Agenda

- Introductions
- Project Objectives
- Work Plan Overview
- Pedestrian Crash Statistics (2011-2015)
- Discussion of 2009 PSAP
- Next Steps
Project Objective

- Evaluate progress and effectiveness of the 2009 PSAP to reduce the frequency of pedestrian crashes established in the 2009 PSAP
- Collect and analyze pedestrian crash data for the most recent five years (2011-2015)
- Identify specific steps, actions, and countermeasures that will reduce pedestrian crashes, injuries, and fatalities on the SHS
Work Plan Overview

Task 1 – Project Work Plan
Task 2 – Evaluation of Progress and Effectiveness of the 2009 Plan
Task 3 – Data Collection and Analysis
Task 4 – Updated Goals and Objectives
Task 5 – Define Pedestrian Safety Priorities
Task 6 – Develop Funding Data and Recommendations
Task 7 – Identify Next Steps
Task 8 – Final Documentation
Task 1 – Work Plan

• Technical Advisory Committee
  • 6 meetings
  • Projected completion: Spring 2017
Task 2 - Evaluation of Progress and Effectiveness of the 2009 Plan

- Summarize and review the implementation status of each 2009 PSAP recommendation
  - ADOT policies, guidelines, and procedures
  - Improvement projects on the State Highway System.
  - Pedestrian-related treatments that have been implemented (2009-2016)
- Document challenges associated with each recommendation based on TAC discussion.
Task 3 – Data Collection and Analysis

• Analyze pedestrian safety crashes that occurred on the SHS from 2011 – 2015
  • 861 crash reports
• Obtain pedestrian crash reports for all pedestrian/motor vehicle crashes on the SHS
• Enter crash report data into PBCAT
  • Crash location, demographic information, roadway features (i.e., lanes, volume, speed, intersection vs. segment) and characteristics, and information to crash-type and identify contributing factors leading to the crash.
Pedestrian and Bicycle Crash Analysis Tool (PBCAT)

The Pedestrian and Bicycle Crash Analysis Tool (PBCAT) is a crash typing software product intended to assist state and local pedestrian/bicycle coordinators, planners and engineers with improving walking and bicycling safety through the development and analysis of a database containing details associated with crashes between motor vehicles and pedestrians or bicyclists. Version 2.1.1 is now available for download.
Task 3 – Data Collection and Analysis (continued)

• Analyze/charts/graphs
  • Trends, demographics, geographic features, roadway characteristics, and contributing factors
  • Map pedestrian crashes to identify pedestrian-crash hot-spots.

• Risk-assessment methodology to identify roadway and land use features that are commonly associated with pedestrian crashes.
  • Examples: five-lane roadway, 45 mph +, urbanizing/suburban locations.

• Identify potential countermeasures using PBCAT and the Pedestrian Safety Guide and Countermeasure Selection System (PEDSAFE).
Task 4 – Update Goals and Objectives

- Review goals and targets established in:
  - State of Arizona Highway Safety Plan (prepared by Arizona GOHS)
  - ADOT Long Range Transportation Plan
- Prepare draft pedestrian safety goals and performance targets
- Propose objectives that will lead to achievement of the goals
Task 5 – Define Pedestrian Safety Priorities

• Develop a systemic procedure to identify pedestrian safety crash countermeasures
• Countermeasures may include:
  • Systematic policies and procedures
  • Warrants or policies
  • Design-standard updates
  • Spot infrastructure improvements
  • Education campaigns and materials
  • Enforcement programs, and encouragement initiatives
• Review / modify the 2009 countermeasure prioritization process
Task 5 – Define Pedestrian Safety Priorities (continued)

• For each recommended countermeasure, develop planning-level costs
• Review/ update 2009 countermeasure prioritization process
  • Likelihood to be funded through HSIP
  • Improvements within or near already programmed projects
  • Inclusion within ADOT Corridor Profile study segment
  • Optimize the b/c ratio of each candidate countermeasure at its corresponding high-risk location
Task 6 – Funding and Data Recommendations

• Assess the level of funding allocated to pedestrian-focused infrastructure and programs.
• Amount of funding needed to address the highest-priority pedestrian-safety hot-spots on the SHS.
• How much is provided and needed for non-infrastructure programs and plans.
• Identify opportunities to incorporate pedestrian improvements into other ADOT projects/programs.
Task 7 – Next Steps

- Prioritize recommendations
- Identify implementing or responsible agencies, divisions, or groups.
- Update 2009 recommendations; incorporate any new strategic opportunities and tasks

Task 8 – Final Report

- Finalize recommended improvement projects to improve pedestrian safety on the State Highway System
## 5-Year Crash Statistics Comparison

<table>
<thead>
<tr>
<th></th>
<th>Pedestrian Crashes</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Roadways</td>
<td>State Highway System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Fatal</td>
<td>Total</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002-2006</td>
<td>1,607</td>
<td>145</td>
<td>154</td>
</tr>
<tr>
<td>2011-2016</td>
<td>1,526</td>
<td>151</td>
<td>172</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002-2006</td>
<td>8,033</td>
<td>726</td>
<td>771</td>
</tr>
<tr>
<td>2011-2016</td>
<td>7,632</td>
<td>757</td>
<td>860</td>
</tr>
</tbody>
</table>
Pedestrian Crash Summary (2011-2015)

- 860 pedestrian related incidents on SHS (2011 – 2015)
- Represents 11.3% of state-wide pedestrian related incidents (7,632 incidents)

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Incidents (ADOT Facilities)</th>
<th>Number of Incidents (Statewide)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>173</td>
<td>1507</td>
</tr>
<tr>
<td>2012</td>
<td>190</td>
<td>1565</td>
</tr>
<tr>
<td>2013</td>
<td>173</td>
<td>1599</td>
</tr>
<tr>
<td>2014</td>
<td>156</td>
<td>1561</td>
</tr>
<tr>
<td>2015</td>
<td>168</td>
<td>1400</td>
</tr>
<tr>
<td>Total</td>
<td>860</td>
<td>7632</td>
</tr>
</tbody>
</table>
Pedestrian Crash Summary (2011-2015)

- SHS pedestrian incidents result in a higher % of **Incapacitating Injuries** and **Fatalities** as compared to statewide percentage.
- **585 (68%)** of reported pedestrian related incidents on SHS occurred within urban boundaries.
  - 88 (47%) resulted in a fatality.
- **6,841 (89.6%)** of statewide reported pedestrian related incidents occurred within urban boundaries.
  - 563 (74%) resulted in a fatality.

### Incident Severity

<table>
<thead>
<tr>
<th>Severity</th>
<th>ADOT Facilities</th>
<th>Statewide</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percent</td>
</tr>
<tr>
<td>No Injury</td>
<td>66</td>
<td>8%</td>
</tr>
<tr>
<td>Possible Injury</td>
<td>160</td>
<td>19%</td>
</tr>
<tr>
<td>Non-Incapacitating Injury</td>
<td>254</td>
<td>30%</td>
</tr>
<tr>
<td>Incapacitating Injury</td>
<td>194</td>
<td>23%</td>
</tr>
<tr>
<td>Fatal</td>
<td>186</td>
<td>22%</td>
</tr>
</tbody>
</table>
Pedestrian Crash Severity (2011-2015)

- No Injury: 8% (State Highway), 9% (Statewide)
- Possible Injury: 19% (State Highway), 24% (Statewide)
- Non-Incapacitating Injury: 30% (State Highway), 36% (Statewide)
- Incapacitating Injury: 23% (State Highway), 20% (Statewide)
- Fatal: 22% (State Highway), 10% (Statewide)

Severity (State Highway)  Severity (Statewide)
Percent of Injury Crashes by Year (2011-2015)

- 2011: ADOT Facilities - 22.54%, Statewide Crashes - 20.97%
- 2012: ADOT Facilities - 24.74%, Statewide Crashes - 21.53%
- 2013: ADOT Facilities - 22.54%, Statewide Crashes - 18.89%
- 2014: ADOT Facilities - 20.51%, Statewide Crashes - 19.73%
- 2015: ADOT Facilities - 22.02%, Statewide Crashes - 20.29%

Legend:
- ADOT Facilities
- Statewide Crashes
Incidents by Roadway Lighting Conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>ADOT Facilities</th>
<th>Statewide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daylight</td>
<td>53.0%</td>
<td>41.2%</td>
</tr>
<tr>
<td>Dawn</td>
<td>1.7%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Dusk</td>
<td>4.0%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Dark - Lighted</td>
<td>26.6%</td>
<td>29.5%</td>
</tr>
<tr>
<td>Dark - Not Lighted</td>
<td>23.7%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Dark - Unknown</td>
<td>2.8%</td>
<td>2.1%</td>
</tr>
</tbody>
</table>
Common Reported Behavior / Violation on ADOT Facilities (Drivers)
Crashes on ADOT Facilities (2011-2015)

Year | Total Incidents
--- | ---
2011 | 173
2012 | 190
2013 | 173
2014 | 156
2015 | 168
## Discussion of 2009 PSAP

### Recommendations for New Policies/Programs/Strategies

<table>
<thead>
<tr>
<th></th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Develop an ADOT Pedestrian Safety Working Group</td>
</tr>
<tr>
<td>2</td>
<td>Develop and adopt an ADOT Pedestrian Policy</td>
</tr>
<tr>
<td>3</td>
<td>Develop and adopt an ADOT Complete Streets Policy</td>
</tr>
<tr>
<td>4</td>
<td>Develop traffic impact study agreements with local agencies</td>
</tr>
<tr>
<td>5</td>
<td>Review all ADOT design and maintenance guidelines and manuals to identify effective measures for accommodating pedestrians on State Highway System</td>
</tr>
<tr>
<td>6</td>
<td>Develop partnerships with local law enforcement agencies</td>
</tr>
<tr>
<td>7</td>
<td>Encourage implementation or expansion of educational programs</td>
</tr>
<tr>
<td>8</td>
<td>Provide pedestrian facility training to state and local governments</td>
</tr>
<tr>
<td>9</td>
<td>Review existing Arizona Revised Statutes related to pedestrians</td>
</tr>
<tr>
<td>10</td>
<td>Develop a mechanism to track the level of investment in pedestrian facilities</td>
</tr>
<tr>
<td>11</td>
<td>Develop transition plan for implementation of pedestrian countdown signals</td>
</tr>
<tr>
<td>12</td>
<td>Develop transition plan for implementation of the Americans With Disabilities Act (ADA)</td>
</tr>
<tr>
<td>13</td>
<td>Adopt ADOT Access Management Plan</td>
</tr>
<tr>
<td>14</td>
<td>Develop a pedestrian safety action plan evaluation program</td>
</tr>
</tbody>
</table>

### Recommended Modifications to Existing Policies and Practices

<table>
<thead>
<tr>
<th></th>
<th>Policy Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>ADOT Traffic Engineering Policies, Guidelines and Procedures, January 2003, Section 700 – Illumination</td>
</tr>
</tbody>
</table>
Discussion of 2009 PSAP

- Infrastructure recommendations
  - See handout/status
Open Discussion

• Any other comments?
Next Steps

- Work Plan
  - Comments to Michael Sanders, msanders@azdot.gov, by July 8, 2016
- Tech Memo No. 1 – Evaluation of 2009 Plan
- Tech Memo No. 2 – Crash Analysis
  - Obtain crash reports
  - PBCAT crash typing
- Technical Advisory Committee Meeting No. 2
  - September 2016