



# The 5 “E” Approach to Safety

A conceptual look...

Larry Hagen, P.E., PTOE

*“Driving Down Fatalities Through Knowledge Sharing”*





# The Three E's of Safety

- Engineering
- Enforcement
- Education



# The ~~Three~~ E's of Safety Four

- Engineering
- Enforcement
- Education
- EMS

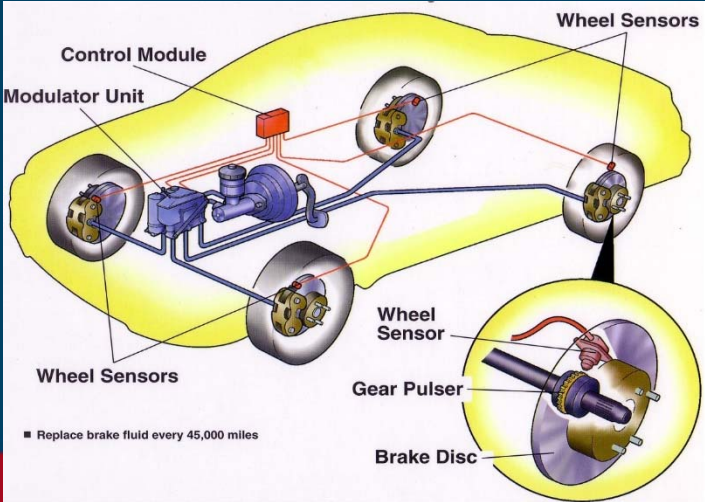


# Five ~~The Three E's of Safety~~ Four

- Engineering
- Enforcement
- Education
- EMS
- ?



# Engineering



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# Engineering

## Warning Signs

### Purpose:

to call attention to **unexpected** conditions and to situations that might **not be readily apparent** to road users





# Engineering

Speed  
feedback  
sign in  
school  
zone





# Engineering



Brite Stick supplementing sign post





# Engineering



Signal Ahead signs with solar-powered flashers

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# Engineering

Qwick  
Kurb



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# Engineering



Audible / vibratory markings to reduce crossover or run-off-road crashes



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# Engineering



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# Engineering

## High-Emphasis Pedestrian Crossings



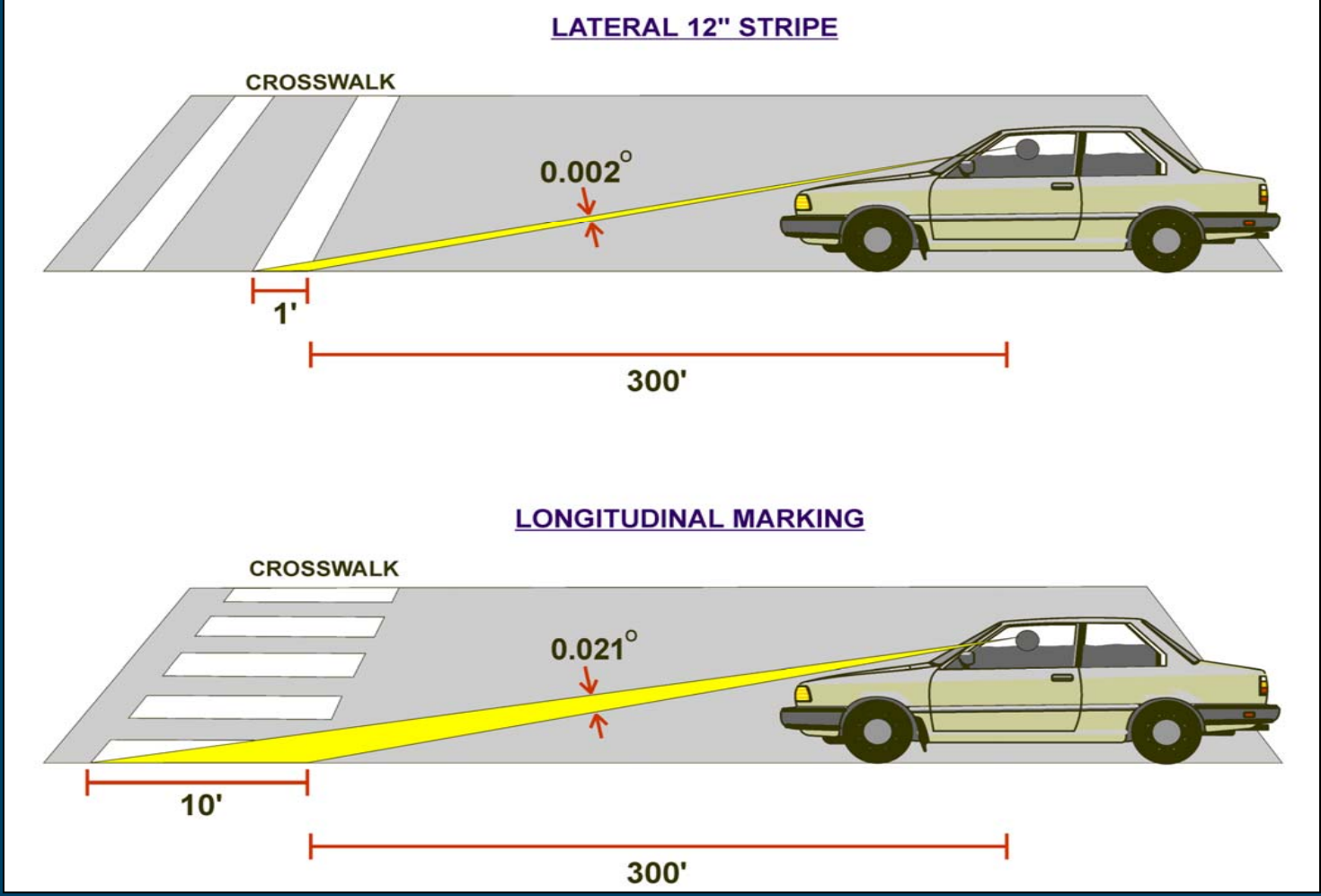
Before

After



# Engineering

High-  
Emphasis  
Pedestrian  
Crossings



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# Engineering



Approximately **25%** of fatal crashes occur along horizontal curves

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# Engineering



Delineation – Markings – Signing – Superelevation

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# Engineering



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# Engineering

**County Road recently resurfaced.**

**Edge drop-off resulted in 3 Fatalities.**



2003. 3. 25 12:13

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# Engineering



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# Engineering

Nebraska Avenue  
(before)



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# Engineering

Nebraska Avenue  
(after)



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# Engineering

Nebraska Avenue  
(after)  
Bus bays





# Engineering



Nebraska Avenue (after) – Bike Lanes



# Engineering

Nebraska Avenue

(after)

Mid-block ped crossing





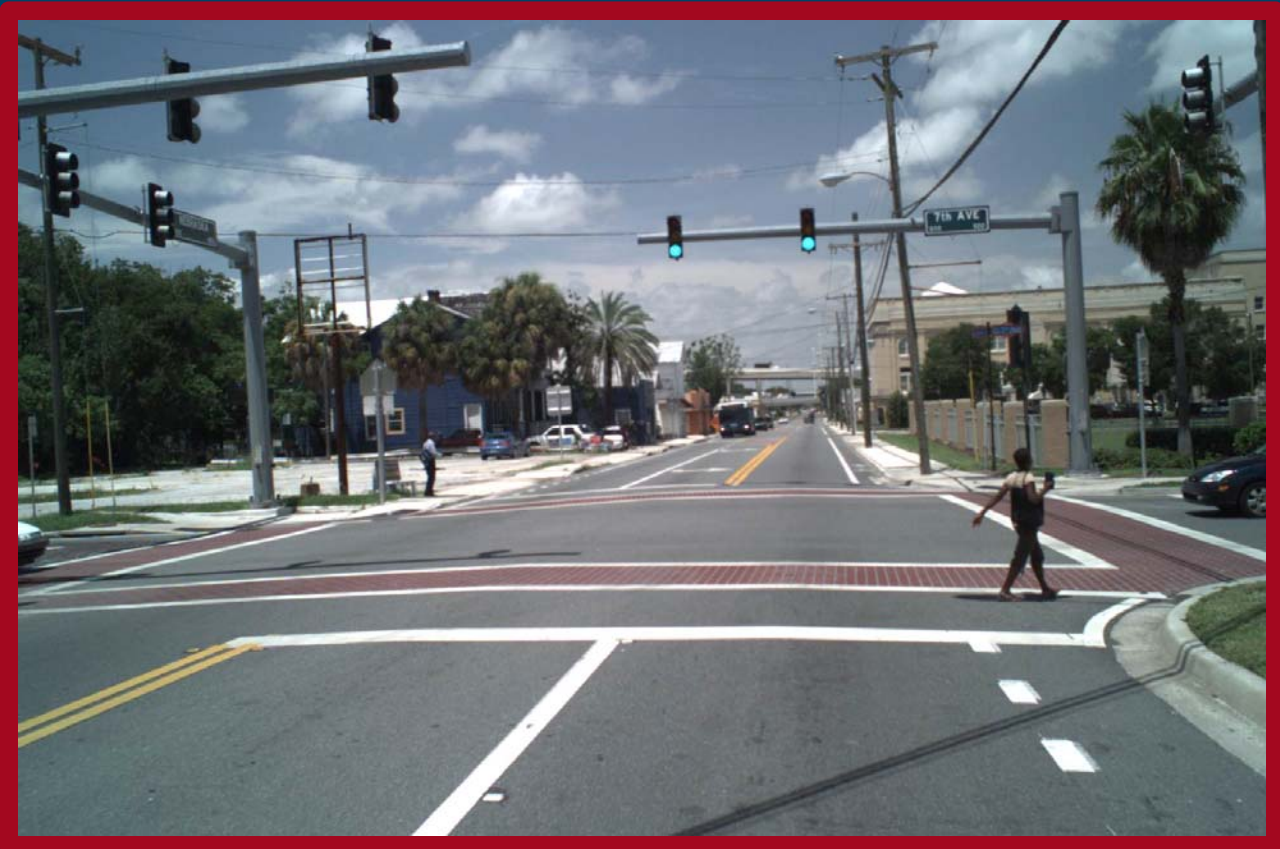


# Engineering

Nebraska Avenue

(after)

Pedestrian signal upgrades





# Engineering



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# Engineering



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# Engineering

## Run-Off-Road Crashes

*Warn*



*Remove*



*Relocate*



*Reduce Impact*



*Shield*



*Delineate*



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# Engineering



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# Engineering



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# Engineering



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# Engineering



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# Engineering



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# Engineering



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# Engineering



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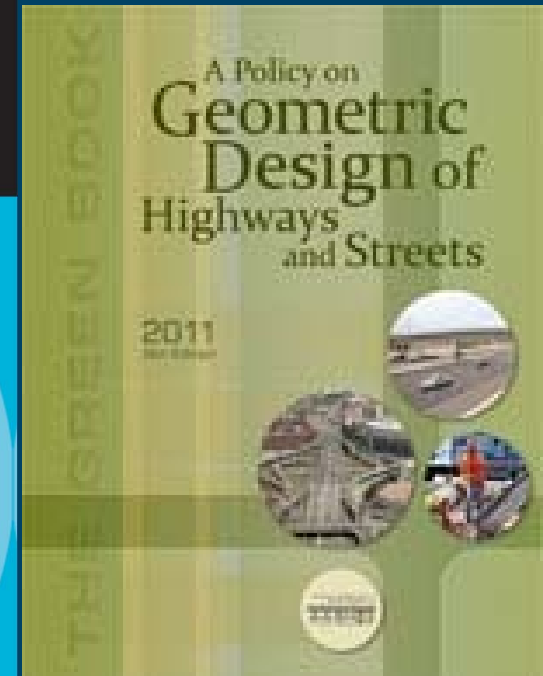
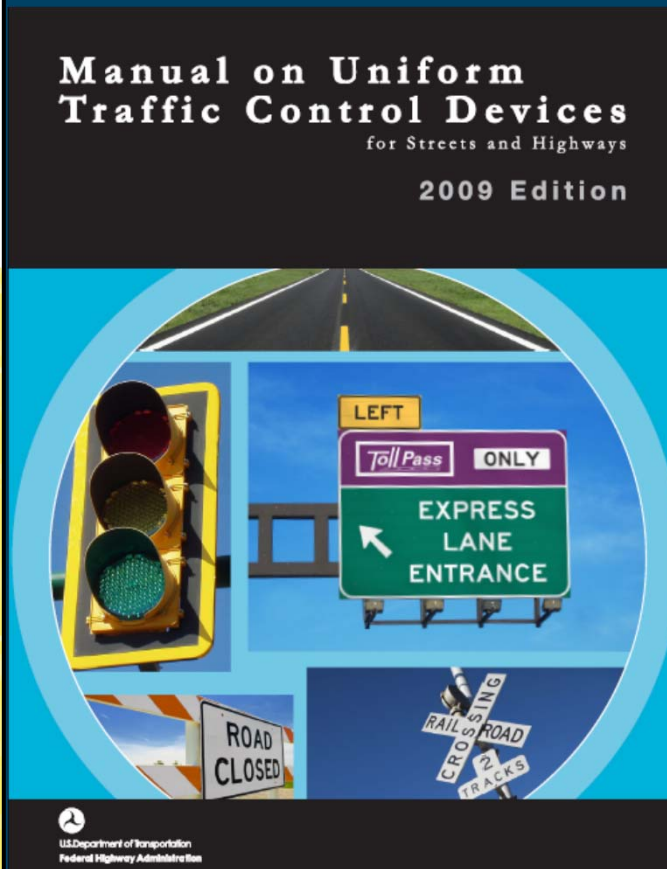
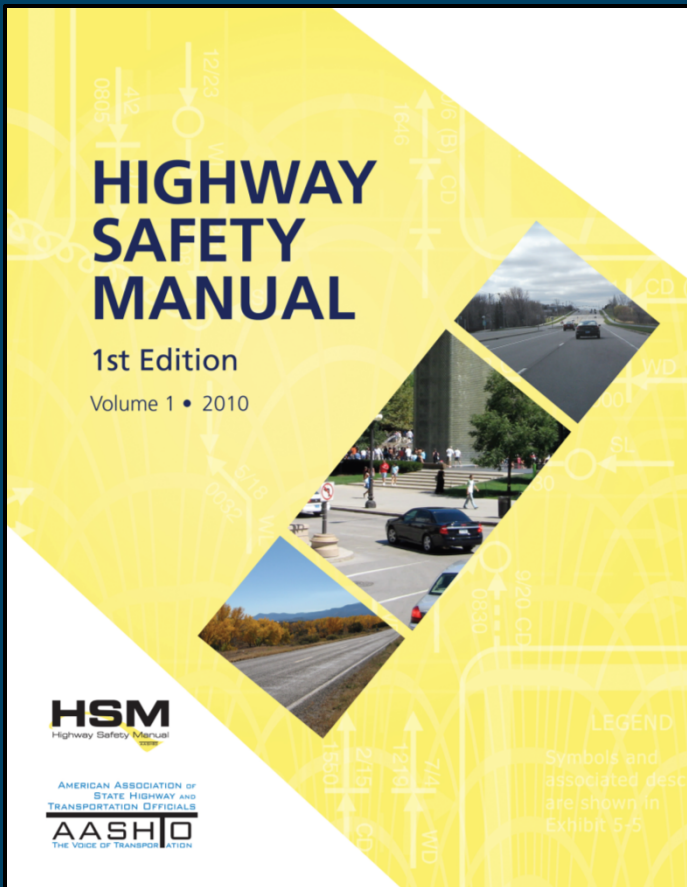
# Engineering



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# Engineering



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# Engineering



Must be enforceable



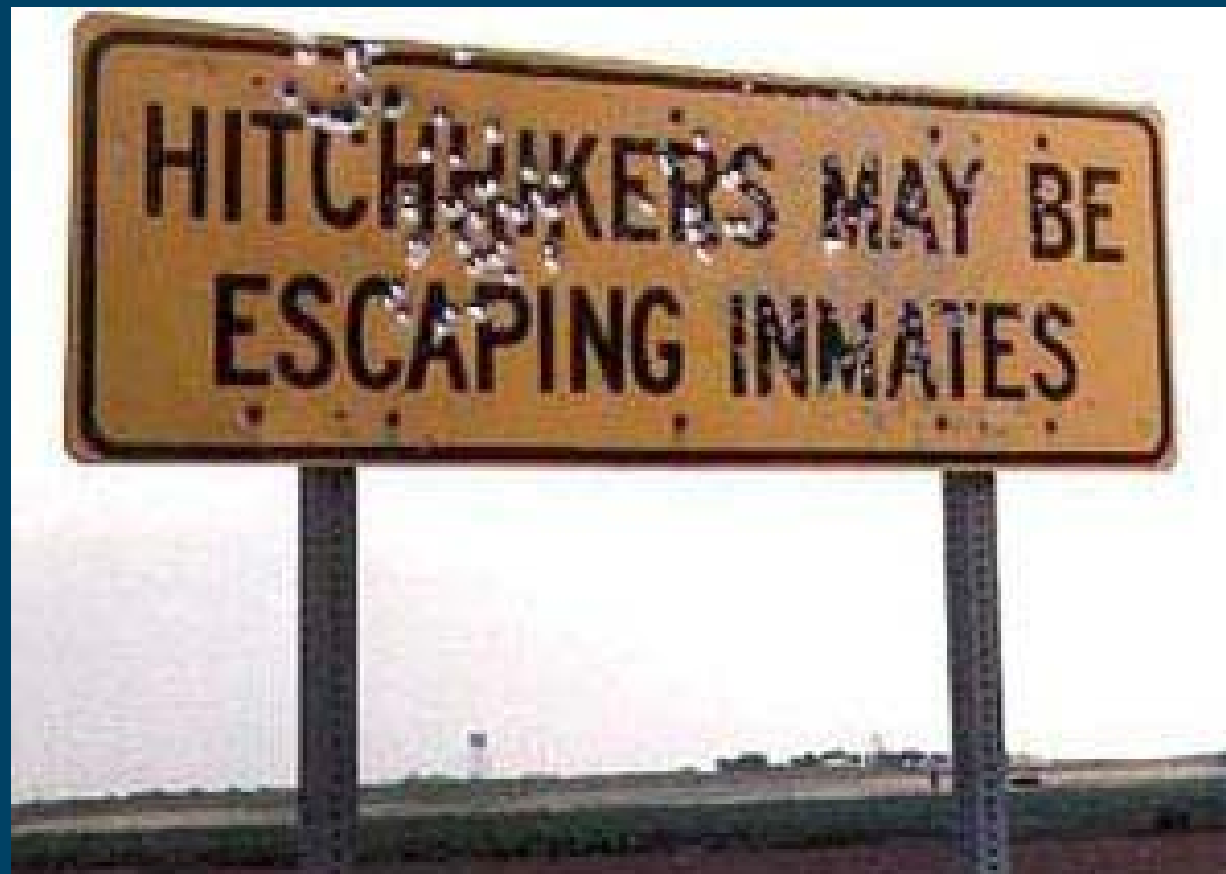
# Enforcement



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# Enforcement







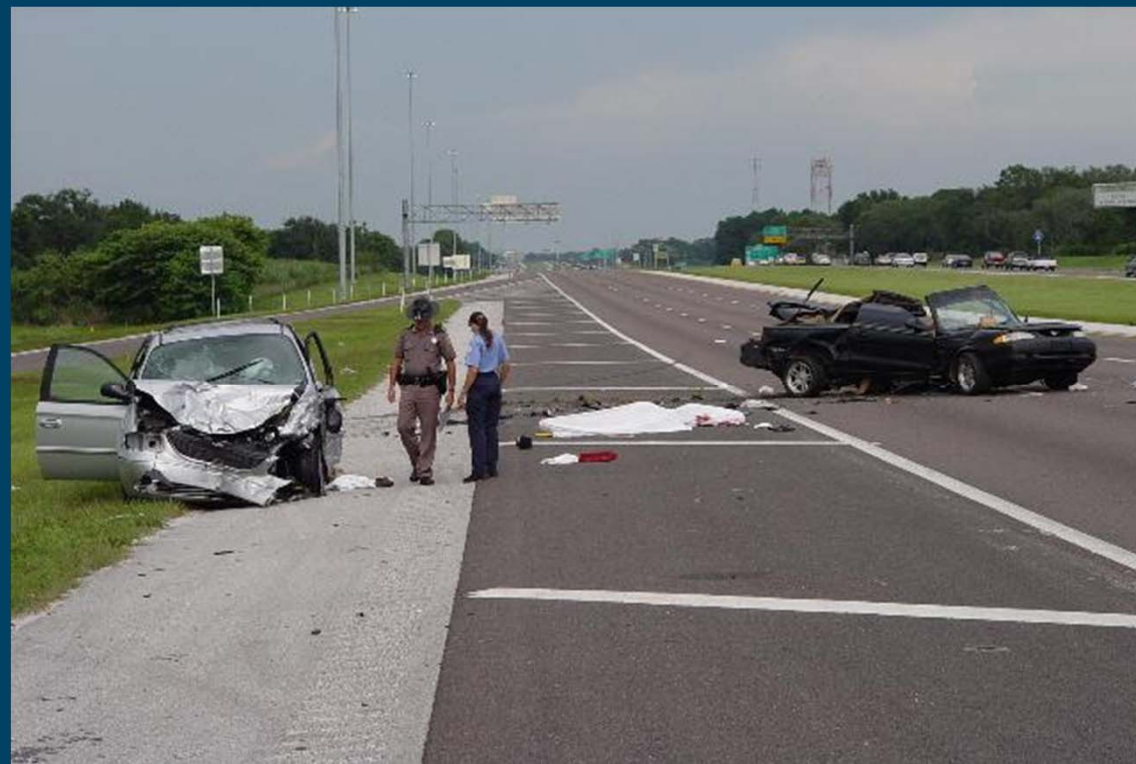
# Enforcement



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# Enforcement



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# Enforcement

**HCSO K-9** *Your Deputy on the Street*

**Tim Bammert & Simba**

**Hernando County**  
[www.hernandosheriff.org](http://www.hernandosheriff.org)  
 352-754-6830

sponsored by the  
Community Traffic Safety Team

**Hernando County**  
[www.hernandosheriff.org](http://www.hernandosheriff.org)  
 1-352-754-6830

*Your Deputy on the Street!*

**HCSO MOTOR UNIT**

*Deputy William Boetiger*

**Hernando County**  
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**HCSO Traffic Unit** *Your Deputy on the Street*

**Deputy Gloria Fribley-Lykes**

**Hernando County**  
[www.hernandosheriff.org](http://www.hernandosheriff.org)  
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**HCSO SRO** *Your Deputy in the School*

**Deputy William Horvath**

**Hernando County**  
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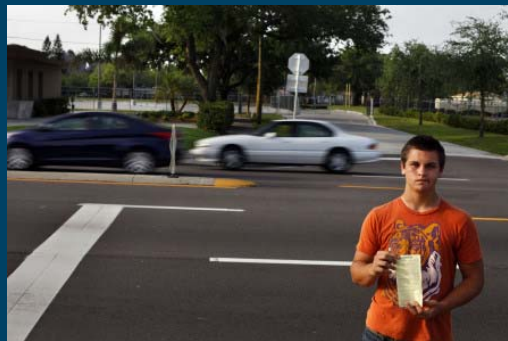
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# Enforcement



Month	Citations
July	367 Warnings
August	399
September	358
October	305
November	281
December	227
January	265



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# Enforcement



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# Education



PEDESTRIAN SAFETY TIP

# 1

Wear bright colors or reflective clothing to increase your visibility.




**GUARD YOUR LIFE**

**Drive Alert**

on 

[www.drivealert75.com](http://www.drivealert75.com)



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# Education

**Motorcycle Safety - Looking Twice May Save a Life!**  
 Highway Safety Program  
 www.ctsc.org

Motorcycle sales are up. Scooter sales are up. Gas prices are up. Highway fatalities are up. Are these things related? YES!!!

**ATV**  
 All Terrain Vehicles

**Florida Road Rules**

**Recipes for the ROAD**

**YOU DO THE MATH**

**Luces Blancas - un Instrumento de Aplicación para Corrimiento de la Luz Roja**

**Hechos y Prácticas Seguras**

Su Equipo de Seguridad de Tráfico de Comunidad

**BUCKLE UP**

Don't think about it, just do it!

Design: Alfredo Alvarez Hillsborough County, FL

**PEDESTRIAN WARNING**

Pedestrians must comply with State Laws. Motorists are not the only ones who can get tickets.

Hillsborough County pedestrian violation fines are \$49.50.

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# Education

Not everyone who gets hit by a drunk driver dies.



Jacqueline Saburido was 20 years old when the car she was riding in was hit by a drunk driver. Today, at 23, she is still working to put her life back together.  
*Learn more at [www.TexasDWI.org](http://www.TexasDWI.org)*

**DON'T DRINK & DRIVE**



Texas Department of Public Safety • Texas Alcoholic Beverage Commission • Texans Standing Tall • Partnership for a Drug-free Texas • Texas Commission on Alcohol and Drug Abuse

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# Education



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# You can't fix stupid...



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# Education



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# Education



## CarFit



[car-fit.org](http://car-fit.org)

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# EMS

- Usually not much of a preventative role
  - Exception - Education
- Usually reactive rather than proactive
- Make crashes more survivable
  - The “Golden Hour”

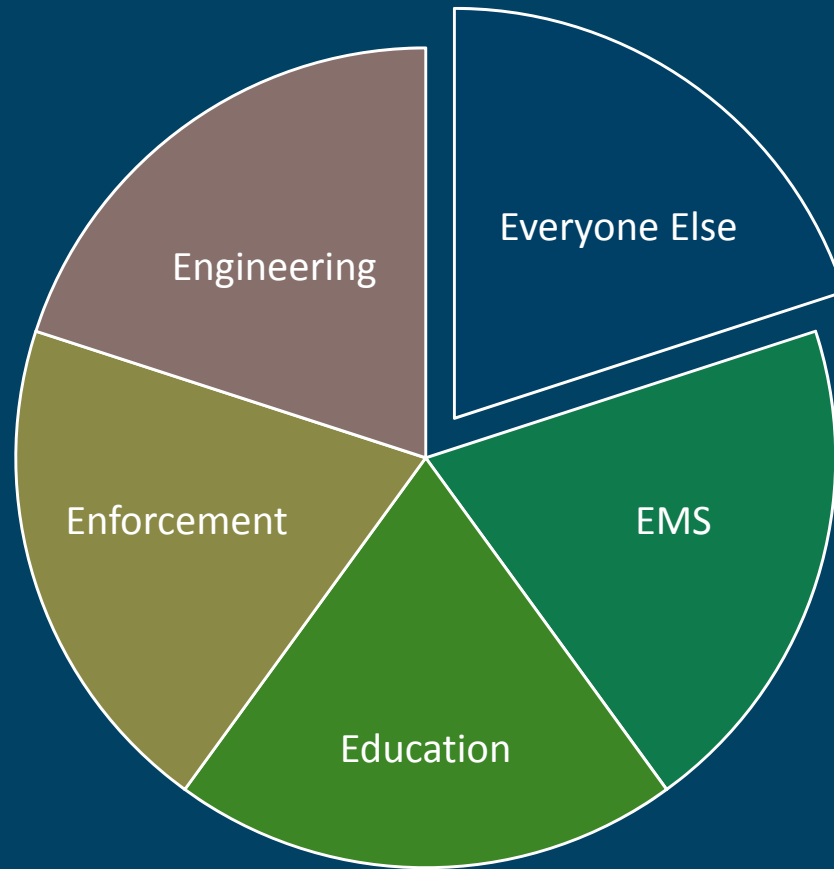


# The Five E's of Safety

- Engineering
- Enforcement
- Education
- EMS
- ?



# The Five E's of Safety



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# The Five E's of Safety

- Engineering
- Enforcement
- Education
- EMS
- Everyone else





# Why is this important...



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# Why is this important...



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# Why is this important...



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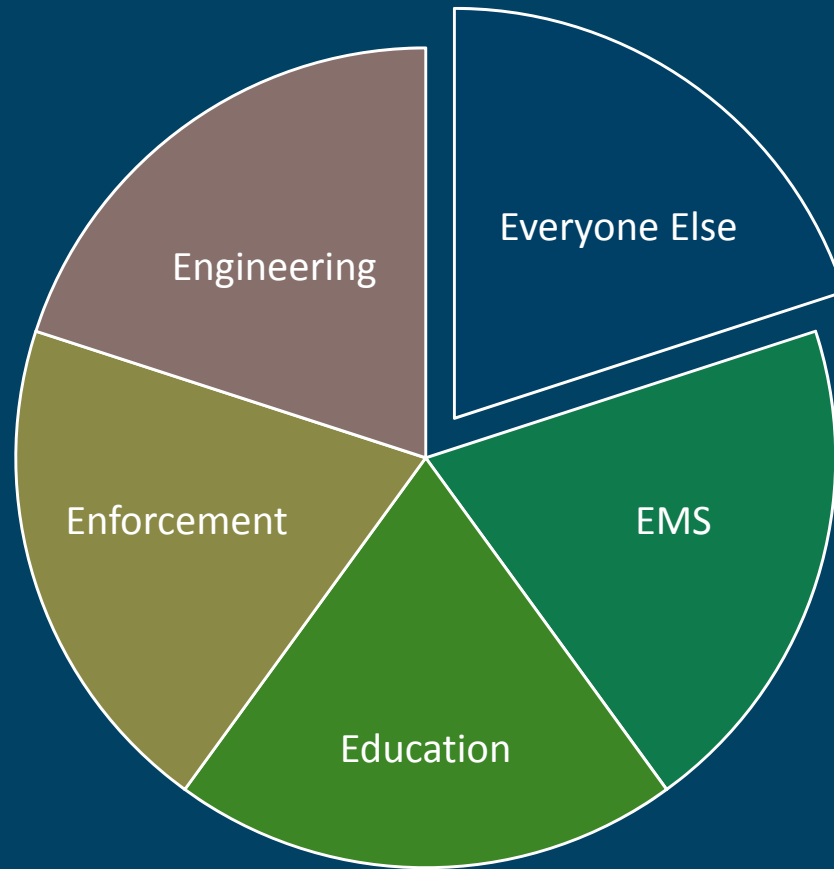
# Why is this important...



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# The Five E's of Safety



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# Questions / Comments?

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