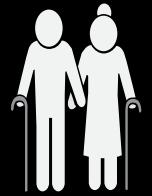
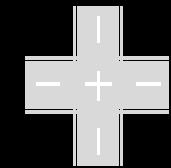


SHSP Action Plan Development

Pedestrian Safety EA Team



March 27, 2018

Agenda

- Welcome and Introductions
- Review Completed Action Plans Developed by Working Groups
- Identify Additional Work Needed
- Next Steps



STRATEGIES: PEDESTRIAN SAFETY EMPHASIS AREA

Strategy #1	Improve driver and pedestrian safety awareness and behavior
Strategy #2	Reduce pedestrian crashes on urban arterials and local roadways
Strategy #3	Improve pedestrians' visibility at crossing locations
Strategy #4	Improve pedestrian networks
Strategy #5	Improve pedestrian involved crash reporting
Strategy #6	Establish vehicle operating speeds to decrease crash severity
Strategy #7	Develop strategic pedestrian safety plans tailored to local conditions

NUMBER	COUNTERMEASURE for ACTION PLANNING
1a	<p>Educate motorists on appropriate actions if they become stranded on a freeway or high speed roadway to reduce crashes with unintended pedestrians on high speed roadways (stay in the vehicle, call for help, Steer It and Clear It).</p> <p>Consider policies for, and enforcement of, moving over and/or encouragement for motorists to move over away from stranded cars and roadside pedestrians (Safe Passing Law). Examples: expansion of the Move Over/Slow Down Law, safe passing laws such as the San Antonio ordinance and proposed statewide legislation. (San Antonio examples – all vulnerable).</p>
1c	<p>Improve driver awareness of pedestrians. Examples: Look Right and Yield to Pedestrian Campaign, Square Your Turns, Rock and Roll in the seat to see pedestrians and bicyclists; educational videos about laws on yielding to pedestrians in crosswalks, targeted education by location, demographics, and other factors.</p> <p>Incorporate pedestrian issues into driver testing and defensive driving courses.</p>
1e	Implement a campaign about drugged, drunk walking. Identify alternatives to impaired walking such as transit, taxis, and transportation network companies (e.g., Uber/Lyft). Work with Teens in the Driver's Seat (high school age program) and U in the Driver's Seat (college-age program) to create awareness around walking and biking issues for young drivers and pedestrians.
2a	<p>Research the distance needed between safe pedestrian crossings:</p> <p>Develop criteria for the maximum desirable distances between safe crossing opportunities for different roadway classifications. Use FHWA materials on Safe Transportation for Every Pedestrian; level of service calculations for all users at signalized intersection and retrofit locations to increase safety (narrowing, speed management treatments).</p>
2c	Implement raised crosswalks at high pedestrian activity locations (Include: right turn channelization roadways, midblock crossings, and on the approach/departure lanes of roundabouts).
2e	Develop and implement a program to assist cities and other agencies to develop policies and implement projects that address common pedestrian crash types (shorten crossing distances, provide complete sidewalk networks, provide enhanced crossing devices, median islands, etc.).

NUMBER	COUNTERMEASURE for ACTION PLANNING
3b	Deploy bulb-outs, neckdowns, median islands, parking restrictions, advance yield bars, Z crossings, and associated improvements that allow pedestrians to find refuge from, and visibility to, vehicular traffic. Minimize the screening of pedestrians by parked or stopped vehicles, vegetation, and other objects (remove on-street parking, encourage Don't Block the Box campaigns) or add bulb-outs.
4a	Incorporate pedestrian considerations in transportation plans. Prioritize pedestrian safety and considerations for mobility and accessibility in the context of land use and roadway environment. Prioritize improvements to fill gaps in networks and crossings within $\frac{1}{4}$ mile of bus stops and $\frac{1}{2}$ mile of other mass transportation. Provide appropriate features along the pedestrian network (wide shoulders, sidewalks, pedestrian crossing treatments, pedestrian refuge islands).
5b	Add fields to the standard crash report form to better define pedestrian crashes and provide additional detail on the specifics of each crash. This includes those needed to use the PBCAT tool and develop law enforcement roll call videos on the need for and uses of pedestrian crash data.
6a	Encourage use of target speeds that consider pedestrians, land use, and the roadway context (e.g., a target speed of 35 mph or less on arterials). Other examples: provide design flexibility guidance for techniques to reduce operating speeds on surface streets; encourage use of tree lined medians, bicycle lanes, safe and attractive pedestrian crossings and walkways; support use of traffic calming for local streets.
7a	Develop Pedestrian Safety Action Plans (PSAPs) in urbanized areas. Identify/create funding sources (i.e., match funding, funding barriers). Other examples: identify barriers which limit use to existing funds; allow for systemic approach (based on site characteristics and not crashes) when implementing countermeasures recommended in PSAPs.

Strategy #1	Improve driver and pedestrian safety awareness and behavior
Countermeasures and Programs:	
1a	<p>Educate motorists on appropriate actions if they become stranded on a freeway or high speed roadway to reduce crashes with unintended pedestrians on high speed roadways (stay in the vehicle, call for help, Steer It and Clear It).</p> <p>Consider policies for, and enforcement of, moving over and/or encouragement for motorists to move over away from stranded cars and roadside pedestrians (Safe Passing Law). Examples: expansion of the Move Over/Slow Down Law, safe passing laws such as the San Antonio ordinance and proposed statewide legislation. (San Antonio examples – all vulnerable).</p>

Steps for Implementation:

1. Develop PSA Campaign for both Motorists and Pedestrian
 - a. TxDOT (Lead Organization)
 - i. Develop campaign materials
 - 1.Audio
 - 2.TV
 - 3.Social Media
 - 4.DMS Messages
 - 5.Potential giveaways
 - ii. Implement campaigns (data-driven)
 - 1.Designated outreach regions
 - 2.Designated time frames

Strategy #1	Improve driver and pedestrian safety awareness and behavior
Countermeasures and Programs:	
1a	<p>Educate motorists on appropriate actions if they become stranded on a freeway or high speed roadway to reduce crashes with unintended pedestrians on high speed roadways (stay in the vehicle, call for help, Steer It and Clear It).</p> <p>Consider policies for, and enforcement of, moving over and/or encouragement for motorists to move over away from stranded cars and roadside pedestrians (Safe Passing Law). Examples: expansion of the Move Over/Slow Down Law, safe passing laws such as the San Antonio ordinance and proposed statewide legislation. (San Antonio examples – all vulnerable).</p>

Steps to Implement Group Notes:

2. Expansion of courtesy patrol programs – TxDOT, RMA, MPO, Toll Authority, County, City, or other government entity
 - a. Develop service levels
 - i. Service hours
 - ii. Services provided
 - iii. Call times
 - b. How are you going dispatch/receive calls
 - i. New facility
 - ii. New phone lines
 - iii. New dispatch equipment
 - c. Purchase equipment
 - d. Hire and train staff

Strategy #1	Improve driver and pedestrian safety awareness and behavior
Countermeasures and Programs:	
1a	<p>Educate motorists on appropriate actions if they become stranded on a freeway or high speed roadway to reduce crashes with unintended pedestrians on high speed roadways (stay in the vehicle, call for help, Steer It and Clear It).</p> <p>Consider policies for, and enforcement of, moving over and/or encouragement for motorists to move over away from stranded cars and roadside pedestrians (Safe Passing Law). Examples: expansion of the Move Over/Slow Down Law, safe passing laws such as the San Antonio ordinance and proposed statewide legislation. (San Antonio examples – all vulnerable).</p>

Effectiveness:

1. Develop PSA Campaign for both Motorists and Pedestrian
** (Goal to get three with constant and consistent messaging, i.e. Click it or Ticket)
2. Expansion of courtesy patrol programs

Cost to Implement:

1. Develop PSA Campaign for both Motorists and Pedestrian - \$\$
2. Expansion of courtesy patrol programs - \$\$\$

Time to implement:

1. Develop PSA Campaign for both Motorists and Pedestrian - Medium
2. Expansion of courtesy patrol programs - Medium

Strategy #1	Improve driver and pedestrian safety awareness and behavior
Countermeasures and Programs:	
1a	<p>Educate motorists on appropriate actions if they become stranded on a freeway or high speed roadway to reduce crashes with unintended pedestrians on high speed roadways (stay in the vehicle, call for help, Steer It and Clear It).</p> <p>Consider policies for, and enforcement of, moving over and/or encouragement for motorists to move over away from stranded cars and roadside pedestrians (Safe Passing Law). Examples: expansion of the Move Over/Slow Down Law, safe passing laws such as the San Antonio ordinance and proposed statewide legislation. (San Antonio examples – all vulnerable).</p>

Barriers:

1. Develop PSA Campaign for both Motorists and Pedestrian
 - a. Concise messaging of what to do (get out or not get out of the car, i.e. fire)
 - b. MUTCD (Allowable DMS messages)
 - c. What is the hook, making it interesting to them
2. Expansion of courtesy patrol programs
 - a. Funding
 - b. Educating people on availability of services and how to contact
 - c. Availability of employee/staff pool

Strategy #1	Improve driver and pedestrian safety awareness and behavior
Countermeasures and Programs:	
1c	<p>Improve driver awareness of pedestrians.</p> <p>Examples: Look Right and Yield to Pedestrian Campaign, Square Your Turns, Rock and Roll in the seat to see pedestrians and bicyclists; educational videos about laws on yielding to pedestrians in crosswalks, targeted education by location, demographics, and other factors.</p> <p>Incorporate pedestrian issues into driver testing and defensive driving courses.</p>

Steps for Implementation:

1. Safety Campaigns (Capital Metro examples) (see above)
 - a. Social Media
2. Proximity detectors on cars to detect approaching objects (detection system)
3. Use of cell phone GPS technology to communicate with cars
4. Evaluation of crash locations/near misses for targeted education
 - a. Potential FTE justification

Steps for Implementation:

1. Update test to include pedestrian information (it only takes one question)
2. Include information in required defensive driving class

Strategy #2	Reduce pedestrian crashes on urban arterials and local roadways
Countermeasures and Programs:	
2a	<p>Research the distance needed between safe pedestrian crossings: Develop criteria for the maximum desirable distances between safe crossing opportunities for different roadway classifications. Consider FHWA materials on Safe Transportation for Every Pedestrian (STEP) , level of service calculations for all users at signalized intersection, and typical distance a pedestrian will work before crossing the street at an unsignalized location. The recommendations may vary by functional classification (e.g., arterial versus local street) and by context (e.g., rural versus urban core). The recommendations may also vary by treatment type (e.g., traffic control signal or pedestrian hybrid beacon versus markings and sign only with no supplemental beacons).</p>

Steps for Implementation:

Step 1: Develop a research problem statement regarding the maximum desirable distance between safe pedestrian crossings. (TTI)

Step 2: Submit problem statements to potential funding sources (TRB, AASHTO, Foundations – AAA, RWJ, Bloomberg and TxDOT) (TxDOT & cities, TTI)

Step 3: Conduct research project to investigate distance between pedestrian crossings

Step 4: Disseminate information from research project and existing information such as FHWA STEP workshop (FHWA, TxDOT, Foundations)
(Lead organization: TxDOT)

Strategy #2	Reduce pedestrian crashes on urban arterials and local roadways
Countermeasures and Programs:	
2a	<p>Research the distance needed between safe pedestrian crossings: Develop criteria for the maximum desirable distances between safe crossing opportunities for different roadway classifications. Consider FHWA materials on Safe Transportation for Every Pedestrian, level of service calculations for all users at signalized intersection, and typical distance a pedestrian will work before crossing the street at an unsignalized location. The recommendations may vary by functional classification (e.g., arterial versus local street) and by context (e.g., rural versus urban core). The recommendations may also vary by treatment type (e.g., traffic control signal or pedestrian hybrid beacon versus markings and sign only with no supplemental beacons).</p>

Step 5: Based on guidance from TXDOT, FHWA, TTI, and others, identify roadways sections potentially in need of safe pedestrian crossings retrofits and develop a prioritized ranking of these locations for retrofitting to increase safety. (Lead organization: local jurisdictions)

Step 6: Incorporate this prioritized list into existing planning and funding decision making processes (Lead organization: local jurisdictions)

Strategy #2	Reduce pedestrian crashes on urban arterials and local roadways
Countermeasures and Programs:	
2a	<p>Research the distance needed between safe pedestrian crossings: Develop criteria for the maximum desirable distances between safe crossing opportunities for different roadway classifications. Consider FHWA materials on Safe Transportation for Every Pedestrian, level of service calculations for all users at signalized intersection, and typical distance a pedestrian will work before crossing the street at an unsignalized location. The recommendations may vary by functional classification (e.g., arterial versus local street) and by context (e.g., rural versus urban core). The recommendations may also vary by treatment type (e.g., traffic control signal or pedestrian hybrid beacon versus markings and sign only with no supplemental beacons).</p>

Effectiveness: **

Cost to implement: \$

Time to implement: short (less than 1 year)

Barriers:

- Funding availability
- Engineering acceptance of findings

Countermeasures and Programs:

6a

Encourage use of target speeds that consider pedestrians, land use, and the roadway context (e.g., a target speed of 35 MPH or less on arterials)
Other examples: provide design flexibility guidance for techniques to reduce operating speeds on surface streets; encourage use of tree lined medians, bicycle lanes, safe and attractive pedestrian crossings and walkways; support use of traffic calming for local streets

Steps for Implementation:

- Step 1: Work with a diverse set of jurisdictions, including TXDOT districts as well as diverse stakeholders including those representing people with disabilities, pedestrians, business districts, low income communities, and transit providers, to explore benefits and barriers to implementation of slower target speed concepts, drawing from NACTO and AASHTO Guidance for designing urban streets with appropriate speeds, recent Florida DOT design manual overhaul, and the Netherlands Sustainable Safety Approach – including the concept of management of kinetic energy.
(Lead organization: TXDOT)
- Step 2: Provide guidance to cities, counties and Districts regarding the ability to set speed limits based on the target speed concept (e.g., USLimits2)
(Lead organization: FHWA, TXDOT,)

Countermeasures and Programs:**6a**

Encourage use of target speeds that consider pedestrians, land use, and the roadway context (e.g., a target speed of 35 MPH or less on arterials)
Other examples: provide design flexibility guidance for techniques to reduce operating speeds on surface streets; encourage use of tree lined medians, bicycle lanes, safe and attractive pedestrian crossings and walkways; support use of traffic calming for local streets

- Step 3: Consider potential changes to Sec. 545.356 of the Transportation Code “AUTHORITY OF MUNICIPALITY TO ALTER SPEED LIMITS” to allow cities to use target speed limits and remove unintended barriers to implementation of safe neighborhood streets.
(Lead organization: Texas Legislature and Governor)
- Step 4: Implement pilot programs to develop pilot arterial and collector “slow zones” and other safe design speed pilots across the state in various jurisdictions and various overlapping bureaucracies.
(Lead organization: Cities and Counties, Texas Legislature and Governor,))
- Step 5: Evaluate effectiveness and how to spread effective treatments of pilot “slow zones” and other safe design speed treatments.
(Lead organization: Cities, TXDOT)

Countermeasures and Programs:**6a**

Encourage use of target speeds that consider pedestrians, land use, and the roadway context (e.g., a target speed of 35 MPH or less on arterials)
Other examples: provide design flexibility guidance for techniques to reduce operating speeds on surface streets; encourage use of tree lined medians, bicycle lanes, safe and attractive pedestrian crossings and walkways; support use of traffic calming for local streets

- Step 6: Write guidance on road design to achieve target speed based upon lessons learned, best practices, and proven countermeasures.
(Lead organization: Cities, TXDOT)
- Step 7: Build and retrofit streets with target speeds that consider pedestrians, land use, and the roadway context.
(Lead organization: Cities and Counties, Texas Legislature and Governor,)

Effectiveness: *****Cost to implement:** \$**Time to implement:** medium (1-5 years)

Countermeasures and Programs:**6a**

Encourage use of target speeds that consider pedestrians, land use, and the roadway context (e.g., a target speed of 35 MPH or less on arterials)
Other examples: provide design flexibility guidance for techniques to reduce operating speeds on surface streets; encourage use of tree lined medians, bicycle lanes, safe and attractive pedestrian crossings and walkways; support use of traffic calming for local streets

Barriers:

- Misperception that congestion or commuter delay is a bigger problem than crashes, when crashes in fact impose a much higher cost on Texans. (References: <http://www.farmandcity.org/2017/09/05/how-much-do-traffic-crashes-cost-the-people-of-texas-a-162-billion/> or <https://www.transportation.gov/sites/dot.gov/files/docs/briefing-room/305216/infrastructure-initiative-booklet.pdf>)
- Public perception of “need for speed” and lack of understanding of how safe, multimodal streets can provide greater access, shorter trips, and even quicker vehicle trips when crashes are avoided.
- Institutional inertia will require leadership, taking concerns seriously, working through issues, to allow the possibility of arriving at results that may seem heretical to many dedicated professionals at various levels of the transportation system.
- Lack of local experience with pedestrian compatible operating speeds - in terms of users, decision-makers, and practitioners.

Countermeasures and Programs:**6a**

Encourage use of target speeds that consider pedestrians, land use, and the roadway context (e.g., a target speed of 35 MPH or less on arterials)
Other examples: provide design flexibility guidance for techniques to reduce operating speeds on surface streets; encourage use of tree lined medians, bicycle lanes, safe and attractive pedestrian crossings and walkways; support use of traffic calming for local streets

Barriers:

- Interpretations of the 85th percentile rule that some might perceive conflicts with this.
- Texas law bars cities from using 20mph speed limits on neighborhood streets, Sec. 545.356 of the Transportation Code requires difficult reporting requirements that some cities say are impossible to meet and thus are seen as a limiting factor for establishing 25mph speed limits which this section is intended to allow, and some cities believe that target and design speeds cannot be set lower than the speed limit, essentially creating a de facto lower limit on the safety of designs at 30mph design speed.
- Reasonable interpretations of this sentence from the TxDOT Procedures for Establishing Speed Zones: “New or reconstructed roadways (and roadway sections) should be designed to accommodate operating speeds consistent with the roadway’s highest anticipated posted speed limit based on the roadway’s initial or ultimate function.”

Countermeasures and Programs:

6b	<p>Design new, or retrofit existing, roadways for a target speed appropriate for the adjacent environment and safety of all users rather than for a design speed intended to maximize motor vehicle speeds.</p> <p>Encourage use of pedestrian compatible target speeds for the design of arterial, collector, and local roadways</p>
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Steps for Implementation:

- Step 1: Design pilot urban arterials with target speeds of 35mph or less, pilot local streets with target speeds of 30mph or less, and pilot neighborhood streets with 20mph target speeds, according to AASHTO and NACTO guidance.
(Lead organization: local jurisdictions)
- Step 2: Implement design changes on local and neighborhood streets using interim, low-cost street redesign strategies, to achieve safe vehicle operating speeds.
(Lead organization: local jurisdictions)
- Step 3: Monitor vehicle speeds before and after implementation of interim design changes.
(Lead organization: local jurisdictions)

Countermeasures and Programs:

6b

Design new roadways for a target speed appropriate for the adjacent environment and safety of all users rather than for a design speed intended to maximize motor vehicle speeds.

Encourage use of pedestrian compatible target speeds for the design of arterial, collector, and local roadways

- Step 4: Integrate safe target speeds into street hierarchy and design manuals, such that all new street construction and retrofits incorporate the benefits of pedestrian compatible target speed design.
(Lead organization: local jurisdictions)
- Step 5: Study costs and benefits of pedestrian compatible target speed implementations across the state.
(Lead organization: TXDOT, various research institutions)

Effectiveness: ***

Cost to implement: \$

Time to implement: medium (1-5 years)

Countermeasures and Programs:

6b	<p>Design new roadways for a target speed appropriate for the adjacent environment and safety of all users rather than for a design speed intended to maximize motor vehicle speeds.</p> <p>Encourage use of pedestrian compatible target speeds for the design of arterial, collector, and local roadways</p>
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Barriers:

- Misperception that congestion or commuter delay is a bigger problem than crashes when crashes in fact impose a much higher cost on Texans.
(References: <http://www.farmandcity.org/2017/09/05/how-much-do-traffic-crashes-cost-the-people-of-texas-a-162-billion/> or <https://www.transportation.gov/sites/dot.gov/files/docs/briefing-room/305216/infrastructure-initiative-booklet.pdf>)
- Public perception of “need for speed” and lack of understanding of how safe, multimodal streets can provide greater access, shorter trips, and even quicker vehicle trips when crashes are avoided.
- Institutional inertia will require leadership, taking concerns seriously, working through issues, to allow the possibility of arriving at results that may seem heretical to many dedicated professionals at various levels of the transportation system.

Countermeasures and Programs:

6b

Design new roadways for a target speed appropriate for the adjacent environment and safety of all users rather than for a design speed intended to maximize motor vehicle speeds.

Encourage use of pedestrian compatible target speeds for the design of arterial, collector, and local roadways

- Lack of local experience with pedestrian compatible operating speeds - in terms of users, decision-makers, and practitioners.
- Interpretations of the 85th percentile rule that some might perceive conflicts with this.
- Texas law bars cities from using 20mph speed limits on neighborhood streets, Sec. 545.356 of the Transportation Code requires difficult reporting requirements that some cities say are impossible to meet and thus are seen as a limiting factor for establishing 25mph speed limits which this section is intended to allow, and some cities believe that target and design speeds cannot be set lower than the speed limit, essentially creating a de facto lower limit on the safety of designs at 30mph design speed.
- Reasonable interpretations of this sentence from the TXDOT Procedures for Establishing Speed Zones: “New or reconstructed roadways (and roadway sections) should be designed to accommodate operating speeds consistent with the roadway’s highest anticipated posted speed limit based on the roadway’s initial or ultimate function.”

Strategy #7	Develop strategic pedestrian safety plans tailored to local conditions
Countermeasures and Programs:	
7a	<p>Develop Pedestrian Safety Action Plans (PSAPs) in urbanized areas. Identify/create funding sources (i.e., match funding, funding barriers).</p> <p>Other examples: identify barriers which limit use to existing funds; allow for systemic approach (based on site characteristics and not crashes) when implementing countermeasures recommended in PSAPs.</p>

Steps for Implementation:

Steps to Implementation & Lead Organization (Action Items) – This is where the majority of your time will be spent. Identify the step-by-step process that would lead to the implementation of the countermeasure. Be as specific as possible. When are the steps going to be taken? Who or what organization is involved at each of the steps? Decide what needs to be done, when it needs to be done, who does it. Add steps as necessary.

Step 1

Lead Organization: FHWA, MPOs, Cities, Counties

Action: Encourage Texas Metropolitan Planning Organizations, cities and counties to study pedestrian safety and develop pedestrian safety action plans, but allows local a broader set of options that include coordination with Vision Zero Action Plans, other safety plans, or Active Transportation Plans. (identified solely as PSAP in further steps)

Step 2

Lead Organization: FHWA, MPOs, Locals

Action: Develop regional and local PSAPs. (first wave – FHWA focus cities/regions)

Strategy #7	Develop strategic pedestrian safety plans tailored to local conditions
Countermeasures and Programs:	
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Step 3

Lead Organization: FHWA, MPOs, TxDOT, TTC, advocates

Action: Work with MPOs to utilize existing funding flexibilities to implement PSAP action items and for additional PSAP development.

Step 4

Lead Organization: MPOs, advocates, TTI, legislature

Action: Explore opportunities for funding to encourage wider spread adoption of PSAPs.

Step 6

Lead Organization: MPOs, Locals

Action: Implement PSAP action items

Step 7

Lead Organization: TxDOT/TTI

Action: Evaluate effectiveness and report to stakeholders. Consider ability to scale to additional communities

Strategy #7	Develop strategic pedestrian safety plans tailored to local conditions
Countermeasures and Programs:	
7a	<p>Develop Pedestrian Safety Action Plans (PSAPs) in urbanized areas. Identify/create funding sources (i.e., match funding, funding barriers).</p> <p>Other examples: identify barriers which limit use to existing funds; allow for systemic approach (based on site characteristics and not crashes) when implementing countermeasures recommended in PSAPs.</p>

Effectiveness – *** PSAPs are FHWA's lead intervention for cities high levels of pedestrian fatalities and serious injuries. Cities with PSAPs include New York City, San Francisco, Los Angeles, and in Texas: San Antonio, Austin, and Fort Worth.

Cost to Implement – \$ to \$\$ - PSAP can be developed with staff time and existing committees or utilizing FHWA resources for the focus cities. Consultant led PSAP development may cost \$50k to \$100k or more. Implementation grants would require new funding to be created or reallocated from existing sources

Time to Implement – medium for development of PSAPs, long for funding and implementation.

Strategy #7	Develop strategic pedestrian safety plans tailored to local conditions
Countermeasures and Programs:	
7a	<p>Develop Pedestrian Safety Action Plans (PSAPs) in urbanized areas. Identify/create funding sources (i.e., match funding, funding barriers).</p> <p>Other examples: identify barriers which limit use to existing funds; allow for systemic approach (based on site characteristics and not crashes) when implementing countermeasures recommended in PSAPs.</p>

Barriers / Other Issues to Implementation –

- Local champions may be reluctant to identity safety areas of concern, to commit to additional physical infrastructure, or lack the staff capacity to take on additional planning activities.
- Cities and MPOs need executive leadership support or champions to ensure plans can be completed and implemented.
- Need for funding (but minimal compared to potential impact)
- Need for balanced approach to transportation considering all modes (solutions that benefit all modes)
- Lack of understanding of pedestrian danger/risk and complete multi-modal safety performance (pedestrian fatalities make up >25% of traffic fatalities in urban areas).
- Requires collaboration and cooperation by broad groups of jurisdictions and levels of government
- Disagreements on effective pedestrian safety strategies (which is also an opportunity for this program)

Strategy #2	Reduce pedestrian crashes on urban arterials and local roadways
Countermeasures and Programs:	
2c (1)	Implement pedestrian-oriented design treatments at high pedestrian activity locations (e.g. raised crosswalks, leading pedestrian intervals, pedestrian refuge island, high visibility crosswalk markings, z-crossing, pedestrian hybrid beacon, bulb outs, etc.)

Steps for Implementation:

- Step 1. Compile and disseminate methods to identify characteristics of, or locations with, higher pedestrian risk. (TxDOT)
- Step 2: Identify locations with higher probability for pedestrian crashes based on characteristics and risk (Lead organization: Local governments and TxDOT)
- Step 3: Identify appropriate lead organization(s) (Lead organization: TxDOT)
- Step 4: Identify suitable treatment(s) (Lead organization: Local government and TxDOT)
- Step 5: Identify and secure funding (Lead organization: Local government)
- Step 6: Implement the treatment (Lead organization: Local government and TxDOT)
- Step 7: Educate the public about the treatment (Lead organization: Local government and TxDOT)
- Step 8: Evaluation of the efficacy of the treatment (Lead organization: TxDOT, local partners)

Strategy #2	Reduce pedestrian crashes on urban arterials and local roadways
Countermeasures and Programs:	
2c	Implement pedestrian-oriented design treatments at high pedestrian activity locations (e.g. raised crosswalks, leading pedestrian intervals, pedestrian refuge island, high visibility crosswalk markings, z-crossing, pedestrian hybrid beacon, bulb outs, etc.)

Effectiveness: ***

Cost to implement: \$\$

Time to implement: medium (1-5 years)

Barriers:

- Funding availability
- Engineering acceptance of treatments
- Political will
- Public support & education

Strategy #2	Reduce pedestrian crashes on urban arterials and local roadways
Countermeasures and Programs:	
2c (2)	Implement pedestrian-oriented design treatments at high pedestrian activity locations (e.g. raised crosswalks, leading pedestrian intervals, pedestrian refuge island, high visibility crosswalk markings, z-crossing, pedestrian hybrid beacon, bulb outs, etc.)

Steps for Implementation:

- Step 1: Develop a process to screen for pedestrian crash locations (segment and/or spot) (TxDOT and TTI)
- Step 2: Screen locations throughout the state to identify the top 15% of crash locations (Lead organization: TxDOTLocal and)
- Step 3: Identify appropriate lead organization(s) (Lead organization: TxDOT)
- Step 4: Identify suitable treatment(s) (Lead organization: Local government and TxDOT)
- Step 5: Identify and secure funding (Lead organization: Local government)
- Step 6: Implement the treatment (Lead organization: Local government and TxDOT)
- Step 7: Educate the public about the treatment (Lead organization: Local government and TxDOT)
- Step 8: Evaluation of the efficacy of the treatment (Lead organization: TxDOT, local partners)

Strategy #2	Reduce pedestrian crashes on urban arterials and local roadways
Countermeasures and Programs:	
2e	Develop and implement a program to assist cities and other agencies to develop policies and implement projects that address common pedestrian crash types (shorten crossing distances, provide complete sidewalk networks, provide enhanced crossing devices, median islands, etc.).

Steps for Implementation:

Building awareness (FHWA outreach to MPOs, cities, TxDOT)

Document and disseminate info on existing programs

Establishing need. Providing information (STEP), Identify local leaders

- Step 1: Develop the program (Lead organization: TxDOT)
- Step 2: Identify partners (local government) (Lead organization: TxDOT)
- Step 3: Implement the program (Lead organization: local government)
- Step 4: Evaluation of the efficacy of the program (Lead organization: TxDOT, local government)
- A program identifies, evaluates, prioritizes, implements

Strategy #2	Reduce pedestrian crashes on urban arterials and local roadways
Countermeasures and Programs:	
2e	Develop and implement a program to assist cities and other agencies to develop policies and implement projects that address common pedestrian crash types (shorten crossing distances, provide complete sidewalk networks, provide enhanced crossing devices, median islands, etc.).

Effectiveness: **

Cost to implement: \$

Time to implement: medium (1-5 years)

Barriers:

- Funding availability
- Political will
- Public support & education

Strategy #3	Improve pedestrians' visibility at crossing locations
Countermeasures and Programs:	
3a	<p>Improve nighttime visibility of pedestrians.</p> <p>Examples: use of visible/reflective clothing by pedestrians, pedestrian-illuminating lighting on urban corridors, midblock crosswalk lighting in accordance with FHWA guidance, smart lighting to illuminate when pedestrians are detected, identify target audiences for information dissemination.</p>

Steps for Implementation:

- Step 1: Identify the locations where nighttime visibility of pedestrians is a concern (Lead organization: Local government)
- Step 2: Identify suitable treatment(s) (Lead organization: Local government)
- Step 3: Identify and secure funding (Lead organization: Local government)
- Step 4: Implement the treatment(s) (Lead organization: Local government)
- Step 5: Educate the public on looking for pedestrians at night (Lead organization: TxDOT)
- Step 6: Evaluation of the efficacy of the treatment (Lead organization: TxDOT, Local government)

Strategy #3	Improve pedestrians' visibility at crossing locations
Countermeasures and Programs:	
3a	<p>Improve nighttime visibility of pedestrians.</p> <p>Examples: use of visible/reflective clothing by pedestrians, pedestrian-illuminating lighting on urban corridors, midblock crosswalk lighting in accordance with FHWA guidance, smart lighting to illuminate when pedestrians are detected, identify target audiences for information dissemination.</p>

Effectiveness: **

Cost to implement: \$\$

Time to implement: medium (1-5 years)

Barriers:

- Funding availability
- Public support & education

Strategy #3	Improve pedestrians' visibility at crossing locations
Countermeasures and Programs:	
3b	Deploy treatments to enhance pedestrian visibility such as bulb-outs, neckdowns, median islands, parking restrictions, advance yield bars, Z crossings, maintenance of vegetation, encourage Don't Block the Box campaigns, and associated improvements that allow pedestrians to find refuge from, and visibility to, vehicular traffic.

Steps for Implementation:

- Step 1: Identify the locations needing enhanced pedestrian visibility (Lead organization: Local government)
- Step 2: Identify suitable treatment(s) (Lead organization: Local government)
- Step 3: Identify and secure funding (Lead organization: Local government)
- Step 4: Implement the treatment (Lead organization: Local government)
- Step 5: Educate the public about the treatment (Lead organization: Local government)
- Step 6: Evaluation of the efficacy of the treatment (Lead organization: TxDOT, Local government)

Strategy #3	Improve pedestrians' visibility at crossing locations
Countermeasures and Programs:	
3b	Deploy treatments to enhance pedestrian visibility such as bulb-outs, neckdowns, median islands, parking restrictions, advance yield bars, Z crossings, maintenance of vegetation, encourage Don't Block the Box campaigns, and associated improvements that allow pedestrians to find refuge from, and visibility to, vehicular traffic.

Effectiveness: **

Cost to implement: \$\$

Time to implement: medium (1-5 years)

Barriers:

- Funding availability
- Engineering acceptance of treatments
- Political will
- Public support & education

Strategy #4	Improve pedestrian networks
Countermeasures and Programs:	
4a	Incorporate pedestrian considerations in transportation plans. Prioritize pedestrian safety and considerations for mobility and accessibility in the context of land use and roadway environment. Prioritize improvements to fill gaps in networks and crossings within $\frac{1}{4}$ mile of bus stops and $\frac{1}{2}$ mile of other mass transportation. Provide appropriate features along the pedestrian network (wide shoulders, sidewalks, pedestrian crossing treatments, pedestrian refuge islands).

Note: These strategies and countermeasures were combined during the facilitated discussion.

Facilitated Discussion Group Notes:

Step 1: Identify locations

(Lead organization: government organization)

Step 2: Select solution based on location; community outreach
(Lead organization: government organization with public input)

Step 3: Design

(Lead organization: government organization/consultant)

Step 4: Install

(Lead organization: government organization/contractor)

Step 5: Public education

(Lead organization: government organization)

Countermeasures and Programs:

- 4a** Incorporate pedestrian considerations in transportation plans. Prioritize pedestrian safety and considerations for mobility and accessibility in the context of land use and roadway environment. Prioritize improvements to fill gaps in networks and crossings within $\frac{1}{4}$ mile of bus stops and $\frac{1}{2}$ mile of other mass transportation. Provide appropriate features along the pedestrian network (wide shoulders, sidewalks, pedestrian crossing treatments, pedestrian refuge islands).

Note: These strategies and countermeasures were combined during the facilitated discussion.

Effectiveness: **

Cost to implementation: \$\$

Time to implement: short to medium

Barriers:

- Public
- Politics
- Amount of space to work in

Strategy #5	Improve pedestrian involved crash reporting
Countermeasures and Programs:	
5b	Add fields to the standard crash report form to better define pedestrian crashes and provide additional detail on the specifics of each crash. This includes those needed to use the PBCAT tool and develop law enforcement roll call videos on the need for and uses of pedestrian crash data.

Facilitated Discussion Group Notes:

Step 1: Gather requirements

Step 2: Cost estimate and prioritize

Step 3: Test

Step 4: Update forms and communication

Step 5: Produce

(Lead organization: TxDOT, Law Enforcement)

Strategy #5	Improve pedestrian involved crash reporting
Countermeasures and Programs:	
5b	Add fields to the standard crash report form to better define pedestrian crashes and provide additional detail on the specifics of each crash. This includes those needed to use the PBCAT tool and develop law enforcement roll call videos on the need for and uses of pedestrian crash data.

Effectiveness: **

Cost to implement: \$

Time to implement: medium

Barriers:

- Contract
- Funding
- Standardization of data

Wrap Up

- Regional Workshops
 - Houston: May 1st
 - San Antonio: May 3rd
 - DFW: May 15th
 - Midland: May 17th
- Enforcement focused Webex: April 12th
- Project inventory web survey
- Traffic Safety Conference
 - August 8-10
 - Sugar Land Marriott Town Square
- Questions
- Comments

Thanks very much!