

**YOU'RE IN GOOD HANDS WITH  
AUTOMATED SPEED ENFORCEMENT TECHNOLOGY**

**by**

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The Command College Futures Study Project is a FUTURES study of a particular emerging issue of relevance to law enforcement. Its purpose is NOT to predict the future; rather, to project a variety of possible scenarios useful for strategic planning in anticipation of the emerging landscape facing policing organizations.

This journal article was created using the futures forecasting process of Command College and its outcomes. Defining the future differs from analyzing the past, because it has not yet happened. In this article, methodologies have been used to discern useful alternatives to enhance the success of planners and leaders in their response to a range of possible future environments.

Managing the future means influencing it—creating, constraining and adapting to emerging trends and events in a way that optimizes the opportunities and minimizes the threats of relevance to the profession.

The views and conclusions expressed in the Command College Futures Project and journal article are those of the author, and are not necessarily those of the CA Commission on Peace Officer Standards and Training (POST).

## **YOU'RE IN GOOD HANDS WITH AUTOMATED SPEED ENFORCEMENT TECHNOLOGY**

Officer Gonzalez reported to work and sat at a virtual work sphere to request secure access from “Chipper,” a holographic avatar. Chipper acknowledged her request by stating, “voice imprint confirmed, Officer Gonzalez you have 112 pending automated speed citations to review for approval. “Gosh,” she thought, “I have better things to spend my time on. If only they would let the computer take over all aspects of detecting, issuing and fining individuals.” She commanded, “Chipper, please show me the pending cases, detailed view, sorted by highest probability rate of positive identification.” Chipper responded, “Here you go Officer Gonzalez; this violation rates a 98 percent probability rate of positive violator/vehicle identification.”

Gonzalez went through the standardized three-point verification protocol she was taught at the Academy. She noted the high-resolution facial recognition image of the violator was depicted next to the driver’s license photo of the violator; it was an obvious match. Officer Gonzalez scanned the vehicle identification section and confirmed the license plate reader image of the violator’s vehicle. The system had matched the license plate with a valid DMV registration record which was displayed. She stated, “page to vehicle speed data.” The avatar shifted to a dashboard page. By now, she knew not to be distracted by all the fancy diagrams, charts, and flashing lights. She noted the embedded global position satellite (GPS) in the violator’s vehicle reported the vehicle had traveled an average speed of 102 miles per hour for over 3 miles. She carefully reviewed the diagnostics history for the system, which indicated prior to, during, and after the violation was captured; sensors were fully operational with no anomalies detected.

Officer Gonzalez commanded, “violation confirmed,” and Chipper responded, “violation issued and filed, you have 111 pending automated speed citations to review for approval.”

Advances in vehicle identification, driver identification, vehicle automation, and speed detection technology present an opportunity to enhance the safety of the motoring public and augment traditional law enforcement strategies. Where can this technology lead us? Should we be leading the technology towards a desired outcome? The goal of this article is to change conventional wisdom about automated speed enforcement technology, and bring it from a science fiction fantasy, to a plausible emerging future of traffic law enforcement.

### **Why Automated Enforcement?**

Why bother applying technology to enforce speed laws? Every year in California, approximately 4,000 individuals lose their lives as a result of a vehicle exceeding the speed limit.<sup>1</sup> Speeding is a factor in one-third of all motor vehicle fatalities.<sup>2</sup> About 35,000 individuals are also injured annually on California's freeways, state routes and unincorporated county roadways.<sup>3</sup> Speeding reduces a driver's ability to steer safely around curves or objects in the roadway, extends the distance necessary to stop a vehicle, and increases the distance a vehicle travels while the driver reacts to a dangerous situation.<sup>4</sup> The severity of an injury increases with speed due to the increased momentum and energy of the vehicle, while the effectiveness of occupant restraint systems decreases at high speeds.<sup>5</sup>

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<sup>1</sup> Average of three years, 2004 through 2006, CHP Statewide Integrated Traffic Records System (SWITRS)

<sup>2</sup> United States (US) Department of Transportation (DOT), Federal Highway Administration Safety Bulletin, *Speeding Counts . . . on all roads!* November 2000

<sup>3</sup> Ibid.

<sup>4</sup> Traffic Safety Facts, 2004 Data, NHTSA's National Center for Statistics and Analysis, Document #DOT HS 809 915

<sup>5</sup> US DOT, Speed Management Workshop, July 2007, Facilitator Guide, Session 3, Enforcement Issues, Effect of Speed, Page 5

The National Highway Traffic Safety Administration (NHTSA) estimates the economic cost to society of speeding related crashes to be a staggering \$40.4 billion per year--\$76,865 per minute or \$1,281 per second.<sup>6</sup> Economic costs include productivity losses, property damage, medical costs, rehabilitation costs, travel delay, legal and court costs, emergency service costs, insurance administration costs, premature funeral costs, and costs to employers. These costs do not include any estimate of the value of lost quality of life associated with deaths and injuries. An immeasurable impact is the emotional toll taken upon the surviving families and friends of the victims. Internationally, the World Health Organization recognizes that setting and enforcing speed limits are two of the most effective measures to reduce road traffic injuries.<sup>7</sup>

California alone has a population of approximately 37 million people, almost 105,000 miles of roadway and over 29 million registered vehicles.<sup>8</sup> The enforcement of speed laws in California requires a significant investment in personnel, equipment and resources. For example, the California Highway Patrol (CHP) has primary responsibility to enforce all laws regulating the operation of vehicles on all toll highways, state highways constructed as freeways, transit-related facilities located on or along toll highway or freeway rights-of-ways, and all non-freeway streets and highways in unincorporated areas.<sup>9</sup> Annually, the CHP drives nearly 110,000,000 miles.<sup>10</sup> It expends more than 1,685,483 patrol hours,<sup>11</sup> dedicates over 3,060 airplane hours to speed

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<sup>6</sup> Traffic Safety Facts, 2004 Data, NHTSA's National Center for Statistics and Analysis, Document #DOT HS 809 915

<sup>7</sup> Margie Peden, et. al., editor, World Report on Road Traffic Injury Prevention, World Health Organization, Geneva, 2004

<sup>8</sup> Speed Management, An Overview of the Department's Approach to Speed Management, California Highway Patrol, Planning and Analysis Division, August 2007

<sup>9</sup> California Vehicle Code Section 2400 & CHP General Order 100.69, Enforcement Policy: Highway Transportation System, August 2003

<sup>10</sup> Average of three years, 2004 through 2006, CHP Fleet Operations Section, Fleet Focus Database

<sup>11</sup> Average of three years, 2004 through 2006, CHP Information Services Unit

enforcement,<sup>12</sup> and issues over 1.1 million speed-related citations.<sup>13</sup> Each fiscal year, the CHP allocates more than \$1.3 billion of its total \$1.8 billion budget to enforce traffic laws.<sup>14</sup> John Smart of the Acceleration Studies Foundation offers “thirty years from now, Automated Highway Systems (AHS) may save half of the 42,000 auto fatalities a year in the US, and one third of the 1.3 million auto fatalities worldwide.”<sup>15</sup> Imagine what could be done if these resources were available to use for other priorities in public safety.

### The potential future of automated speed enforcement (ASE) technology

Speeding is a multifaceted issue. It involves the interaction of many factors; including public attitudes, road user behavior, vehicle performance, roadway design and characteristics, posted speed limits and enforcement strategies.<sup>16</sup> Figure 1 below represents the choices and factors involved in speed selection by a driver, and also provides a systems view of relationships among speed limits, enforcement levels, and safety.<sup>17</sup>

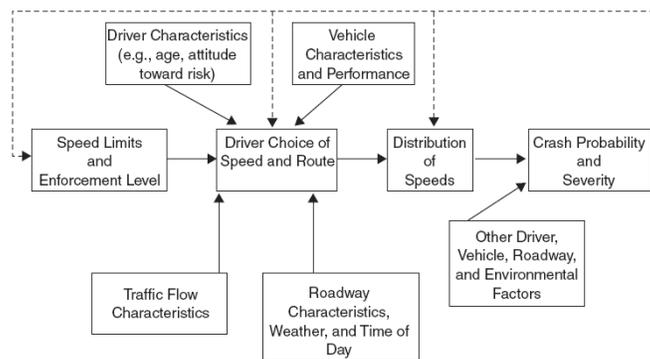


Figure 1

<sup>12</sup> Average of three years, 2004 through 2006, CHP Data Services Group “Green Bar Report”

<sup>13</sup> Average of three years, 2004, through 2006, CHP Information Services Unit

<sup>14</sup> CHP Budget Program 10 Expenditures, [http://www.dof.ca.gov/Budget/Budget\\_2006-07/documents/GovernorsBudget2006-07/documents/2000.pdf](http://www.dof.ca.gov/Budget/Budget_2006-07/documents/GovernorsBudget2006-07/documents/2000.pdf), Accessed October 29, 2007

<sup>15</sup> John Smart, “Homeland Security and Policing: Opportunities and Challenges of Accelerating Change,” FBI Futures Working Group 2005. Presentation on-line. Available from Acceleration Studies Foundation, [http://www.accelerationwatch.com/presentations/SecurityandPolicing2015\(2.05\).ppt](http://www.accelerationwatch.com/presentations/SecurityandPolicing2015(2.05).ppt). Accessed June 21, 2008.

<sup>16</sup> U.S. Department of Transportation, Speed Management Strategic Initiative, June 2005, Page 1

<sup>17</sup> Transportation Research Board, National Research Council, *Special Report 254, Managing Speed – Review of Current Practice for Setting and Enforcing Speed Limits*, 1998, Page 25

Automated Speed Enforcement (ASE) technology can have a dramatic impact on the enforcement level of speed limits. It may also be used to enforce speeding violations while permitting a redirection of resources to higher priority violations and providing a cleaner environment by reducing the number of miles driven/patrolled by traffic enforcement officers. The core components of ASE include detecting the speeding vehicle, identifying the driver, and identifying the speeding vehicle.

### **Detecting Speeding Vehicles**

“Light Detection And Ranging” (LIDAR) is a laser speed-measuring device that transmits coherent infra-red light pulses, measures the time of flight for the pulses reflected from moving vehicles, then calculates and displays the speed of the target.<sup>18</sup> Unlike radar, which uses a wide microwave beam, the laser beam is narrow and focused which permits officers to single out any vehicle and immediately determine its speed. LIDAR could be combined with multi-pulse radar used in military weapons, which track multiple moving targets<sup>19</sup>, which could quickly and accurately detect all speeding vehicles on a given roadway. Data from navigation systems with embedded GPS information and vehicle diagnostic technology, aka: black boxes could be wirelessly mined and collected to establish a vehicle’s speed.

### **Driver Identification**

Drivers could be identified by sophisticated systems, which feature military-grade cameras with advanced photo-electronic imaging capabilities. According to sales representatives for Securus Technologies, Inc. located in Dallas, Texas, advancements in three dimensional (3-D) facial

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<sup>18</sup> International Association of Chiefs of Police, Speed Measuring Device Performance Specifications: LIDAR Module, Accessed October 30, 2007, <http://www.theiacp.org/profassist/IACPLidarModule10-15-06R1.pdf>

<sup>19</sup> <http://www.freepatentsonline.com/4028991.html>, Accessed on October 30, 2007

identification systems can be incorporated into an ASE system to provide a high probability of driver identification with little to no user intervention. For example, U.S. southwestern border law enforcement agencies are currently utilizing a biometric solution in their “The Linebacker Program.” These agencies were faced with a large influx of illegal aliens who were arrested multiple times for not only illegal border crossing but also crimes committed in the local communities. Many of these detainees use multiple aliases and are not easily identifiable. The 3-D Facial Biometrics Identification System scans a person’s face and can capture up to 20,000 points of minutiae to compare to a previously captured image.<sup>20</sup> At present time, this system can scan and capture images at relatively slow speeds, e.g., under 30 mph, however the company is working on adapting the technology to high-speed use.

### **Identifying the Vehicle**

License plate reader (LPR) technology is currently being used by the CHP to detect stolen vehicles with great success. An LPR is comprised of seven components: a camera which takes images of the car (front or rear); an illumination unit which projects infra-red light to permit day and night operation and is invisible to the driver; a “frame grabber” which is an interface board between the camera and the computer; a computer which runs the LPR application that controls the system, reads the images, analyzes and identifies the plate, and interfaces with other applications and systems; the software which is the application and the recognition package; the hardware comprised of various input/output boards used to interface the system with external systems; and the database.<sup>21</sup>

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<sup>20</sup> Securus Technologies, Customer Impact Evaluation, Review 1027864, May 1, 2007

<sup>21</sup> <http://www.licenseplaterecognition.com>, Accessed October 30, 2007

Both fixed and mobile license plate readers scan and capture a digital image of license plates, which read the image of license plate by the use of optical character recognition and compare the results to a stolen vehicle database. This system could be modified to permit direct access to Department of Motor Vehicle registration records to allow for instant vehicle and registered owner identification and automated issuance of a citation. The question remains, though: does our ability to do these things mean we should embark on an ASE program?

### **An expert panel weighs in**

On August 30, 2007, a panel of individuals representing a cross section of disciplines was convened at the CHP Academy in West Sacramento, California to discuss the impact of ASE technology on law enforcement operations.<sup>22</sup> The panel members were carefully chosen for their diverse credentials, formal training and education, and levels of expertise on issues related to ASE technologies. Office Chief Greg Larson, who is CALTRANS resident expert on ASE technology, firmly believed the use of ASE complemented traditional traffic law enforcement strategies, rather than negating or eliminating them. Chief Larson shared the straightforward concept of using current cruise control technology to limit or control a vehicle's speed and the ability of vehicles to interact with intelligent highway systems. The consensus of the panel was

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<sup>22</sup> In attendance were— the California Department of Transportation (CALTRANS Chief) of the Office of Traffic Operations Research, Division of Research and Innovation who is subject matter expert in ASE technology; a Senior Transportation Planner who is a subject matter expert in ASE research studies; a Criminal Justice Professor from California State University, Sacramento who is a criminal defense attorney and former Assistant United States Attorney; a Research Program Analyst who is a subject matter expert in red light enforcement laws and policies; a Senior Staff Counsel who is a subject matter expert in risk management; a Labor Representative from the California Association of Highway Patrolmen; a Sacramento County Red Light Enforcement Program Manager who is a CHP Officer who issues citations and testifies in court based upon the technology; the California Department of Motor Vehicles (DMV) Chief of the Program & Policy Development Branch, Licensing Operations Division who oversees driver license security and biometrics research; a Data Processing Manager III who has a diverse knowledge of information technology; and an Information Security Officer who is a Certified Information Systems Security Professional (CISSP).

that there is a misconception amongst traffic engineering and information technology experts that the only challenge to integrating ASE into law enforcement operations would be the type of technology to use. Senior Transportation Planner John Keller pointed out, “ASE technology cannot be implemented without the support, authorization, and mandate, of the California Legislature.” The panel agreed and concluded before potential benefits could be realized, statutes in the California Vehicle Code must be revised to permit the use of ASE. Everyone agreed that ASE could be viewed as a “Force Multiplier” in the battle to reduce speed related deaths and injuries.

### **Legislative and social concerns**

Notwithstanding compelling traffic collision statistics, legislative support for such change has been difficult to garner. Significant opposition to using ASE technology to enforce speed laws continues to exist in California. In fact, legislative bills have failed passages in the last two legislative sessions.<sup>23</sup> Opponents to this legislation include the Association for Los Angeles Deputy Sheriffs, California Association of Highway Patrolmen, and the Riverside Sheriff’s Association.<sup>24</sup> These groups raise several concerns and criticisms with regard to the use of automated enforcement for any purpose.

Among their chief concerns are allowing photographs to be taken of motorists, which are perceived as an intrusion into one’s privacy. Other objections involved the use of ASE primarily

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<sup>23</sup> Senate Bill 446 (2006-2007 Session) authored by California Senator Sheila Kuehl, Senate District 23; Senate Bill 1300 (2006-2007 Session) authored by California Senator Sheila Kuehl; Assembly Bill 23 (2007-2008 Session) authored by Assemblywoman Fiona Ma, 12<sup>th</sup> District; and Senate Bill 1325 (2007-2008 Session) authored by California Senator Sheila Kuehl, Senate District 23.

<sup>24</sup> Jennifer Gress, Senate Transportation & Housing Committee Analysis of SB 1325, February 20, 2008, 10. Available from the Office of the Secretary of the Senate, California. [http://info.sen.ca.gov/pub/07-08/bill/sen/sb\\_1301-1350/sb\\_1325\\_cfa\\_20080424\\_153817\\_sen\\_comm.html](http://info.sen.ca.gov/pub/07-08/bill/sen/sb_1301-1350/sb_1325_cfa_20080424_153817_sen_comm.html). Accessed June 21, 2008.

to generate revenue; ASE hampering officers' efforts to educate motorists they have stopped regarding their unsafe driving behavior; ASE allowing unsafe driving behaviors to continue at the time they are occurring; and preventing opportunities for the enforcement of other traffic offenses such as aggressive or reckless driving, driving under the influence, or unlicensed driving.<sup>25</sup> The most fundamental concern of these groups is that ASE is incapable of determining whether or not a driver is violating California's basic speed law, which requires discretion on the part of a law enforcement officer.<sup>26</sup> Such discretion is difficult when enforcement is automated and machines are pre-set with a speed over which a driver is deemed to be driving at an unsafe speed.

The State's judiciary will have an opportunity this year to weigh on the issue of ASE. The only active ASE program in California, started in 1995, is in the City of San Jose. The Neighborhood Automated Speed Compliance Program (NASCP) uses technology to address neighborhood speeding complaints. Three unmarked vans equipped with radar units and cameras take pictures of vehicle license plates and motorists driving faster than a predetermined threshold over the posted speed limit. The photographs are forwarded to Redflex Traffic Systems, Inc., a private company under contract with the City of San Jose, to insert the information into a Notification of Observed Violation of Speed ("Notice") which is mailed to the registered owner of the vehicle. The Notice advises the registered owner that he/she, or someone driving his/her vehicle, was observed driving in violation of the speed law. The registered owner is provided the opportunity to view the photographs taken when the violation occurred and either declare his/her innocence

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<sup>25</sup> Ibid. 5

<sup>26</sup> California Vehicle Section 22350, which states, "No person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property."

or acknowledge driving the vehicle and submit a completed “Request to File an Infraction Complaint.” If the owner acknowledges driving the vehicle, the Santa Clara County Traffic Court issues a "Courtesy Notice" advising the owner of the fines due for the traffic violation. If the owner does not respond to the Notice, or responds in writing that he/she was not driving the vehicle and does not indicate who might have been the driver, City Department of Transportation (DOT) staff obtain a photo of the vehicle's registered owner from the DMV and compare it to the individual shown in the NASCP photographs. If the individual depicted in the photographs is believed to be the same individual, all documents are sent to the Traffic Court with a request for an Infraction Complaint to be issued.<sup>27</sup>

On February 13, 2007, recognizing legal concerns, the San Jose City Council voted to modify their NASCP from an enforcement program to a warning program; and directed their DOT to work with the City Manager’s Office and City Attorney’s Office to explore legal options to retain or reinstate the NASCP for the purpose of photo radar enforcement on local streets.<sup>28</sup> On April 21, 2008, however, Mr. Jorge Ramirez filed a class action lawsuit against The City of San Jose based on citations issued via NASCP.<sup>29</sup> Mr. Ramirez alleges the NASCP relied upon city engineers, not police officers to issue citations, and issued about \$5 million worth of tickets for over ten years in spite of the program being prohibited by the California Vehicle Code. Mr. Ramirez alleges the citations resulted in a multitude of fines and an increase in drivers’ insurance rates and contends since the tickets were illegal; the city should pay drivers back what it got from

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<sup>27</sup> James R. Helmer, Transportation and Environment Committee Agenda, City Council, City of San Jose, Recommended Modification to the Photo Radar Speed Enforcement Program, February 13, 2007. Available from the Office of the City Clerk, City of San Jose.

[http://www.sanjoseca.gov/clerk/CommitteeAgenda/TE/022207/TE022207\\_1.pdf](http://www.sanjoseca.gov/clerk/CommitteeAgenda/TE/022207/TE022207_1.pdf). Accessed June 21, 2008.

<sup>28</sup> Ibid.

<sup>29</sup> Jorge Ramirez vs. The City of San Jose, California Department of Motor Vehicles, Redflex Traffic Systems, Inc., Superior Court of California, County of Santa Clara, Case #108CV110886

the program. Considering the legal roadblocks ahead, how can California realize the benefits of ASE technology, while complying with existing speed trap laws?

### **A viable model**

Traditionally, an officer detects a speeding vehicle, initiates a traffic stop, and issues the violator a traffic citation. The violator appears in court and is either found not guilty or guilty. Upon conviction, the violator is subjected to a combination of fines, incarceration, license restriction/suspension, vehicle impoundment/seizure, mandated driver education, community service, or probation. A viable alternative to this traditional punitive model would be to complement it with a paradigm based upon a private-public partnership to implement a non-traditional ASE safety project.

As envisioned, this project would be funded primarily by insurance companies. A joint program could fund the installation of mobile ASE to target areas which experience a high incidence of speeding related traffic deaths or injuries or traffic complaints. Based on the sampling data captured, insurance companies could increase or decrease insurance premium rates. Individuals who are detected consistently complying with speed laws would obtain discounted insurance premiums, while chronic violators would receive increased premiums. Insurance companies could offer a fee-based subscription service for companies and governmental agencies so employers could monitor their fleet operations and take appropriate corrective action or rewards for individual driving behavior.

Fleet operators could also use GPS technology to track employee's compliance with speed laws and provide this data to their insurance company to obtain additional discounts. Another incentive could be to provide companies with discounted insurance premiums for employees consistently complying with speed laws, or hiring individuals with a documented history of complying with speed laws. Basing rates upon this data would be consistent with Proposition 103, passed by the California voters on November 8, 1988 and California Insurance Code Section 1861.02 which permits rates and premiums to be established based upon a driver's safety record.<sup>30</sup>

Why would insurance companies be interested? They have a vested interest in reducing the number of traffic collisions, thus reducing the amount of claims paid out. According to Mr. Robert Wilson, who worked for 33 years as an Assistant Vice President for Claims, covering the Western States with the Government Employees Insurance Company (GEICO), funding these types of initiatives by the insurance industry is not new. Wilson, a current National Crime Insurance Bureau (NICB) Membership Director, points out the NICB is a great example of the insurance industry partnering with law enforcement to reduce crime, and lower insurance premiums. For nearly 100 years the NICB, a not-for-profit organization that receives support from approximately 1,000 property/casualty insurance companies, has partnered with insurers and law enforcement agencies to facilitate the identification, detection and prosecution of insurance criminals.<sup>31</sup>

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<sup>30</sup> California Insurance Code Section 1861.02. <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=ins&group=01001-02000&file=1861.01-1861.16>. Accessed April 5, 2008.

<sup>31</sup> Who We Are, National Crime Insurance Bureau, 2008. <https://www.nicb.org/cps/rde/xchg/nicb/hs.xml/18.htm>. Accessed June 21, 2008.

Why would traffic safety professionals and community members seek this partnership?

According to the City of San Jose, ASE lowers the frequency of speed-related traffic collisions, increases driver compliance with posted speed limits, diminishes the need for spending funds on costly physical traffic calming devices to reduce speeding, decreases the number of speed related citizens' complaints, and overall improves the quality of life in communities.<sup>32</sup> ASE has been a success in locales where its use is permitted by law. A four year study of ASE deployment in Great Britain revealed that vehicle speeds were down by 91 percent at fixed camera sites and 36 percent at mobile camera sites. Injury and fatal statistics were also impressive. Overall, roadway segments with ASE realized a 22 percent reduction in injury collisions, and a 42 percent in fatal or serious injury collisions.<sup>33</sup> Deploying ASE in problem areas is also consistent with the Automated Speed Enforcement Resolution adopted on October 16, 2007, by the International Association of Chiefs of Police (IACP) at their 114<sup>th</sup> Annual Conference in New Orleans, Louisiana. The IACP endorses that ASE be deployed to high-collision locations, and without regard to fine revenues.<sup>34</sup>

## **Conclusion**

To borrow Malcolm Gladwell's postulate in his book, "The Tipping Point," what will be the tipping point which moves us toward or away from ASE technology? Public outrage at the

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<sup>32</sup> James R. Helmer, Transportation and Environment Committee Agenda, City Council, City of San Jose, Recommended Modification to the Photo Radar Speed Enforcement Program, February 13, 2007, 5. Available from the Office of the City Clerk, City of San Jose.

[http://www.sanjoseca.gov/clerk/CommitteeAgenda/TE/022207/TE022207\\_1.pdf](http://www.sanjoseca.gov/clerk/CommitteeAgenda/TE/022207/TE022207_1.pdf). Accessed June 21, 2008.

<sup>33</sup> The national safety camera programme: Four-year evaluation report, June 2004. Available from the Department for Transport, United Kingdom.

<http://www.dft.gov.uk/pgr/roadsafety/speedmanagement/nscp/nscp/thenationalsafetycameraprogr4597>. Accessed July 7, 2008.

<sup>34</sup> International Association of Chiefs of Police Resolution, Automated Speed Enforcement, S&P.033.a07, October 16, 2007. Available from the International Association of Chiefs of Police.

<http://www.theiacp.org/resolutions/2007Resolutions.pdf>. Accessed May 2, 2008

growing number of traffic deaths? Deaths of high profile persons or celebrities? Or negative stories associated with privacy invasions or defective or hacked ASE systems in other states? What works is certain—a robust enforcement, education, and engineering approach to traffic safety applied enthusiastically will reduce deaths and injuries due to speed-related traffic collisions.<sup>35</sup> However, with the projected increase in the number of registered vehicles, licensed and unlicensed drivers, and millions of miles travelled in California it will be difficult, if not impossible, to sustain a long-term effort to attract, hire, train and maintain an adequately sized traffic law enforcement operation(s) to meet the future demands placed upon California’s local and state transportation system.

In an era of limited budgets, staffing shortages, and an ever increasing demand for services, it is logical to include ASE technology as a force multiplier in the arena of traffic safety and the noble goal of saving lives. It is time to look to the advances in emerging technology and forge a sophisticated system, coupled with sound, fair legal constraints to complement traditional traffic law enforcement operations. If law enforcement does not take the leadership role in guiding the use of ASE technology, then the technology and its implementation, or lack thereof, will zip by us in the fast lane.

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<sup>35</sup> Strategic Highway Safety Plans, A Champion’s Guide to Saving Lives, Interim Guidance to Supplement SAFETEA-LU Requirement, October 14, 2005. Available from the United States Department of Transportation, Federal Highway Administration, <http://safety.fhwa.dot.gov/safetealu/shsppreview.htm#introduction>. Accessed June 23, 2008

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