

# Club Deals

**Sizzling Summer  
Club Deals on  
Water Parks:  
\$15.25 - \$24.45**

**Cleopatra Exhibition,  
Cal. Science Center:  
Adults, \$15**

**Chivas USA  
vs. LA Galaxy:  
Aug. 12, \$25**

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for Tickets

# Alive!



TRANSPORTATION

FROM

SLOW TO

FLOW

Its major upgrade nearly complete, the City's Automated Traffic Surveillance and Control system (ATSAC) is saving us time and leading the world.

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Transportation Engineering Associates hard at work at the ATSAC are (foreground) Irene Serrano, Club Member; and (from left, in background) Khanh Tran; Quan Tran; Masis Khashakyan; Erik Zambon; and Bhuvan Bajaj.

Alive! photo by Sunny Lam



City Employees Club of Los Angeles  
120 West 2nd Street  
Los Angeles, CA 90012

RLACEI



Retirees:

## Welcome to the Club!

A great City newspaper, even greater benefits. See page 13!

**TRANSPORTATION**

# FROM SLOW TO FLOW

**Its major upgrade nearly complete, the City's Automated Traffic Surveillance and Control system (ATSAC) is saving us time and easing our commutes.**



*Information courtesy LADOT; Photos by Summy Lam, Club Marketing Director, and courtesy Transportation*

**F**our floors below City Hall East, in a former emergency bunker, sits a facility that has a lot to do with your transportation happiness... and you might not even know it exists.

It's the Automated Traffic Surveillance and Control System, designed and operated by City Employees. Its software – developed in house and, when its current upgrade is completed in January, every traffic signal under the jurisdiction of the City of Los Angeles will be controllable from here.

ATSAC's team of 35 Traffic Engineers and 20 Operators set, monitor, measure and modify the timings.

ATSAC is a 21st century answer to the City's notorious traffic congestion, and it's a cutting-edge solution designed and operated by City Employees.

### The Situation

The City of Los Angeles, the second largest city in the United States, differs from other metropolitan areas in that Los Angeles does not have one central core, but many. The City's multiple epicenters cause residents to travel in many different directions. Congestion is also created because most City residents do not use public transportation.

The City has some of the nation's most traveled and congested freeways, as well as some of the most congested surface streets in Los Angeles County. Traffic congestion will intensify as more people use streets, highways and public transit.

Congested conditions at garden-variety intersections contribute approximately 40 percent of the City's surface street, peak-hour vehicular travel.

One of the best ways to alleviate Los Angeles' congestion is to improve the existing highway system. The City improves efficiency with its Automated Traffic Surveillance and Control (ATSAC) System.

### A Solution

Since the early 1980s, LADOT engineers have embarked on a mission to computerize

and connect to the ATSAC Center to every one of its nearly 4,400 traffic signals. LADOT engineers, systems analysts, graphic designers, accountants, and electricians designed and oversaw the construction of the nation's most sophisticated traffic control system. Today, 92 percent of the City's traffic signals are connected to the ATSAC Center, as a result of almost 30 years of continuous development. The system will be completed by January, when all traffic signals will be connected to the ATSAC Center.

The ATSAC System is a real-time, computer-based traffic signal system that can reduce delay at intersections using signal synchronization. ATSAC monitors traffic conditions and system performance, and then selects appropriate signal control strategies. It's automated, but it can be adjusted, too.

Every second, 18,000 magnetic sensors embedded in the City's roads send traffic speed and congestion levels to the ATSAC nerve center.

ATSAC also allows for the remote installation of adaptive signal timing plans. The adaptive plans respond to events that can cause congestion. With these timing plans, ATSAC can significantly enhance an entire region's mobility when accidents or natural disasters occur on freeways or major arterial streets. By effectively managing high traffic volumes, ATSAC projects improve traffic flow, thereby reducing congestion, fuel consumption and air pollution.

Transportation planning data is collected through ATSAC projects. ATSAC can gather baseline data through street sensors for travel times and speeds, levels of air emissions and fuel consumption, delay and number of stops. This information is analyzed to determine whether changing signal timing will

achieve better traffic flow. If required, signal timing is changed using communication lines that connect the ATSAC Center with each traffic signal. Electronic detector information is supplemented by closed-circuit television (CCTV) surveillance equipment. Transportation has installed CCTV cameras at more than 300 locations and continues to install more at critical locations throughout the City.

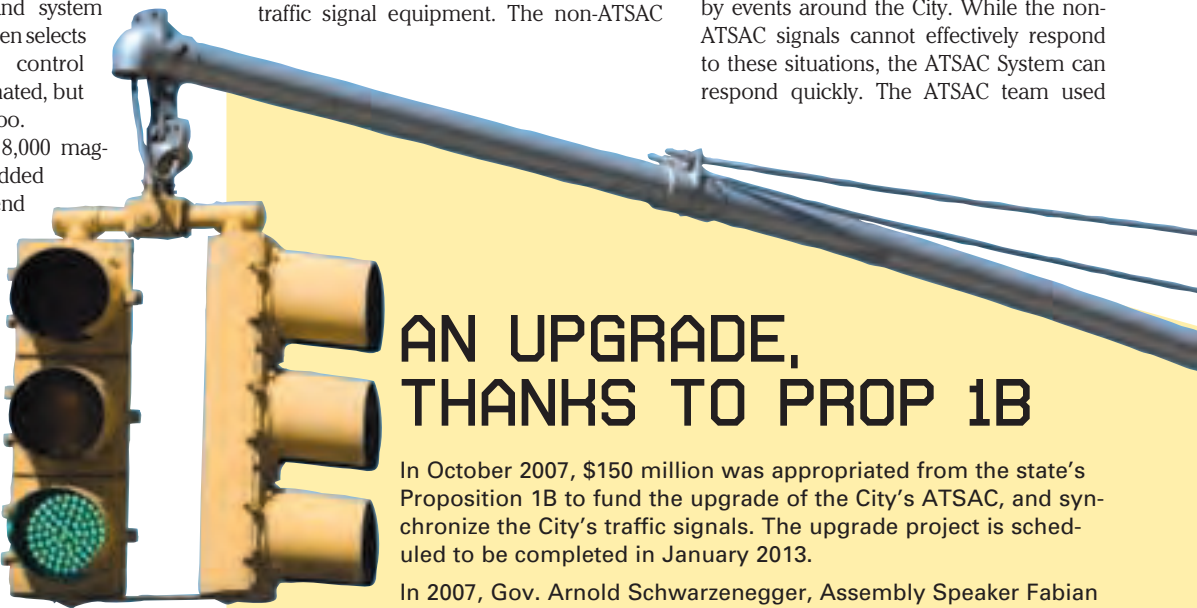
### Signal Timing Improvements

There are limitations in signal timing and synchronization with non-ATSAC traffic signal equipment. The non-ATSAC

equipment has minimal ability to respond to continuous traffic volume and congestion changes.

Non-ATSAC equipment is less reliable and malfunctions often. A Transportation study conducted for the California Energy Commission concluded that at any one time, about one in four signals has a malfunction significant enough to adversely affect traffic flow. The ATSAC signal equipment, which has been replacing older equipment, is inherently more reliable than other equipment. With ATSAC system, Transportation is aware of any malfunction immediately.

Increasingly, traffic flow is disrupted by events around the City. While the non-ATSAC signals cannot effectively respond to these situations, the ATSAC System can respond quickly. The ATSAC team used



## AN UPGRADE, THANKS TO PROP 1B

In October 2007, \$150 million was appropriated from the state's Proposition 1B to fund the upgrade of the City's ATSAC, and synchronize the City's traffic signals. The upgrade project is scheduled to be completed in January 2013.

In 2007, Gov. Arnold Schwarzenegger, Assembly Speaker Fabian Nunez and Mayor Antonio Villaraigosa, announced the funding and toured the ATSAC Center – a more primitive setup than today's ATSAC.

Nunez and the mayor had pushed the legislature to earmark \$150 million from Proposition 1B funds, which was approved by voters in 2006.

Approximately 1,117 signals are being added to the ATSAC system. Another 1,256 signals already on the system have been or will be upgraded with new software to give traffic experts more control.



In October 2007: Officials announced the appropriation of \$150 million from the state's Proposition 1B funds for the City's ATSAC center. From left: Mayor Antonio Villaraigosa, Gov. Arnold Schwarzenegger, and State Speaker Fabian Nunez.

ALIVE! FEATURE



**→ ATSAC REDUCES DELAYS, KEEPS TRAFFIC MOVING.**

this capacity to efficiently re-route freeway traffic around portions of the Santa Monica Freeway that were destroyed in the January 1994 Northridge earthquake.

**Benefits**

A 1994 ATSAC evaluation study notes that ATSAC projects provide congestion relief, improving travel times by 12 percent and travel speeds by 12.3 percent and reducing delay by 30 percent. The increase in travel speeds results from fewer starts and stops, which dramatically reduces air emissions. ATSAC has environmental advantages because its construction and operation do not physically alter the surrounding landscape, since no curb relocation or right of way acquisition is required. The ATSAC evaluation study showed that the benefits of implementing ATSAC facilities will provide a 32.12 to 1 benefit/cost ratio relative to the costs of construction.

The ATSAC System also benefits motor-

ists because it can be updated with new software instead of costly installations of new hardware and equipment. For example, some kinds of software updates manage transit vehicles on major commuter corridors or give favorable signals to emergency signals.

Transportation is also implementing a program that complements ATSAC: ATCS is a traffic signal control system that controls the signals based on real-time traffic conditions. Results have shown that ATCS increases capacity 3 percent more than even the existing ATSAC system.

**System Upgrade**

Currently, 92 percent of the City of Los Angeles signalized intersections have been added to the ATSAC system. The ATCS ATSAC enhancement has been added to 2,012 of these intersections. Since 2001, ATCS facilities have been included in every ATSAC project that has been constructed.

In conjunction with recently received local grant funding, \$150 million in Proposition 1B state bond funding will be used to fund all remaining ATSAC and ATCS intersections, with a scheduled completion date of this summer. The addition of Proposition 1B funding has made it possible to complete the Citywide ATSAC Program 12 years earlier than previously thought possible and provide the much needed congestion relief, travel time delay savings and air emission reduction benefits.

**Sharing With the World**

The ATSAC System has repeatedly demonstrated its ability to effectively manage dynamic traffic flow to reduce congestion. The reduced congestion has led to improved travel times, cleaner air and more efficient vehicular traffic movement. The ATSAC System is also extremely cost effective and environmentally friendly.

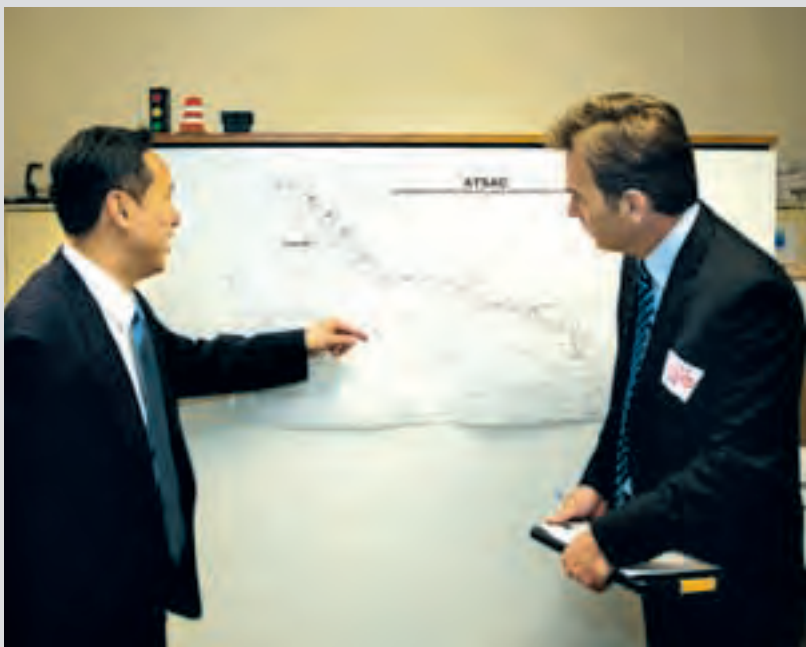
ATSAC is generally regarded as one of

the best systems to control traffic signals and manage traffic, prompting a number of cities to model their systems after ATSAC. The system's software, which was developed in house, was funded significantly by the federal government, which retains some licensing rights. The federal government has licensed the system to other cities.

The ATSAC System has brought both national and international recognition to Transportation. The ATSAC System was a recipient of the Ford Foundation's 1992 Innovations in State and Local Government Award.

The ATSAC technology strongly supports the City's goals as it achieves public safety, energy conservation, improved air quality, economic development and expanded communication. ATSAC is directly responsible for efficiently moving Los Angeles motorists more quickly to their destinations. ■

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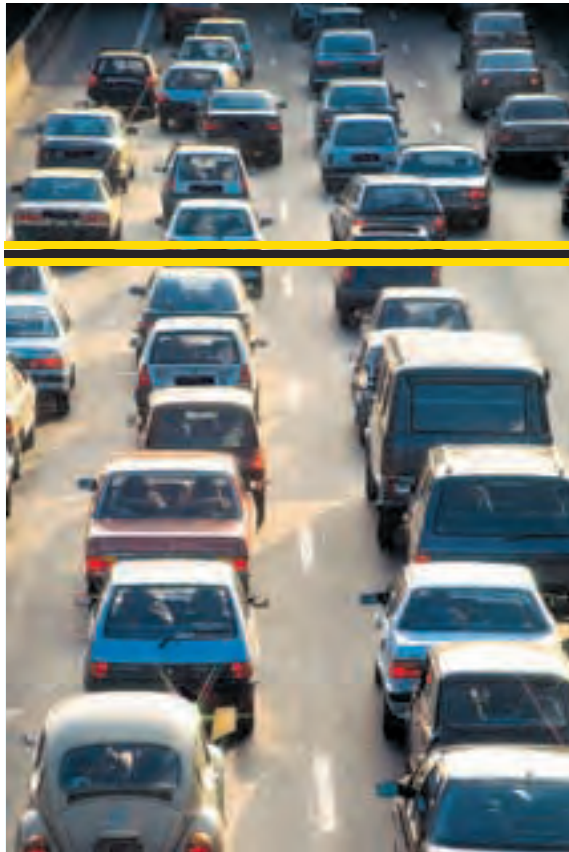


From left: Edward Yu, Transportation Engineer and Club Member who's in charge of the entire ATSAC operation, explains a new ATSAC system coming on line to John Hawkins, Club CEO.



Timing Engineers strategize about a traffic issue.

ALIVE! FEATURE, CONTINUED



# CONGESTION RELIEF

The ATSAC team constantly monitors the City's traffic status. Every second, the software alters the City's more-than-4,000 traffic signals to maintain peak traffic flow, but the system requires a dedicated team of professional Traffic Engineers to program, monitor, adjust and study the system performance, and traffic in general.

The work of the Transportation Engineers directly relates to Mayor Antonio Villaraigosa's call to move traffic faster, and reduce emissions.

The following is a description of one of ATSAC's Engineer Teams.

## TPS INTEGRATION STUDY

The County's Metropolitan Transportation Agency (MTA) is adding transponders to its buses. Those TPS - Transit Priority System - transponders "speak" to traffic signals ahead of the bus on the route to alter the signal timing, and assist in the smooth flow of traffic. But before the technology can be implemented, ATSAC Transportation Engineers must make sure that the system will improve the traffic flow, and not impede it.

Demonstrating their study to Club CEO John Hawkins (left) are Transportation Engineering Associates III Khanh Tran (center) and Quan Tran (no relation). They are studying an MTA TPS timing plan implementation for the intersection of South Figueroa Street and West Washington Boulevard just south of downtown.



## TRAFFIC IS NOTHING NEW TO LOS ANGELES!



The intersection of Seventh and Broadway downtown before "jaywalking" laws came into effect, circa 1924.

**As long as there has been traffic, the City has been working to keep it flowing.**



Transportation Engineers stand next to an early signal management system.



## TRAFFIC SIGNAL IMPROVEMENT/MODIFICATION

Traffic signal plans, once created by the ATSAC Signal Design team, are put in front of a second set of eyes, and must be reviewed and approved by a Team Leader. Once the Team Leader puts his or her stamp on the plan, it's sent to a Field Crew for implementation on site.

ABOVE: Irene Serrano, Transportation Engineering Associate III and Team Leader, pores over the signal plans for the intersection of Pico and San Vicente Boulevards. With her is *Alive!* editor John Burnes.

TRANSPORTATION

FROM  
SLOW TO  
FLOW



REAL-TIME TRAFFIC MONITORING

Transportation Engineers at ATSAC directly monitor current traffic conditions from this station, and have control over all the closed-circuit cameras on the screens in the background. If conditions warrant, the Transportation Engineer at this station can adjust the automated system and adjust signal timings. Each Transportation Engineer takes a shift in this position twice a month.

ABOVE: Masis Khashakyan, Transportation Engineering Associate, monitors current traffic.



TRAVEL TIME STUDY ASSESSMENT

ATSAC creates frequent "before and after" studies, looking at data both before and after the system makes a change to traffic signal timing. The data must be reviewed to make sure a desired effect was gained.

ABOVE: Transportation Engineering Associates II Bhuvan Bajaj (left) and Erik Zambon review a study of changes to signal timing in the Harbor Gateway area.



SIGNAL-TIMING

Designing signal-timing plans is an important part of what ATSAC does. Many hours of location study and situation consideration go into the plans. After the timing plans are made, they are reviewed by ATSAC managers.

ABOVE: Members of the signal-timing team, from left: Gordon Kam, Transportation Engineering Associate II; Jeffrey Xu, Transportation Engineering Associate II; Carlos Henriquez, Transportation Engineering Associate II; and Gabriel Perez, Clerk Typist.



Edward Yu, Transportation Engineer, Club Representative and Member, who's in charge of the entire ATSAC operation, consults with Irene Serrano, Transportation Engineering Associate III on a signal-timing plan.



LEFT: Another member of the ATSAC signal-timing team is Tina Huang, Transportation Engineering Associate II. She focuses on "which direction of traffic should be favored during peak times," she says.