Vision Zero: Emerging National Best Practices

Insights from Denver High Injury Network Analysis and Boston Rapid Response/Rapid Implementation Program
Presented by Brian Tang, EIT

What is Vision Zero?
Set a Target: Zero Fatalities by 20XX
Why Vision Zero?

<table>
<thead>
<tr>
<th>TRADITIONAL APPROACH</th>
<th>VS.</th>
<th>VISION ZERO</th>
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<tbody>
<tr>
<td>Traffic deaths are inevitable</td>
<td>Traffic deaths are preventable</td>
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<td>Perfect human behavior</td>
<td>Integrate human failing in approach</td>
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<tr>
<td>Prevent collisions</td>
<td>Prevent fatal and severe crashes</td>
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<tr>
<td>Individual responsibility</td>
<td>Systems approach</td>
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<tr>
<td>Saving lives is expensive</td>
<td>Saving lives is not expensive</td>
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Source: Vision Zero Network

High Injury Network Analysis

Case Study from Denver Vision Zero Action Plan
Denver Vision Zero Action Plan

Quick, 1-year schedule with tight budget
Expansive city limits (3x bigger than Saint Paul or Minneapolis)
Needed way to go beyond conventional crash analysis without time/budget to build a full predictive model (aka systemic safety analysis)

High Injury Network Analysis

Paired with conventional crash data analysis:
- Speeding was a factor in 53% of fatalities in Denver in 2015
- Most fatal crashes happened when pedestrians crossed between signalized intersections
- Most bike/ped fatalities at unlit locations

50% of Denver’s traffic fatalities occurred on just 5% of streets
Denver High Injury Network Analysis

96% of High Injury Network consisted of multi-lane arterial streets

Arterial roadways are disproportionately dangerous for all modes in Denver

- 6x more pedestrians died on arterials than other roads
- 7x more bicyclists died on arterials than other roads
- 4x more drivers died on arterials than other roads

Data Sources

High Injury Network:
- Denver Public Works vehicle, pedestrian, and bike crash data
- Denver Police Department fatality data
- Colorado Department of Transportation crash data for state roads

Communities of Concern overlay:
- Households w/ elementary students within 1 mile of schools
- Socioeconomic indicators from US Census Bureau
- Older adults
- Zero-car households
- Disabilities
- Traffic safety indicators
- Health indicators
Intercept Surveys

Brought community outreach to street corners on High Injury Network in Communities of Concern to understand safety concerns.

High Injury Network Analysis Highlights

High Injury Network analysis helps focus resources
Transparent and understandable
Resource-efficient compromise between reactive crash analysis and systemic safety analysis
High Injury Network analysis has been repeated in several additional communities and continues to be refined.
Rapid Response and Rapid Implementation Programs

Case Study from the Implementation Phase that Followed Boston’s Vision Zero Action Plan

Boston Vision Zero Action Plan

Action plan developed 2015-2016
Led to two-pronged implementation program

- Rapid Response
  - Review location after a fatality or severe crash
- Rapid Implementation
  - High crash target locations
  - Tend to be 10-12 months long
Rapid Response/Rapid Implementation Toolbox

“Rapid” is about process, not materials
Interim construction approaches are means to reach “yes”
- Flexposts
- Markings
- Signs
- Signal changes

Before

Rapid Response/Rapid Implementation Toolbox

“Rapid” is about process, not materials
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After
Rapid Response

Interagency Rapid Response Team created
Leverages political will created by high profile crashes to build partnerships and break down institutional barriers to action
As partnerships are strengthened, focus is able to shift to longer-term, more financially sustainable implementation programs

Rapid Implementation Program

Data-driven priority corridors
Builds on High Injury Network analysis
Massachusetts Avenue

Daylighting
Improved bikeway continuity
Lagging lefts:
- 66% fewer vehicle-pedestrian conflicts
- 84% lower vehicle-pedestrian conflict rate
- Lower collision rates for left-turning vehicles (in past applications—data pending on Mass Ave)
Boston’s Rapid Response and Rapid Implementation Programs

Follow up with data collection and changes as needed

Rapid Response
- Driven by emotional/political imperative
- Resource intensive
- May be necessary stepping stone to build trust and cooperation

Rapid Implementation
- How “rapid” it is depends on process, not materials
- Depends on strength of partnerships—may take time to build

Rapid Response/Rapid Implementation Highlights
Takeaways

High Injury Network analysis cuts through the noise

- Fundamentally a communication tool
- Helps prompt and facilitate conversations needed to build durable coalitions
- “The flexpost of safety analysis”
Takeaways

High Injury Network analysis cuts through the noise
  - Fundamentally a communication tool
  - Helps prompt and facilitate conversations needed to build durable coalitions
  - “The flexpost of safety analysis”

“Rapid” is about process and partnerships, not materials
  - Reactive response to crashes is not “efficient,” but may leverage political will into institutional changes
  - Rapid deployment of proactive interventions requires a foundation of institutional trust and cooperation

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