

PEDESTRIAN SAFETY IN TRIBAL AREAS RESEARCH PROJECT

Arizona Tribal Transportation Safety & Injury Prevention Summit

August 9, 2023

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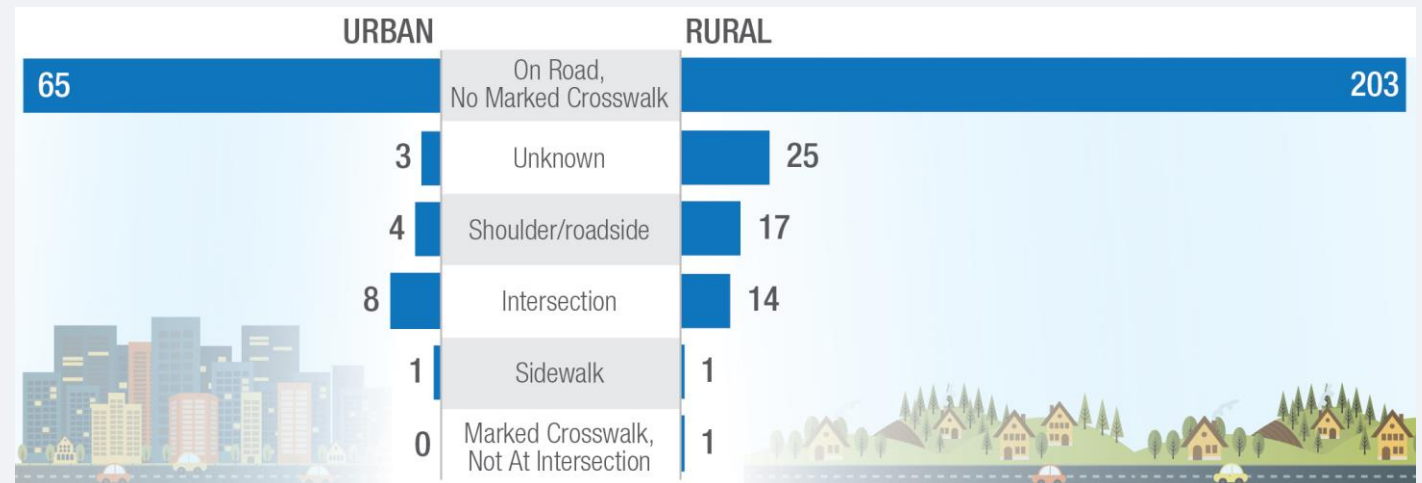
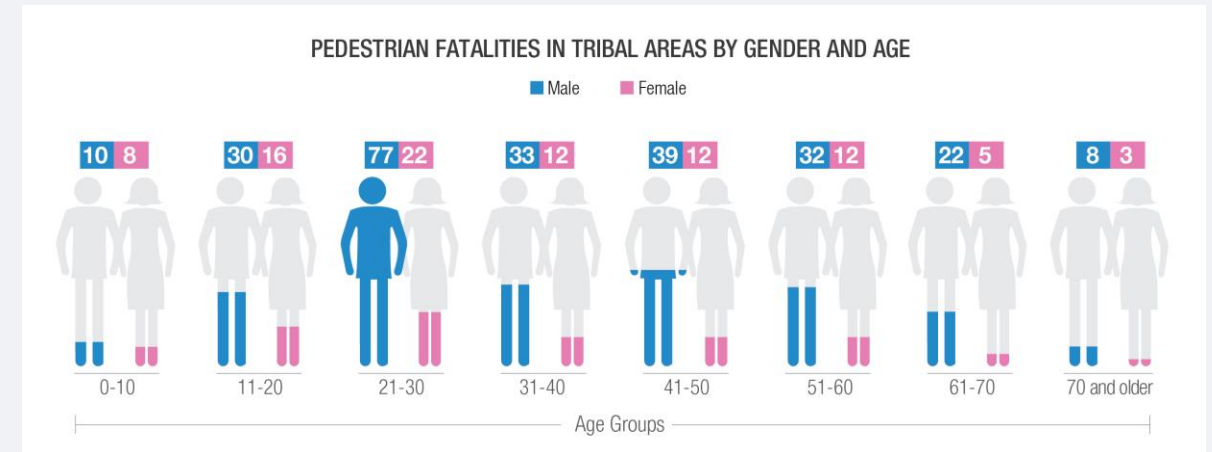
Tribal Transportation Strategic Safety Plan

- Decision Making Process
- Safety Data
- Occupant Protection/Child Seats
- Roadway Departure Crashes
- Impaired Driving
- Pedestrian Safety
- Public Safety Services
- www.TribalSafety.org/Reports



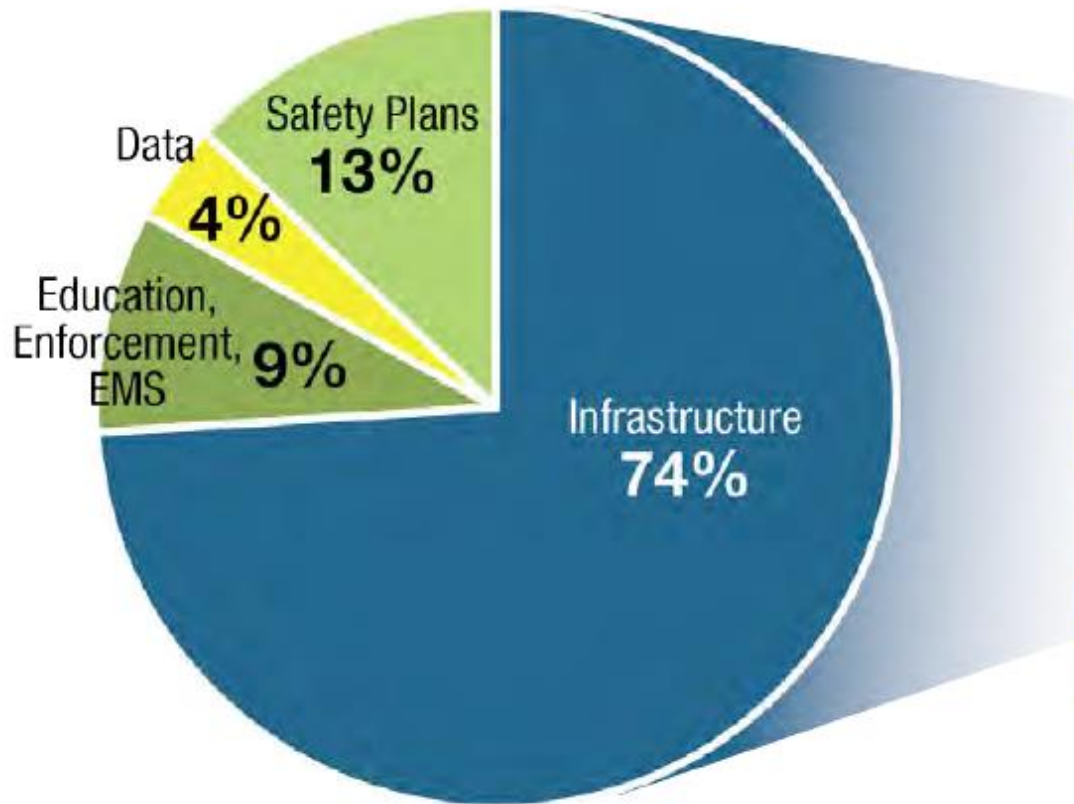
Pedestrian Fatalities

- Fatal pedestrian crash rates 3.5 times greater among Native Americans and Alaska Natives, 2005-2014
- Most fatal pedestrian crashes in Tribal areas occur:
 - In rural areas
 - Not at intersection
 - In the evening after 5pm
 - In dark conditions where no lighting exists
 - Frequently involve males ages 21-50
 - 45% involve impaired pedestrians



Tribal Transportation Program Safety Fund

FUNDING DISTRIBUTION BY CATEGORY



BREAKDOWN OF INFRASTRUCTURE FUNDING BY PROJECT TYPE

A breakdown of infrastructure funding by project type including four categories (Roadway departure, pedestrians, intersections, and other infrastructure improvement) with a comparison to the crash statistics as follows:

PEDESTRIANS



INTERSECTIONS



ROADWAY DEPARTURE



Chart shows 2013-2019 awards

Project Purpose

FHWA seeks to research ways to implement pedestrian safety in rural Tribal areas, including rural Tribal communities, through a variety of approaches including infrastructure improvement.

- Identify risk factors for pedestrians in rural Tribal settings through crash data analysis
- Recommend investment strategies
- Identify planning practices and practical safety strategies for decreasing pedestrian crashes in Tribal areas
- Develop training for Tribal transportation and injury prevention specialists



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Burger King

Navajo Parks & Recreation

Blue Canyon Grill

Simpson's Market & Conoco





Burger King

Navajo Parks & Recreation

Blue Canyon Grill





PROJECT OVERVIEW



GOAL

- Understand safety risks faced by pedestrians in Tribal areas and practical approaches to reduce them



STUDY ELEMENTS

- Assemble advisory committee
- Review fatal crashes involving pedestrians in Tribal areas to identify common risks
- Document method of identifying risk to pedestrians
- Learn from successful projects and programs
- Identify a range of pedestrian safety countermeasures
- Develop report and training



STUDY APPROACH

- Data Gathering
 - Representative sample of fatal crash events in Tribal areas
 - Crash data and reports with narratives for ~500 crashes
 - Supplemental stakeholder interviews
- Data Analysis
 - Crash type using Pedestrian and Bicycle Crash Analysis Tool (PBCAT)
 - Supplemental geographic and contextual information from visual inspection and other available data sets
- Identify Risk Factors
- Learn from Successful Projects
- Recommend Strategies for Improvements



STUDY APPROACH

- Draft and Final Report
- Training
 - Develop training materials
 - Host in-person training



Ways to Participate

ADVISORY COMMITTEE

- Meet on a monthly basis during the project (18 months)
- Report study progress
- Present analyses, issues, and solutions
- Ideally comprised of Tribal, Federal and State agencies
- Meeting dates and times to be determined

Please suggest or volunteer by sending an email to adam.larsen@dot.gov

STAKEHOLDER INTERVIEWS

- Tribal employees or members impacted by pedestrian fatalities in your area
- Supplemental crash data not included in crash reports or narratives
- Recently completed successful pedestrian infrastructure projects
- Conducted virtually

Please nominate or volunteer by sending a message to **adam.larsen@dot.gov**



PROJECT EXAMPLES

- Learn from successful project examples
 - Identify completed pedestrian safety projects
 - Evaluate effectiveness, to extent data available
 - Please send suggestions for completed projects to **Brent.Crowther@kimley-horn.com**

Data Gathering

Crash Data Collection (2015-2021)

State	Pedestrian Fatality Crash Count	State	Pedestrian Fatality Crash Count
Alaska	19	New York	3
Arizona	129	North Dakota	10
California	36	Oklahoma	189
Florida	2	Oregon	3
Idaho	1	South Dakota	18
Iowa	1	Utah	6
Maine	1	Washington	64
Michigan	4	Wisconsin	7
Minnesota	6	Wyoming	7
Montana	26	Grand Total	604
Nebraska	2		
Nevada	1		
New Mexico	69		
New York	3		

Crash Data Collection Status

State	Years of Crash Data	Number of Narratives Provided	Crash Data Summaries	Notes
Arizona	2015-2019	109	0	Request 2015-2021 crash data Request 2020-2021 crash narratives
California	2015-2019	0	82	Request 2020-2021 general crash data Request 2015-2021 crash narratives
Minnesota	2016-2022	6	7	Request one additional narrative
Montana	2015-2019	47	47	Request 2020-2021 crash data and narratives
New Mexico	2015-2019	15	68	Request 2020-2021 crash data Request narratives for crash data previously provided
South Dakota	2015-2019	17	0	Narratives provided by FHWA Request general crash data 2015-2021 and narratives for 2020-2021
Washington	2015-2021	1	53	Request narratives for crashes 2015-2021
Wyoming	2015-2022	0	9	Request narratives 2015-2022

Data Requests in Process

- Arizona
- Wisconsin
- Michigan
- Utah
- Oregon
- Nevada
- Idaho
- Iowa
- Nebraska
- Minnesota
- New York
- New Mexico
- California
- Montana
- South Dakota

Supplemental Data Collection

- Operating Environment
 - Number of lanes
 - Roadway width
- Infrastructure (bridge, guard rail, culverts, etc.)
- Missing Sidewalks/Pedestrian Facilities
- Paved Shoulder Width
- Posted Speed Limit
- Traffic Volume
- Signalized Intersection Spacing
- Weather Conditions
- Lighting Conditions
- Impairment
- Population Density
- Land Use
- Presence of, or distance to, attractors
 - Convenience/liquor stores
 - Parks, Schools and Education facilities
 - Transit stops
 - Casinos, etc.

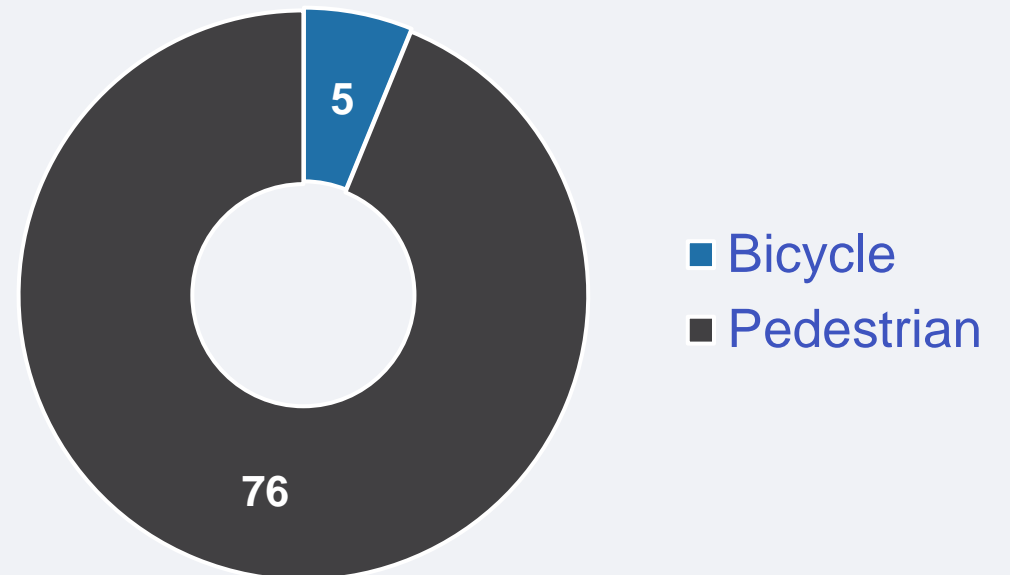
What have we learned so far?



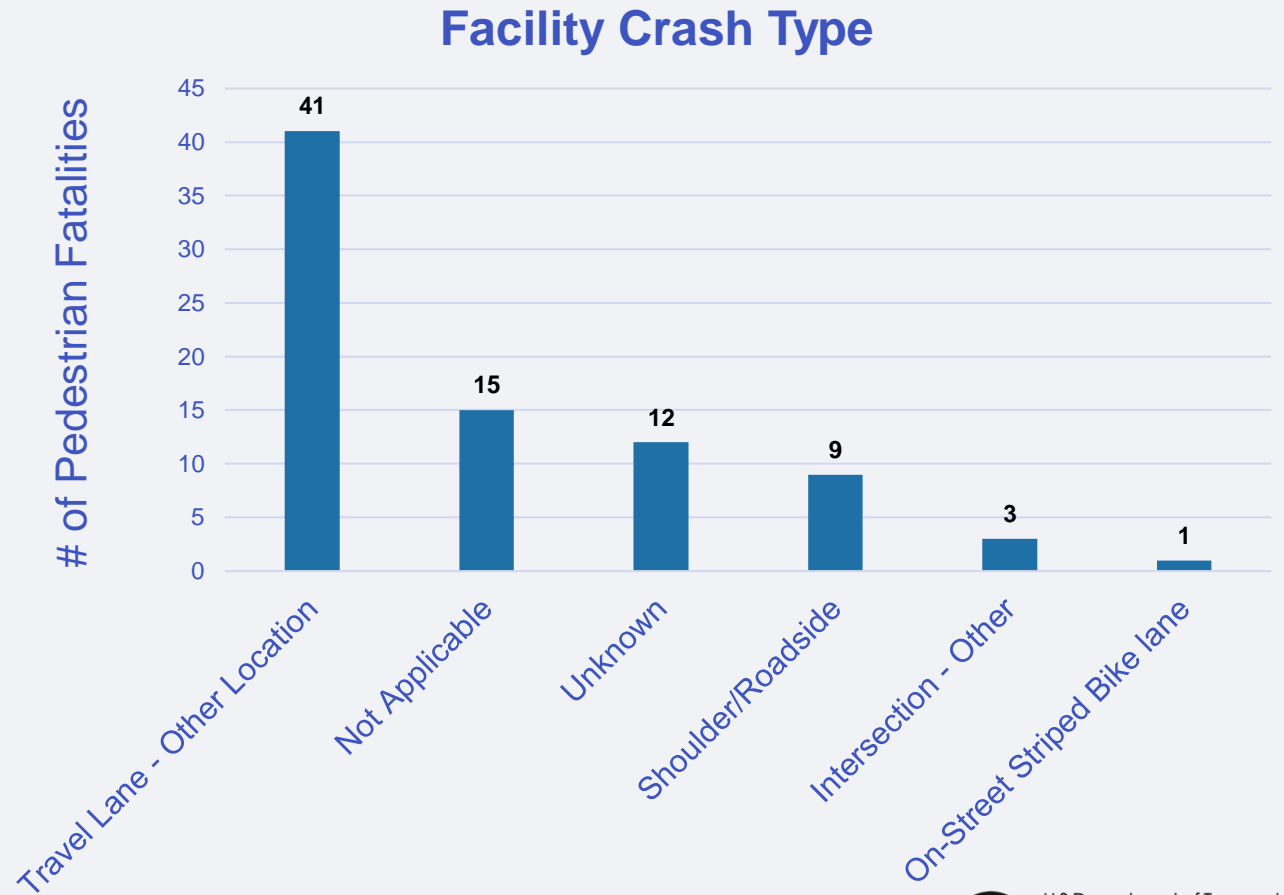
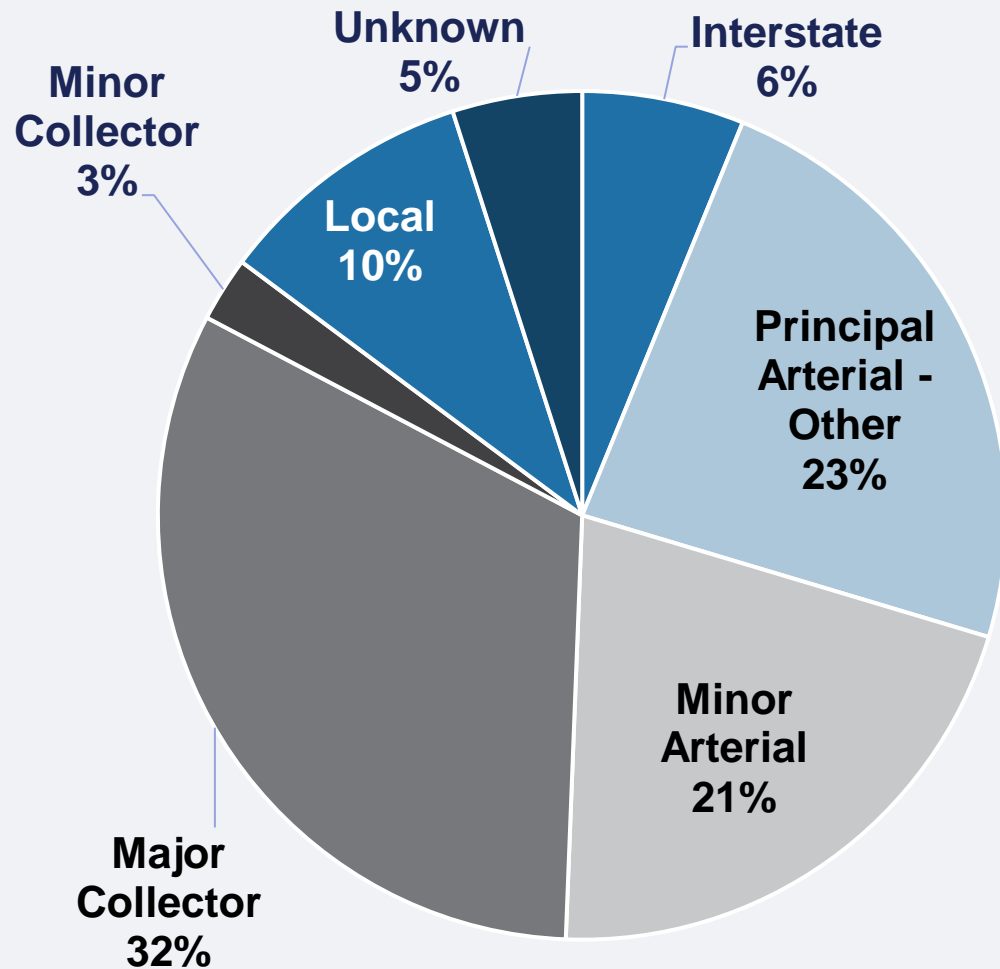
Arizona Crash Typing

- 81 crash narratives processed thus far
- 31 were hit and run crash types
- 10 crashes involved either the pedestrian/bicyclist or motorist impairment

Pedestrian and Bicycle Fatalities

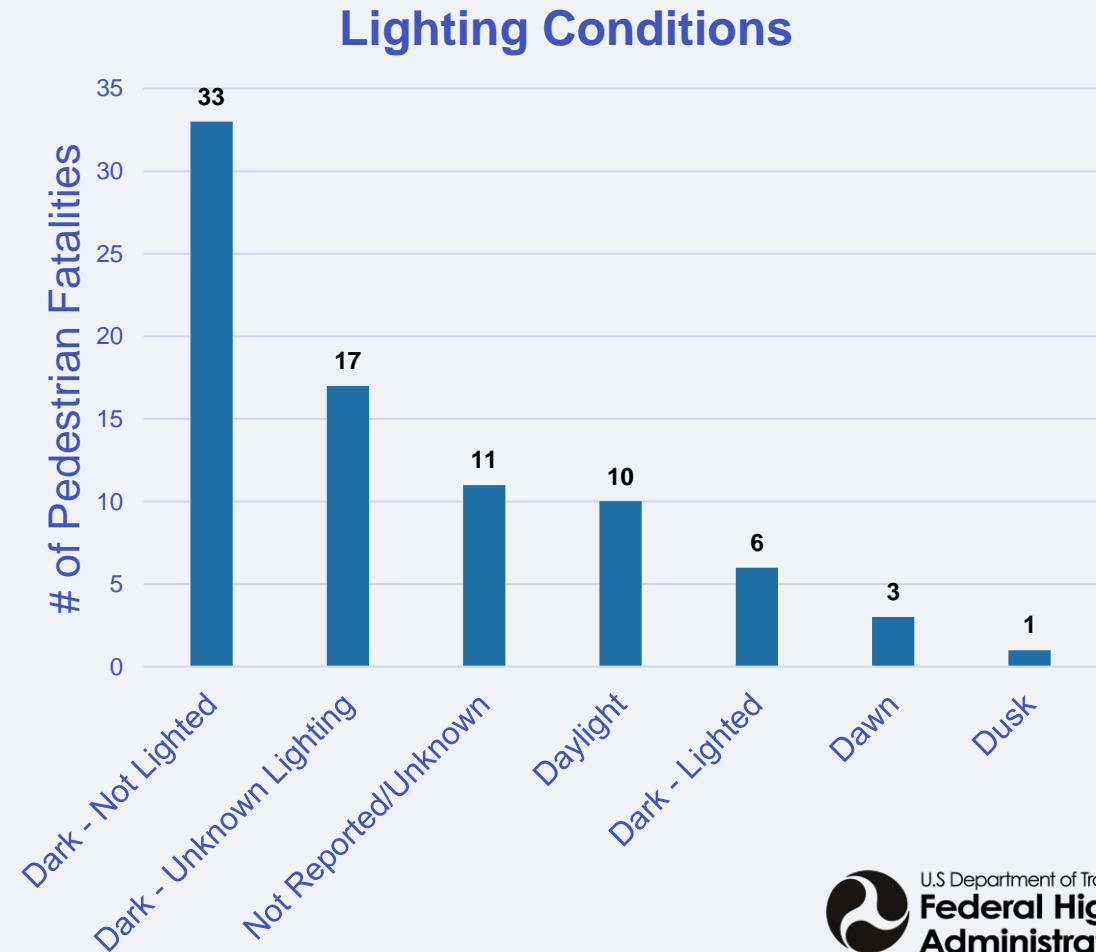


Where are crashes occurring?

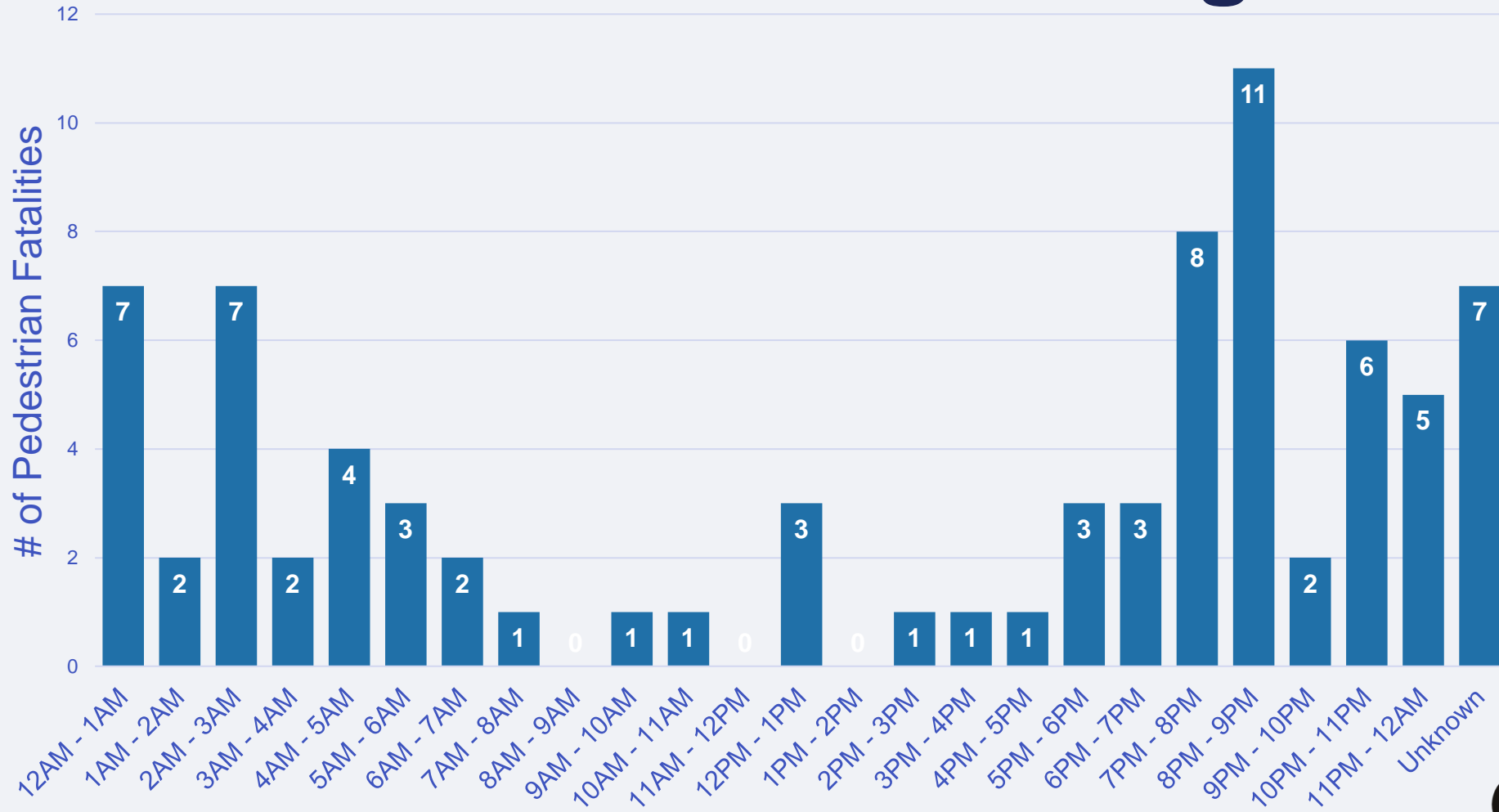


Conditions when crashes occur?

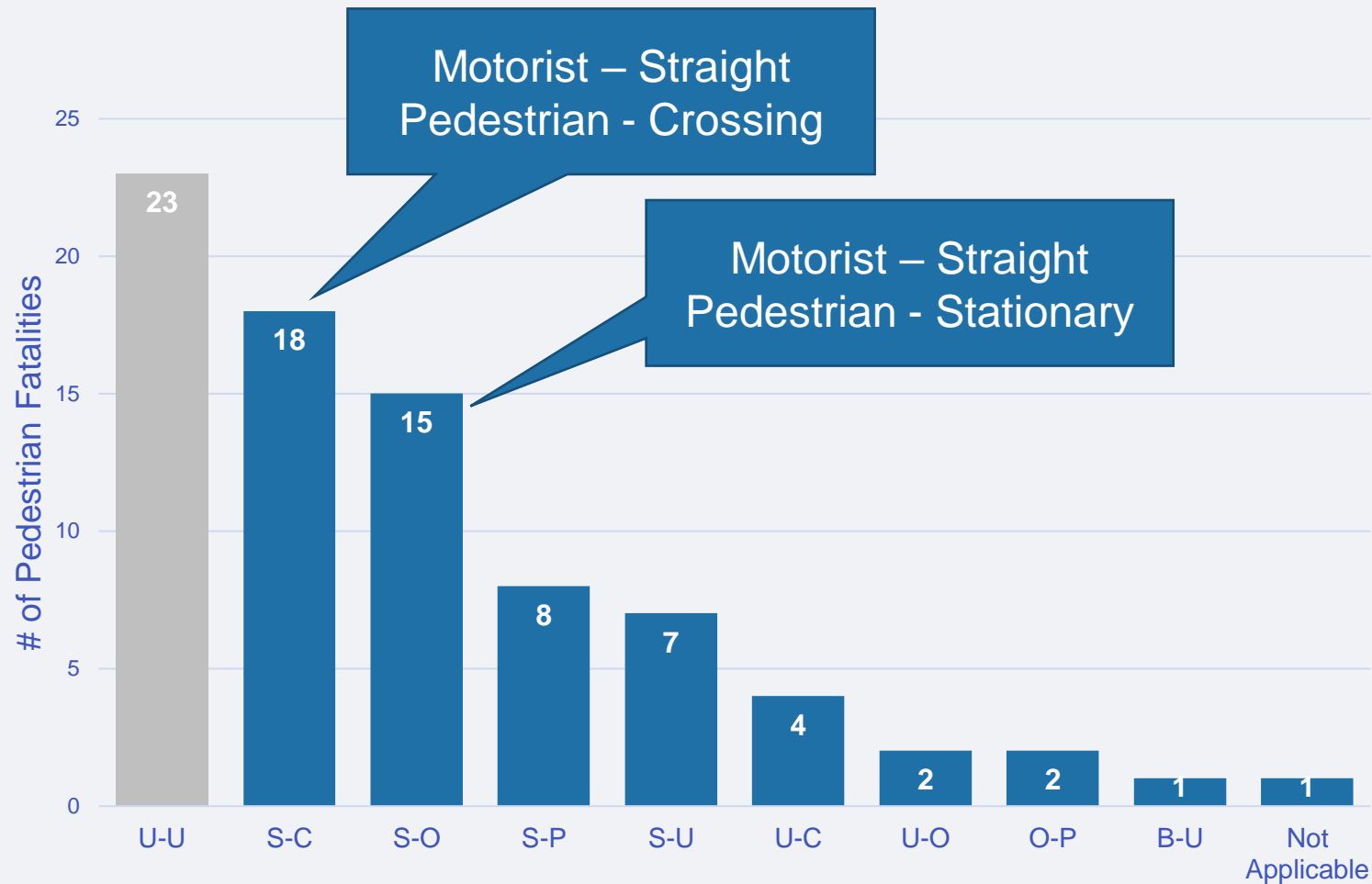
- Higher speed facilities
- Often a pedestrian in the travel lane
- Dark, not lighted conditions
- High proportion occurring from evening to early morning, 7PM to 6AM



When are crashes occurring?

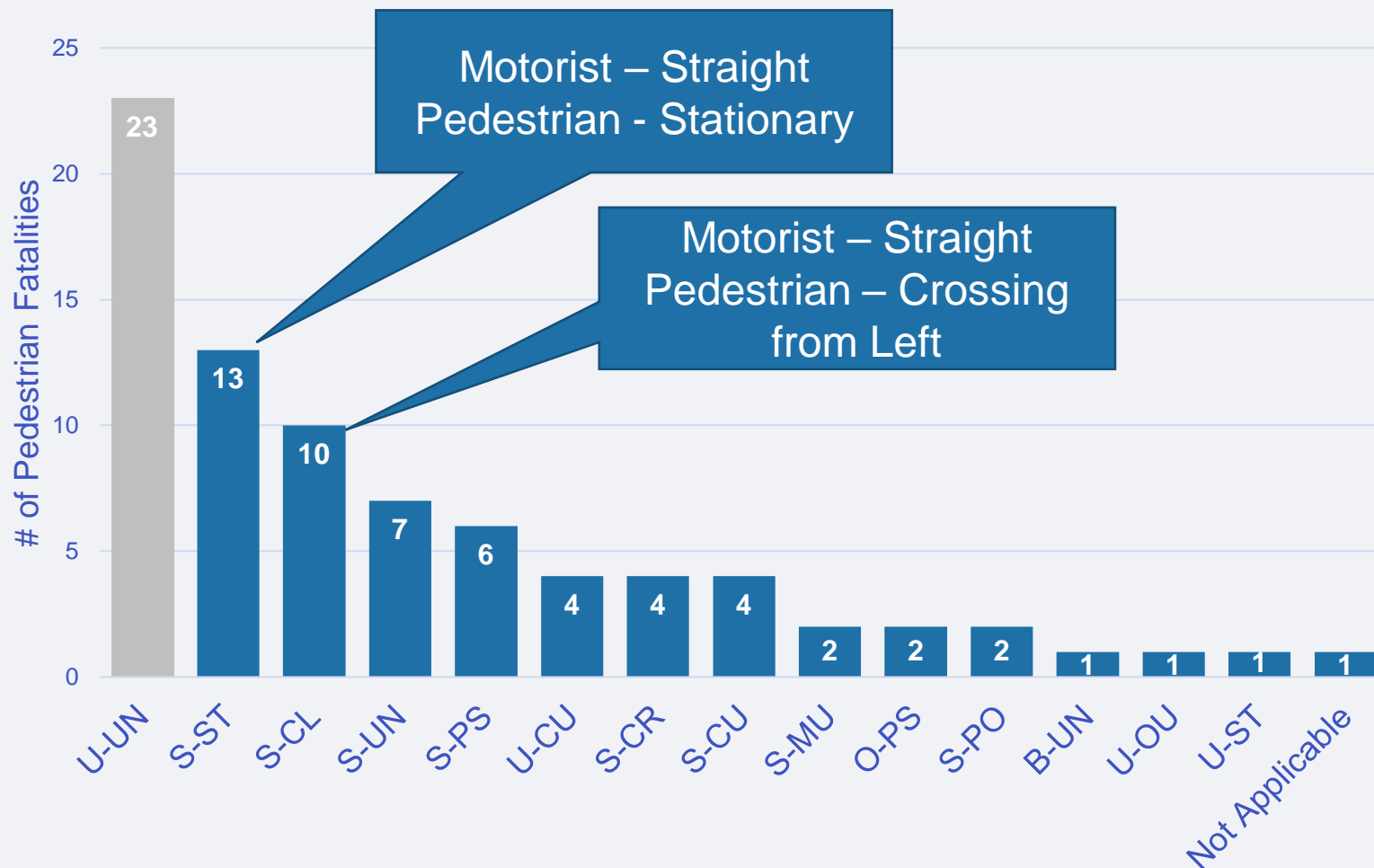


PBCAT Crash Typing (Basic)



Most common crash types are motorists traveling straight (“S”) and either the pedestrian crossing the path (“C”) or being stationary (“O”)

PBCAT Crash Typing (Detailed)



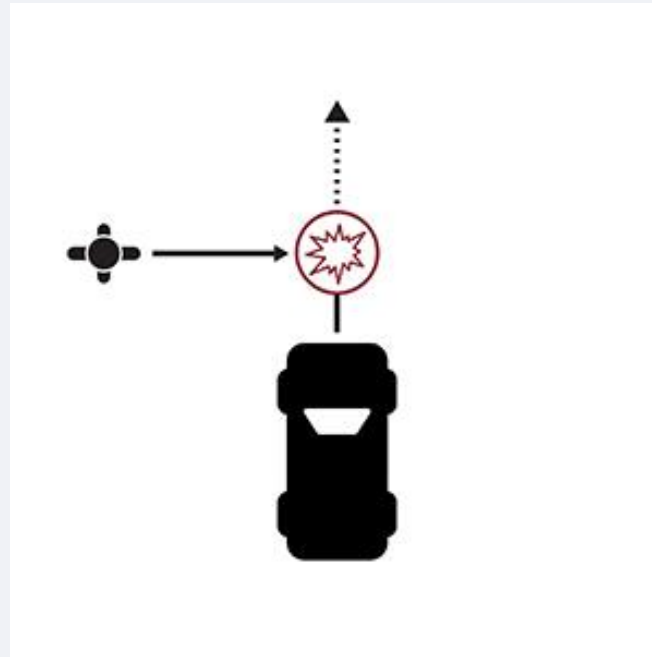
- S-ST: motorist going straight and the non-motorist being stationary
- S-CL: Motorist going straight and the non-motorist crossing the path (from the motorist's left)

PBCAT Crash Typing (Detailed)

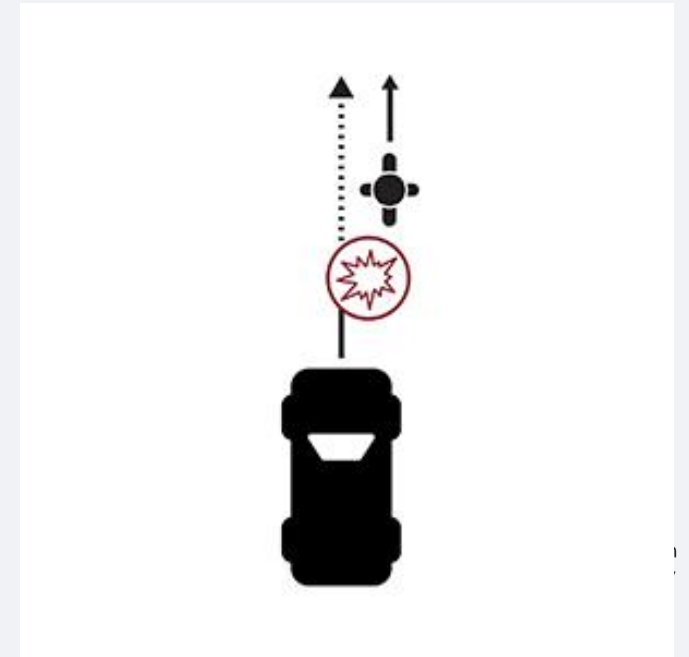
- S-ST: motorist going straight and the non-motorist being stationary



- S-CL: Motorist going straight and the non-motorist crossing the path (from the motorist's left)



- S-PS: motorist going straight and the non-motorist traveling in a parallel path (same direction)



Supplemental Data Collection

- Operating Environment
 - Number of lanes
 - Roadway width
- Infrastructure (bridge, guard rail, culverts, etc.)
- Missing Sidewalks/Pedestrian Facilities
- Paved Shoulder Width
- Posted Speed Limit
- Traffic Volume
- Signalized Intersection Spacing
- Weather Conditions
- Lighting Conditions
- Impairment
- Population Density
- Land Use
- Presence of, or distance to, attractors
 - Convenience/liquor stores
 - Parks, Schools and Education facilities
 - Transit stops
 - Casinos, etc.

We want your input!

<https://www.surveymonkey.com/r/TribalPedSafety>



For additional information or questions, please contact:

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