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The Technology Transfer Program is a unit of the Institute of Transportation Studies at the University of California, Berkeley. Its mission is to bridge research and transportation practice by facilitating and supporting the planning, design, construction, operation and maintenance of efficient and effective state-of-the-art transportation systems. The Technology Transfer Program provides professional training, workshops, conferences, technical assistance and resources in the areas of planning and policy, traffic engineering, project development, infrastructure design and maintenance, safety, environmental issues, and aviation.

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TRANSPORTATION LIBRARY

We encourage public agency employees to contact the Institute of Transportation Studies Library for reference services and loans. Specialized services are provided free to employees of California-serving public transportation agencies at the local, state and regional levels, and federal agencies located in-state, with funding from the California Local Technical Assistance Program (LTAP). See www.lib.berkeley.edu/ITSL/agencies.html for details.

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All requests must include your name, job title, agency name, mailing address, and, if requesting material, the title and number.

LTAP FIELD AGENTS

Field agents provide free peer-to-peer technical assistance to local transportation agencies on request. Three field engineers provide general support within specific geographic areas in California. Two other experts in the fields of pavements and transportation planning serve public agencies statewide. Call a field expert when you need advice or help with a technical issue. This program is funded through the California Local Technical Assistance Program (LTAP).

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We readily grant reprint permission for most articles; contact Laura Melendy for details.

TECHNICAL ASSISTANCE TRANSFER



APPLYING SYSTEMS ENGINEERING PRINCIPLES TO ITS PROJECTS IN CALIFORNIA

This new course is not to be missed if you are involved in any aspect of Intelligent Transportation Systems (ITS). Individuals who have attended prior training in systems engineering given by UC Berkeley in the past two years or by NHI are strongly encouraged to attend this new course.

The contents of this course are entirely new and will prepare you for ITS projects large and small.

Learning Objectives

By the end of the course, students will:

- Be able to explain what systems engineering is and how the systems engineering process, as described in the *Caltrans Systems Engineering Guidebook*, relates to the ITS project life cycle—from regional transportation planning and regional architecture development stages, through specific project development, delivery, operation, maintenance and replacement or retirement.

- Be able to discuss how the use of the systems engineering process enhances technical and institutional efficiency and effectiveness and can help agencies minimize risks and avoid pitfalls typically associated with ITS projects.
- Be able to identify the roles and responsibilities of their own agency, other agencies, and stakeholders throughout the systems engineering process for different ITS projects in California.
- Understand the purpose and uses of the *Caltrans Guidebook*, as well as what needs to be done in order to be in compliance with the Federal and Caltrans Local Assistance requirements for using a systems engineering approach for ITS project development.

Presentation of Material

At this class, you will meet colleagues from California public agencies who work on ITS projects. This new course is taught by an extensively experienced team assembled by Kimley-Horn and Associates.

The course goes beyond lectures and discussions—it engages attendees to work on a series of class exercises based on real-world ITS projects, both ongoing and completed. These exercises collectively reflect the practical systems engineering process from beginning to end. In addition, the instructors will also provide examples of best practices with respect to how systems engineering has been or should be applied to ITS projects.

Target Audience

This new 2-day course is specially designed for employees (engineers, planners, technicians, managers, etc...) of California transportation agencies who manage and/or are involved in any aspect of ITS projects/activities.

DATE: June 8–9, 2006

TIME: 8 am–4:30 pm

LOCATION:

University of California Berkeley
Richmond Field Station

COST: Free

INSTRUCTORS:

- Bruce Eisenhart
- Kevin Aguigui
- Melissa Hewitt
- Pierre Pretorius
- Anush Nejad

REGISTRATION:

This course is free for employees of all California public agencies, but **you must register in advance.**

Space is limited, so please **register early to avoid being shut out.**

To register, please sign up for TE-21, “Applying Systems Engineering Principles to ITS Projects in California” at www.techtransfer.berkeley.edu/training.



RISK ALERT: DON'T LET ROADSIDE METH WASTE TRIP YOU UP



Roadway employees who keep our roadsides clean and beautiful—particularly mowers and ditch cleaners—face an unexpected danger as they perform their jobs: exposure to waste from methamphetamine (“meth”) labs.

For every pound of meth manufactured, five to six pounds of toxic waste is produced. Proper “safe” disposal of the waste is expensive and controlled. The people running meth labs often dump toxic waste or lab equipment without regard for the hazards it causes people, property, and the environment.

This stuff can look just like any other trash commonly dumped at the side of the road, but waste from meth labs may contain or be surrounded by potentially hazardous chemicals. Use the information below to recognize and avoid the dangers caused by contact with the byproducts of meth production.

FACTS ON METH

What is Meth?

Meth is an extremely dangerous and highly addictive stimulant drug that releases high levels of the neurotransmitter dopamine in its users. It is highly addictive and extremely hard to stop using. 98% of users become addicted after just one use. Meth use

can cause psychotic behavior and brain damage, and chronic use can bring about violent behavior, anxiety, confusion, insomnia, auditory hallucinations, mood disturbances, delusions and paranoia.

California's Meth Problem

Clandestine labs that produce meth and other illegal substances are a very real problem in California, where the state Bureau of Narcotic Enforcement seized 286 meth labs in 2005, 498 clandestine labs in 2004, and 768 clandestine labs in 2002. Some authorities believe that for every lab that is seized, 9 others are in operation.

Where and How Meth is Produced

Meth is manufactured from a variety of chemical ingredients that are readily available in most communities. Its production requires anhydrous ammonia, iodine, and ephedrine, which is found in many over-the-counter cold medicines.

Meth can be made just about anywhere. Labs have been found in houses, apartments, barns, outbuildings, garages, hotel and motel rooms, storage facilities, vacant buildings, and vehicles. A makeshift lab can fit in a suitcase.

THE POTENTIAL DANGERS OF METH EXPOSURE AND HOW TO AVOID THEM

The Potential Dangers

The chemicals used to make meth are toxic. The fumes from meth waste can cause itching and burn the eyes, throat, and lungs if inhaled. Physical contact with the chemicals or piles of waste can burn the skin and cause very severe respiratory damage. Protect yourself by knowing what to avoid.

Smell: Know What to Sniff For

Meth lab trash might emit strong chemical odors. It may smell like cat urine, ether, ammonia, nail polish remover (acetone), or similar chemicals.

Sight: Look At the Waste Before Picking it Up

The list below includes items that are used to make meth. When found clustered together, these items indicate that a pile of trash could be waste from a meth lab.

- Anhydrous ammonia tanks, often with brass tank valves that are bluish-green
- Loose pills that look like common cold pills or diet pills, or packaging from cold pills that contain ephedrine or pseudoephedrine
- Empty or full containers that are labeled as Muriatic acid, Freon, or Starter fluid

- Alcohol or methanol (“Heet” brand gasoline additive or rubbing alcohol)
- Camp stove fuel (“Coleman” fuel) or lantern fuel cans
- Red-stained coffee filters, bed sheets, pillow cases, or old clothing
- Iodine crystals (grayish-black and shiny)
- Containers that held sodium hydroxide, sulfuric and hydrochloric acid (“Red Devil” lye), or other drain cleaners
- Red phosphorus (in match books or sticks)
- Ether (engine starting fluid)
- Cans of solvents such as Acetone, Benzene, Toluene, Methyl Ethyl Ketone or Xylene
- Disassembled lithium batteries
- Clear glass containers that look like they’re from a laboratory, with rubber or plastic hosing
- Containers from table salt or rock salt

WHAT TO DO IF YOU THINK YOU’VE FOUND A METH LAB DUMP SITE

- Don’t investigate, because producing the material could further endanger you or others in the area
- Immediately contact local police or the sheriff’s department to notify them of your suspicions
- Call 911 if you think you’ve been exposed to toxic chemicals

Inhalation Exposure: Move to fresh air. Give artificial respiration if colleague is not breathing. If breathing difficulty occurs, give oxygen and seek medical attention.

Contact with Clothing or Skin:

Remove contaminated clothing. Flush exposed skin and hair with water for at least 15 minutes. Thoroughly wash with soap and water when possible. Meth can be absorbed through the skin. Seek medical attention if needed.

Contact with eyes: Flush exposed eyes with water or saline solution for at least 15 minutes. Remove contact lenses if possible. Seek immediate medical attention.

VIDEOS TO HELP YOU LEARN MORE ABOUT HOW TO PROTECT YOURSELF

Meth Labs: California’s Hidden Danger—California Department of Justice

Multijurisdictional Counterdrug Task Force Training

Colorado Department of Transportation Adopt a Highway Safety Video

These videos are available in streaming format at www.techtransfer.berkeley.edu/videos

This article is adapted with permission from an article originally published by the Montana LTAP Center, LTAP MATTERS, Fall 2005; Source: www.methfreemt.org.

It includes additional information from the California Violence Prevention Center, California Bureau of Narcotic Enforcement, California Department of Justice, California Office of Environmental Health Hazard Assessment, California Department of Toxic Substances Control, Colorado Department of Transportation, and Minnesota Department of Health.



CABLE MEDIAN BARRIERS

ONE OF THE PRIORITY, MARKET-READY TECHNOLOGIES AND INNOVATIONS THAT THE FEDERAL HIGHWAY ADMINISTRATION BELIEVES WARRANTS SPECIAL ATTENTION.

PROBLEM:

Traditional concrete and metal-beam barriers are effective but are expensive and can be difficult to install in some locations. Is there an alternative?

Median crossover crashes often result in fatalities or severe injuries to occupants of the errant vehicle and the motorists in the opposing traffic lanes. The concrete and metal beam barriers traditionally used to prevent these crashes, however, are difficult to install on sloped terrain where their performance is often suboptimal. In addition, concrete and metal beam barriers are expensive, and state and local agencies often lack the resources to rapidly deploy these technologies to areas where vehicles frequently cross over the adjacent medians.

SOLUTION:

Use Cable Median Barriers

Recent research shows that cable median barriers are more forgiving than traditional concrete and metal beam barriers and can be an effective alternative on sloping terrain as they will deflect the collision force laterally thereby reducing the forces transmitted to vehicle occupants. Some states are turning to cable median barriers in areas where there is a high potential for crashes and sufficient median width so that vehicles can land safely outside the travel lanes.

The Pro's of Using Cable Median Barriers

Although cable barriers have been used since the 1960s, it was not until the 1980s that some state DOTs started using a modified cable rail as a median barrier. Today, many states, including Arizona, Colorado, North Carolina, Ohio, Oklahoma, Oregon, South Carolina, Utah, and Washington, are installing cable barriers in medians originally built without barriers. New data suggest that cable median barriers are an effective mechanism for preventing fatal and disabling crashes. In Washington, for example, annual crossmedian fatal crashes declined from 3.00 to 0.33 fatalities per 100-million miles of vehicle travel,

while annual disabling accidents went from 3.60 to 1.76. The overall benefits of cable median barriers were calculated to be \$420,000 per mile annually.

The Con's of Using Cable Median Barriers

While cable median barriers have low installation costs, they can be costly to repair after a crash. In addition, when several posts are hit during a single crash, the cable barrier may then be vulnerable to crossovers until the damaged section is repaired. Rapid maintenance and repair of the barrier is therefore very important, and can be difficult, especially during winter months. Several proprietary hightension cable designs are now available, however, that can withstand multiple hits.

SUCCESSFUL APPLICATIONS:

Using cable barrier systems to meet local needs

The North Carolina and Oregon DOTs completed detailed in-service evaluation reports of cable barrier systems and found that the systems were nearly 100 percent effective in preventing deadly crossover crashes on freeways. Cable median barriers have been successful in South Carolina, where three-strand cable systems were installed in areas with multiple

Cable Median Barrier photos provided by North Carolina Department of Transportation





median crossover crashes. From August 2000 through July 2003, the South Carolina cable median system was hit 3,000 times, but only 15 vehicles penetrated the cables. In addition, Oklahoma and several other state DOTs recently installed proprietary cable barrier systems with reported success.

Some motorcyclists have expressed concerns about cable barriers. Researchers in the United Kingdom, however, found little difference between crashes into cable median barriers and other barrier types. According to the data, most riders are separated from their motorcycles soon after leaving the pavement and are sliding on the ground by the time they reached the barrier. The data also did not show that cable barriers cause extraordinary injuries.

Deployment Statement

The increased use of cable barriers in relatively wide medians where a barrier is warranted will decrease the number of severe cross-median crashes. Cable barriers are cost effective because they are relatively inexpensive compared to other types of barriers. They also perform better than other barriers when installed on the moderately sloping terrain common to many existing medians.

Deployment Goal

The goal is for every state to review its median crossover crash history to identify locations where cable median barriers may be warranted and to implement appropriate construction projects that use cable median barriers.

Deployment Status

Many state DOTs have independently assessed the extent of their median crossover problem and have modified the barrier warrants established in the late 1970s. Most of these states also have installed a significant number of cable barriers, including both the generic, lower-tension design and high-tension patented cable barriers. The American Association of State Highway and Transportation Officials (AASHTO) is modifying its median barrier warranting criteria to reflect current trends, an action that will lead to the installation of additional median barriers in many states.

Status in California

As of the date of publication, cable median barriers are not a system that has been adopted for use by the California Department of Transportation.

Additional Resources

Guidelines for median barrier warrants, selection, and installation are contained in AASHTO's 2002 Roadside Design Guide. Information on crash-tested cable barriers can be found at safety.fhwa.dot.gov/report350hardware under Longitudinal Barriers, using the keywords, "Cable Barriers." To learn more about AASHTO-TIG's approved technologies, visit tig.transportation.org.

For More Information Contact:

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PUTTING IT IN PERSPECTIVE

Many states have collected figures that demonstrate the significant impacts of cross-median crashes:

- Between 1990 and 1999, only 2.4 percent of all interstate crashes in Iowa were crossmedian crashes, yet these crashes resulted in 32.7 percent of all interstate fatalities.
- From 1999 to 2000, more than 70 people in South Carolina lost their lives in 57 separate interstate crossover median crashes.
- North Carolina DOT has found cross-median crashes to be three times more deadly than other freeway crashes. Cross-median barriers are expected to lead to an estimated 90 percent reduction in these types of collisions.

BENEFITS

- Cable median barriers are an effective means of reducing fatal crossover crashes.
- Sufficient cost efficiencies can be achieved through the introduction of higher-tension cable systems.
- Financial resources can be saved if crews at state DOTs develop the skills to rapidly repair cable median barriers.



TORT REPORT: WHAT YOU CAN DO TO HELP PROTECT YOUR AGENCY FROM TORT LIABILITY CLAIMS



A tort is a wrongful act, either intentional or accidental, that injures another. Since most civil litigation arises from torts, saving your agency money and avoiding litigation can be as simple as learning about situations where others were found liable for torts, and avoiding those mistakes. The following hypothetical situations are based on actual cases and provide clear and informative examples of ways to prevent liability.

THE CASE OF THE INTERFERING SIGN

Ryan Moe, an 18-year-old student transporting his professor, Dr. Shoe, came to a temporary stop at the intersection of Hiland Rd. and Machu Way, then pulled out into the intersection, directly into the path of an oncoming truck. Both Mr. Moe and Dr. Shoe were killed. The parents of Mr. Moe and the wife and daughter of the professor sued the highway department for a combined total of several million dollars.

“In the first place,” plaintiffs argued, “there should have been an interchange, not an at-grade intersection. And if not an interchange, the location should at least have been equipped with traffic signals.”

“Moreover,” alleged the families, “a large ‘Wrong Way Do Not Enter’ sign blocked Moe’s sight distance. He never saw the truck. The highway department is at fault.”

“It was reasonable to construct this intersection without an interchange - there wasn’t enough money” exclaimed the highway folks. “We installed signals two months after this accident, but that was a timely installation, based on information available. Mr. Moe just didn’t survey the traffic carefully before pulling out. Not our fault!”

But when investigators took a good look, the view of a driver stopped at the limit line on Hiland Road was, in fact, completely blocked by the “Wrong Way Do Not Enter” sign. Mr. Moe apparently looked to his left and didn’t see the truck, then looked to the right for other traffic and didn’t see anything. So, he pulled out into the intersection and was broadsided. This one cost the highway department a fair amount of money.

TORT REPORT: Designers and sign crews: do a visual check for sight-distance obstructions before and after the sign goes into the ground. It might save a life.





THE CASE OF THE KINKY THERMOPLASTIC

Carol Ann Doe, a self-employed labor relations consultant and part-time model, was driving alone along Route 800 when, for unknown reasons, her car veered across the centerline and plowed head-on into a vehicle driven by George David Goe, ejecting his girlfriend Monique Soeby, who died from injuries within two hours. Ms. Doe suffered massive injuries to her face and multiple injuries to her arms and legs.

Ms. Doe sued Caltrans and several other defendants for over a million dollars. “The State, without any plausible explanation, narrowed the westbound lane by installing a thermoplastic strip, and then improperly placed a shoulder stripe that necked the lane down and produced a “kink” in it. And not only that, Caltrans’ own sign logs called for a warning/advisory speed sign package that had not been there for two years. Our client was confused,” said her attorney.

“No way,” responded the highway department. “Ms. Doe was negligent. She wasn’t driving with due care and she caused the accident herself. We owe nothing!”

Unfortunately, area media had kept up a drumbeat about the potential

safety problems at this location for months, so potential jurors would have been well aware of the problems. Caltrans had no choice but to settle for a reasonable amount.

TORT REPORT: The sign at this location had been missing for two-and-a-half years. Caltrans could have discovered the problem sooner by conducting periodic statewide surveillance with a sign log.

THE CASE OF THE TELL-TALE TESTIFIERS

At 6 a.m. on a rural county road intersecting a state route, James Boe failed to see a stop sign in time to stop. When he did realize it was there, he decided to “blow through the intersection because at that time of the morning there wasn’t anyone else on the road.”

Unfortunately there was someone on the road: Nigel Noe, whose car arrived at the intersection at the same time. Noe was killed.

At trial, the parents of the deceased driver tried to convince the jury that the stop sign was obstructed by bushes, a power pole and guy line, and various handmade ‘For Sale’ signs put up by nearby residents. “The ‘stop ahead’ pavement markings on the

county road had not been replaced since the last repaving, more than a year before the accident,” they alleged.

But just a minute. At trial, the state’s stencil and sign crew supervisors were able to explain their inspection routine and to document the fact that the signs and markings complied with the requirements at that time. The state’s engineers could also show how decisions were made about the placement of the stop sign.

Sorry, plaintiffs. The jury was convinced that this accident happened solely because of driver error and that the driver’s view of the stop sign was not obstructed. The jury ruled that the state acted reasonably in its inspections and remedial actions. No state liability.

TORT REPORT: In any legal action, it is important to be able to show that there is a reasonable, rational process for what you do and to document that you have complied with that process.

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RESOURCES FROM THE TRANSPORTATION LIBRARY

TORT LIABILITY



10

GENERAL READING

Tort Liability of Highway Agencies
Selected Studies in Transportation Law, Volume 4

Transportation Research Board, NCHRP
CRP-CD-20
2003. 140 pages.

→ Provides background information and cites more than 150 legal cases involving tort liability of public transportation agencies. It describes situations such as pavement defects, icy bridges and trees blocking roads that give rise to such liability. It outlines defenses for discretionary activity involving road maintenance, guardrails and barriers, and traffic control devices, and defenses in tort actions. It describes trial preparation, evidence rules and strategies, including admissibility of evidence. It addresses shifting or sharing liability among the transportation department and others.

Transportation Tort Law

Jay L. Smith, Lawrence A. Durant,
Norman N. Hill, Charles Raymond
Lewis II, *TR News*, November 1999.
Pages 24-26, 37.

→ Outlines in brief the evolution of transportation tort law that has accompanied the weakening of the doctrine of sovereign immunity and describes how technical innovations will influence the law.



FOR TRANSIT OPERATORS

Identifying and Reducing Fraudulent Third Party Tort Claims against Public Transit Agencies

gulliver.trb.org/publications/tcrp/tsyn36.pdf

M. P. Maier, Transportation Research Board, *TCRP Synthesis of Transit Practice No. 36*, 2000. 66 pages.

→ Describes fraudulent claims as an aspect of risk management. Lists preventative measures to identify and minimize loss exposure, and response-oriented measures for examining risk treatment alternatives and selecting the best risk management techniques. Includes many examples.

FOR HIGHWAY AND LOCAL ROAD AGENCIES

Roadway Defects and Tort Liability

John C. Glennon
Lawyers & Judges Publishing Company
1996. 540 pages.

→ Written as a safety toolbox for roadway agencies, notes that the acts or omissions of public agencies are often legally weighed against those of drivers involved in accidents. Chapters address standards, accident circumstances, technical aspects of roadway defects cases, and typical defense arguments.

Managing Product Liability to Achieve Highway Innovations

Gary L. Gittings and John W. Bagby
NCHRP Synthesis of Highway Practice 265, 1998. 69 pages.

→ Identifies tort liability experience of public agencies involved in introducing new products to the highway market. Presents details on the litigation risks of highway innovation, the perceptions of public agency and private sector personnel, and the state-of-the-art methods to confront litigation risks. Includes a general tort and product liability overview.

Liability of Highway Departments for Damages Caused by Stormwater Runoff

Larry W. Thomas
NCHRP Legal Research Digest No. 40
1998. 22 pages.

→ Discusses the general rules applicable to liability for surface water runoff and outlines the applicable liability rule in each state. Notes that the rule of reasonable use is now the majority rule.

Practical Safety Tool for Local Low-Volume Rural Roads: the Road Safety Audit Review

Eugene M. Wilson and Marin E. Lipinski
Transportation Research Record 1819, v.1, pp. 225-230.

→ Presents a methodology appropriate for local agencies to perform road safety audits that analyze the safety aspects of plans and designs before project completion. Having an audit may protect

agencies from tort liability since it establishes a record of the organization's safety agenda.

How a Good Traffic Engineering Program Can Help Defend Public Agencies

R. F. Beaubien
Institute of Transportation Engineers Annual Meeting
2001. 5 pages.

→ Shows that public agencies with ongoing programs to identify crash locations, analyze crash causes, and develop responses to safety concerns can provide a defense against charges that they have ignored "dangerous locations."

Defining a Road Safety Audits Program for Enhancing Safety and Reducing Tort Liability

Roger S. Owers and Eugene M. Wilson
Mountain-Plains Consortium
2000. 85 pages.

→ Examines how the road safety audit concept might be accepted in the current legal environment and provides guidelines for its use as a tool in managing tort liability.

VIDEOS

Available at
www.techtransfer.berkeley.edu/videos

Reducing Tort Liability in California Work Zones

Technology Transfer Program
Tech Transfer Video Library CD-656 or VH-656
2004. Runtime: 1 hour, 7 minutes.

→ Teaches members of road crews how to avoid liability. Emphasis is on reducing agency exposure to liability by knowing, planning with, and applying all current standards and practices, and documenting traffic control plans, and, in the event of an incident or crash, documenting all the details.

Complimentary copies of this video are also available to California's public sector transportation employees at
www.techtransfer.berkeley.edu/freestuff.

Risk Management and Tort Liability on the Roadways: What You Need to Know to Protect Your Agency

American Public Works Association
Tech Transfer Video Library CD-635
2002. Runtime: 2 hours.

→ Provides an understanding of common liability issues that street departments and highway agencies face. Teaches key legal concepts that relate to the liability of roadway agencies from a risk management standpoint.



SAVE MONEY WITH THE U.S. COMMUNITIES GOVERNMENT PURCHASING ALLIANCE

The U.S. Communities Government Purchasing Alliance can reduce the costs of purchased goods and save your agency's precious taxpayer resources.

PROGRAM ELEMENTS

U.S. Communities is a non-profit instrumentality of government established by public agencies to reduce the cost of purchased goods and to streamline the purchasing process. This program is nationally sponsored by the National Association of Counties, National League of Cities, the Association of School Business Officials International, National Institute of Governmental Purchasing and U.S. Conference of Mayors.

Through U.S. Communities, counties, cities and other public agencies such as schools and special districts can centrally join in competitively solicited contracts to take advantage of the enormous collective purchasing power of thousands of U.S. local government agencies.

Designed in cooperation with an Advisory Board of local government purchasing officials, U.S. Communities pools the purchasing power of public agencies, achieves bulk volume discounts on behalf of public agencies, competitively solicits quality products through a lead public agency and provides a purchasing forum for public agencies nationwide. Today more than 14,000 public agencies are participating in U.S. Communities including counties, cities, school districts and other public and non-profit agencies in all 50 states.

PRODUCTS

U.S. Communities offers a variety of commodity lines, as well as services, on their contracts. Some of the companies that supply goods under existing U.S. Communities contracts include Office Depot (office supplies), Ricoh (Office Machines), Steelcase (Office Furniture), and The Home Depot Supply (MRO Supplies).

ADVANTAGES OF THE PROGRAM

The key advantage is cost savings for public agencies. Public agencies gain access to the national purchasing power of all local government

public agencies through U.S. Communities. Public agencies secure the following key advantages:

- Competitively solicited contracts by a lead public agency
- Most favorable public agency pricing
- No cost to the public agency to participate
- Nationally sponsored by leading associations and purchasing organizations
- Broad range of high quality products
- Aggregated purchasing power of public agencies nationwide
- Managed by public purchasing professionals
- Available to all counties, cities, schools, special districts, townships, villages, boroughs, other local governments and state agencies, as well as non-profit agencies that support local and state governments.

U.S. Communities works closely with public agencies to understand their buying needs and the needs of thousands of other public purchasing agents, purchasing managers, purchasing directors, and procurement officers. U.S. Communities is constantly expanding its product offering to public agencies and acts as a strategic sourcing option for local government.

The purchasing function plays a critical role in helping local governments save money on the goods purchased by their agencies each year. U.S. Communities is a successful, proven tool to help counties, cities, schools, and other public agencies achieve this important mission.

GETTING INVOLVED

Pooled contracts can cross state boundaries. So, a public agency in California can take advantage of a contract negotiated by another agency anywhere in the country. Several of the major contracts offered through the program—including a contract with Office Depot—were competitively solicited by Los Angeles County. Any local agency that is part of the U.S. Communities program can make purchases under this contract. Many entities in California are already profiting from the savings offered by the program.

Getting involved is simple. To take advantage of the contracts this program offers to public agencies, visit www.uscommunities.org or e-mail info@uscommunities.org.



TOWARD SUSTAINABLE TRANSPORTATION

CALIFORNIA CONVERTS TO LED TRAFFIC SIGNALS

California law now requires traffic signals in the state to be energy efficient—so energy efficient that only light emitting diodes (LED) lamps meet the new standard.

In 2002, the California Energy Commission adopted standards for vehicular traffic signal lamps and modules, adding pedestrian signal lamps in 2004. As cities and counties convert to the more efficient lamps, 35 local agencies have received nearly \$9.4 million in loans from the Energy Commission to help them with their improvements. LED technology has reduced California local agencies' utility bills by nearly \$2 million annually.

The reason for the savings is simple—traditional incandescent lamps are a very inefficient light source. Since most of the energy goes to produce unneeded heat rather than actual light, incandescent traffic signals consume 80 to 90 percent more electricity than those using LED technology.

Michael Grimes, Facilities Manager of the City of Santa Barbara, reports 70 to 80 percent savings in electricity costs as a result of converting all their traffic signal lamps to LEDs. The Energy Commission staff estimates that the city's electricity costs for traffic signals dropped from

\$155,000 a year with incandescents to about \$17,000 with the new LED lamps. Electricity use went from 1.4 million to 150,000 kilowatt hours (kWh) a year. He states that since the different color LED clusters wear out at different rates, the city can also spread out replacement costs over several years.

What California Standards Require

Currently, only LED traffic signal modules meet the requirements. A list of certified traffic signal modules can be downloaded in a Zip format from the Energy Commission's website at: www.energy.ca.gov/appliances/appliance/excel_based_files/traffic_signals.

State Funding

California has \$40 million to loan to local governments to help them with energy efficiency projects, including the retrofit of traffic signals. The interest rate is 4.5 percent (4.1 percent in some cases). An application can be downloaded from the Energy Commission's website at: www.energy.ca.gov/efficiency/financing.



GOOD ENGINEERING ISN'T ENOUGH ANYMORE



There may have been a time when project managers were able to manage projects by simply applying long-established principles of engineering: designing a roadway based on the most effective route, or constructing a structure based on economic constraints and budgets. There may have been a time when engineers could focus on the job of getting projects done without worrying about environmental concerns, public criticism, and ever shrinking funding. There may have been a time when support for projects was overwhelming and public projects were seen for their pure societal benefit. However, if there ever was such a time, it has passed.

The days when “true engineers” managed projects were full of tense relationships, projects that were delivered late and over budget, and projects that were doomed to failure due to infighting, sabotage, and inaction. Traditionally, engineers who managed public works projects had excellent engineering skills rather than project management abilities. Today, however, engineering skills alone are not enough to successfully manage a project.

Engineers and project managers in today's environment must be both highly skilled and well-rounded. Technical expertise and engineering knowledge are as important as ever, and a good engineer must also keep up with state of the art techniques and methods, and be willing to search for and incorporate new materials and products. Engineers who manage projects must be expert accountants, schedulers, and administrators as well as cutting edge designers and constructors.

An engineer who manages projects today must also be an excellent leader, communicator and negotiator. She must be able to bring a group of opposing interests together and cobble a team with one focus: finish the project. On time and within budget would be nice, too.

It is not enough to train our engineers and project managers in the wonderful realities of applied physics. We need engineers with leadership skills who can communicate a vision, a goal and a direction. Our project managers must be trained in the fine art of negotiation and the intricacies of team building. Technical expertise is no longer enough. In addition to engineering our projects, we must now engineer our project relationships.

An engineer/project manager with highly developed interpersonal abilities can turn a public works project around. Infighting diminishes, and project meetings become productive exercises instead of opportunities to get back at the “opposition.” One project manager with the right skill set can deliver a project ahead of schedule and below budget, and make everyone feel proud of her contributions.

To learn how to turn your projects around, please join Hazem Mobarak and myself on our journey to decipher the intricacies of project management in today's environment. We will be exploring this topic and many others during **Fundamentals of Project Management for Transportation Engineers (PD-05)**, offered on June 6 and 7, 2006 in Richmond, California.

For a course outline and to register, visit www.techtransfer.berkeley.edu/training.



FREE TOOLS TO MAKE YOUR JOB EASIER

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Do you need training in some aspect of transportation practice? A search in the **Training Clearinghouse** could lead you to just the class you need.

The **Training Clearinghouse** is a searchable database that contains classes offered in California and several nearby states. ITS Tech Transfer classes are cross-listed in the Clearinghouse, along with classes offered by nearly 150 organizations from the public and private sector. Certificate Programs, online classes, and major providers of customized training in California are included.

The courses in the Training Clearinghouse can be sorted by course subject, location, title, or provider. Listings are also organized into eight broad categories that make it easy for you to browse and find the course that best fits your training needs:

- Pavement and Highways
- Traffic Engineering and Operations
- Multimodal Planning and Policy
- Administration, Management, and Finance
- Intelligent Transportation Systems
- Environment
- Non-auto modes
- Safety and Security

Next time you're looking for training in transportation engineering and its related fields, start at the **Training Clearinghouse**. It will probably be the only place you need to look. The Clearinghouse is located at www.techtransfer.berkeley.edu/clearinghouse. You'll want to bookmark it.

GOING...GOING...GONE

One of the Tech Transfer Program's most popular offerings allows California public sector professionals in the transportation field to go shopping in our library—for free!

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Is your organization sponsoring an upcoming training in or around California? If so, send an announcement to clearinghouse@techtransfer.berkeley.edu so we can include your event in the clearinghouse.



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RESIDENT ENGINEER'S ACADEMY

Local Assistance Resident Engineer's Academy

PD-04	Free/\$350 with lodging	May 23-26	Fresno
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In 2007, sessions are planned in:

San Diego • San Luis Obispo • Redding • Oakland

In 2008, sessions are planned in:

Oxnard • San Bernardino • Stockton • Santa Rosa

INFRASTRUCTURE DESIGN & MAINTENANCE

Asphalt Pavement Maintenance Road Show

IDM-05RS	Free	May 4	Eureka
IDM-05RS	Free	May 5	Ukiah

TRANSPORTATION PLANNING, POLICY & ENVIRONMENT

Federal Procedural Requirements for Environmental Analysis for Transportation Projects

EV-03	Free	May 9	Oakland
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NEPA and Transportation Decision Making

NHI-05	\$375/\$645	May 9-11	Monrovia
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Integrating Freight in the Transportation Planning Process

NHI-04	\$225/\$375	May 16-17	Sacramento
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TRAFFIC ENGINEERING, OPERATIONS & SIGNALS

Design, Implementation and Operation of Bicycle Facilities

TE-19	\$225/\$375	May 25-26	Los Angeles
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Applying Systems Engineering Principles to ITS Projects in California

TE-21	Free	Jun 8-9	Richmond
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Roundabout Design

TE-26	\$195/\$325	Jun 13-14	Richmond
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Annual MUTCD Workshop

TE-06	\$95/\$175	Jun 15	Emeryville
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Basic Traffic Signal Design

TE-02	\$375/\$645	Jun 20-22	Fresno
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Topics in Geometric Design 2: Applications, Methods & Good Practice

IDM-02	\$195/\$325	Jun 26-27	Stockton
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SAFETY

Northwest Crossings –

The Western Regional Grade-Crossing Safety Training Conference

RR-01	\$225/\$295	Jun 5-7	Vancouver, WA
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PROJECT DEVELOPMENT & MANAGEMENT

Fundamentals of Supervision for Road Maintenance Supervisors

PD-14	\$195/\$325	May 23-24	Sacramento
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Fundamentals of Project Management for Transportation Engineers

PD-05	\$195/\$325	Jun 6-7	Richmond
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FEDERAL-AID PROJECT DEVELOPMENT: A FIVE COURSE SERIES

Getting Your Federal-Aid Project Started

PD-08	Free	May 2	Oakland
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Federal Procedural Requirements for Environmental Analysis

For Transportation Projects / NEPA

EV-03	Free	May 9	Oakland
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Procedures for Right-of-Way Acquisition

PD-09	Free	May 10	Oakland
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Federal-Aid Project Development: Design to Construction

PD-10	Free	May 11	Oakland
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Federal Rules for Contract Administration and Project Completion

PD-11	Free	May 12	Oakland
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Call your Caltrans Local Assistance Training Coordinator for details.

District 1	Mia Eddington	707.441.3922
District 2	Sue Gale	530.229.0532
District 3	Jim Day	530.741.5116
District 4	Jose Reyes	510.286.5233
District 5	Mikie Wickersham	805.549.3074
District 6	Karen Moore	559.445.5573
District 7	Assaad Fayadd	213.847.2951
District 8	Debbie Morales	909.383.4941
District 9	Trudy Mischell	760.872.0657
District 10	Perfecto Robledo	209.948.3689
District 11	Debora Ledesma-Ribera	858.616.6524
District 12	Homa Nouri	949.724.2410

Some of these classes are also available free, online.



Fees for most courses are two-tiered: the lower rate is for California public agencies and is subsidized by the Cooperative Training Assistance Program (CTAP); the higher rate is for all others.

- Additional course and registration information: www.techtransfer.berkeley.edu/training
- Course content related questions: training_info@techtransfer.berkeley.edu or 510.665.3410
- Registration related questions: registrar@berkeley.edu or 510.665.3466
- Mailing list changes: www.techtransfer.berkeley.edu/subscribe or 510.665.3466