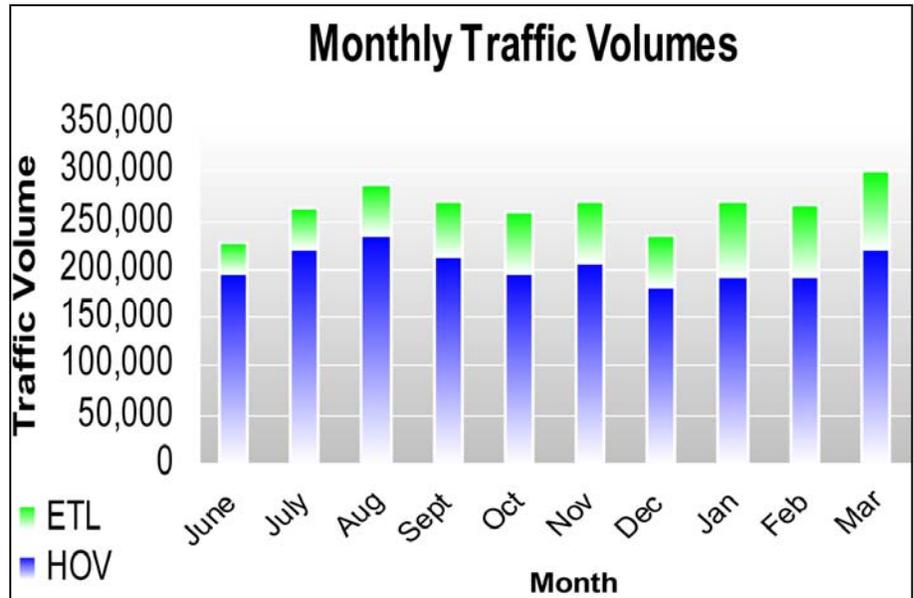
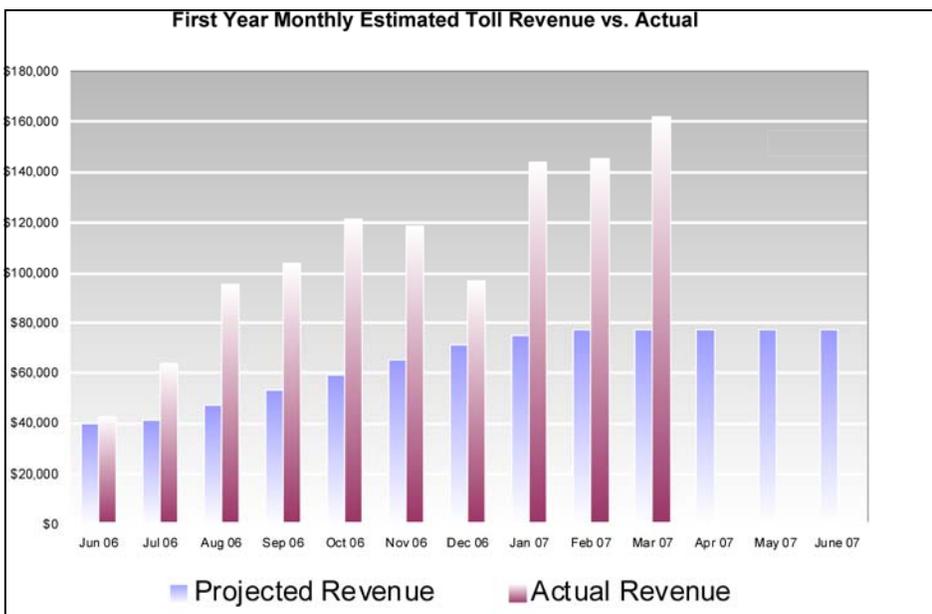


Figure 4



EDITORS' CORNER

As we approach the Annual Meeting in July, the Westernite Editors would like to thank all of the contributors that have made our second year of producing the newsletter enjoyable. The list is extensive and includes many ITE members and leaders who work hard to keep District 6 the finest district in ITE. Dalene Whitlock, District 6 President, has provided tremendous support. Ken Ackeret, Jennifer Rosales and Monica Suter have contributed columns, feedback and filler as needed.

Nate Larson has been great in his role of Technical Editor. Besides scaring up excellent articles, he also tracks advertising and keeps the professional services directory updated.

We appreciate the contributions of Dr. Jerry Hall and Loretta Hall, for accepting the challenge of developing an on-going column, "The Adobe Tower."

Walt Stringer consistently provides District 6 with the latest legislative updates that keep us on top of what is happening in our profession.

We want to thank the Section scribes that have made regular contributions to the newsletter for the section and chapter activities column.

We also want to thank all of the technical article authors who have

contributed professional credibility to our district newsletter.

Adcraft Business Mail gets our appreciation for working with us to improve delivery of the newsletter to your home or office.

At the Annual Board Meeting, the Westernite Editors are requesting approval of some changes to the way we manage the newsletter. These changes will focus on how we accept and manage advertising in order to improve service to our member agencies and organizations. Once these changes are approved by the Board of Directors, we will post them on Westernite.org. Advertisers will be given specific instructions on how to submit and request positions available and newsletter advertising in future editions.

Finally, we want to thank everyone who reads the Westernite newsletter for your support over the last year.

Our final thanks are reserved for the member organizations in the public and private sector that have consistently invested in the newsletter through advertising in the newsletter, in positions available and the professional services directory.

Advantec Consulting Engineers
CH2M Hill
DKS Associates
Engineering Inc.
Fehr & Peers
HDR Inc.
Iteris Inc.
Katz Okitsu & Associates
Kimley Horn & Associates
Morrison Maierle, Inc.
Oregon Department of Transportation
Parametrix
City of Pasadena
City of Phoenix
RBF Consulting
T.Y.Lin
Transpo Group
URS Corporation
W.G. Zimmerman, Inc.
Willdan

PRESIDENT'S MESSAGE

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Endowment Fund, and hopefully this is just the beginning! There are two persons responsible for this recent jump in the Fund balance, and I want to thank Julie Townsend and Zaki Mustafa for all the efforts they've made to bring this charitable opportunity to the attention of our membership. Zaki was originally responsible for establishing the Endowment Fund, and he has made a point of talking to members of his home Southern California Section about donating, and they've done so to the tune of literally thousands of dollars. Julie and her husband Clark issued a challenge last fall to match, dollar for dollar, donations made by Sections that she visited, and allowed me to issue that challenge for her during some of my visits as well. She has also sent emails to more than 400 members that she knows personally encouraging them to donate, and many have. During the Annual Meeting in Portland, we will be recognizing everyone who has donated since the inception of the Fund, but sincere thanks also go out to those

who aren't able to come to Portland and be recognized.

The Endowment Fund will ensure that we can continue the programs we have already established, but it will also allow us to expand our programs and make them more attractive. It was recently noted that some students have indicated an unwillingness to put in the time necessary to apply for a scholarship that is only \$500. Once we reach our goal for the Endowment Fund, we should be able to offer scholarships in amounts that will be substantial enough to get more students' time and attention.

As I end my term as President, I want to thank all of the officers, committee chairs and other leaders who have helped and supported me. So that this doesn't sound like a bad Oscar speech, I won't list everyone who contributed to making this year such a pleasant experience, but I do want to highlight a few whose support was so critical. It was my good fortune this year to serve with four International Directors who took our message to Headquarters, and

represented us admirably. My thanks go out to Rock Miller, Rory Grindley, Randy McCourt and Julie Townsend for their willingness to lend me an ear and a word of advice when I needed their wisdom. Thank you to my fellow officers, Ken Ackeret, Jennifer Rosales and Monica Suter, who have been there for me all year long, helping me keep the business of the District running smoothly. Our District Administrator, Jenny Grote, has my undying gratitude for her insight and generous sharing of the experience of many years serving ITE. Finally, I want to thank Jon Pascal, our webmaster, for helping me keep in touch through mass emailings and posting information quickly even when I waited until the last minute to give it to him.

Most importantly, thank *you* for allowing me to serve the District as your President. I have truly enjoyed every meeting I've attended, and have taken so much more from this position than I could ever have put in to it. It has been an honor and a privilege for which I'm truly grateful!

LEGISLATIVE NEWS



Walt Stringer,
Legislative Chair

In California, the Governor's May 2007 proposed Revision to the State Budget (called the 'May Revise') caused additional turmoil in the same area mentioned in last issue's column—continued diversions of Proposition 42 gas tax spillover revenue, away from transportation and public transit into

General Fund uses, would have negative impacts on transportation project and service funding. The proposal also calls for using newly-approved bond funding to backfill diverted revenue, which further roiled the

waters as the statewide bond funds were premised on funding new projects, versus backfilling diversions from existing projects. Methods for allocation of bond funds (Prop 1B, PTIMSEA Account) were proposed in AB901 and SB716, which were heard in Committees during April and May. A similar process is underway for allocation of transportation security funding, with AB1350 and SB45 serving as the legislative vehicles for the proposals.

In Washington state, preparations and debate are underway as to the contents of November 2007 ballot proposals to fund transportation projects, with as much as \$16 Billion potentially at stake. In the Seattle region, a combined roads and transit program reached consensus in May and

should move ahead for voter funding approval. In late April, as the state legislature ended their session, partial funding was approved for specific projects such as the SR520 floating bridge and the double-deck Alaskan Way viaduct on the Seattle waterfront, which will initially be rebuilt along the north and south ends at an estimated cost of \$915M. Advocacy groups have posted analytical summaries, accessible via www.rtid.org/blueprint.html, and www.washingtonpolicy.org.

At the Federal level, little has occurred to update transportation funding matters, with budget proposals for this year and next still under debate at a broad policy level.

DENVER I-25 HOT LANES

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be greater than the RTD express bus fare. Reporting requirements were also spelled out in the IGA.

A maintenance IGA included updating the previous 1993 agreement, and transferred snow removal, roadway sweeping and other maintenance duties from RTD to CTE. CTE in turn is funding the maintenance costs from toll revenues. An IGA provided for expanded enforcement of the HOV lanes by the Colorado State Patrol. A tolling agreement was signed with FHWA allowing for tolled SOV's in the HOV lanes, along with maintenance and record keeping requirements. An incident management plan was also developed spelling out roles and responsibilities for policing, fire protection and operations.

Performance to Date

Now in the twelfth month of operations, the use of the HOT lanes by SOV's has greatly exceeded the initial forecasts. HOV monthly traffic has remained stable ranging between 180,000 and 240,000 while SOV toll paying traffic has increased from 30,000 in June 2006 to 80,000 in March 2007 (Figure 3). And for the period June 2006 through March 2007, RTD buses have operated over 96 percent on time.

The primary purpose of the Express Lanes is not to generate revenue but to cover operations and maintenance expenses, and to better utilize the built facility by giving motorists another option to avoid congestion. To view more on the I-25 Express lanes, go to www.dot.state.co.us/CTE/ExpressLanes?index.cfm. You can click on to the information video and also access monthly progress reports.

About the Author:

Jack Tone is a Senior Project Manager and Senior Professional Associate with PB in Denver, Colorado. Jack specializes in multimodal projects including highway planning, along with railroads and rail transit. He is a Fellow of ITE and a PE in seven states.



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STUDENT ENDOWMENT FUND

You can help make a difference in a Student's Life.

For many of us, our college days seem like a distant memory. For others those memories may be a bit fresher. However, whether you graduated 5, 10, 20 or more years ago, we all shared the same lack of student programs and opportunities that were available to us during our college days. For me, I would have loved to have had the opportunity to be involved with ITE during college, but no such opportunities existed.

We have come a long way in the last five years. District 6 has implemented a very successful student initiatives program that is currently comprised of a variety of student competitions, mentoring, meeting attendance, data collections funds, etc. Meeting attendance from students has risen from an average of about 15 students before initiation of the program to a high of 80

students at the 2004 Sacramento meeting. Students from all over the District have benefited from the student initiatives program.

Now that such a successful program exists, the focus is to ensure that it will always remain. District 6 has set up a Student Endowment Fund for just this reason. The goal is to raise \$300,000 and utilize only the interest to pay for these programs, thereby insuring that this program will always remain for future generations. While this seems like a large amount of money, it equates to only \$75 per member.

Many of you have already taken the initiative to help and your efforts are truly appreciated. However, we still have a long way to go to make this a reality. Everyone can help with this program. Whether it is by personally giving to the fund, having your company contribute, urging your Sections or

Chapters contribute, or by helping with the outreach to others, you can make a difference in the opportunities that are provided to future generations. So, if you have ever wanted to make a difference in the life of a student, now is your chance.

A donation from is provided on the web and in this issue of WesternITE along with the various recognition levels of participation. Remember all of your contributions are tax deductible, but the best part is the feeling that you have helped improve the opportunities of future transportation engineers. So please consider joining your colleagues in making a difference in a student's life.

Julie Townsend
International Director

Donation Form

The District needs your help! To meet the goal of the Endowment portion of the Student Initiatives Fund only requires that District 6 ITE members pledge to donate \$25 per year for the next 3 years. This modest investment from our profession will secure a long-term funding source to attract future students to transportation engineering and contribute to programs that retain and develop future engineers. Please make a check payable to and send your contribution to:

ITE District 6 Student Endowment Fund
C/O Jenny Grote, District 6 Administrator
4512 E. Lafayette Blvd.
Phoenix, AZ 85018

Firm/Agency: _____
 Name: _____
 Address: _____
 City/State/Zip: _____
 Email Address: _____ Phone: _____

Individual Contribution Amount: \$75 \$100 \$150 Other \$ _____
 Corporate Contribution Amount: \$250 \$500 \$1,000 Other \$ _____
 Pledge Amount: \$ _____ per year for _____ years Initial payment enclosed: \$ _____
 Would you like to be recognized in WesternITE or www.westernite.org web site for your contribution? Yes No
 Comment: _____

- Recognition will be given to the following groups (from Annual Meeting to Annual Meeting):
- Individuals:
 - \$75 - \$149 Contributors (listing)
 - \$150 - \$499: Friends of the Profession (listing + pin)
 - \$500 - \$999: Sponsors of the Future (listing + pin + certificate)
 - \$1000 and above: Visionaries of Transportation (+ plaque at Annual Meeting)
 - Companies/Agencies/
 - \$500 - \$999: Bronze (listing + annual meeting listing)
 - Sections/Chapters:
 - \$1000 - \$2499: Silver (listing + annual meeting list + web notice)
 - \$2500 - \$4999: Gold (plaque at annual meeting)
 - \$5000 and above: Platinum (1 free Annual Meeting vendor booth)

TOLL TOLERANCE

In the first half of the 20th century, momentum grew for improving the nation's vehicular mobility. But the expense of building long sections of high-quality rural highways was daunting even to the engineers and politicians who believed in its necessity. Some believed that the most reasonable approach was to build toll roads so that the motorists and freight haulers who benefited from the highways would be the ones to pay for the system's construction.

A prominent example of this strategy was the Pennsylvania Turnpike, which was built on the remnants of the never-completed South Pennsylvania Railroad and eventually extended to 360 miles in length. Although it was spectacularly successful as a modern freeway, it was not a reliable model for testing the feasibility of the toll road alternative for rural highway construction. It was conceived and built in the financial context of the Great Depression. The Pennsylvania state government supported the concept of the turnpike and authorized the sale of bonds to fund its construction. Unwilling to accept any financial risk, however, the legislature refused to back the bonds with the "full faith and credit" of the state government. As a practical matter, this rendered the bonds unsaleable.

Two New Deal programs allowed the project to proceed. The Public Works Administration, which funded projects to combat the nation's unemployment problems, contributed 40 percent of the turnpike's cost. The rest of the cost was covered by bonds purchased by the federal Reconstruction Finance Corporation. In 1938, while the Pennsylvania Turnpike was being built, Congress directed the Bureau of Public Roads (BPR) to evaluate the feasibility of using toll revenues to construct a grid of five or six transcontinental routes. The BPR collected enormous amounts of data from the states and analyzed it carefully. Because the proposed highway system was unprecedented, the analysis was also based on several key assumptions made by BPR chief Thomas MacDonald:

- a toll road can't compete with a substantially parallel free road, which must still be provided to serve the large amount of short-range traffic
- to make people willing to pay, the design standards of the free road must be noticeably lower than those of the toll road
- to remain free of congestion and attract a sustaining amount of traffic, the toll road must be designed for a greater capacity than it will actually attract

- toll roads are more expensive because of toll collection costs and higher interest rates for financing.

The resulting analysis, published in the 1939 report *Toll Roads and Free Roads*, was that the proposed national toll road network was not feasible. Recognizing the importance of a modern highway system, however, MacDonald and his assistant, Herbert Fairbank, proposed in that report an alternative: a more extensive system of free roads that would serve a greater amount of non-local traffic. Financed jointly by federal, state, and local governments, this highway system would "include substantially every major line of interregional travel in the country" and connect "the populous cities of the United States, almost without exception."

To further develop this promising concept, President Roosevelt appointed a National Interregional Highway Committee led by MacDonald and Fairbank. The resulting report, *Interregional Highways*, proposed a 39,000-mile highway system, three-fourths of which was rural. Shelved during most of World War II, the 1941 report was dusted off and submitted to Congress in 1944 as a way of stimulating the post-war economy. The proposal prompted lively debates, primarily about how the system would be funded. Perhaps as a way of reassuring states of their importance in the process, the Federal-Aid Highway Act of 1944 called for the selection of a National System of Interstate Highways totaling as much as 40,000 miles.

In the flurry of post-war economic activity, analysts revisited the idea of toll roads. They reasoned that uncongested highways with gradual curves and grades would save motorists time, fuel, and vehicle maintenance. Several states built bond-financed toll roads without federal assistance. Some, like the Maine Turnpike were commercially successful; others, like the Oklahoma Turnpike, failed to pay for themselves.

Far from being a "system," the state-authorized turnpikes were a patchwork affair. The most dramatic example was the Kansas Turnpike, which opened in 1956; at the Oklahoma border, it dead-ended at a farm field. Hundreds of motorists ran headlong into the field, even after a massive wooden barricade was installed.

This patchwork approach to rural highways ended with the Federal-Aid Highway Act of 1956 and the resulting National System of Interstate and Defense Highways. With the federal government paying 90 percent of the cost of building these roads, the states lost interest in

developing new toll roads. In 1957, the Interstate System absorbed over 2000 miles of toll facilities, including bridges and tunnels as well as roads. The states were allowed to continue collecting tolls to pay off the bonds that had financed these facilities. However, seeing that other Interstate highways were being built with mostly federal funds, the states asked to be reimbursed for a similar proportion of the construction cost of their toll facilities that had become part of the System. Congress studied the issue, concluding in 1958 that repayment would take \$2.5 billion—a sum they were unwilling to authorize. Finally, the Intermodal Surface Transportation Efficiency Act of 1991 authorized \$4 billion for such reimbursements.

The Adobe Tower



About the Authors:

Jerry Hall, a professor of Civil Engineering at the University of New Mexico, has served District 6 as president and international director.

Loretta Hall, a member of the Construction Writers Association, is a freelance writer concentrating on engineering and construction.

They can be contacted at jerome@unm.edu and lorettahall@constructionwriters.org, respectively.

This is the fifth in a series of articles tracing the development of the Interstate Highway System.

SECTION AND CHAPTER ACTIVITIES



HAWAII SECTION

March 2007

The University of Hawaii (UH) ITE Student Chapter hosted the March Hawaii ITE Chapter Meeting on March 23, 2007. Cathy Leong presented \$750 check to the UH Student Chapter. The money came from the total \$1,500 that the District Board returned the 2006 annual meeting surplus to the Honolulu LAC.

The student members discussed two technical research and analysis projects. The first project was Local Calibration of Saturation Flow Defined by HCM. The data showed that statistical difference for Saturation Flow Rate and Start Up Lost Time collected among touristy and non-touristy intersections in Honolulu. The project was funded by District 6 Data Collection Fund. The second project was VISSIM Simulation of a Toll Plaza in Greece. Different tolling scenarios were simulated and tested. The project demonstrated VISSIM's capabilities on modeling tolling booth service time, freeway weaving and merging, and queuing. The members were also impressed by VISSIM's powerful visualization.

April 2007

Darin Mar, City and County Honolulu Department of Transportation Services, and Melissa McFerrin, Hawaii Superferry CR Manager, spoke at Hawaii ITE April Meeting on April 26, 2007. Mr. Mar introduced Oahu intra-ferry running from Barber Point, Kapolei to Aloha Tower, Down Town Honolulu. The intra-ferry is aimed at serving the commuting patrons between Kapolei and Downtown Honolulu. The Bus will be orientated to feed the ferry during morning and afternoon peak hours. The intra-ferry will be launched in July 2007.

Ms. McFerrin discussed Hawaii Superferry which will serve between Oahu and Maui, Oahu and Kauai. Hawaii Superferry will be able to accommodate not only walk-on passengers, but also passengers with vehicle and commercial transportation. Beginning in July, Hawaii Superferry will offer daily service between Oahu and Maui and service between Oahu and Kauai six

days a week (Mon-Fri and Sun). When the second ferry arrives in 2009, the service between Oahu and the Island of Hawaii, and a second daily Oahu-Maui roundtrip will be offered. Travel from Oahu and Kauai and Oahu and Maui will take approximately 3 hours, and approximately 4 1/2 hours to the Island of Hawai'i.

*Honglong Li,
Secretary*



CALIFORNIA BORDER SECTION

January 2007

Our January meeting was held at the Hilton Garden Inn in Carlsbad on January 4, 2007 with 47 people in attendance. The topic for this meeting was on the operations of the traffic signal preemption system for the Highway Rail Grade crossings on the SPRINTER alignment. The two presenters for this topic were Jason Stack of Katz Okitsu and Associates (now with Stack Traffic Consulting) and Michael Boraks of North County Transit District (now with Cornerstone Engineering). The discussion focused on the unique aspects of the traffic signal operation during preemption, including the SPRINTER preemption circuitry and the traffic signal preemption logic.

February 2007

Our February meeting was held on San Diego State University's campus at the Aztec Center on February 1, 2007 with 58 people in attendance, including 10 students. For this meeting, there was no set presentation, but included a discussion panel with transportation professionals on careers in the transportation field. The four speakers were: Hank Morris, retired County of San Diego Traffic Engineer; Ed Krulikowski, retired City of El Cajon Traffic Engineer; Jenny Grote, City of Phoenix Traffic Engineer; and Patti Boekamp, City of San Diego Engineer and Capital Projects Director. All speakers

talked about the importance of the transportation engineering field and how they all made a career out of it.

March 2007

Our March meeting was a joint meeting with the Southern California section held at the Irvine Institute of Technology in Irvine on March 9, 2007. There were 59 people in attendance with 13 people making the drive up from the California Border section.

April 2007

Our April meeting was held at the Handlery Hotel in San Diego on April 5, 2007 with 45 people in attendance. The topic for this meeting was an introduction to the planning and design of a modern roundabout. The presenter for this topic was Nick Abboud of Wilson and Company. Nick touched on the major issues of consideration for a modern roundabout, including preliminary geometric design, traffic signing and markings, safety considerations, and community acceptance with an emphasis on the advantages and disadvantages of roundabouts.

*Marc Mizuta,
Secretary*



SAN FRANCISCO BAY AREA SECTION

February 2007

Smart Growth: Coordinating Land Use and Transportation Planning was held in Ristorante Raphael in downtown Berkeley, California. Not only more than 60 transportation professionals attended, a lot of graduate students from U.C. Berkeley joined with us at this event as well.

It was our honor to have Dr. Reid Ewing, Research Professor, National Center for Smart Growth, University of Maryland share his knowledge with us. Dr. Ewing has written books for the major planning and development organizations: Developing

SECTION AND CHAPTER ACTIVITIES

Successful New Communities for the Urban Land Institute; Best Development Practices and Transportation and Land Use Innovations for the American Planning Association; and Traffic Calming State-of-the-Practice for the Institute of Transportation Engineers.

His 1997 Journal of the American Planning Association article on sprawl is listed by APA as a "classic" in urban planning. His 2003 study of sprawl and obesity may have received more national media coverage than any planning study ever. It was the most widely cited academic paper in the Social Sciences as of late 2005, according to Essential Science Indicators. Dr. Ewing is a much sought-after speaker, delivering over 100 addresses in 30 states over the past five years. Venues for his featured addresses have included the National Press Club and Congressional committees.

At this joint meeting with East Bay Traffic Engineers, Mr. Ewing laid out principles of coordinated land use and transportation planning, and provide best-in-class examples of regional planning, community design, transit-oriented development, context-sensitive highway design, and access management.

April 2007

The SF Bay Area ITE Section held its monthly technical meeting at California Department of Transportation (Caltrans) District 4 headquarters in Oakland. In what has become an annual tradition during the month of April, the Section invited local transportation students to submit papers on a general transportation topic. The Section awarded scholarships to competition winners and gave them the opportunity to present their papers at the April Section meeting.

This year, the students focused on Smart Growth and Transit-Oriented Development. Many of the papers addressed the potential for TOD around existing suburban stations of the Bay Area Rapid Transit (BART) regional rail system. Such developments have the potential to reduce automobile trips given their characteristics of dense, mixed-use development, and they also promote use of alternative modes such as transit, bicycling, and walking.

Three student scholarship recipients presented their winning papers at the April Section meeting, which was followed by a lively Q & A session between students and attendees. The scholarship winners and

their paper topics were as follows:

- Grand Prize Scholarship (\$1,000): Wendy Tao for "A Smart Growth Vision for Downtown Fremont: Enhancing Mobility One Step at a Time." Ms. Tao is a graduate student in Transportation Engineering & City Planning at the University of California, Berkeley.
- Graduate Scholarship (\$500): Nicole Foletta for "TOD Recommendations for MacArthur BART Station." Ms. Foletta is a graduate student in Transportation Engineering & City Planning at the University of California, Berkeley.
- Undergraduate Scholarship (\$500): Sahil Gulati for "Combining the Haciendas and Beyond: Transit Oriented Development in the Tri-Valley Eastern Span of Dublin and Pleasanton, CA." Mr. Gulati is an undergraduate student in civil and environmental engineering at San Jose State University and an SJSU chapter officer of Engineers Without Borders.

In addition to the above scholarships, the Section also offered the above three students an all-expenses paid trip to this July's District 6 Annual Meeting in Portland, Oregon.

Due to the high quality of student papers this year, two additional students were awarded \$100 Honorable Mention prizes at the April Section meeting:

- Laura Stonehill for "Planning Experiences in Ohlone-Chynoweth Commons and Fruitvale Transit Village." Ms. Stonehill is a graduate student in Transportation Engineering & City Planning at the University of California, Berkeley.
- Rebecca Sanders for "Daly City: The Next Bay Area TOD." Ms. Sanders is a graduate student in Urban Design and Transportation Planning at the University of California, Berkeley.

*Andrew Kluter,
Co-Scribe*



OREGON ITE SECTION

December 2006

Members of the Oregon ITE section and District 6 Local Arrangements Committee had the opportunity for a "behind-the-scenes" tour of the Oregon Health Science University (OHSU) aerial tram in before it opened to the public. The aerial tram cabin travels 3,300 linear feet between the South Waterfront terminal and the upper terminal at OHSU's main campus. The tram travels at 22 mph and rises 500 feet for the three-minute trip. The tram opened to the public in February and will be offered as a technical tour for the District 6 ITE meeting held in Portland. It was a quick, smooth ride with a spectacular view.

January 2007

The Oregon ITE Technical Workshop was held on January 30th at the Oregon Department of Transportation Region 1 Office. The topics were Context Sensitive Design and Context Sensitive Solutions. Context sensitive solutions, by definition utilize a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. The workshop explained in more detail what Context Sensitive Design and Context Sensitive Solutions are, provided information about some of the technical and legal issues related to its implementation, and focused on real life applications and examples. Several people presented on a variety of issues related to these design principles including: Estimating Safety Performance Using Current and Future Tools, Context Sensitive Solutions and Sustainability in Transportation, Synthesis of Design Exception Practices, Introduction to Context Sensitive Design and Context Sensitive Solutions and

(Continued on page 10)

CHAPTER AND SECTION ACTIVITIES

Applications of Context Sensitive Design and Context Sensitive Solutions on Various Highway Types.

February 2007

The Oregon ITE meeting was held on February 27th at the Intelligent Transportation System (ITS) Lab at Portland State University. The meeting included a tour of the lab, as well as presentations from two PSU students with ongoing research projects studying transit performance using automated vehicle location (AVL) and arterial performance using advance and system loop data. Several other undergraduate and graduate PSU students joined the meeting and were available for questions about their poster session projects. ITE District 6 President, Dalene Whitlock also attended the meeting and provided an update on District 6 activities and the upcoming conference being held in Portland, Oregon this July.

April 2007

The April meeting was a joint meeting with the Oregon section of the Women's Transportation Seminar (WTS) held on April 10th at the Embassy Suites Hotel in downtown Portland. The topic of the meeting was the Columbia River Crossing project. The Columbia River Crossing project addresses the future of the Interstate-5 Bridge between Vancouver, Washington and Portland, Oregon and the 5-mile segment of the Bridge Influence Area from SR 500 in Vancouver to Columbia Boulevard in Portland. Currently, traffic demand exceeds capacity on the I-5 Bridge contributing to heavy congestion and delay for automobile, transit, and freight traffic, with demand expected to continue growing significantly on this regional facility. A creative, multi-modal solution is needed to address the existing and future needs. Kris Strickler (Deputy Project Director for the past two years) and Danielle Cogan (the Communications Manager) presented an update on the progress and challenges of the Columbia River Crossing Project including the project schedule, what has been completed to date, the preliminary alternatives that have been developed, the analysis that is currently underway and project constraints.

Brandy Sularz, Scribe

POSITIONS AVAILABLE

ENGINEERING SUPERVISOR City of Phoenix

RECRUITMENT DATES: May 21, 2007 - Until selection is made. *First review of application material will occur on June 1, 2007.*

SALARY: \$64,667 - \$101,858 annualized. *Appointment can be made above the minimum depending upon qualifications.*

EXPERIENCE: Five years of experience in planning, organizing and directing difficult and complex civil engineering projects, including a minimum of one year of supervisory experience, and a bachelor's degree in civil engineering or a related field. Preferred experience includes construction management, or experience in a materials laboratory, street maintenance, or floodplain and storm drains. *Must be registered as a Professional Engineer in the State of Arizona by the end of the 12-month probationary period.* Other combinations of experience and education that meet the minimum qualifications may be substituted.

DUTIES: These are management positions in the Street Transportation Department which typically supervise multiple sections within a major division. These divisions include Planning, Design, and Programming; Design and Construction Management; and Street Maintenance. All positions report directly to a Deputy Street Transportation Director. They exercise considerable skill in communicating engineering problems and proposed solutions to public officials, City departments, agencies, neighborhood associations, consultants and contractors. These positions are responsible for operational budgets and personnel management.

APPLY: Apply on-line at www.phoenix.gov or submit your resume, cover letter, and data collection form to the City of Phoenix Application Office at 135 N. 2nd Ave., Phoenix, AZ 85003.

CIVIL ENGINEER I City of Phoenix

SALARY: \$46,176 - \$68,931 annualized.

EXPERIENCE: Requires a bachelor's degree in civil engineering. A bachelor's degree in a related engineering field may be substituted if the applicant also has one year of civil engineering experience. Other combinations of experience and education that meet the minimum requirements may be considered.

DUTIES: Under the supervision of a professional engineer, this position performs entry level civil, transportation and/or traffic engineering work. Coordinates projects within the Street Transportation Department and other federal, state, county, and local transportation/flood control agencies.

APPLY: Apply on-line at www.phoenix.gov or submit your resume, cover letter, and data collection form to the City of Phoenix Application Office at 135 N. 2nd Ave., Phoenix, AZ 85003.

TRAFFIC ENGINEERING SUPERVISOR City of Phoenix

RECRUITMENT DATES: May 21, 2007 - Until selection is made. *First review of application material will occur on June 1, 2007.*

SALARY: \$64,667 - \$101,858 annualized. *Appointment can be made above the minimum depending upon qualifications.*

EXPERIENCE: Five years of professional traffic engineering experience in a technical capacity, including one year of experience supervising professional-level engineers who perform very difficult and advanced traffic engineering work, and a bachelor's degree in engineering including, or supplemented by, courses in traffic or highway engineering. *Must be registered as a Professional Engineer in the State of Arizona by the end of the 12-month probationary period.* Other combinations of experience and education that meet the minimum qualifications may be substituted.

DUTIES: These are management positions in the Street Transportation Department which typically supervise multiple sections within a major division. All of these positions exercise considerable skill in communicating traffic engineering problems and proposed solutions to public officials, the development community, City departments, agencies, neighborhood associations, and homeowner associations. These positions are responsible for operational budgets and personnel management.

APPLY: Apply on-line at www.phoenix.gov or submit your resume, cover letter, and data collection form to the City of Phoenix Application Office at 135 N. 2nd Ave., Phoenix, AZ 85003.

POSITIONS AVAILABLE

CIVIL ENGINEER II City of Phoenix

SALARY: \$50,918 - \$76,045 annualized.

EXPERIENCE: Requires one year of civil engineering experience and a bachelor's degree in civil engineering or two years of civil engineering experience and a related engineering degree. An Engineer-In-Training (EIT) certification and project management experience is highly desirable. Other combinations of experience and education that meet the minimum qualifications may be substituted.

DUTIES: Performs civil engineering work at the intermediate professional level under the supervision of a professional engineer in civil, transportation and/or traffic engineering work. May coordinate projects with other City departments as well as federal, state, county, and local transportation agencies. Currently there are several vacancies in the City of Phoenix. Civil Engineer II positions are located within several city departments having different functions.

APPLY: Apply on-line at www.phoenix.gov or submit your resume, cover letter, and data collection form to the City of Phoenix Application Office at 135 N. 2nd Ave., Phoenix, AZ 85003.



ASSISTANT CITY TRAFFIC ENGINEER

Hiring Range: \$59,786- \$90,976 DOE. As of July 1, 2007 with budget approval new salary range will be: \$63,180-\$93,797.

The position of Assistant City Traffic Engineer will plan, perform difficult and advanced traffic engineering work. Supervision is exercised over professional and paraprofessional personnel in planning, designing, collecting and analyzing data and information on traffic engineering projects. Work involves the application of professional traffic engineering knowledge and skills to a variety of engineering functions.

Position requires a valid driver's license and three (3) years experience in traffic engineering or a related field. Work requires professional level of knowledge of a discipline equivalent to that which is acquired in a Masters degree-level of study, though equivalent experience may be substitute for education. Please visit our website for more details at www.goodyearaz.gov. The position is open until filled.

OLSSON ASSOCIATES

Olsson Associates is a multi-discipline engineering firm specializing in civil, mechanical and electrical engineering. However, we are more than a group of talented engineers, planners, scientists, and landscape architects. We are a comprehensive team of dynamic, hardworking, hard-playing, success-oriented professionals who solve problems, create new environments, and provide specialized services in nearly every market imaginable.

Traffic Engineer

Responsibilities include all elements of traffic impact assessment, signal design and signing and striping design, the preparation of traffic control plans as well as working on a variety of traffic studies. EIT registration is required, PE desired. Three to six years of experience required. Must be detail oriented and should value team collaboration. Experience with AutoCAD, Synchro and Traffix preferable.

Transportation/Roadway Engineer

Responsible for project engineering, marketing, staff development and oversight. Candidate will play a lead role in transportation engineering functions in this office. P.E. with a minimum of 8+ years. Experience with software including: MicroStation, InRoads, AutoTURN, Microsoft Project helpful. Knowledge of intersection design, plan production, cost estimating and roadway modeling.

Professional environment, excellent compensation, comprehensive benefits.

Please send a cover letter and resume to:

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www.oaconsulting.com

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Job Title: CITY TRAFFIC ENGINEER
Class Title: Division Manager
Department: Engineering, Traffic Division
Reports To: City Engineer
FLSA Status: Exempt
Job Status: Full-time; Non-classified
Salary Grade: D-6-2
Starting Salary: \$74,456.00 annually

SUMMARY: Incumbents are responsible for directing the Traffic Engineering activities, budget, and personnel of a division within the Engineering Department. Incumbents must be able to perform critical decision making and are given the independence and discretion to set up processes/programs. Incumbents are responsible and accountable for: performing strategic planning; ensuring Federal, state and local policy, rules and regulations are followed; providing oversight and direction for implementation of programs/services; coordinating within the department across divisions; representing the division City-wide and to Council; and taking on legislative initiatives.

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

POSITIONS AVAILABLE



ROADWAY ENGINEERING DESIGNERS

Morrison-Maierle Arizona Inc. has immediate opportunities in its expanding Downtown Tempe and Tucson Offices. MMI - www.m-m.net - has offered a broad range of civil engineering design services for over 60 years. As a regional firm with a staff of approximately 400, MMI is a growing ENR top 274 design firm, up 55 places from last year, with great upside potential and ownership/compensation benefits to match.

Senior Project Manager

Senior project manager to help form and lead the Roadway Design Group from the Tempe or Tucson offices. Candidates must be professionally registered and have 10+ years of experience in the state of Arizona. Candidates ought to be familiar with ADOT roadway design standards, have a working knowledge of MicroStation/Inroads, and a record of successful project design work for ADOT and local municipalities. Project management, client service and team leadership skills are highly desirable.

Project Engineer

The Downtown Tempe Office seeks an AZ registered Civil Engineer (5 to 10 yrs roadway design experience) with project management skills to oversee the activities of the roadway design group. Exceptional communications and human relationships skills are required. Familiarity with ADOT roadway design standards, and fluent in MicroStation/Inroads/AutoCAD practices for ADOT and local municipalities are important.

Please e-mail, Fax or send letter of Interest and resume to:

Human Resource Department,
Morrison-Maierle Arizona Inc.
 80 East Rio Salado Parkway, Suite 201
 Tempe, AZ 85281
 FAX: 480-517-5801
 E-mail: lmidgette@m-m.net

TJKM TRANSPORTATION CONSULTANTS

TJKM Transportation Consultants is recruiting a full-time senior transportation engineer for our Pleasanton, California office. We are seeking a highly motivated individual with strong communication and analytical skills who can join our team to work on projects for public and private clients including traffic impact studies, traffic signal systems, transportation modeling, highway operations studies, GIS, ITS and more.

Senior Transportation Engineer requirements include:

- B.S. in Civil or Traffic Engineering (M.S. preferred)
- P.E. registration
- 6 to 10 years of experience
- Excellent written and verbal communication and computer skills
- Knowledge and experience with traffic analysis software
- Field and operations experience with signals preferred

This position requires strong project management skills and an ability to lead teams on small to mid size projects. Interested candidates please e-mail your resume to jobs@tjkm.com or mail to TJKM - Jobs at 5960 Inglewood Drive, Suite 100, Pleasanton, CA 94588. EOE

WILLDAN Traffic Engineer

Willdan is part of the Willdan Group of Companies that was recently listed on the NASDAQ exchange. We specialize in providing engineering and planning services to public agencies in California, Nevada and Arizona, and are seeking a Traffic Engineer to join our Ventura Regional Office. The qualified candidate should have a minimum of 3 years of experience in traffic/transportation planning and design. The position will be responsible for the design of traffic signal systems and signing and striping plans and for the preparation and review of traffic impact studies, parking studies and analysis of traffic control needs. This position has an excellent opportunity for advancement and requires a BS in Civil or Traffic Engineering, an EIT, good driving record and valid Calif. driver's license.

Willdan provides for growth through advancement within engineering, management opportunities and cross training in other disciplines. We offer a

superior benefits package including stock purchases, medical, dental, vision, life insurance and a 401(k) plan. Visit our website at www.willdan.com. Interested candidates should e-mail their resume to hrventrua@willdan.com or fax to (805) 643-0791. Willdan is an Equal Opportunity Employer.

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ADVANTEC Consulting Engineers is looking for Engineers/Planners in all disciplines of traffic engineering and transportation planning. We will provide training and support such that you will eventually be like running your own business, but with technical and administrative support. Our company systems are designed to make you successful and be rewarded for it. It is like having the company to work for you instead of you working for the company.

Here are some of the current vacancies:

Lead Transportation Planner

You will lead the Transportation Planning discipline and will oversee the business development, project management and performance of planning projects. Requires suitable degree with 10+ years experience. Successful candidates may be offered opportunity to own shares of the company.

Senior Engineer/Planners

You will be managing interesting projects involving ITS, traffic engineering, transportation planning, and other disciplines. You will be given training in business development and project management, with great career advancement opportunities! Requires suitable degree and professional license with 7+ years experience.

Mid-level Engineers

You will work on interesting projects involving ITS, traffic engineering, transportation planning, and other interesting disciplines. Requires suitable degree and professional license with 3+ years experience.

Our compensation package involves very competitive salaries, medical/dental insurance, 401k plan, and bonuses! For more information about ADVANTEC, visit our website at www.advantec-usa.com.

Email resumes to Leo Lee, President, at LeoLee@advantec-usa.com. All correspondence will be held in strict confidence.

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SURFACE TRANSPORTATION GROUP MANAGER Seattle, WA

The URS Seattle office needs a Surface Transportation Group Manager who will develop and lead the Seattle surface transportation group. You will pursue new work as well as address technical issues and be accountable for the delivery of transportation projects to high technical standards. You will develop and maintain capture plans for each project in the Washington State area. You will assist in building teamwork and technical staff development on some of the most challenging and complex transportation projects in the Greater Seattle area and in the state of Washington.

Bachelor's Degree in Civil Engineering, or related engineering field. PE or the ability to obtain a Washington PE within six months.

Apply on-line at www.urscorp.com and refer to URS17957 or submit your resume to Melanie_wall@urscorp.com. To discuss this and other positions, please contact Melanie Wall at 206-438-2259.

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SENIOR TRANSPORTATION PLANNER

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Kennecott Land is seeking a Senior Transportation Planner. This role will provide support in the implementation of transportation related projects across the Kennecott and Daybreak Business. This position will manage day to day operations of key transportation projects, work with

UDOT, UTA, MAG and WFRC to maintain strong relationships and develop West Bench Transportation master plans.

Please apply at www.riotinto.com/careers.

Additional responsibilities include:

- Be a liaison with UTA, UDOT on implementation of the Mid-Jordan TRAX Line within Daybreak and Salt Lake County East West Transportation Plan.
 - Assist the development team with transportation related issues affecting Daybreak.
 - Manage legal advisors, contractors and vendors while building relationships with each group.
 - Coordinate with state and local transportation project development and implementation teams to represent Kennecott Land's interests.
 - Draft, track, and maintain financial budgets.
 - Participate in company sponsored committees.
 - Evaluate all projects related with Kennecott Land's environmental management system.
- Always maintain a high quality of health and safety.

Qualifications:

- Bachelors Degree in planning, engineering or related field is a must. Masters degree preferred.
- Minimum of 5 years experience in transportation or related area.
- Minimum of 2 years experience in project management role.
- Knowledge of UDOT, UTA, MAG, and WFRC transportation planning processes is required.
- Knowledge of state and federal transportation regulations with specific emphasis on FHWA and FTA requirements and funding.

Rio Tinto's success depends on talented, motivated professionals. We offer unparalleled opportunities to grow and establish a global career. Rio Tinto offers a competitive compensation and benefit package, including retirement and 401(k) plans. Professional reference education and background checks will be conducted. A post-offer, pre-employment physical and drug screen are required.

Due to the large volume of responses we receive, you will only be contacted by Rio Tinto if additional information is requested or if you are selected for an interview.

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HDR is an employee-owned architectural, engineering, planning and consulting firm.

Senior Transportation Project Manager Responsibilities:

- Direct/monitor all aspects of medium/large size projects with high degree of complexity. Projects, typically in excess of \$100k, require Environmental Assessment/Environmental Impact Statement, alternative analysis, and preliminary engineering.
- Oversee public involvement processes and final design
- Involved with the production and coordination of several projects concurrently including QA/QC
- establishing client relations
- Marketing, contractual, design and production meetings involvement
- Conduct schematic, project development and contract document work sessions at project sites in conjunction with others.

Right candidate will:

- Coordinate staffing/staff workload throughout entire project development; complete studies, technical reports, and construction plans and specifications documents on schedule.
- A-team oriented mindset is critical; will work with Project Controllers, Business/Accounting, Section, and Department Managers for project reviews.

Required: BSCE; PE; minimum 10+ years transportation design management experience.

Apply Online:

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