INSTITUTE OF TRANSPORTATION ENGINEERS
SOUTHERN CALIFORNIA SECTION

NEWSLETTER

2011 – 2012, Issue No. 4 **January 2012**

President's Message

Steven Itagaki, PE, TE, PTOE

Happy New Year!

I hope all of you have enjoyed the holidays and I would like to extend sincere wishes for a prosperous and healthy 2012. According to news reports, the national economy had shown some improvement for 2011. However, California's economy and jobless rate remain to see significant improvement. This year, being an election year, we have high hopes the current or new administration will move forward on improving the economic conditions. Senate Democrats expect to pass a long-delayed surface transportation bill soon after they return to Washington this month. Senator Barbara Boxer (D-Calif.), chairwoman of the Environment and Public Works Committee, said her colleagues have identified a list of offsets that could be used to cover the final $12 billion of the bill's cost. Shortly before Congress left town for the holidays, Boxer stated that Senate Finance Committee Chairman Max Baucus (D-Mont.) had put together a variety of proposals to push the legislation over the finish line. Senators had hoped to pass the $112 billion highway bill before the end of the year but were held up by uncertainty over the final offsets. Senate Majority Leader Harry Reid (D-Nev.) told reporters last week the legislation would be among his first priorities in 2012.

At this time, I would also like to re-visit our officers at the International and District level. As you already know, we have **Rock Miller** as our **International President**, **Zaki Mustafa** as our **International Vice President**, **Walter Okitsu** as our **District Vice President**, and **Monica Suter** as our **International Director**. I would like to introduce **Lisa Martellaro-Palmer** as our **District Advertising Manager** and **Janna McKhann** as our **District Vendor Chair**. By having our Southern California Section members within the International and District levels, they are representing and solidifying our Section throughout the nation. Please join me in congratulating all of them when you see them at our venues.

Our November joint luncheon meeting with RSBITE was held at the Restaurant at Kellogg Ranch in Cal Poly Pomona. Our guest speaker was **Jim Curry, Associate Vice President, Iteris Inc**. Mr. Curry presented on **"Recent Developments in the Los Angeles Countywide Metro Rapid Signal Priority Program".** (See the Scribe Report on Page 3). You can also view the photos of this event at our website (www.itesocal.org) under the Photos tab.

Our January newsletter is sponsored by **KOA Corporation**. We truly appreciate the support of our sponsors who help offset the costs of our events. See Page 9 of this newsletter for information on sponsorship opportunities. *–Continued on Page 2*

Meeting Announcement

Wednesday, January 18, 2012

11:30 AM

Monterey Hill Restaurant

3700 W. Ramona Blvd

Monterey Park CA 91754-2105

For Reservations Contact:

Sri Chakravarthy, PE, TE at Srikanth.chakravarth@kimley-horn.com

By 12:00 pm on Thursday, January 12, 2012

See Flyer for Details

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Brief Look Ahead

January
- Thurs 12th, 12:00 PM, ITE So Cal+City Traffic Engineers Meeting RSVP Deadline (contact: Secretary-Treasurer)
- Thurs 12th, 10:00 AM, California High-Speed Rail Authority Board Meeting, Los Angeles County Transportation Authority (1 Gateway Plaza, Board Room, Los Angeles)
- Wed 18th, 11:30 AM, ITE So Cal+City Traffic Engineers Meeting at Monterey Hill Restaurant (3700 W. Ramona Blvd, Monterey Park)
- Fri 27th, 11:59 PM, ITE So Cal Feb Newsletter Deadline (contact: Newsletter Editors)

February
- Tues 7th, 11:30 AM, ITE So Cal+Central Coast Meeting at Plug Nickel (Westlake Village)
- Tues 28th, High Speed Rail Summit, Washington DC (www.ushsr.com)

March
- Fri 23rd, 10:00 AM, ITE So Cal+San Diego Workshop (South Orange County location to be determined)

April
- Wed 18th, 11:30 AM, ITE So Cal Meeting at Monterey Hill Restaurant (Monterey Park)

May
- Wed 23rd, 5:00 PM, ITE So Cal+OCTEC Meeting+Student Chapter Presentations at Holiday Inn & Suites (Fullerton)

June
- Wed 13th, 8:30 AM, ITE So Cal Mini Workshop Business Meeting at Monterey Hill Restaurant (Monterey Park)

In This Issue

President's Message (continued)

Our next luncheon meeting will be a joint meeting with City Traffic Engineers (CTE) held at the **Monterey Hill Restaurant** on **Wednesday, January 18th at 11:30 AM**. Our guest speaker will be **James Pinheiro, Deputy District Director, Operations and Maintenance, Caltrans District 12**. Mr. Pinheiro will be presenting on **Applying Intelligent Transportation Systems (ITS) to Orange County Freeways.** (See the flyer attached towards the end of this newsletter). Please be sure to RSVP with **Sri Chakravarthy** at sri.chakravarthy@kimley-horn.com with your menu choice **before noon on Thursday, January 12th**.

See you there!

November 2011 Scribe Report

Clinton M. Quan (City of Los Angeles DOT)
ITE So Cal Scribe

The Institute of Transportation Engineers Southern California Section monthly meeting was held on Wednesday, November 16, 2011 at The Restaurant at Kellogg Ranch at the Collins College of Hospitality Management at Cal Poly Pomona. The program topic was "Recent Developments in the Los Angeles Countywide Metro Rapid Signal Priority System." It was presented by Jim Curry, the Associate Vice President of Iteris Inc.

The Los Angeles Metro Transit Signal Priority System began with a steering committee which conducted an analysis of requirements and alternatives. The pilot project was Crenshaw Boulevard which stretched 10.5 miles from Adams Boulevard to the South Bay Galleria with 54 signalized intersections. The jurisdictional partners included the City of Los Angeles, the City of Inglewood and the County of Los Angeles. It was operational in 2002.

The system is currently operational in five metro rapid corridors with over 240 signalized intersections and installation is underway in two metro rapid corridors with about 150 signalized intersections. In Santa Monica, the installation is completed for the Metro Rapid/Big Blue Lines. The Foothill Transit is under development for Line 187 Colorado Boulevard/Foothill Boulevard local bus service. The Long Beach Transit is operational for Line 45/46 Anaheim Street local bus service. In Torrance, the transit is under development for Line 3 Metro Rapid line from the South Bay Galleria to Long Beach. In Culver City, the transit is under development for Line 6 Metro Rapid line along Sepulveda Boulevard.

The Omnitrans sbX is under development for 52 signalized intersections. It is based on the concept of a "Connected Bus." It has on-board and intersection-based systems including GPS-based AVL capabilities, wireless bus-to-intersection communications and upgraded intersection traffic controller technologies.

The objectives of the transit signal priority system include improving transit running times, reducing delay at traffic signals on a route or at specific intersections, improving schedule reliability and improving transit performance without adversely affecting vehicular traffic and safety and pedestrian safety. Transit signal priority can be always on or conditional based on factors such as scheduled variance, passenger load, time of day and direction or route. The measured benefits include up to 8% reduction in running times, up to 23% reduction in red stopped time delay and minimal or no measurable impact on cross street traffic delays.

Some technology considerations for transit signal priority include strategy, architecture, communications and intersection controller equipment. Transit signal priority data management includes route, intersection, and schedules data management; intersection check-in and check-out location data management and parameters for conditional priority.

Some of the new developments in transit signal priority include easily expandable wireless network architecture which involves signal interconnect, traffic data collection, bus arrival times, on-bus passenger information and parking management.

Legislative Analysis

Thong Ngov, PE (Los Angeles County DPW)
ITE So Cal Legislative Analyst

I want to wish everyone a happy new year and to seize this year and make it a prosperous one. With the ringing of the New Year, 745 new laws were enacted in the 2011 regular session are set to be effective starting 2012,

With most laws effective January 1, 2012. I've listed the bills regarding transportation affecting the southern California region that will be effective starting 2012.

Legislative Bill Updates

Assembly Bill No. 427 (Perez)
Keywords: transportation bonds funds; transit system safety
Status: Approved on October 7, 2011

What this Bill will do:
This importance of this bill is that it would allow commuter rail operators to be eligible to receive State Transit Assistance funds from 60% share of Transit System Safety, Security, and Disaster Response Account fund of $1 billion for eligible projects.

Assembly Bill No. 520 (Ammiano)
Key Words: vehicles, reckless driving; suspension of licenses
Status: Approved on October 9, 2011

What this Bill will do:
Existing law requires the suspension of a driver's license for one year if convicted of a DUI offense. The suspension is terminated if that person is eligible to apply for a restricted license. Also, existing law provides that a person guilty of convicted of reckless driving in satisfaction of, or as a substitute for, an original charge of a DUI, the conviction is treated as a prior offense for purposes of specified laws related to punishment for DUI offenses. This bill would terminate a driver's license suspension and make the person eligible for a restricted license if that person is convicted of reckless driving in satisfaction of, or substitute for, an original charge of DUI if certain conditions are met.

Assembly Bill No. 529 (Gatto)
Key Words: vehicles, speed limits, downward speed zoning
Status: Approved on October 7, 2011

What this Bill will do:
This bill would require the California Department of Transportation (DOT) to revise the CA MUTCD as it read on January 1, 2012 to require the DOT and local agencies to round speed limits to within 5 miles per hour of the 85th-percentile speed of free-flowing traffic. Speeds can be rounded down to the nearest 5 miles per hour increment, but prohibited from reducing the speed limit any further for any reason.

Senate Bill No. 565 (DeSaulnier)
Key Words: transportation
Status: Approved September 26, 2011

What this Bill will do:
This bill includes several additional requirements to existing laws that would govern the operations of vehicles on public and private roadways. This bill would require transit bus, whether operated by a private company, be equipped with a speedometer that is maintained in good working order. Other additional requirement involve the enforcement of parked vehicles in designated spaces and authorizes law enforcement officers to remove vehicles on public right-of way if certain conditions are met.

More information on any particular bill can be found at the following website and entering the bill number:
http://www.leginfo.ca.gov/bilinfo.html.

Mentors help Candidates Prepare for Traffic Engineering Exam

Lisa Martellaro-Palmer

We would like to thank our ITE Southern California Section mentors for volunteering their time to instruct our upcoming transportation professionals for the October 2011 Traffic Engineering Exam.

The instructors are listed:

Dave Royer
John Fisher
Erik Zandvliet
Rock Miller
Mike Bagheri
Pat Gibson
Sri Chakravarthy

We especially would like to thank them for volunteering their Saturday mornings and teaching our group transportation topics. We enjoyed Starbucks, pastries and a lot of laughs. The topics became real and personal when a mentor shared their views or experience.

Our group consisted of seventeen members from our Southern California Section. This class will be part of a series that will provide "Professional Development" to our members.

Mentoring Students and Young Professionals

David M. Schwegel, PE

ITE holds mentorship in high regard at both the student and young professional levels.

Students

When I served among the Civil Engineering mentors at a Puget Sound Engineering Council (PSEC) (umbrella organization representing 30+ engineering organizations throughout Seattle) Mentor Night at the University of Washington, I was amazed at the number of students expressing interest in Transportation Engineering. When PSEC approached ITE Washington about PSEC involvement, ITE leaders immediately perked up when PSEC mentioned mentoring activities.

Western District President Rory Grindley instituted "Year of the Student" in 2002, emphasizing affordability of student participation and boosting student attendance at Western District Annual Meetings from 4 to 80.

ITE So Cal Members are encouraged to mentor students. Contact our Student Chapter Liaisons. Attend Student Chapter meetings and our Section Student Paper Night in May. Participate in our Section Mentor Program.

Young Professionals

Western District Officer Jennifer Rosales emphasized the need to ramp up emphasis on mentoring young professionals, particularly between graduation and professional engineering certification. She instituted the District Mentor Program in 2005.

ASCE Society President Bill Marcuson's (2006-2007) "Traits of Young Successful Engineers" presentation at the Levee Conference in Sacramento in 2007 was a huge hit.

ITE So Cal Members are encouraged to mentor young professionals. Teach Civil/Transportation and Traffic PE Review Courses. Speak at Younger Member Forum (YMF) (young professionals up to 35) meetings on topics such as career advancement, ethics, and work-life balance. Host PE Information Sessions at your company. Invite them to participate in Engineering Science and Technology Fairs to educate the public on the Engineering profession. Note the valuable role their energy and enthusiasm plays in advancing our profession for the next generation.

What are the Sustainability Characteristics for Air, Road, and High-Speed Rail?

David M. Schwegel, PE

Systra, TRL, and the Deutsche Bahn Environment Centre collaborated to produce *High Speed Rail and Sustainability* (Sustainability Study) (November 2011) for the International Union of Railways (UIC) examining general sustainability, quality of life, and economic impacts of the aviation (air), roadway (road), and high-speed rail (HSR) transportation modes. This Sustainability Study has special relevance to environmental stewardship minded transportation professionals throughout the nation, especially California.

THE CASE FOR ENVIRONMENTAL STEWARDSHIP IN AMERICA

On a national scale, a European presenter at the June 2010 US High Speed Rail Association (USHSR) (www.ushsr.com) Los Angeles Conference noted that among 30 industrialized nations examined throughout the world, the US ranks dead last in terms of environmental stewardship. As the world's largest untapped High-Speed Rail (HSR) market, the US has 4% of the world's population, yet consumes 25% of the world's oil.

California recently passed environmental legislation including the Global Warming Solutions Act of 2006, AB 32 (1990 emission levels by 2020), and SB 375 (Sustainable Communities).

With regard to economic stimulation and environmental preservation, Umpqua Bank CEO Ray Davis noted (before an audience of 400+ entrepreneurs) at the "Navigating 2012: Leading in Unchartered Waters" seminar (November 2011, Sacramento): "The world is watching the US and the US is watching California."

At a 2009 Kyoto World Environmental Conference, the question was posed: "What is the US doing to combat climate change?" A Caltrans representative said: "We can't speak for the US, but California is building a High-Speed Train System."

A recent USHSR email blast (December 25, 2011) notes that the California and Northeast Corridor HSR projects are deemed two of national significance! In fact, California's is the "largest and most advanced HSR project in the nation." The California High-Speed Rail Authority (Authority) (www.cahighspeedrail.ca.gov) is charged with planning and constructing this project.

The Sustainability Study examines three categories of sustainability – general, quality of life, and economic. General elements include energy, carbon footprint (air emissions), noise, resource efficiency, bio-diversity, visual insertion, land use, and environmental efficiency (per passenger). Quality of life elements include safety, congestion relief, productivity, reliability, comfort mobility, and mode interconnectivity. Economic elements include macro, external, local, green jobs, and social responsibility.

QUANTITATIVE FINDINGS

The Sustainability Study shows the following air, road, rail, and waterway comparisons:

Air, Road, Rail, Waterway at a Glance

	Air	Road	Rail	Waterway
Collision Costs (%)	14	84	1.9	0.4
External Costs (incl congestion, Billion Euros/year)	100	600	10	10

The study also shows the following air, road, and HSR comparisons:

Air, Road, HSR at a Glance

	Air	Road	HSR
Primary Market (mi)	>750	<180	180-750
Carbon Footprint (Europe) (g CO2)	153	115	17
Environmental Efficiency (kg CO2/pass)	97	88	2
People Highly Disturbed by Noise (%) (70 db night)	24	20	9
Fatality Rate (per billion pkm)	0.4	5.9	0
Quality Productive Time (%)	35	0	100
Space between Seats (cm)	75-85	55-90	87-97
On-Board Noise (dB(A))	70-81	70-76	62-69
External Costs (excluding congestion) (Euros/1000 pkm)	52.5	76	22.9

The study also shows the following air and HSR comparisons:

Air, HSR at a Glance

	Air	HSR
Land Use (Paris Airport vs. 140km HSR) (ha)	3,200	1,400
Punctuality (% late) (US Air vs. Japan Shinkansen)	21	1
Market Share (Madrid-Seville) (%) (2009)	15	85
Rolling Stock Construction Cost (1,000 Euros/Seat)	345	49

Additionally, the study shows the following road and HSR comparisons:

Road, HSR at a Glance

	Road	HSR
People (millions) affected by noise (>55db day)	88	12
Land Use (ha/km) (2x3 la road, 2x1 la hsr)	9.3	3.2

Operating/Maintenance Cost (Euro/km) (France)	44.1	56.8

Finally, the study explores how HSR complements existing roadway infrastructure:

Road, Road+HSR at a Glance		
	Road	Road+HSR
Employment Growth (Japan) (%) (1981-1985)	7	22
Tourism (Lille France) (1990-2003)	34,000	517,000

QUALITATIVE REMARKS

Safety

While a few passenger fatalities have been reported on both the German and Chinese HSR systems, HSR is highly regarded as "the safest mode of travel." According to the USHSR, Japanese HSR systems have carried over 9 billion passengers over 45 years with no reported fatalities. According to the study, considering the few fatalities relative to the huge number of passengers carried overall, the fatality rate is actually near 0. Yet the closing presentation for the 2004 ITE Quad Meeting (Oregon, Washington, Vancouver, and Victoria Sections) drives home the fact that 'this is not sufficient.' We must make every reasonable effort to make this fatality rate 0. As the world's largest untapped HSR market, the US has a clean slate for HSR.

Congestion

The USHSR underscores how the "hardening of the nation's arteries" degrades America's competitiveness with nations that have HSR systems. Specifically, congestion costs Americans $156 billion annually. The USHSR notes how HSR is "the only form of transportation not subject to congestion." Increasing air capacity requires modifying existing and constructing new airports. Increasing road capacity requires adding lanes and constructing new roadways. By contrast, once infrastructure is in place, increasing HSR capacity merely boosting the quantity, length, and frequency of trains.

Noise

The percentage of Europeans within close proximity of infrastructure are disturbed by nighttime noise levels of greater than 70 dB by infrastructure type as follows: Air: 24%; Road: 20%; Rail: 9%. The figure is for "rail in general," not just HSR. Low speed passenger and freight rail noise is generally "chugging" in nature with "dinging" at the at-grade crossings. HSR, on the other hand is completely insulated, with no at-grade crossings. HSR noise is not "chugging," but rather a relatively quiet "woosh." While HSR noise is relatively low, one challenge facing transportation professionals is handling the pronounced "woosh" generated when high-speed trains exit tunnels.

Quality Productive Time

While air dominates the European market share for journeys over 3 ½ hours and 750 miles, and road for journeys less than 180 miles, a key element that is highly underrated is quality productive time during the journey. How billable can we be in each of the travel modes?

Air comes in at 35% due to time consuming formalities associated with check-in, checking baggage, security, boarding, and portable electronic device restrictions in transit.

Road comes in at 0%, especially for single occupant drivers. While drivers can listen to audio programs and talk on the phone with a hands free device (with intense conversations degrading focus and concentration and severely compromising safety to a potential trend of completely outlawing cell phone use by drivers), they cannot legally text, read, or work on a computer.

HSR, the mode with the greatest distance between seats, comes in at 100%. Systems include wireless internet. With the exception of a few cars designated as "quiet," there are no portable electronic device restrictions in transit.

The "Media, Messaging, Marketing" presentation at the USHSR June 2010 Conference in Los Angeles underscores the need for transportation professionals to get the public to think beyond just travel time when it comes to transit. Emphasize quality productive time. Many HSR systems actually have conference rooms on board. Conducting business meetings on high-speed trains is common practice overseas.

Land Use

This is an extremely hot topic associated with starting the Initial Construction Segment (ICS) in the Central Valley. Preservation of agricultural land for California's multi-billion dollar agricultural industry (one of the world's largest) is high priority. Carrying capacity for HSR varies significantly based on train length and frequency. The study notes that a 2x3 lane roadway requires approximately three times as much right-of-way as a 2x1 lane HSR system. The USHSR notes, pending frequency and train lengths, HSR requires 1/10 the land as a roadway to achieve the same carrying capacity.

Comparing Air and HSR land consumptions is more complex. Air land consumption is fixed and considerable at airports. HSR land consumption varies based on multi-modal center configuration and track length. Ideally multi-modal centers in downtown areas should consume little land in an area that lends itself well to transit-oriented development and interconnectivity of transportation modes such that the centers are not dominated by massive parking structures.

A key consideration is the infrastructure and side effect development land-take nature of the transportation mode. Roadway expansions encourage suburban and rural single-family development, taking over rural land, escalating vehicle miles traveled (VMT), and putting more residences beyond walking distance to transit. According to the USHSR, HSR is the "catalyst for the next new real estate boom," revitalizing city centers and encouraging multi-family residential development within walking distance of transit, boosting ridership. Even with such development, agricultural land continues to be a precious and in high demand resource.

Consider the incorporation of urban farms among the city center revitalization efforts. By contrast, the large land requirements of airports, and their associated surrounding development, pushes them further from city centers, taking over rural farmland.

In our dealings with the public with agricultural interests, we must be sensitive to the "dividing farmland perception of HSR" that killed Texas TGV in the 90's. This same perception is igniting opposition among such interests in California.

Punctuality

As the old adage goes, "time is money!"

US flights are delayed approximately 21% of the time with America's busiest short-haul aviation market, Los Angeles (LAX) to San Francisco (SFO) significantly higher (25% of flights delayed by an hour or more).

Road delays are generated by capacity constrained infrastructure. The individualized operating nature (typically single occupant drivers) generates road rage, stress, and associated health consequences.

The Japanese Shinkansen (HSR) is late 1% of the time, and rarely over 90 seconds.

Market Share

The best performing markets for HSR are journeys between 180 and 750 miles. Los Angeles to San Francisco resembles Madrid to Seville Spain in length and topography. Air has a 15% market share while HSR comes in at 85%. A considerable portion of HSR trips are "new" trips that would not take place if HSR were not available. Air journeys of greater than 750 miles are far more cost effective for airlines causing Germany's Lufthansa Airlines to put short-haul passengers on HSR.

Rolling Stock Construction Cost

The per seat construction cost of an airplane is approximately seven times that of an HSR train set.

Operation and Maintenance Costs

The operation and maintenance cost of HSR in France is approximately 1.3 times that of road.

Employment Growth

The employment growth generated by HSR construction/operation/maintenance and associated side-effect developments and services (like transit oriented development in and around stations) is an extremely hot topic. On the one hand, the USHSR notes California's project location near Silicon Valley "could lead to the launch of a new high tech industry." On the other hand, Mike Rosenberg's December 21, 2011 *San Jose Mercury News* article entitled "California's high-speed rail jobs estimate too good to be true," claims the one million projected employees ("more than the combined workforce of San Jose and San Francisco") "would have to cram shoulder-to-shoulder just to fit along the rail line between San Francisco and Anaheim."

The Sustainability Study examines employment growth in Japan between 1981 and 1985. Areas served by road infrastructure only grew 7%, while those served by both road and HSR grew 22%.

Tourism Growth

The California HSR project, if properly and seamlessly interconnected to other modes, actually helps them. In *Derailed: What Went Wrong and What to do about America's Passenger Trains* (1997), Joseph Vranich sheds light on "vacation rail." One implication for a Central Valley start is "vacation rail" to Yosemite, Kings Canyon, and Sequoia National Parks, enhancing the tourist appeal (especially for our growing elderly and socially responsible populations) and preserving the fragile ecosystems of these national treasures (especially Yosemite where air pollution, traffic congestion, and parking limitations are already hot topics).

The Sustainability Study examines tourism in Lille France between 1990 (served by road infrastructure only) and 2003 (served by both road and HSR). Tourism grew by a factor of 15.

THE TRANSPORTATION PROFESSIONAL'S ROLE

1. Read literature. Suggested sources include: America 2050 (www.america2050.org), US High Speed Rail Association (www.ushsr.com), Vision California (www.visioncalifornia.org), California High Speed Rail Authority (Authority) (www.cahighspeedrail.ca.gov), Authority Business Plan (http://www.cahighspeedrail.ca.gov/Business_Plan_reports.aspx), and Transbay Terminal (www.transbaycenter.org). Subscribe to eNewsletters.

2. List "hot topics" (such as those identified in this article) and convey your views (such as social media, public meetings, and editorials) to enhance the credibility of our profession.

3. Participate in Authority Board Meetings. The next one in our Section is Thursday, January 12, 10:00 AM, Los Angeles County Transportation Authority, 1 Gateway Plaza, Board Room, Los Angeles. Testify on agenda items. Those related to this article include Item No. 4 (Central Valley – Los Angeles Basin Mountain Crossing [I-5 Grapevine alignment] – cutting travel time and cost while bypassing the 500,000 Palmdale/Lancaster Metropolis and subjecting infrastructure to the fragile Tejon Ranch ecosystem), and Item No. 6 (Station Area Planning activities). Follow legislation and forward to our Section's Legislative Analyst for newsletter inclusion. Note the Board's position (approve, monitor, oppose).

Questions and comments may be directed to David M. Schwegel (425-466-5677, davidmschwegel@aol.com).

Opportunities for Newsletter Advertising and Sponsorship

Julia Wu, PE, PTOE (Port of Long Beach)

The newsletter is a perfect venue for advertising your products and services, as it is circulated nine (9) times a year to approximately 800 ITE recipients all over Southern California. Advertisements are priced reasonably for the benefit of our members.

There is no charge for brief job announcements or course announcements (about 100 words) that would be of interest to our members. Free announcements may be edited or condensed as necessary, though. Only ads that are of direct interest to our members will be accepted. The costs are as follows:

- Sponsorship full page Ad: $300 per month
- Full page Ad: $200 per month
- Half page Ad: $125 per month
- 1/4 page Ad: $ 75 per month
- 1/8 page (business card) Ad: $ 50 per month

If you are interested in sponsoring the newsletter, the price is $300. The sponsoring company ad is displayed prominently in the newsletter.

For an additional $50 per month, companies can also include the same advertisement on our section web-page. The web advertisement will be on the page for the entire month.

Aug-11	KHA
Sep-11	Sensys Networks, Inc.
Oct-11	Minagar & Associates
Nov/Dec-11	Iteris
Jan-12	KOA Corporation
Feb-12	Sensys Networks
Mar-12	(Available)
Apr-12	Minagar & Associates
May-12	Minagar & Associates
June-12	(Available)
Sept-12	Sensys Networks
Oct-12	(Available)
Nov/Dec-12	(Available)
Jan-13	(Available)
Feb-13	(Available)
Mar-13	(Available)
Apr-13	(Available)
May-13	(Available)
June-13	(Available)

In addition to Newsletter Sponsorship opportunities, we also have lots of Luncheon Sponsorship Opportunities at $100 per meeting. This is an extraordinary opportunity to educate one of the West Coast's largest Transportation Engineering communities on your organization. Some other Sections charge $200 or more for lower profile meeting sponsorship opportunities. At $100 per meeting, this is an extraordinary value.

The Newsletter Editors must receive your ad by the 3rd Friday of the month prior to the following month's newsletter. Thank you in advance for your contribution to the ITE Southern California Section.

Please contact **Julia Wu** at **(562) 590-4152** or juwu@polb.com if you have questions or if you would like to submit an ad or sponsor a newsletter.

On behalf of our Newsletter committee, I, Julia Wu, would like to thank you, all currently-committed sponsors, for your support. Your help in sharing the production costs is what makes the newsletter distribution possible and allows us to increase our student support. I hope the advertisements in our newsletter have contributed to raising your profiles in the local transportation industry. Please note that with the electronic newsletter, the ads are now full-page and in color.

To our prospective sponsors, I encourage you to make your company better known in the community. We have sponsorship vacancies in March and June and after **September 2012.**

Opportunities for Newsletter Content

David M. Schwegel, PE

The newsletter is also a perfect venue for keeping the membership appraised of a fascinating project you are working on or for educating the membership on a unique development of interest to the local transportation engineering community. Feel free to either provide an article, or if you are too busy to write an article, feel free to submit a fact sheet, and our technical writing team can either write the article for you or co-author the article with you. Typically 500 words and two photos fit on a single page. Articles should be objective and focus on the project, not the firm. This way they are not misconstrued as advertisements. Please submit content to Newsletter Editors Jay Dinkins (jaydinkins@gmail.com) and David Schwegel (davidmschwegel@aol.com) by the deadline. The deadline for the February Newsletter is **11:59 PM** on **Friday, January 27, 2012.** Thank you in advance for your valuable contributions to this great team effort.

Announcements

ITE So Cal Latest Information:

www.itesocal.org

Meeting and Event Photos:

http://picasaweb.google.com/itesocal

We Are Now on Facebook

http://www.facebook.com/home.php?sk=group_174132915945907 or search for Southern California ITE

Section Members Holding International and Western District Offices:

Congratulations to the following Section Members who were elected as Officers at the International and District levels:

Rock Miller, International President

Monica Suter, International Director

Zaki Mustafa, International Vice-President

Walter Okitsu, District Vice-President

Lisa Martellaro-Palmer, District Advertising Manager

Janna McKhann, District Vendor Chair

High-Speed Rail

California and the Northeast Corridor (Washington DC to Boston) are leading the charge for advancing High-Speed Rail (HSR) in the US – "the world's largest untapped HSR market."

Whether you are for or against the advancement of this new form of transportation under consideration in America, it is imperative that you become actively engaged. There has never been a better opportunity than now. 2012 is an extremely pivotal year – either construction of the Initial Construction Section (ICS) will begin in the Central Valley in September or the project will be killed completely.

Here are two participation opportunities:

1. California High Speed Rail Authority Board Meeting, Thursday, January 12, 10:00 AM, Los Angeles County Transportation Authority (1 Gateway Plaza Board Room, Los Angeles) (www.cahighspeedrail.ca.gov)

2. High Speed Rail Summit, February 28 – March 1, Washington DC (www.ushsr.com)

What is the Carbon Footprint for Air, Road, and High Speed Rail?

David M. Schwegel, PE

Systra prepared *Carbon Footprint of High Speed Rail* (Carbon Footprint Study) (November 2011) for the International Union of Railways (UIC), examining the carbon footprint (greenhouse gas emissions) of the aviation (air), roadway (road), and high-speed rail (HSR) transportation modes. This Carbon Footprint Study has special relevance to California transportation professionals as they critically examine the California High-Speed Rail Authority's (Authority) (www.cahighspeedrail.ca.gov) proposal to begin construction of the Initial Construction Segment (ICS) of a 220-mile-per-hour HSR project in the Central Valley. Specifically the ICS involves Fresno (pop. 500,000) and Bakersfield (pop. 350,000), where air quality is a "hot topic," particularly Bakersfield, whose air quality is among the worst in the nation.

The Carbon Footprint Study includes a case study of the 210 km (130 mi) Valence to Merseille travel segment in France for air (86,000 planes moving 5.6 million passengers in 2004), road (58,400 vehicles per day over 2x3 lanes of infrastructure), and HSR (LGV Mediterranee, 20.4 million passengers in 2004). The study reveals the following figures:

Carbon Footprint by Mode			
(g CO2/pkm)	Air	Road	HSR
Vehicle	0.5	20.9	1.0
Operations	163.2	130.0	5.7
Infrastructure Construction	0.3	0.7	4.3
Total	164.0	151.6	11.0
HSR Multiple Total	15	14	1
Air Multiple Infrastructure	1	2	14
Mode Total/HSR Infra	38	35	3

On the one hand, the overall Air carbon footprint is 15 times that of HSR. On the other hand, the infrastructure construction aspect of HSR is 14 times that of air. The HSR infrastructure construction breakdown (thousand tons of CO_2) is as follows:

HSR Infrastructure Construction		
(kt CO2)	Amt	%
Conception	11.250	1%
Equipment	43.750	3%
Rail	171.000	14%
Tunnel	269.880	21%
Viaduct	292.800	23%
Bridge	282.170	22%
Earthwork	172.257	14%
Main Station	16.400	1%
Secondary Station	3.300	0%
Total	1262.807	100%

The lion share (80%) for HSR infrastructure construction comes from tunnel, viaduct, bridge, and earthwork related construction - characteristic of mountainous topography. The Authority's *California High-Speed Rail Project Environmental Impact Report/Environmental Impact Statement: Merced to Fresno Section* (November 2011) shows a preferred Hybrid Alternative with the least amount of these lion share infrastructure features among the three alternatives considered.

In addition to this infrastructure construction consideration, why else should we start in the Central Valley? Additional justifications include the following: (1) Federal funding requirement; (2) A centralized start point (modeled after the US Interstate Highway System and overseas HSR systems) in a region most cost effectively demonstrating the performance (220 mph) and transformational economic benefits (Fresno's 25.1% [No. 1 in California] and Bakersfield's 16.2% [No. 2] poverty concentration [per *Sacramento Business Journal*]); and (3) flexibility in going north to Bay Area (Bay) or south to Los Angeles Basin (Basin) pending interim performance measures. For economic benefits, according to the US High Speed Rail Association (USHSR) (www.ushsr.com), transit oriented development in and around stations is the "catalyst for the next new real estate boom."

Although high relative to other modes, the HSR infrastructure construction carbon footprint is a whopping 39% of the HSR total (vehicle construction + infrastructure construction + operations) yet only 2.6% of the air total carbon footprint – minor in the overall mode comparison scheme.

As transportation professionals striving to be among the "go-to" technical experts on one of California's most expensive ($98.5 billion) and controversial infrastructure projects in history, we must critically review the literature and attend information sessions and public meetings, so we can formulate answers to critical questions: (1) Is the significantly lower lifecycle carbon footprint for HSR worth the tradeoff of an initially temporarily higher infrastructure construction carbon footprint? (2) Is a Central Valley ICS start that lacks the ridership benefits of a Bay or Basin start the way to go? (3) How consistent are the carbon footprint and related environmental impacts of HSR to the values proposed through the passage of recent California legislation: Global Warming Solutions Act of 2006, AB 32 (1990 emission levels by 2020), and SB 375 (Sustainable Communities Strategy)?

Convey your clear concise answers in articles, social media posts (like the Railgroups 5000+, Traffic Engineer/Transportation Professional, Californians for High-Speed Rail, and American Society of Civil Engineers LinkedIn (www.linkedin.com) groups), and public meetings such as the Authority Board Meeting on Thursday, January 12, 10:00 AM, at the Los Angeles County Transportation Authority (1 Gateway Plaza, Board Room). Comment on Item No. 7 "Presentation by the National Renewal Energy Laboratory (NREL)" on achievement of the Authority's renewable energy goals. Historically, testimonies from engineers have been notable absent in such meetings due to demanding work schedules and the need to address items at home. Please plan ahead, so you can participate. If you can't be there in person, then convey your views to the Authority ahead of time. Our expertise benefits both the public and the Authority.

Questions and comments may be directed to David M. Schwegel (davidmschwegel@aol.com, 425-466-5677).

How do we Pay for the California High-Speed Rail Project?

David M. Schwegel, PE

INFRASTRUCTURE SITUATION

According to Vision California (www.visioncalifornia.org), California will have 50 million people and 24 million jobs by 2050, adding the equivalent population of New York State between now and then. To address existing and projected California infrastructure pain points, the California High-Speed Rail Authority (Authority) (www.cahighspeedrail.ca.gov) is planning an 800-mile long High-Speed Rail (HSR) project between San Francisco and Los Angeles (Phase 1, 520 miles) with future extensions to San Diego and Sacramento (Phase 2, 280 miles).

According to the Authority Business Plan (http://www.cahighspeedrail.ca.gov/Business_Plan_reports.aspx), pain points include: (1) Los Angeles (LAX) to San Francisco (SFO) is America's busiest short-haul aviation market with 25% of the flights delayed by an hour or more; (2) Expanding highways (2,300 additional lane miles) and airports (115 new gates and 4 new runways) costs twice as much and runs counter to recent environmental legislation including Global Warming Solutions Act of 2006, AB 32 (1990 emission levels by 2020), and SB 375 (Sustainable Communities and Climate Protection Act of 2008).

The US High Speed Rail Association (USHSR) (www.ushsr.com) noted an additional pain point in a November 2011 Congressional (national) Hearing entitled "California's High-Speed Rail Plan: Skyrocketing Costs & Project Concerns:" California (world's 8th largest economy representing "more than 13% of the US economy") has the "worst congestion in America, with no possibility of expanding their freeways."

FINANCING SITUATION

How will cash-strapped California pay the $98.5 billion price and start construction in the Central Valley (fastest growing part of California and most hard hit by unemployment)? A clear plan is needed for the State Legislature to kick in $2.7 billion from the 2012-13 Budget, so construction of the Initial Construction Segment (ICS) can begin in 2012. Proposition 1A (passed in November 2008) requires the full Phase 1 System (Los Angeles to San Francisco) to be financially self-sufficient by 2035.

Planning for HSR is no stranger to cash strapped economies like California. In 1991, Brazil was "Latin America's largest debtor, owing foreigners $110 billion and falling short of fulfilling obligations to creditor banks" (Joseph Vranich, *Super-Trains: Solutions to America's Transportation Gridlock (1991).* Yet the same Vranich publication quotes Washington Consultant Raul V. Bravo: "The financing is up in the air, but we're studying solutions. If there's a market in the world, that's it." Now Brazil is moving forward with a 317.4-mile line between Rio de Janeiro and Campinas via Sao Paulo, with completion planned in time for the 2014 World Cup and the 2016 Summer Olympic Games.

According to the USHSR, the Authority's Business Plan "laid out the worst case scenario of taking decades to build out." Many investors are interested in "building the end pieces" to complete the Los Angeles to San Francisco connection. The USHSR says, "This will quickly become the busiest, most profitable rail line in America, and a top 5 in the world." USHSR wants to advance the California project simultaneously with the $113 billion Northeast Corridor (NEC) project (Washington DC to Boston) (currently the "busiest rail corridor in America" with "well established ridership and support networks"). Based in Washington DC, the USHSR is calling for dedicating "part of the Federal Surface Transportation funding each year to HSR, starting in 2012" for these two high-profile projects. What can we learn from one another? California can learn about ridership and the Acela Express experience (somewhat speedy, but too slow to qualify for an actual HSR designation) from the NEC. Individual states within the NEC can learn the valuable of state-level agencies and legislation in moving HSR efforts forward. This will be helpful as NEC leaders orchestrate the efforts of multiple states.

Despite the Brazil story and the USHSR insight, critics argue that the project price tag has more than doubled since 2008. $98.5 billion over 520 miles in California correlates to $189 million per mile. Is this per mile cost reasonable? Compare with: (1) $113 billion NEC over 432 miles or $262 million per mile; (2) $18.5 billion Brazil over 317.4 miles or $58 million per mile. California's per mile cost is within range and even conservative (heavy allowance for contingencies and overruns). Large distances between city centers - characteristic of the California system – is typically less expensive than the closer city distances characteristic of Brazil and the NEC. Other variables come into play include: (1) ridership, (2) topography, (3) population and socioeconomic conditions along the corridor, (4) design and construction standards relative to the litigious nature of the nation, (5) station interconnectivity to other modes, and (6) station proximity to residences, businesses, lodging, and convention facilities (i.e. 'Are they within walking distance?'). On variable (4), note that America's culture is far more litigious than that of Brazil and European and Asian nations boosting sensitivity to performance and safety standards and specifications.

PLAN IN GENERAL

The Authority's Business Plan is a product of research of and collaboration with many nations with HSR expertise. The Authority has Memorandums of Understanding (MOU's) with the United Kingdom (includes England), Belgium, France, Germany, Korea, China, Japan, Italy, and Spain. The Authority has also studied the fully private sector solutions of Taiwan and Brazil before proposing a public-private partnership (PPP) solution to design, build, finance, operate, and/or maintain the California system over 30 years. The California Authority Business Model shows the public sector handling the governance, and the private sector handling infrastructure delivery, infrastructure operations, and train operations. Public Sector partners include Caltrans, the State Department of Finance, the State Treasurer's Office, the US Federal Railroad Administration, the US Department of Transportation, Regional Transportation Agencies, and International Governments. Keys to success include: (1) small, discrete, interconnected, "standalone" projects to reduce risk and individualize profit centers; and (2) proactive investment in regional and local rail transit systems to capitalize on existing infrastructure and add value to travelers through "interconnected blended services." The business model: (1) transfers design, construction, cost, and schedule risks to the private sector, boosting efficiency and capitalizing on "private sector innovation,;" (2) offers future flexibility that is not locked in by today's decisions; and (3) proposes multiple-phased construction with stop losses that avoid paralyzing the State in the event performance projections are unmet (modeled after Interstate Highway System and overseas HSR systems).

The $98.5 billion year of expenditure (or $65.4 billion in 2010) breakdown is as follows: $6 billon ICS + $24.718 billion Initial

Operating Segment (IOS) North + $24.011 billion San Francisco Bay (Bay) to Los Angeles Basin (Basin) + $23.902 (Phase 1 Blended – leveraging multiple rail systems) + $19.864 billion (Phase 1 Full) = $98.495 billion, which rounds up to $98.5 billion. Price tag assumptions are as follows: (1) The private sector design, builds, operates, and finances the system with each section generating a net operating profit; (2) IOS operation generates $11 billion for the private sector to use to complete the Bay to Basin; (3) There are $16 billion in contingencies and a $27.5 billion inflated cost over time based on a 3 percent interest rate compounded annually; and (4) tickets (priced at 83% of projected airline fares) are $52 advance purchase, $81 standard, and $123 last-minute, and 9 trains per hour.

STEPS

1. Leverage initial federal and state sources. Federal sources include the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) and the America Recovery and Reinvestment Act of 2009 (ARRA). State sources include Proposition 1A funding for the Safe, Reliable, High-Speed Passenger Train Bond Act for the 21st Century (Prop. 1A). Federal sources have already generated approximately $3 billion, with California being the greatest recipient of federal HSR dollars. Prop. 1A sources totaling $9.95 billion include $9 billion for HSR and $0.95 billion for enhancements to commuter and intercity rail lines. The $9 billion bond proceeds are used for preliminary engineering, right-of-way acquisition, and construction of tracks, structures, power systems, stations, and rolling stock (train cars). Such proceeds are used for 50+% of the total construction cost for each corridor or usable segment.

2. Authority submits Funding Plan to the Legislature and requests $2.7 billion for the 2012-13 Budget to construct the ICS in the Central Valley between September 2012 and September 2017.

3. On ICS completion, Authority procures an additional $24.7 to $27.2 billion to construct the IOS. Such sources are not fully identified at this time. Potential funding programs include: (1) The Federal Transportation Authority (FTA) New Starts Program, Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants Program, FHWA/FRA Rail Highway Crossing Hazard Elimination in High-Speed Rail Corridors, FHWA Section 130 Railway-Highway Crossing Program, FRA Rail Line Relocation and Improvement Capital Grant Program, FHWA Congestion Mitigation and Air Quality (CMAQ) Improvement Program, and the FHWA Surface Transportation Program. Federal Funding programs deemed most applicable to HSR include the High-Speed Intercity Passenger Rail Program and the Passenger Rail Investment and Improvement Act (PRIIA) of 2008. The next round of federal funding will be needed around 2015 to complete IOS. The most beneficial federal funding initiatives include: (1) dedicated trust fund structure, and (2) availability payments (AP). To date, California has received approximately 33% of the Federal discretionary HSR grants. Receiving just 20% of this funding in future years, at proposed funding levels, satisfies a 6-year financial planning period starting in 2015. State funding sources include the general obligation bonds under Prop. 1A to provide up to $5.3 billion in matching funds to complete the IOS. Local generated revenues (public and private) are transit oriented development (TOD) related under the control of local municipal partners or cities and counties. Public opportunities include: (a) local agency cost sharing, (b) right-of-way contribution, (c) cooperative funding agreements with local transportation agencies, and (d) revenues from innovative use of right-of-way/system facilities/equipment. Private opportunities include: (a) tenant rents (retailers, office space, residential housing, hotel rooms), (b) parking, (c) station/plaza naming rights, (d) advertising/sponsorships, and (e) miscellaneous taxes (sales, transient occupancy, parking, special events, sub-leases of space, user fees, and additional station-related revenues.

4. Once operational, ridership revenue is leveraged, so the Authority can attract private capital to leverage public funds to complete Bay to Basin. Cash flow projections show profitable operations. Private sources contribute funds for future capital constructions. Yet, like other HSR systems, cash flow does not support all capital needs for future construction. Public funds remain part of the funding equation as system expands. Under Public Private Partnerships (PPP), the private sector helps provide system funding once operations begin. There are also chances to gather other private sector revenues via locally generated commercial and land-use activities expected at future stations – jointly considered with station owners. Additional programs include the Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA), Railroad Rehabilitation and Improvement Financing Program (RRIF), and Private Activity Bonds.

TRANSPORTATION PROFESSIONAL'S ROLE

1. Break out those engineering economics textbooks. They will be much needed. Formulate clear and concise answers to hot questions related to the financial feasibility of HSR in California and the US.

2. Study financial success stories of overseas HSR projects. What made them successful?

3. Study the California ridership projection reports. Are they reasonable? With a huge projected increase in our senior citizen population, is it reasonable to expect them to live in transit oriented developments (TOD) in and around multi-modal centers where major services including medical are closely accessible? How do we fit TOD into already capacity constrained city centers while facilitating the seamless interconnection of modes to boost ridership?

4. Weigh in on discussions in social media and in print. Write editorials.

5. Write articles for publication in future ITE So Cal Newsletters exploring both sides of the issue of the financial feasibility of HSR in California. We need to know how both sides think.

6. Present papers on HSR Financing and Revenue Forecasting Best Practices at upcoming ITE and related professional society meetings.

Questions and comments may be directed to David M. Schwegel (davidmschwegel@aol.com, 425-466-5677).

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TE-27 Traffic Flow Principles for Practitioners

Description

This new online training course provides fundamental and practical knowledge on traffic flows, with emphasis on how to assess and improve these flows. Attendees will learn basic assessment methods and traffic flow theories particularly for evaluating the effects of bottlenecks, as well as the application of these concepts to improve traffic conditions on street and highway networks. This course uses a combination of lectures, case-study examples, and classroom exercises to convey tools and logic for tackling traffic problems. AICP CM 7.5 hours pending approval.

Topics Include

Fundamental flow concepts and traffic stream properties. Assessment tools such as time space and queueing diagrams. Models for congested traffic. Bottleneck evaluation and capacity analysis. Evaluation of vehicle delays. Applications to traffic signals, ramp-metering, network design and network-wide congestion management.

Date and Time

This live, instructor-led, online class begins on January 10, 2012 (Tuesday) and ends on January 12, 2012 (Thursday) from 2:00 PM - 4:30 PM Pacific Time.

Class Fee: $250

What You Will Learn

Attendees will gain good understanding of principles in traffic operations and how these principles can be applied to address real-world traffic problems.

Who Should Attend

This course is specially tailored for engineers and planners who work in the traffic and transportation fields, with or without previous formal training/experience in traffic flow fundamentals.

About the Instructor

Dr. Eric J. Gonzales is an Assistant Professor in the Department of Civil and Environmental Engineering at Rutgers, The State University of New Jersey, specializing in urban traffic operations. He teaches transportation engineering and transportation planning at the undergraduate and graduate levels. Prof. Gonzales obtained his PhD in Transportation Engineering from UC Berkeley.

For More Information

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Happy New Year!

INSTITUTE OF TRANSPORTATION ENGINEERS

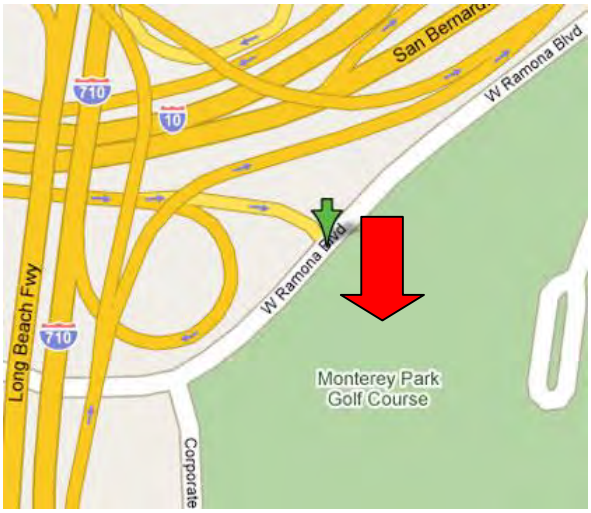
CITY TRAFFIC ENGINEERS

January 2012 Joint Luncheon Meeting

"Applying Intelligent Transportation System (ITS) to Orange County Freeways"

By James Pinheiro, PE
Deputy District Director, Operations and Maintenance, Caltrans District 12

To be held on Wednesday, January 18, 2012 at 11:30 AM at Monterey Hill Restaurant



3700 W Ramona Blvd
Monterey Park, CA 91754-2105
Phone: (323) 264-8426

Directions:
From 10 Eastbound, take Eastern exit, continue straight for a mile to entrance on right.

From 710 Northbound, take Ramona exit, continue straight ahead.

From 10 Westbound, take the Eastern exit, turn left on Campus Rd., turn left on Ramona, turn right on Corporate Center Drive, at the first signal turn left into the driveway.

$30 with advance reservation
(By noon, Thursday, January 12th)
$35 at the door $15 for students
Cash or Checks Only

Please include your lunch choice:
Chicken Chardonnay, Fresh Atlantic salmon, or Vegan Plate

FOR RESERVATIONS, please contact:
Sri Chakravarthy, P.E., T.E.
Secretary-Treasurer of Southern CA Section