OUR PLAN TO ELIMINATE FATALITIES AND SEVERE INJURIES ON OUR ROADS BY 2030
TWO-YEAR ACTION PLAN • PBTSAC Draft Review • July 24, 2017
## REPORT SECTIONS

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<tr>
<th>Acknowledgements</th>
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<td>Shared Mission, Shared Accountability</td>
<td>Appendix</td>
</tr>
</tbody>
</table>
1. Transportation–related deaths and severe injuries are **preventable and unacceptable**.

2. **Human life takes priority over mobility and other objectives of the road system.** The road system should be safe for all users, for all modes of transportation, in all communities, and for people of all ages and abilities.

3. **Human error is inevitable;** the transportation system should be designed to anticipate error so the consequences are not severe injury or death. Advancements in vehicle design and technology, as well as engineering advancements, personal electronic device innovations, etc., are necessary components for avoiding the impacts of human errors.

4. **People are inherently vulnerable,** and speed is a fundamental predictor of crash survival. The transportation system should be designed for speeds that protect human life.

5. **Safe human behaviors,** education, and enforcement are essential contributors to a safe system.

6. **Policies at all levels of government need to align,** making safety the highest priority for roadways.

**SOURCE:** Brian Tefft, “Impact Speed and a Pedestrian’s Risk of Severe Injury or Death,” AAA Foundation for Traffic Safety, 2011
WHAT IS VISION ZERO?

1997 Sweden

2000 Washington State

2014 New York City

Photo Credits:
Johna Willner/imagebank.Sweden.se
“20West,” Erica Stineman (Target Zero)
“Vision Zero Turning” City of New York Taxi & Limousine Commission
WHAT IS VISION ZERO?

Vision Zero Cities

A Vision Zero City meets the following minimum standards:
- Sets clear goal of eliminating traffic fatalities and severe injuries
- Mayor has publicly, officially committed to Vision Zero
- Vision Zero plan or strategy is in place, or Mayor has committed to doing so in clear time frame
- Key city departments (including Police, Transportation and Public Health) are engaged

Map Courtesy of the Vision Zero Network

Updated
March 2017
<table>
<thead>
<tr>
<th>Country</th>
<th>Fatalities per 100k Pop.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>18.9</td>
</tr>
<tr>
<td>US</td>
<td><strong>10.6</strong></td>
</tr>
<tr>
<td>Poland</td>
<td>10.3</td>
</tr>
<tr>
<td>Greece</td>
<td>9.1</td>
</tr>
<tr>
<td>Canada</td>
<td>6.0</td>
</tr>
<tr>
<td>Australia</td>
<td>5.4</td>
</tr>
<tr>
<td>Japan</td>
<td>4.7</td>
</tr>
<tr>
<td>Germany</td>
<td>4.3</td>
</tr>
<tr>
<td>UK</td>
<td>2.9</td>
</tr>
<tr>
<td>Sweden</td>
<td>2.8</td>
</tr>
</tbody>
</table>

**TRAFFIC DEATHS IN US AND SWEDEN**

<table>
<thead>
<tr>
<th>Year</th>
<th>US</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>15.9</td>
<td>6.5</td>
</tr>
<tr>
<td>1997</td>
<td>13.6</td>
<td>6.3</td>
</tr>
<tr>
<td>1999</td>
<td>11.6</td>
<td>6.1</td>
</tr>
<tr>
<td>2001</td>
<td>10.0</td>
<td>5.6</td>
</tr>
<tr>
<td>2003</td>
<td>9.7</td>
<td>5.5</td>
</tr>
<tr>
<td>2005</td>
<td>9.1</td>
<td>4.4</td>
</tr>
<tr>
<td>2007</td>
<td>7.9</td>
<td>3.8</td>
</tr>
<tr>
<td>2009</td>
<td>7.2</td>
<td>3.5</td>
</tr>
<tr>
<td>2011</td>
<td>6.9</td>
<td>2.9</td>
</tr>
<tr>
<td>2013</td>
<td>6.5</td>
<td>2.7</td>
</tr>
<tr>
<td>2015</td>
<td>5.9</td>
<td>2.7</td>
</tr>
</tbody>
</table>

**SOURCE:** “Global Health Observatory Data Repository”, World Health Organization, 2017.

**SOURCES:** “Fatality Analysis Reporting System,” NHTSA, 2017;
“Road Safety Evolution in EU,” European Commission, 2016.
DATA ANALYSIS – REDUCTION TARGETS

Severe and Fatal Collisions

Year

2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030

Target
-20%
-35%
-40%
-45%
-50%
-60%
-70%
-75%
-80%
-85%
-90%
-95%
-100%

Vehicle Occupant
Pedestrian
Cyclist

2019
35% Reduction
End of 2-Year Plan

2024
70% Reduction
Halfway to 2030

2030
100% Reduction
Functional Zero

Graph showing the reduction targets for 2018 to 2030 for severe and fatal collisions for vehicle occupants, pedestrians, and cyclists.
DATA ANALYSIS – COLLISIONS BY ROADWAY OWNER

Vehicle Occupants
- State: 3%
- County: 37%
- Municipal: 57%

Pedestrians
- State: 6%
- County: 30%
- Municipal: 44%

Cyclists
- State: 5%
- County: 49%
- Municipal: 41%

<table>
<thead>
<tr>
<th></th>
<th>State</th>
<th>County</th>
<th>Municipal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lane Miles</td>
<td>1,167</td>
<td>4,877</td>
<td>773</td>
<td>6,817</td>
</tr>
<tr>
<td>Percent of Total</td>
<td>17%</td>
<td>72%</td>
<td>11%</td>
<td>100%</td>
</tr>
</tbody>
</table>
DATA ANALYSIS —
AGE OF PERSON KILLED OR SEVERELY INJURED

Drivers KSI per 100k Registered

Pedestrians KSI per 100k pop.

Cyclists KSI per 100k pop.
### Data Analysis

**Sex of Person Killed or Severely Injured**

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drivers</td>
<td>57%</td>
<td>43%</td>
</tr>
<tr>
<td>Pedestrians</td>
<td>52%</td>
<td>48%</td>
</tr>
<tr>
<td>Cyclists</td>
<td>78%</td>
<td>22%</td>
</tr>
</tbody>
</table>
DATA ANALYSIS – NIGHTTIME COLLISIONS

Vehicle Occupant
- Severe: 21%
- Fatal: 50%

Pedestrian
- Severe: 35%
- Fatal: 63%

Cyclist
- Severe: 9%
- Fatal: 25%
DATA ANALYSIS – VEHICLE BODY TYPE

- Passenger Vehicle, 83%
- Moped & Motorcycle, 5%
- Other, 2%
- N/A, 7%
- Bus, 2%
- Heavy & Med. Truck, 1%
- Bus, 2%

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### DATA ANALYSIS – VEHICLES – COLLISION TYPE

<table>
<thead>
<tr>
<th>Collision Type</th>
<th>% of Single or Vehicle-to-Vehicle Collisions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Severe</td>
</tr>
<tr>
<td>Same Direction Rear End</td>
<td>27%</td>
</tr>
<tr>
<td>Left Turn</td>
<td>19%</td>
</tr>
<tr>
<td>Straight Movement Angle</td>
<td>19%</td>
</tr>
<tr>
<td>Single Vehicle</td>
<td>18%</td>
</tr>
<tr>
<td>Head On</td>
<td>7%</td>
</tr>
<tr>
<td>Sideswipe</td>
<td>4%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
</tr>
<tr>
<td>Right Turn</td>
<td>2%</td>
</tr>
<tr>
<td>Unknown N/A</td>
<td>1%</td>
</tr>
</tbody>
</table>
DATA ANALYSIS – VEHICLE – SAFETY EQUIPMENT USED

![Chart showing the percent of drivers killed or severely injured by seat belt usage.]

- Seat Belt: 87% (Severe: 56%, Fatal: 31%)
- Unknown, N/A: 7% (Severe: 9%, Fatal: 0%)
- None: 23% (Severe: 5%, Fatal: 18%)
- Air Bag Only: 12% (Severe: 1%, Fatal: 11%)

Photo Credit: "Know Someone Who Doesn't Wear Their Seatbelt?", NHTSA, 2011
DATA ANALYSIS — PEDS & BIKES — PARTY AT FAULT

Percent of Severe and Fatal Collisions

<table>
<thead>
<tr>
<th></th>
<th>Pedestrian</th>
<th>Cyclist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ped/Cyclist</td>
<td>36%</td>
<td>36%</td>
</tr>
<tr>
<td>Driver</td>
<td>50%</td>
<td>54%</td>
</tr>
<tr>
<td>Both</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>Undetermined</td>
<td>9%</td>
<td>8%</td>
</tr>
</tbody>
</table>
DATA ANALYSIS – PEDS & BIKES – VEHICLE MOVEMENT

- Constant Speed: 36\% Pedestrians, 40\% Cyclists
- Left Turn: 14\% Pedestrians, 18\% Cyclists
- Accelerating: 2\% Pedestrians, 8\% Cyclists
- Slowing or Stopping: 1\% Pedestrians, 8\% Cyclists
- Right Turn: 6\% Pedestrians, 17\% Cyclists
- Backing: 2\% Pedestrians, 6\% Cyclists
- Unknown, N/A: 2\% Pedestrians, 5\% Cyclists
- Stopped in Traffic Lane: 2\% Pedestrians, 5\% Cyclists
- Starting from Traffic Lane: 2\% Pedestrians, 10\% Cyclists
- Starting from Parked Position: 2\% Pedestrians, 0\% Cyclists
- Parked: 0\% Pedestrians, 2\% Cyclists
- Other: 5\% Pedestrians, 6\% Cyclists
### Pedestrians

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross/Enter at Intersection</td>
<td>40%</td>
</tr>
<tr>
<td>Cross/Enter not at Intersection</td>
<td>22%</td>
</tr>
<tr>
<td>Other</td>
<td>11%</td>
</tr>
<tr>
<td>Unknown, N/A</td>
<td>8%</td>
</tr>
<tr>
<td>Standing</td>
<td>7%</td>
</tr>
<tr>
<td>All Others*</td>
<td>3%</td>
</tr>
<tr>
<td>Getting On/Off Vehicle</td>
<td>3%</td>
</tr>
<tr>
<td>Walking/Riding with Traffic</td>
<td>3%</td>
</tr>
<tr>
<td>Other Working</td>
<td>3%</td>
</tr>
</tbody>
</table>

### Cyclists

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross/Enter at Intersection</td>
<td>42%</td>
</tr>
<tr>
<td>Walking/Riding with Traffic</td>
<td>25%</td>
</tr>
<tr>
<td>Walking/Riding Against Traffic</td>
<td>8%</td>
</tr>
<tr>
<td>Walking/Cycling on Sidewalk</td>
<td>7%</td>
</tr>
<tr>
<td>Cross/Enter not at Intersection</td>
<td>7%</td>
</tr>
<tr>
<td>Unknown, N/A</td>
<td>5%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
</tr>
<tr>
<td>Moving At Constant Speed</td>
<td>3%</td>
</tr>
</tbody>
</table>
## DATA ANALYSIS – OTHER TRENDS – SELECT CHARACTERISTICS

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Montgomery County</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Household Income</td>
<td>$99,435</td>
<td>$53,889</td>
</tr>
<tr>
<td>Median Age</td>
<td>38.9</td>
<td>37.8</td>
</tr>
<tr>
<td>Limited English Speaking Households</td>
<td>7.0%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Residents in Poverty</td>
<td>6.7%</td>
<td>15.5%</td>
</tr>
<tr>
<td>Foreign Born Residents</td>
<td>33.0%</td>
<td>13.0%</td>
</tr>
<tr>
<td>Population 25 Years and Older with Graduate or Professional Degree</td>
<td>31.3%</td>
<td>11.2%</td>
</tr>
</tbody>
</table>
DATA ANALYSIS – OTHER TRENDS – LAND USE

Photo Credits:
"Montgomery County Agricultural Reserve Welcome Sign," WikiMedia Commons/Vpescanlar, Licensed under Creative Commons
"Bethesda," Flickr/Ed Welker, Licensed under Creative Commons


Changes from FY10 to FY15

<table>
<thead>
<tr>
<th>Metric</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ride-On Ridership</td>
<td>-7%</td>
</tr>
<tr>
<td>MetroBus Ridership</td>
<td>10%</td>
</tr>
<tr>
<td>MetroRail Weekday Ridership</td>
<td>-3%</td>
</tr>
<tr>
<td>Driving Speed*</td>
<td>-11%</td>
</tr>
<tr>
<td>Driving Planning Time Index*</td>
<td>16%</td>
</tr>
</tbody>
</table>

*Data are for calendar years 2011 to 2015
1. Review of previous roadway safety efforts in the County

2. Review of promising practices from other Vision Zero communities

3. Analysis of County collision data to identify trends and significant issues to inform the plan

4. Consultation with County Agencies and with the Pedestrian, Bicycle, and Traffic Safety Advisory Board
Why a two-step plan?

• Need to eliminate our “known unknowns” to build an even stronger plan

• Align our codes, policies, and laws to Vision Zero principles

• Determine what is or is not working for traffic safety projects

• Acknowledge major leadership changes coming in 2018 to County Executive and Council
PREVIOUS ROADWAY SAFETY EFFORTS

2002 Blue Ribbon Panel

Montgomery County Blue Ribbon Panel
On Pedestrian and Traffic Safety

FINAL REPORT
Setting Safety in Motion: Recommendations for Creating Walkable Communities in Montgomery County, Maryland

Delegate William A. Bronrott, Chair
January 2002

www.co.md.us

2007 Pedestrian Safety Initiative

Montgomery County Executive Isiah Leggett
Pedestrian Safety Initiative
December 2007
RESULTS FROM PEDESTRIAN SAFETY INITIATIVE

Collisions per 100k Population

Pre-Initiative vs. Post-Initiative

Total Collisions
Severe and Fatal Collisions
Fatalities

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1. Aggressive and impaired driving
2. Distracted driving and occupant protection
3. Pedestrians and bicyclists
4. Traffic incident management
5. Vehicle technology
6. Roadway infrastructure
Similarities:
• State that traffic collisions are tragic, preventable occurrences
• Use a data-driven process to identify needs and countermeasures on roadways
• Set interim and long-range reduction targets for severe and fatal traffic collisions
• Employ strategies built around engineering, education, enforcement, and emergency medical services
• Adopt similar focus areas

Differences:
<table>
<thead>
<tr>
<th>Montgomery County</th>
<th>Maryland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eliminate traffic fatalities by 2030</td>
<td>Reduce traffic fatalities by 50% by 2030 from 2008 baseline</td>
</tr>
<tr>
<td>Sets specific actions</td>
<td>Sets broad strategies</td>
</tr>
<tr>
<td>Each action has a deadline</td>
<td>No deadlines to implement strategies</td>
</tr>
</tbody>
</table>
Jan 2002
Blue Ribbon Panel Report on Pedestrian and Traffic Safety Released

Dec 2007
Pedestrian Safety Initiative Launched (Full funding started in July 2009)

Oct 2015
MCDOT adopts “Moving Forward Together” vision document

Jun 2016
County Executive establishes Vision Zero Steering Committee

Nov 2016
Focus area stakeholder groups meet to develop Action Plan

Feb 2016
Council adopts Vision Zero Resolution

Sep 2016
1st Vision Zero stakeholder meeting

Oct 2017
Two Year Action Plan Approved

July 2017
1st Action Plan draft reviewed by PBTSAC
Oct 2017 to May 2018
Outreach and input to build 10-year plan

Dec 2018
1st Draft of 10 Year Plan

Oct 2018
Vision Zero 1 Year Progress Report

Dec 2030
Zero traffic fatalities or severe injuries

2019 and Beyond
Annual updates to 10-year plan strategies and progress reports
### Traditional Road Safety Approach vs. Safe System Approach

<table>
<thead>
<tr>
<th></th>
<th>Versus</th>
<th>Safe System Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Try to prevent all crashes</td>
<td><strong>What is the problem?</strong></td>
<td>Prevent crashes from resulting in fatal and serious casualties</td>
</tr>
<tr>
<td>Reduce the number of fatalities and serious injuries</td>
<td><strong>What is the appropriate goal?</strong></td>
<td>Zero fatalities and serious injuries</td>
</tr>
<tr>
<td>Reactive to incidents Incremental approach to reduce the problem</td>
<td><strong>What are the major planning approaches?</strong></td>
<td>Proactively target and treat risk Systematic approach to build a safe road system</td>
</tr>
<tr>
<td>Non-compliant road users</td>
<td><strong>What causes the problem?</strong></td>
<td>People make mistakes and people are physically fragile/vulnerable in crashes. Varying quality and design of infrastructure and operating speeds provides inconsistent guidance to users about what is safe use behavior.</td>
</tr>
<tr>
<td>Individual road users</td>
<td><strong>Who is ultimately responsible?</strong></td>
<td>Shared responsibility by individuals with system designers</td>
</tr>
<tr>
<td>The system is composed of isolated interventions</td>
<td><strong>How does the system work?</strong></td>
<td>Different elements of a Safe System combine to produce a summary effect greater than the sum of the individual treatments – so that if one part of the system fails other parts provide protection.</td>
</tr>
</tbody>
</table>
TWO-YEAR ACTION PLAN – ACTION ITEMS

Engineering
- Design facilities that prioritize safety above all else
- Key Outcome: Reductions in severe and fatal collisions in High Incidence Areas (HIAs)

Enforcement
- Encourage safe behaviors using evidence-based high visibility enforcement
- Key Outcome: Hours of dedicated enforcement for factors contributing to severe and fatal collisions

Education
- Engage the public to promote the importance of traffic laws and safe behaviors
- Key Outcome: Increased awareness of dangerous driving, biking, and walking behaviors

Traffic Incident Management
- Ensure that when a collision occurs, prompt care is provided
- Key Outcome: Maintain response times for traffic collisions with injuries based on dept. standards

Law, Policy, and Advocacy
- Improve the way traffic safety is managed by changing codes, laws, and policies that do not align with Vision Zero
- Key Outcome: Passage of significant laws and policies required to implement Vision Zero
ENG-1: Crash Analysis
ENG-2: Revise County Road Code
ENG-3: Expand Road Safety Audits
ENG-4: Review Transit Stops
ENG-5: Redesign Trail Crossings
ENG-6: State/County Project Collaboration
ENG-7: Improve Pedestrian Signal Timing
ENG-8: Complete Sidewalk Inventory
ENG-9: Accelerate Sidewalk Building
ENG-10: Expand Low-Stress Bicycle Network
ENF-1: Establish Collision Review Team

ENF-2: Increase Enforcement Activities

ENF-3: Expand Safety Camera Use

ENF-4: Improve Distracted Driving Detection

ENF-5: Collaboration with Court System
TWO-YEAR ACTION PLAN – EDUCATION

EDU-1: Create Comprehensive Outreach Strategy

EDU-2: Expand Safe Routes to School Program

EDU-3: On-Bike Education Program for Kids

EDU-4: Fund Non-Profit Outreach

EDU-5: Outreach to County Employees

EDU-6: Cross-Departmental Team Building

EDU-7: Raise Awareness of Sleep and Safety

EDU-8: Future Technology Task Force

EDU-9: Training in the Community
TIM-1: Provide Prompt Emergency Medical Service

TIM-2: Devise Safe Incident Management Plan

TIM-3: Enhance Police Driver Training

TIM-4: Temporary Traffic Control Devices
TWO-YEAR ACTION PLAN – LAW, POLICY, AND ADVOCACY

LPA-1: Change Policies, Regulations, and Laws
LPA-2: Ensure Equity throughout Vision Zero Projects
LPA-3: Appoint Vision Zero Coordinator
LPA-4: Create Vision Zero Website

LPA-5: Create Vision Zero Feedback Map
LPA-6: Create Pedestrian Master Plan
LPA-7: Publish Collision Data
LPA-8: Improve Crash Data Collection

LPA-9: Establish Peer Learning Network
LPA-10: Audit Existing Traffic Safety Programs
LPA-11: Work with Municipalities
LPA-12: Engage Outside Research Partners

LPA-13: Procure Safer Vehicles
LPA-14: Build the Ten-Year Action Plan

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SHARED MISSION, SHARED ACCOUNTABILITY

- Annual Strategic Plan
- Monthly Steering Committee
- Annual Progress Reports
- Quarterly Stakeholders Meeting
**August 7th** –
Comment period for PBTSAC Draft Closes

**September (Date to be Set)** –
Full Public Review

**September 28th** –
Final Review during PBTSAC Meeting

**October 15th** –
Two-Year Plan Signed-off by County Executive
Copy of Draft: https://goo.gl/98TWue

Feedback Form: https://www.surveymonkey.com/r/MCVZfeedback
NO TRAFFIC DEATHS BY 2030
IN MONTGOMERY COUNTY