


**CITY OF LOS ANGELES**  
INTER-DEPARTMENTAL MEMORANDUM

**Date:** October 7, 2015

**To:** Transportation Committee  
c/o City Clerk, Room 395, City Hall  
Attention: Honorable Mike Bonin, Chair

**From:** Seleta J. Reynolds, General Manager  
Department of Transportation 

**Subject:** **ENHANCED SPEED ENFORCEMENT AND TOOLS TO REDUCE SPEEDING  
(COUNCIL FILE NO. 15-1006)**

**SUMMARY**

Council Motion 15-1006 (Englander-Bonin) asked the Los Angeles Department of Transportation (LADOT), in consultation with the Los Angeles Police Department (LAPD), to provide a report on the current state of speed enforcement in the City of Los Angeles, and make recommendations to more effectively enforce safe travel speeds. Additionally, the departments were asked to report on pilot projects that could be implemented quickly to reduce speeding.

The process of setting speed limits in California can present challenges for municipalities. With Vision Zero, proper perspective on the issue of speed as it relates to motor vehicle injuries, guides a path forward.

**BACKGROUND**

**Vision Zero and the High Injury Network**

The Mayor's Executive Directive No. 10, issued on August 24, 2015, commits the City to eliminate traffic fatalities by 2025. Fundamental to the Vision Zero principles and goals is a discussion on vehicle speeds since speed is a primary indicator of whether or not a person will survive a crash. According to the Federal Highway Administration (FHWA) and the Insurance Institute of Highway Safety, speeding was a contributing factor in about 30% of crash fatalities nationwide in 2013.<sup>1</sup>

Additionally, speed is a fundamental predictor of crash survival. Research has shown that increasing vehicle speed from 20 mph to 40 mph increases the likelihood of a pedestrian death when hit, from 10% to 80%. Slower speeds also increase a driver's field of vision and allow for more time to react to unexpected situations.

Work on the Vision Zero initiative has led to the identification of the High Injury Network (HIN). The HIN (Attachment A) is the network of streets with the highest incidence of severe and fatal collisions, accounting for 65% of all fatalities and severe injuries involving people walking. The HIN covers 6% of the City's street miles. Therefore, the HIN includes areas where speeds should be more closely scrutinized.

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<sup>1</sup> [www.iihs.org/iihs/topics/t/general-statistics/fatalityfacts/overview-of-fatality-facts](http://www.iihs.org/iihs/topics/t/general-statistics/fatalityfacts/overview-of-fatality-facts)

## California Speed Laws

The Los Angeles Department of Transportation (LADOT) has authority to establish certain speed limits, by ordinance, on City streets, as prescribed in State law and the Los Angeles Municipal Code (LAMC). LADOT must follow the guidelines and requirements of the California Vehicle Code (CVC) and the California Manual of Uniform Traffic Control Devices (MUTCD) when establishing speed limits.

The following is a summary of the key provisions of speed laws in California:

- Basic speed law (CVC 22350): 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.
- Prima Facie Speed Limits (CVC 22352): The State establishes prima facie speed limits. The State establishes a prima facie speed limit of 15 mph at certain railroad crossings, at uncontrolled “blind” intersections and on alleys. A prima facie speed limit of 25 mph applies to streets, not designated as State Highways, in any business or residence district, a school zone or near a senior center.
- CVC 22349: For all other roadways, the speed limit where no signs are posted is 65 mph, except for two-lane undivided highways with one lane in each direction, where the speed limit is 55 mph.
- CVC 22357 & 22358: Whenever a local authority determines by conducting an Engineering and Traffic Survey (ETS) that a speed greater than the 25 mph prima facie speed limit or lower than the 65 mph speed limit, as described above, would facilitate the orderly movement of vehicular traffic and would be reasonable and safe, the local authority may declare a prima facie speed limit of five mile-per-hour increments between 25 mph and 65 mph. The declared prima facie or maximum speed limit shall be effective when appropriate signs giving notice are erected and shall not be revised except upon the basis of an ETS.
- School slow zones (CVC 22358.4): The school zone speed limit of 25 mph described above may be reduced to 20 mph and 15 mph as the vehicle approaches the school on streets with a maximum of two lanes and a maximum posted speed limit of 30 mph prior to and after the school.
- Engineering and Traffic Survey (CVC 627): A survey of highway and traffic conditions in accordance with methods determined by California Department of Transportation (Caltrans) for use by state and local authorities to determine speed limits. Further explanation is given below.
- CVC 21400(b): To determine the speed limit, local authorities are to round the 85<sup>th</sup> percentile speed of free-flowing traffic to the nearest 5 mph increment. However, if this indicates rounding up, the local authority may instead round down to the nearest 5 mph increment, but shall not reduce the speed limit any further for any reason.
- CVC 22358.5: Width, curvature, grade and surface conditions, or any other condition readily apparent to the driver would not indicate a need to further lower the speed limit, as the Basic Speed Law is sufficient to address such conditions.
- CVC 40802: Defines a “speed trap”.

## Engineering and Traffic Surveys

An engineering and traffic survey (ETS), as mandated in CVC 627, is an engineering study that is used to determine speed limits. The California MUTCD directs the methodology that municipalities shall follow in determining appropriate speed limits. The Traffic Surveys section in LADOT collects the necessary

data and prepares the necessary documents for each segment to be studied and submits it to the local LADOT district office for review.

An ETS involves the collection and analysis of the following information and data:

- Field investigations of roadway geometry, conditions, curvature, grade, driveways, traffic controls, signs, parking, and roadside development
- Vehicle counts conducted at various points in the segment to determine average daily traffic (ADT)
- Spot speed studies at various locations in the segment. The speed of 100 vehicles in each direction is measured. Locations should be midblock and measure the speed of free flowing traffic (uninhibited by controls).
- Collision data to determine if there is an unusually high collision rate for the type of facility under study

The speed limit determination begins by using the spot speed data, collected in an unmarked vehicle, and ranking the speed of the 100 vehicles. The critical speed, also called the 85<sup>th</sup> percentile speed, is the speed at which 85% of the drivers are driving at or below. Speed limits should be posted to reflect the maximum speed that is considered safe and reasonable by the majority of drivers. The majority of motorists select a speed that they feel is safe based on the conditions presented to them. Research has shown that the upper region of acceptable risk to motorists is in the vicinity of the 85<sup>th</sup> percentile speed.

Speed limits that are set near the 85<sup>th</sup> percentile speed are more consistent and result in a predictable traffic flow. Studies have shown that artificially lowering speed limits below what is required by the MUTCD has little effect on actual speeds. Additionally, collisions have been shown to increase with artificially lowered speed limits, due to the greater variation in vehicle speed that typically results.<sup>2</sup> The Federal Highway Administration (FHWA) has reported that speed limits that are set too high or too low can increase the risk of collisions.<sup>3</sup> An artificially low speed limit would cause a higher number of drivers to be in violation of posted speed limits and would require constant enforcement.

LADOT follows these guidelines in determining speed limits as required by the State of California. The current MUTCD allows two options for modifying the indicated speed limit. A high collision rate (calculated as collisions per million vehicle miles) as compared to the average for the type of roadway, would justify the additional lowering of the speed limit under Option 1 and indicates that there may be conditions not readily apparent to the driver. Other non-apparent conditions include traffic generators that are not visible to the motorist. Non-apparent conditions may not be used to lower the speed limit more than 5 mph in total. Rounding down from the nearest 5 mph increment to the critical speed is allowed (Option 2), as long as no further reductions are taken due to conditions that are not readily apparent (non-apparent) to the driver.

Examples are shown in the following table:

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<sup>2</sup> FHWA publication No. FHWA-RD-92-084

<sup>3</sup> FHWA publication No. FHWA-RD-98-154

Critical Speed (mph)	Indicated Speed Limit Nearest 5 mph Increment	Speed Limit - Option 1	Speed Limit - Option 2
		Can reduce the nearest 5 mph increment by 5 mph based on conditions not readily apparent to the motorist	Can round down to the nearest 5 mph increment from the critical speed, if no further reductions are taken for non-apparent conditions
35	35	30	35
34	35	30	30
33	35	30	30
32	30	25	30
31	30	25	30
30	30	25	30

Conditions such as width, curvature, and poor surface conditions are readily apparent to the driver and cannot be used to lower the speed limit (per CVC 22358.5).

LADOT generally sets the speed limit as low as is practical and allowed by these guidelines. Based on these principles, a renewed speed survey could result in the increase of the speed limit at certain locations. Justification of the speed limit based on the ETS will allow for enforcement of the speed limits by electronic means. Changes in speed limits will require an ordinance to the LAMC authorizing the change.

### Enforcement and Speed Traps

Speed traps cannot be used to determine speed and enforce a speed limit. A speed trap is clearly defined in the CVC (40802). The first definition states that a jurisdiction cannot use the time it takes to traverse a particular section of roadway in order to determine a vehicle's speed.

The second definition states the circumstances under which jurisdictions are allowed to use electronic means to determine vehicle speed. This definition of a speed trap involves the use of radar, laser, or other electronic equipment that measures the speed of a moving object. If the posted speed limit is not justified by an Engineering and Traffic Survey conducted within the five years prior to the date of the alleged violation, then enforcing the speed limit electronically becomes a speed trap. The five year period can be extended to seven years if the officer shooting the radar/laser is properly certified in the use of the equipment and the electronic device used was calibrated within three years of the alleged violation. Additionally, if a registered engineer determines that no significant changes have occurred on the roadway after seven years, the Engineering and Traffic Survey can be extended for an additional three years.

While electronic methods (radar/laser) cannot be used to enforce speed limits if the ETS is expired, speed limits can be enforced using other methods, such as pacing. In cases of very excessive speed, such as reckless driving and street racing, an ETS is not necessary to cite the violator.

The definition of a speed trap does not apply to a local street or school zone. A local street in this section is defined as a road with a width of not more than 40 feet, not more than one-half mile of uninterrupted length and not more than one traffic lane in each direction, as stated in CVC 22352. No ETS is necessary to enforce the 25 mph speed limit with radar/laser under such conditions.



### **Current Backlog of Engineering and Traffic Surveys**

Currently, the Traffic Surveys section in LADOT has only two full-duty employees that complete the data collection and field investigations for ETS for the entire City. This is down from seven employees a few years ago. Consequently, production of ETS is below the rate at which the surveys are expiring. We estimate that we should survey an average of 200 miles of streets annually in order to keep all ETS current. In the current year, we will renew or extend about 75 miles of speed surveys throughout the City.

Attachment B summarizes the current status of ETS in the City. There are approximately 655 total ETS segments in the City, representing approximately 1224 miles of City streets. While all the miles are enforceable, only approximately 28% of the ETS miles are enforceable by radar or laser. About 408 of the 1224 miles are on the HIN. Of those 408 miles, only 19% can be enforced today with the use of radar/laser, and 81% need renewal or extension.

### **Tools to Reduce Speed**

Speed and speeding are complex issues. Regardless of how the speed limit is determined, there are tools that can be used to reduce the critical speeds. These tools can reduce the prevailing speeds over a period of time and can have permanent lasting effects, while others only provide short-term speed reduction. These can include:

- Speed trailers and speed feedback signs
- Increased police presence
- Road diets (removal of traffic lanes)
- Lane narrowing
- Physical improvements (bump outs, roundabouts, median islands, roadway narrowing)
- Speed humps and speed tables (on residential streets)
- Signal timing techniques
- School slow zones
- Automated red light cameras
- New vehicle technologies
- Automated speed enforcement (ASE)

ASE is currently not allowed in the State of California. Many communities across the country use ASE (136 communities as of June 2012). 12 states currently prohibit the use of speed cameras. If legislation were passed to allow for ASE in California, the experience of these other jurisdictions can help frame a program for Los Angeles.

LADOT and LAPD have used many of these tools over the years, and continue to experiment with new ways of calming traffic. These efforts can be controversial, but if applied with community support and at the proper locations, can be very effective. Recent focus has been on road diets, and restriping to narrow pedestrian crossing distances. Data on the effectiveness of various measures is available through the Federal Highway Administration (FHWA).

**CONCLUSION**

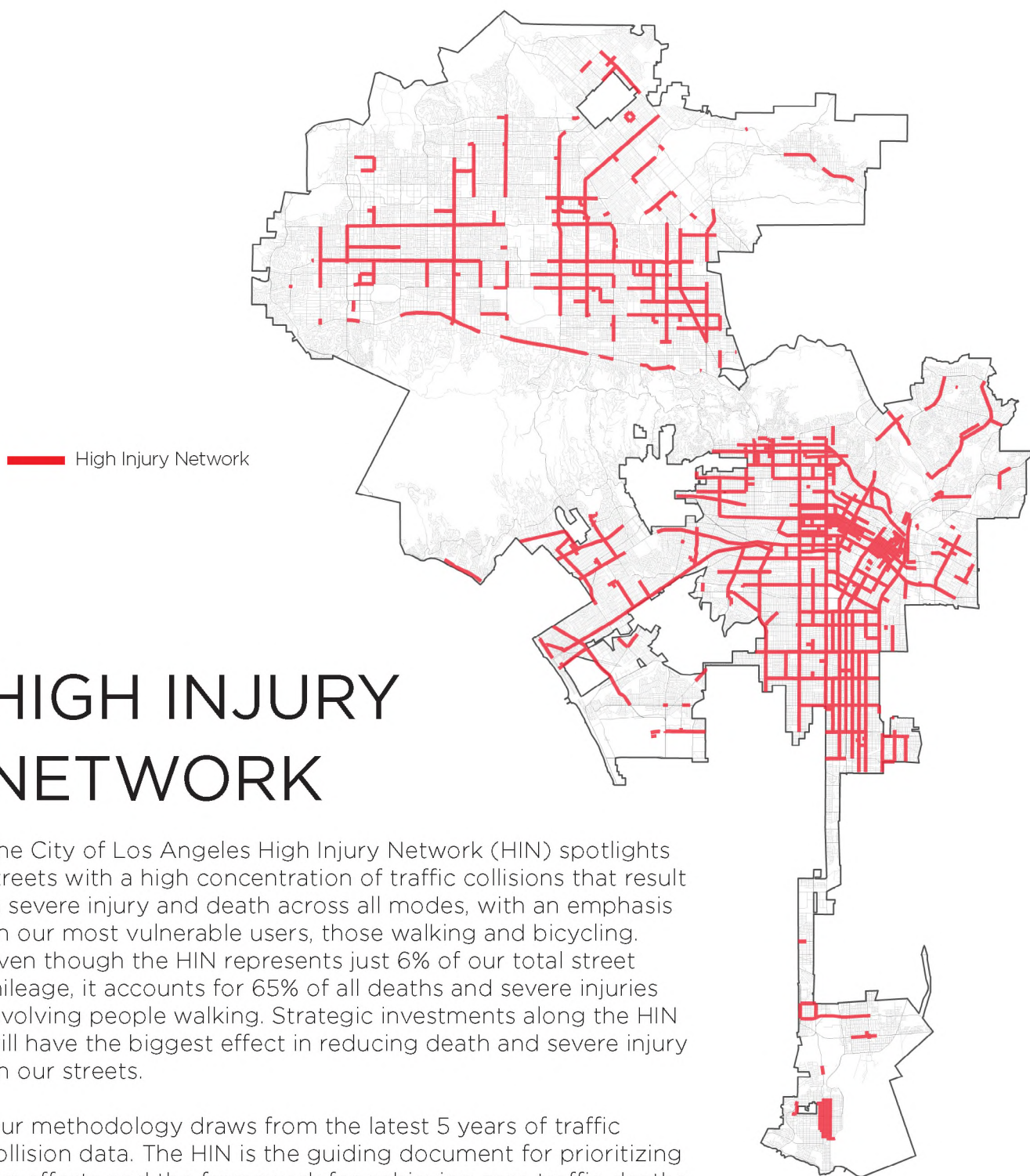
The issues of determining speed limits and speed enforcement can be complex and challenging. Additionally, staffing challenges have resulted in many of the City's speed limits becoming unenforceable by radar. From the new perspective of Vision Zero and the High Injury Network, we can begin to look at strategies to enforce more speed limits and reduce critical speeds, with the goal of eliminating deaths by the year 2025.

SJR:na

**Attachments**

c:      Honorable Mitchell Englander, 12<sup>th</sup> District  
         Honorable Joe Buscaino, 15<sup>th</sup> District  
         Los Angeles Police Department  
         City Attorney's Office

## Attachment A



# HIGH INJURY NETWORK

The City of Los Angeles High Injury Network (HIN) spotlights streets with a high concentration of traffic collisions that result in severe injury and death across all modes, with an emphasis on our most vulnerable users, those walking and bicycling. Even though the HIN represents just 6% of our total street mileage, it accounts for 65% of all deaths and severe injuries involving people walking. Strategic investments along the HIN will have the biggest effect in reducing death and severe injury on our streets.

Our methodology draws from the latest 5 years of traffic collision data. The HIN is the guiding document for prioritizing our efforts and the framework for achieving zero traffic deaths by 2025.

Data Sources: Collision Records, RoadSafe GIS and Statewide Integrated Traffic Records System (SWITRS), January 2009 to December 2013; Streets and City Boundary, Los Angeles September 2015



[visionzero.lacity.org](http://visionzero.lacity.org)

## Attachment B

As of October 1, 2015

### Engineering and Traffic Surveys (ETS) Citywide

Citywide Total	
ETS Segments =	655
ETS Miles =	1224

Citywide - Currently Enforceable by Radar				
ETS Segments =	161	or	25%	of Citywide
ETS Miles =	338	or	28%	of Citywide

Citywide - Not Currently Enforceable by Radar				
ETS Segments =	494	or	75%	of Citywide
ETS Miles =	886	or	72%	of Citywide

### Engineering and Traffic Surveys (ETS) and the High Injury Network (HIN)

Citywide Total	
ETS Segments =	655
ETS Miles =	1224

On the High Injury Network (HIN)				
ETS Segments =	161	or	25%	of Citywide
ETS Miles =	408	or	33%	of Citywide

On the HIN - Currently Enforceable by Radar				
ETS Segments =	39	or	24%	of the HIN
ETS Miles =	78	or	19%	of the HIN

On the HIN - Not Currently Enforceable by Radar				
ETS Segments =	122	or	76%	of the HIN
ETS Miles =	330	or	81%	of the HIN