ARE WE THERE YET?

a guide to pedestrian safety incrementalism | transport chicago
AGENDA

I. National Trends

II. Pedestrian Fatality Data 2017

III. Traffic Safety vs. Pedestrian Safety

IV. New Approaches

V. Impacts
NATIONAL TRENDS
PEDESTRIAN / TRAFFIC FATALITIES 1994-2017

SOURCE: NSC tabulations of NHTSA FARS data
WHO IS MOST AT RISK 2017

SOURCE: NSC tabulations of NHTSA FARS data
US Traffic Crash Pedestrian Fatalities

* 2018 estimate based on preliminary data and historical trends
PEDESTRIAN FATALITY DATA
POTENTIAL FACTORS 2008 - 2017

Walking as a share of all trips increased by less than 1%* from 2009 to 2017

Pedestrian deaths increased by 35.4%

Vehicle miles traveled increased by 8.1%

Traffic deaths among motor vehicle occupants decreased by 6.1%

SOURCE: Smart Growth America – Dangerous by Design 2019
TRADITIONAL APPROACH TO ROAD SAFETY

Many E’s

• Enforcement
  • Speeding
  • Drunk driving
• Seat belts
  • Children car seats
  • Motorcycle helmet usage
• Education
• Engineering
• Emergency Medical Services
PUBLIC ROAD LENGTH BY OWNERSHIP 2016

Illinois

RURAL

US Total

URBAN

US Total

STATE HIGHWAY AGENCY  COUNTY  MUNICIPALITY  OTHER  FEDERAL
### 2017 Illinois Strategic Highway Safety Plan (SHSP)

#### Emphasis Area Overview 2010 – 2014

**Road Safety Is More Than a Problem of Driver Behavior**

<table>
<thead>
<tr>
<th>Priority Level</th>
<th>Emphasis Areas</th>
<th>Fatalities</th>
<th>A-Injuries</th>
<th>Fatalities and A-Injuries</th>
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</thead>
<tbody>
<tr>
<td><strong>Priority Level 1</strong></td>
<td>Roadway Departure</td>
<td>2,483</td>
<td>19,279</td>
<td>21,762</td>
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<td></td>
<td>Impaired Driver</td>
<td>2,088</td>
<td>8,331</td>
<td>10,419</td>
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<td></td>
<td>Unrestrained Occupants</td>
<td>1,377</td>
<td>5,041</td>
<td>6,418</td>
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<td></td>
<td>Intersection Related</td>
<td>1,178</td>
<td>26,397</td>
<td>27,575</td>
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<tr>
<td><strong>Priority Level 2</strong></td>
<td>Speeding/Aggressive Driver</td>
<td>1,108</td>
<td>12,884</td>
<td>13,992</td>
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<td></td>
<td>Older Driver</td>
<td>848</td>
<td>9,593</td>
<td>10,441</td>
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<tr>
<td></td>
<td>Young Driver</td>
<td>694</td>
<td>12,240</td>
<td>12,934</td>
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<tr>
<td></td>
<td>Motorcycle</td>
<td>694</td>
<td>5,271</td>
<td>5,965</td>
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<tr>
<td></td>
<td>Heavy Vehicle</td>
<td>672</td>
<td>4,426</td>
<td>5,098</td>
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<td></td>
<td><strong>Pedestrian</strong></td>
<td>641</td>
<td>4,525</td>
<td>5,166</td>
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<td><strong>Priority Level 3</strong></td>
<td>Pedalcyclist</td>
<td>137</td>
<td>2,047</td>
<td>2,184</td>
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<td>Work Zone</td>
<td>133</td>
<td>980</td>
<td>1,113</td>
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<td></td>
<td>Distracted/Fatigued/Drowsy Driver</td>
<td>123</td>
<td>3,264</td>
<td>3,387</td>
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<td></td>
<td>Highway–Railroad Grade Crossings</td>
<td>45</td>
<td>54</td>
<td>99</td>
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</tbody>
</table>

**CROSS DISCIPLINARY AREAS**

- Traffic Incident Management
- Information Systems
CHALLENGES OF INCREMENTALISM

• How many deaths are acceptable?

• Reactive approach – Focus on specific hot spot links and intersections where crashes have already occurred.

• Cost considerations – How to prioritize low-cost interventions?

• Responding to political risk – Reducing access to private vehicles
## Traffic Deaths in US and other High-Income Countries

### Motor vehicle crash deaths in 10 comparison high-income countries, 2013

<table>
<thead>
<tr>
<th>Country</th>
<th>Deaths per 100,000 people</th>
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</thead>
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<tr>
<td>United States</td>
<td>10.3</td>
</tr>
<tr>
<td>New Zealand</td>
<td>5.6</td>
</tr>
<tr>
<td>Canada</td>
<td>5.4</td>
</tr>
<tr>
<td>France</td>
<td>5.1</td>
</tr>
<tr>
<td>Japan</td>
<td>4.5</td>
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<tr>
<td>Germany</td>
<td>4.0</td>
</tr>
<tr>
<td>Spain</td>
<td>3.6</td>
</tr>
<tr>
<td>Switzerland</td>
<td>3.3</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>2.8</td>
</tr>
<tr>
<td>Sweden</td>
<td>2.7</td>
</tr>
</tbody>
</table>

### Countries with the highest and lowest reductions in crash deaths, 2000-2013

- **Spain (highest)**: 75% reduction
- **Average**: 56% reduction of 19 high-income countries
- **United States (lowest)**: 31% reduction

NEW APPROACHES
NEW APPROACH: SHARED RESPONSIBILITY

• Road users have a role in the creation of safe traffic

• Their roles are shaped in part by the technology, design, policy, and social norms of the road transportation system.

• Shifts gaze away from automobile: Focus on the whole system of cars, drivers, pedestrians, bicyclists, laws, roads, and conditions.

• Key Actors: Health, law enforcement, education, engineering, and planning disciplines
  • Architects, urban designers, landscape architects, and city planners have been less present in road safety decision making.
VISION ZERO: OF ETHICS AND SYSTEM DESIGN

• Identify common risk factors throughout a network
  ◦ AADT
  ◦ Traffic lanes
  ◦ Traffic speed
  ◦ Signalization

• Proactively detect and identify problematic combinations

• Apply treatments in a systematic way

• Prioritize locations with similar conditions system wide

Source: Vision Zero Network
ACCOMMODATE USER ERROR

• Road users make mistakes, apply faulty logic, and have limits to their rationality, and for these reasons roads, cars, and laws need to be created to protect them from harm.

• No one should die or be seriously injured in the road transportation system

• It is the responsibility of the system designers to ensure that the transportation system is designed to protect those that need the most protection
IDENTIFY HIGH INJURY NETWORK (HIN)

• Harness crash data to identify a network of streets where there is a higher incidence of severe and fatal collisions.

• Strategic investments along the HIN will have the biggest impact in reducing severe injury and death.

• In LA, HIN is 6% of streets where 65% of all deaths and severe injuries occur.
REDUCE SPEEDS
REDUCE SPEEDS
SEPARATE TRAFFIC BY MODE
SEPARATE TRAFFIC BY MODE
TACTICAL / RAPID DELIVERY APPROACHES
TACTICAL / RAPID DELIVERY APPROACHES
AUTOMATED CAMERAS

• Make data collection on collision reports less subjective
• Removing human factor – Potential for reducing inherent bias
• How are they deployed?
• When is enforcement span?
• How do tickets / fees impact repeat offenders?
KEY PEDESTRIAN SAFETY TOOLS

• Speed limit reductions
  o Reduce lane widths
  o Reduce curb radii

• Signal timing
  o Leading Pedestrian Interval
  o Banning Right turns on Red (RTOR)
  o Left Turn Protection

• Complete streets and traffic calming
  o High visibility Ped crossings / Refuges
CONNECTED / AUTOMATED VEHICLES?

• The injuries and fatalities of both vehicle occupants and vulnerable road users will be reduced and mitigated.

• Users share information such as speed, location, and direction or travel information, allowing drivers/vehicles to take preemptive actions to avoid and/or mitigate crashes.

• Equity impacts – How will pedestrians participate in a connected environment?
EVEN IF 90% SAFER THAN CARS

Passenger Deaths per 1 Billion Passenger Miles, 2000-2014

- Car: 6.53
- Ferry: 2.46
- Train: 0.36
- Subway: 0.33
- Bus: 0.2
- Plane: 0.02

Source: Passenger Deaths By Mode, 2000-2014, APTA
TRANSLIT IS ALREADY 95% SAFER

Passenger Deaths per 1 Billion Passenger Miles, 2000-2014

- AVs: 0.65
- Ferry: 2.46
- Train: 0.36
- Subway: 0.33
- Bus: 0.2
- Plane: 0.02

Source: Passenger Deaths By Mode, 2000-2014, APTA
IMPACTS
Traffic Fatalities in Select Vision Zero Cities

PERCENTAGE CHANGE IN FATALITIES SINCE 2010

SOURCE: Streetsblog  https://usa.streetsblog.org/2019/05/22/are-we-starting-to-see-progress-toward-vision-zero/
ACTIONS
STATE ACTIONS

1. Set performance targets that will improve safety.

2. Prioritize safety over vehicle movement. Move away from LOS design metrics that measure success only in terms of the delay that vehicles experience.

3. Provide state transportation officials and engineers with the most up-to-date training and education on implementing Complete Streets.

4. Support Data Sharing / Transparency

SOURCE: Smart Growth America – Dangerous by Design 2019
LOCAL ACTIONS

1. Pass actionable Complete Streets policies.
2. Prioritize projects that will benefit those who suffer disproportionately.
3. Empower Road Safety and Implementation departments
4. Design roads to reduce speeds wherever possible.
5. Embrace the flexibility provided by FHWA to design safer streets.
6. Test out bold, creative approaches to safer street design.
7. Cultivate advocacy groups and build coalitions – Outside Push
DISCUSSION

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