

## INTRODUCTION

At their meeting on November 18, 2013, City Council approved Resolution R-13-367, which called for the Council to appoint a Pedestrian Safety and Access Task Force that will explore strategies to improve pedestrian safety and access within a framework of shared responsibility through community outreach and data collection, and will recommend to Council improvements in the development and application of the Complete Streets model, using best practices, sound data and objective analysis.

The resolution notes that developing a task force such as this is “one of the tools recommended for implementing the Complete Streets to consider steps toward the creation of a comprehensive Pedestrian Safety Action Plan.” The following proposed work approach uses the Federal Highway Administration (FHWA) guidebook titled *How to Develop a Pedestrian Safety Action Plan* as a guide. The task breakdown for the proposed work approach follows:

**Task A. IDENTIFY GOALS & OBJECTIVES**

**Task B. DEVELOP COMMUNITY OUTREACH & ENGAGEMENT PLAN**

1. Pedestrian Safety and Access Task Force
2. Resource Group (staff and others)
3. Stakeholders
4. Public/Community

**Task C. ONGOING COMMUNICATIONS**

1. Audiences
2. Key Messages
3. Communication Methods

**Task D. DETERMINE DATA TYPES & ISSUES IDENTIFICATION**

1. Understanding Data Types
2. Project Types & Issues Identification
3. Community Outreach & Engagement—First Round

**Task E. ANALYSIS & PRIORITIZATION**

1. Understanding Countermeasures
2. Categorizing Safety Concerns & Solution Types
3. Development of Prioritization Systems

**Task F. SAFETY SOLUTION ALTERNATIVES & FUNDING OPTIONS**

1. Engineering & Planning Solutions
2. Education-Related Solutions
3. Enforcement & Legislative Solutions
4. Funding Options
5. Community Outreach & Engagement—Second Round

**Task G. PEDESTRIAN SAFETY ACTION PLAN ELEMENTS**

1. Checklist for Pedestrian Safety Action Plan Elements
2. Draft Recommendations
3. Community Outreach & Engagement—Third Round
4. Final Documentation

## **Task A. IDENTIFY GOALS & OBJECTIVES**

The work of the Task Force will inform the subsequent development of a Pedestrian Safety Action Plan (PSAP) using the Federal Highway Administration (FHWA) guidebook titled *How to Develop a Pedestrian Safety Action Plan* as a guide (referred to as the FHWA *How to Develop a PSAP* in the body of this document). The City's Non-motorized Transportation Plan, and ADA Plan are other important resources that can facilitate Task Force considerations.

### **1. Convene Task Force**

At this kick-off meeting the Task Force shall create a goals and objectives statement; determine roles and responsibilities of Task Force members and appoint a chair and secretary. Methods of communication and information sharing shall be determined and project background materials needs identified.

### **2. Develop Work Plan**

The Resource Group will assist the Task Force in developing a work plan including confirming a final timeline for their work efforts.

## **Task B. DEVELOP COMMUNITY OUTREACH & ENGAGEMENT PLAN**

Seeking input from the members of the community is a key component of the Task Force effort. Through a genuine outreach and engagement process, trust is built and partnerships are formed between all participants throughout the course of the project and beyond, resulting in community-wide ownership of the project.

Working with a facilitator is key to assisting in the development of an engagement plan in order to enlist the involvement of the following groups so that the Task Force may arrive at a recommendations report that can be delivered to City Council in February 2015, as stated in the resolution.

- **Pedestrian Safety and Access Task Force**
  - City Council appointed members with a broad range of perspectives.
  - *18 meetings*
- **Resource Group**
  - Consisting of city staff and/or consultants
  - *24 meetings*
- **Stakeholders**
  - Including individual citizens; citizen-based organizations; public officials; public agencies (both state and local); private sector groups; media outlets.
  - *Three (3) rounds of stakeholder focus group meetings and/or interviews*
- **Public/Community**
  - Consisting of any and all city residents, stakeholders and others interested in the eventual development of a PSAP.
  - *Three (3) city-wide meetings*

The roles and responsibilities, related to the outreach and engagement efforts, for each of these groups are described below.

### **1. Pedestrian Safety and Access Task Force**

As stated in the City Council resolution: *the City Council will appoint a Task Force that will consist of nine (9) residents, and shall include representatives from organizations that address the needs of school aged youth, senior citizens, pedestrian safety, and people with mobility impairments. The*

*Pedestrian Safety and Access Task Force will explore strategies to improve pedestrian safety and access within a framework of shared responsibility through community outreach and data collection, and will recommend to Council improvements in the development and application of the Complete Streets model, using best practices, sound data and objective analysis*

The Task Force may also provide guidance on the best approaches for engaging other stakeholder groups and the broader public over the course of their effort.

For estimation purposes, the Task Force may meet 18 times during the 14-month period; twice per month in the first four months and once per month thereafter.

### **2. Resource Group**

The Resource Group shall consist of members of city staff (including technical consultants, as applicable) who may be sources of background information, provide data and analysis expertise and who may support and assist the Task Force with other components of their 14-month work effort.

Typically, the Resource Group will meet prior to Task Force meetings and/or stakeholder or city-wide meetings to prepare data and materials for presentations and discussions and determine an appropriate format/venue for specific public engagement activities.

For estimation purposes, the Resource Group may meet 24 times during the 14-month period.

Typical Resource Group activities related to the Task Force work effort components may include:

- Assisting with a stakeholder analysis and Community Outreach and Engagement Plan.
- Corresponding with stakeholder groups and/or managing contact lists.
- Preparing agendas for Task Force, stakeholder and city-wide meetings.
- Preparing graphic materials (e.g., maps, illustrations).
- Reviewing, commenting on and editing materials.
- Advertising public meetings or other project events (e.g., press releases, newsletters, twitters, posters).
- Arranging for meeting logistics (e.g., space reservation, equipment provisioning).
- Meeting facilitation and coordinating presentations.
- Preparing content for public review (e.g., PowerPoint presentations, maps, handouts).
- Drafting results summaries from stakeholder focus groups/interviews and city-wide meetings.
- Updating information and posting documents to the City's web site.
- Providing technical expertise and interpretation of data and background information.

### **3. Stakeholders**

Stakeholders include a range of groups with an interest in, or involvement with, pedestrian safety issues and whose input is important to the development and eventual success of a PSAP. The engagement methods for the stakeholders include focus groups and/or interviews designed to offer special opportunities to review and comment on materials at key stages of the process. Members of

The stakeholder focus group meetings or interview sessions shall typically be held prior to city-wide meetings so stakeholders can help focus content and key questions for the city-wide meetings.

For estimation purposes, stakeholders may be comprised of four (4) categories of stakeholder groups that may meet three (3) times during the 14-month period.

At project start-up, an analysis will be undertaken to determine various stakeholder groups which may include members from:

- Residential Neighborhood Groups/Citizens At-Large
- City Units
- Boards & Commissions
- Agencies/Public Groups
- Private Companies
- Non-profit Groups/ Organizations
- Business Organizations/Commercial Neighborhoods
- Residential Neighborhood Groups/Citizens At-Large

#### **4. Public/Community**

The general public may participate in the process through a series of three (3) city-wide meetings during the 14-month period. The city-wide meetings will typically last two (2) hours, using the first hour to present information or draft materials in an open house/presentation format and the second hour for public discussion or other feedback activities.

#### **Task C. ONGOING COMMUNICATIONS**

Effective communications leading up to and during the course of the Task Force effort will help to encourage walkers, bikers and drivers to use their “shared responsibility” on the road to make sure everyone gets to their destination safely. Providing clear, concise messages is an important element of an effective program. The Task Force can serve to emphasize the importance of, methodology(ies) and recommended resource level for these activities.

Understanding ongoing communication efforts and sending these messages through the course of the Task Force efforts is key to enlisting community interest and awareness.

#### **1. Audiences**

- Students
  - University of Michigan (UM)
  - Ann Arbor Public Schools
- Drivers (those who live in the city and those who commute to, and travel within, Ann Arbor)
  - Residents
  - Commuters
  - Visitors

#### **2. Key Message**

- Shared Responsibility: whether you drive, walk or bike, you are responsible for the safety of others. Stay alert, focused, and sometimes just slow down.

#### **3. Communication Methods**

- Traditional Media
  - Press Release: In September 2014, as Fall was approaching, staff issued a press release reminding everyone who uses the roads and sidewalks of Ann Arbor of their shared responsibility to keep each other safe.
- Other Outreach Tools
  - A shared responsibility pledge drive is being considered as an opportunity to tie together all efforts including those of local high school students and the UM
  - Public art campaign to support the shared responsibility message
  - Outreach in the city’s monthly online resident newsletter

- Public Service Announcements on CTN
- Parks and Recreation brochure
- WasteWatcher & WaterMatters publications
- City website & Gov Delivery email notifications
- A2 Open City Hall feedback
  
- Social Media
  - 31 Days, 31 Safety Tips: In October 2013, the City ran a month-long social media campaign to remind people of simple tips that would help them stay safe while traveling in Ann Arbor. These short tips, often accompanied by links to helpful video's and articles, reached thousands of the City's followers on Facebook and Twitter.
  - City staff coordinated its social media campaign with UM's communications office to expand outreach to students on and off campus.
  
- Grassroots
  - City staff has been working with a group of high school students at Skyline High School who are part of a communications and public policy program who have been assigned the task of developing an outreach campaign to reach students their age.
  - City staff continues to meet with members of UM's Coordinated Student Government on an outreach campaign, both off and on campus.
  - City staff is working with University Housing, Parking and Beyond the Diag to find ways to communicate with students on safety.
  - City staff will be also be reaching out to Ann Arbor Public Schools to find the best ways to communicate with students at all grade levels and their parents who drive and walk them to school.

#### **Task D. DETERMINE DATA TYPES & ISSUES IDENTIFICATION**

Analyzing crash data, patterns and police reports, assessing motorist and pedestrian behavior, examining the extent of sidewalk gaps in the city, and other methods for understanding pedestrian safety issues, are needed in order to identify and quantify safety deficiencies.

Using the FHWA *How to Develop a PSAP* as a guide, the Task Force shall work closely with the Resource Group and Stakeholders to gain an overall understanding of known issues, supporting data and general project types.

##### **1. Understanding Data Types**

The Resource Group shall work with the Task Force to inventory existing databases as well as identify gaps in information. Methods for prioritizing data needs will be explored in order to determine short- and long-term data needs and the most effective types of data needed to make best use of available resources. Categories of data types that may be discussed are:

- Pedestrian Crash Data
  - Number, severity and type of crashes.
  - Identification of high crash roadways.
- Observations of Motorist and Pedestrian Behavior
  - Field observation/audits by transportation technicians at targeted areas.
  - Stakeholder observations from surveys, focus groups and other outreach methods.
- Roadway and Sidewalk Inventories
  - Street classification; roadway cross sections; posted speed limits; school zones; presence of medians; signals; beacons; signage; crosswalks; and gaps in sidewalks.

Inventories can also include identifying major destinations that generate high rates of foot traffic.

- Traffic Counts and Characteristics
  - Vehicle
  - Pedestrian
  - Bicycle
- Police Reports

## 2. Project Types and Issues Identification

The Resource Group will work with the Task Force to identify project types and related, known issues:

- Spot Locations—may include individual intersections and/or mid-block areas.
- Corridors—including roadway sections and/or entire corridors.
- Targeted Areas—specific neighborhoods, school zones or business districts where pedestrian crashes are especially high.
- Entire Jurisdiction—this may include system-wide improvements and policies.

## 3. Community Outreach & Engagement—First Round

The Task Force shall meet with stakeholders in focus group settings and by hosting a public meeting with assistance from the Resource Group. At these meetings, background information shall be conveyed relating to:

- Task Force Goals and Objectives
- Outreach and Engagement Plan
- Communication Methods
- Data Types, Known Issues and Project Types

The majority of time at the meetings shall be designed to optimize community feedback regarding observations of motorist and pedestrian behavior. Formats may include a combination of the following:

- Focus Groups
- Open House Format with Work Stations
- Large Group Discussion
- Small Group Discussion by Topic
- Small Group Discussion by Geographic Area
- Worksheets and Surveys

Other engagement venues will be explored to provide multiple ways for the community to participate in the discussion about pedestrian safety. These, among other methods, may include:

- Online Surveys
- A2 Open City Hall Message Board
- Attendance at Neighborhood Meetings
- Walking Tours and Meetings

There may be an opportunity to recruit residents and students to be involved in Pedestrian and Motorist Behavior Assessments as described in Appendix C (attached) of the FHWA *How to Develop a PSAP*—a guided exercise of “thinking like a pedestrian” and “thinking like a motorist” to better understand the human element of safety concerns.

## Task E. ANALYSIS & PRIORITIZATION

Building on the understanding of data types, known issues, project types, and information gathered from stakeholders in Task D., the Task Force and Resource Group, including technical consultants will work to categorize concerns related to pedestrian safety. According to the FHWA *How to Develop a*

PSAP, improving pedestrian safety involves an understanding of the countermeasures needed to address a variety of different types of concerns:

*“Crash countermeasures, or treatments intended to address pedestrian safety concerns, can take several forms: operational and construction projects intended to fix specific problems; changes in design guidelines to help improve streets and intersections in future projects; and education and enforcement programs aimed at achieving changes in motorist and pedestrian behavior or attitude.”*

### **1. Understanding Countermeasures**

The Resource Group shall provide the Task Force with a general overview of the variety of countermeasures most commonly used to improve pedestrian safety. Visual images and graphics shall be used to convey categories of countermeasures described in the FHWA *How to Develop a PSAP*:

- Design Specifications and Guidelines
- Engineering Solutions
- Enforcement and Education Solutions
- Policy and Planning Solutions

### **2. Categorizing Safety Concerns & General Solutions**

The Resource Group will work with the Task Force to categorize known and identified safety concerns by type:

- Spot Location—concerns are unique to a particular location
- Corridor Location—concerns occur at sequential intersections or along an entire corridor
- Targeted Areas—concerns are unique to neighborhood locations; school zones or business districts
- Entire Jurisdiction—concerns are a result of ineffective or undesirable practice throughout the City

Using the categories of safety concerns, the Resource Group will work with the Task Force to assign general solution types, such as:

- Operational/Construction
- General Design
- Education/Enforcement

### **3. Development of Prioritization System(s)**

During the development of a PSAP, pedestrian safety improvement needs will most likely be greater than resources can accommodate. The Resource Group will work with the Task Force to develop applicable factors/criteria that can be used in existing prioritization tools to rank projects needs. Prioritization system(s) may take into account the following factors as described in the FHWA *How to Develop a PSAP*:

- Availability of Right-of-Way (ROW)
- Federal and/or State Mandates
- Public Support
- Travel Demand
- Cost of Improvements
- Funding
- Safety Benefits

The Task Force may discuss weighting of scores that are assigned to identified criteria. Examples of standard forms or checklists may be explored to increase the likelihood of objective results.

## **Task F. SAFETY SOLUTION ALTERNATIVES & FUNDING OPTIONS**

During this task, the Resource Group will work with the Task Force to gain a better understanding of safety solutions, or countermeasures. Since there is vast inventory of safety solutions, it may be beneficial to organize the Task Force into subgroups to address the 3 ‘E’s’ of safety solutions as defined in the FHWA *How to Develop a PSAP*:

- Engineering
- Education
- Enforcement

With this subgroup approach, much of the work efforts can be accomplished in small groups with “report outs” and recommendations communicated to the entire Task Force.

### **1. Engineering and Planning Solutions**

The Resource group will work with the Task Force (or a subgroup, thereof) in a guided exercise aimed to develop a common understanding of countermeasures, and to assess whether or not the City of Ann Arbor has adopted these, or other applicable, practices. Appendix H (attached)—*Checklist for Engineering and Planning Solutions* in the FHWA *How to Develop a PSAP*, is a worksheet that describes countermeasures and asks specific questions that will help the Task Force gain a better understanding of areas of focus for the subsequent development of a PSAP.

### **2. Education-Related Solutions**

The Resource group will work with the Task Force (or a subgroup, thereof) to discuss ongoing communication efforts and explore other methods for increasing awareness of pedestrians and motorists about safety concerns. Discussions may focus on:

- Defining education-related concerns and goals
- Understanding target audiences
- Key messages and strategies
- Exploring successful education efforts across the country

### **3. Enforcement Solutions**

The Resource group will work with the Task Force (or a subgroup, thereof) to discuss ongoing enforcement efforts and explore other methods for increasing awareness of pedestrians and motorists about traffic safety and laws. Discussions may focus on:

- Understanding existing pedestrian and traffic laws
- Understanding the role of enforcement
- Identifying unsafe behaviors
- Role of law enforcement officers
- Community enforcement approaches
- Law enforcement methods



#### 4. Funding Options

The Resource Group shall work with the Task Force to discuss various funding strategies that can be used to finance pedestrian safety improvements, including, as examples:

- Routine accommodation in new projects, both public and private
- Partnerships
- Dedicated funds and set asides
- Annual maintenance budget
- Grants and awards
- Donations

#### 5. Community Outreach & Engagement—Second Round

The Task Force shall meet with stakeholders in focus group settings and by hosting a public meeting with assistance from the Resource Group. At these meetings, background information shall be conveyed relating to:

- Categories of Safety Concerns
- Prioritization Systems
- Safety Solution Alternatives
- Funding Options

The majority of time at the meetings shall be designed to optimize community feedback regarding prioritizations and acceptance of solution alternatives. Formats may include a combination of the following:

- Focus Groups
- Open House Format with Work Stations
- Large Group Discussion
- Small Group Discussion by Topic
- Small Group Discussion by Geographic Area
- Worksheets and Surveys

#### Task G. PEDESTRIAN SAFETY ACTION PLAN ELEMENTS

A Pedestrian Safety Action Plan is an effective tool to identify countermeasures that address specific pedestrian safety concerns and includes measures that can track progress over time. The Task Force efforts will help to lay the foundation for community understanding and provide an effective approach that can be used as the framework for the development of a PSAP which incorporates the following steps as outlined in the FHWA *How to Develop a PSAP*:

- Step 1. Define Objectives
- Step 2. Identify Locations
- Step 3. Select Countermeasures
- Step 4. Develop an Implementation Strategy
- Step 5. Institutionalize Changes to Planning and Design Standards
- Step 6. Consider Land Use, Zoning and Site Design Issues
- Step 7. Reinforce Commitment
- Step 8. Evaluate Results

#### 1. Checklist for Pedestrian Safety Action Plan Elements

The Resource Group shall work with the Task Force to prepare an outline of plan elements and needs in order to effectively begin the development of a PSAP for the City of Ann Arbor. This guided exercise

shall use Appendix I: Checklist for Pedestrian Safety Action Plan Element (attached) in the FHWA *How to Develop a PSAP*. The Task Force will be able to answer pertinent questions about several topics which may form the basis of their recommendation to City Council. These include recommendations regarding:

- Goals and Objectives
- Stakeholders
- Data Collection
- Analyzing Information and Prioritizing Concerns
- Providing Funding
- Creating the Pedestrian Safety Action Plan

**2. Draft Recommendations**

The Task Force, with Resource Group assistance, shall document draft recommendations for community review.

**3. Community Outreach & Engagement—Third Round**

The Task Force shall meet with stakeholders in focus group settings and by hosting a public meeting with assistance from the Resource Group. At these meetings, the Task Force will discuss draft recommendations and receive feedback from interested stakeholders.

**4. Final Documentation**

Based on community feedback, the Task Force, with Resource Group assistance, shall document draft recommendations for City Council consideration.



## Appendix C: How to Conduct Pedestrian and Motorist Behavior Assessments

### Step 1: Understand the Human Element of a Crash

First and foremost on the observer's mind should be the realization that, in most cases, the pedestrian did not walk into the street with the intention of being struck. Similarly, the motorist involved in a pedestrian crash did not collide with the pedestrian intentionally. If the motorist could have avoided the crash, he or she would have done so. Crashes can result from:

- Motorist or pedestrian inattention.
- Poor judgment on the part of the motorist or pedestrian (possibly a factor of age [young and elderly pedestrians and motorists], mental or physical disabilities, fatigue, or drug/alcohol use).
- Miscalculation of risks.
- Pedestrians not understanding the speed of an approaching vehicle.
- Motorists miscalculating their own speed.
- Pedestrians assuming that approaching motorists see them and will react to them.
- Motorists not understanding the speed and direction of a pedestrian, or unexpected pedestrian movement.
- Visual screens (parked or stopped vehicles, landscaping) or insufficient lighting.

### Step 2: Observe Pedestrian and Motorist Movements

The best way to conduct the process of “thinking like a pedestrian” is to first observe pedestrian movements. In many cases, pedestrians will follow a variety of patterns in areas with a high number of crashes. For example, some pedestrians will wait at a signalized intersection and cross on the WALK signal, while others will cross against the signal when they see a gap in motor vehicle traffic.

Next, observe motorist movements to “think like a motorist.” In many cases, motorists appear to travel oblivious to the presence of pedestrians. Observers should note their movements. For example, some motorists at a signalized intersection will yield to

pedestrians while turning right or left when the pedestrians are in the crosswalk, while others will try to drive around the pedestrian and through the crosswalk as soon as there is a sufficient gap to do so.

### **Step 3: “Walk a Mile” in Their Shoes**

The observer should begin where the pedestrians initiate their movements, preferably under typical conditions (including at night), and look up and down the street to see what the pedestrian sees. With all due caution, the observer should then attempt to emulate the observed movement without placing himself or herself at risk. At times, an illegal maneuver may be safer than the legal or intended movement.

To focus on the motorist’s experience, the observer should also drive through the area and make the observed movements, preferably under typical conditions (including at night), and look up and down the street to see if there are any pedestrians in the problem areas identified earlier. With all due caution, the observer should then attempt to emulate the observed vehicle movement (again, without placing anyone at risk).

### **Step 4: Record Objective and Subjective Observations**

The observer should then note what he or she saw, heard, felt, including a subjective evaluation such as the relative safety of both the pedestrian and motorist maneuvers observed and experienced. Objective observations can point out design flaws such as poor sight distance, or other roadway features. The subjective evaluation may lead to an observation such as “no wonder pedestrians do not cross there—it is so far away from the bus stop” or “I can see why the motorist could have missed seeing the pedestrian crossing—that billboard is so distracting.” The observer should note these behaviors uncritically and record these movements.

### **Step 5: Visualize a Solution**

The observer then should take a step further and imagine a pedestrian safety solution that better accommodates the pedestrian’s needs as well as the motorist’s. With that solution in mind, the observer should again cross the road making the movement as if the solution were in place (if possible), as well as drive along the roadway. This process may require the use of spotters to watch for approaching motor vehicle traffic and pedestrians and ensure that no one is placed at undue risk.



## Appendix H: Checklist for Engineering and Planning Solutions

This section lists effective and commonly used pedestrian crash countermeasures, each with a brief description. It follows the outline provided in Chapter 5, although the order may be slightly different in some places. Please fill in the blanks with information on whether or not your agency has adopted these practices; if not, what changes in your policies would be required for these countermeasures to become “routine accommodation”?

### I. Walking Along the Road Crashes

#### *Rural environments*

Paved shoulders provide room for pedestrians to walk away from traffic; they also provide room for bicyclists and increase safety for motor vehicle operators. To be effective, paved shoulders should be 1.8 m (6 ft) wide or more; 1.2 m (4 ft) is considered the minimum acceptable width.

- Do you routinely provide paved shoulders on rural highways and trunk roads?  
Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure shoulders are routinely provided? \_\_\_\_\_

#### *Urban and suburban environments*

Sidewalks reduce walk-along-the-road crashes by providing positive separation from traffic. Continuous and connected sidewalks are needed along both sides of streets to prevent unnecessary street crossings. Sidewalks should be buffered with a planter strip to increase pedestrian safety and comfort; separation makes it easier to meet ADA requirements for a continuous level passage and for a clear passage around obstacles.

- Do you routinely provide sidewalks on urban and suburban arterials? Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If so, what is the standard width? \_\_\_\_\_
- Are your sidewalks curbtight or separated? \_\_\_\_\_
- What change(s) need to be instituted to ensure separated sidewalks are routinely provided? \_\_\_\_\_

Driveways clearly mark the area where motorists will be crossing the pedestrian's path. Continuous access to parking creates long conflict areas between pedestrians and motorists; this ambiguity complicates the motorist's task of watching for pedestrians.

- Do you routinely ensure that access points are limited and well defined? Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure access points are well defined? \_\_\_\_\_

Driveways should be designed to look like driveways, not street intersections: sidewalks should continue through the driveway, the level of the sidewalk should be maintained, and the driveway should be sloped so that the motorist goes up and over the sidewalk. Driveways should be away from intersections. The number and width of driveways should be minimized.

- Do you routinely require that driveways be located away from intersections and designed to look like driveways, not intersections? Yes/No
- If yes, please state your policy: \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure driveways are properly designed and located? \_\_\_\_\_

Illumination greatly increases the motorist's ability to see pedestrians walking along the road at night. Double-sided lighting illuminates both sidewalks for increased pedestrian safety.

- Do you routinely provide illumination on both sides of the street? Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure streets are well lit? \_\_\_\_\_

## II. Crossing the Road Crashes

Pedestrian crossing islands reduce crashes substantially at uncontrolled locations, especially on busy multilane streets where gaps are difficult to find. An island breaks an otherwise complex crossing maneuver into two easier steps: a pedestrian looks left, finds an acceptable gap in one direction, crosses to the island, then looks right and finds a second gap.

Do you routinely provide pedestrian crossing islands at identified crossing points?

Yes / No

If yes, please state your policy: \_\_\_\_\_

If not, what change(s) need to be instituted to ensure islands are provided?

\_\_\_\_\_  
\_\_\_\_\_

Curb extensions reduce the total crossing distance on streets with on-street parking and increase visibility: the waiting pedestrian can better see approaching traffic and motorists can better see pedestrians waiting to cross the road, as their view is no longer blocked by parked cars.

Do you routinely provide curb extensions at identified crossing points? Yes / No

If yes, please state your policy: \_\_\_\_\_

If not, what change(s) need to be instituted to ensure curb extensions are provided?

\_\_\_\_\_  
\_\_\_\_\_

Illumination greatly increases the motorist's ability to see pedestrians crossing the road. Increased lighting should be provided at the primary crossing points. Double-sided lighting should be provided along wide arterial streets; this enables motorists to see pedestrians along the road, who may decide to cross anywhere, anytime.

Do you routinely provide illumination at identified crossing points? Yes / No

If yes, please state your policy: \_\_\_\_\_

If not, what change(s) need to be instituted to ensure illumination is provided?

\_\_\_\_\_  
\_\_\_\_\_

### III. Popular Crossing Solutions and How to Improve Them

The public often responds to a tragic pedestrian crash with a call for an immediate solution. Commonly requested solutions include traffic signals, flashers, overcrossings or undercrossings, or marked crosswalks. While these can be effective solutions in certain places, in some instances they are not appropriate or effective.

#### *Traffic Signals*

The primary purpose of a traffic signal is to create gaps in traffic that otherwise would be hard to find. The MUTCD warns against the overuse of signals for a variety of reasons. Inappropriate traffic signals may increase crashes. Traffic signals are expensive, from \$35,000 to \$300,000 for one intersection, not including any associated road widening.

But in some cases, the only solution to crossing a busy, multilane arterial street is to install a pedestrian crossing signal. This is especially true in locations where there is no other signal for 0.4 km (0.25 mi) or more in an area with lots of pedestrian activity.

### Improving Traffic Signals

Traffic signals may be the only way to create a gap for pedestrians to cross busy multi-lane highways with significant volumes. Since it is difficult to meet MUTCD warrants for a pedestrian signal based solely on existing pedestrian counts, it may be necessary to anticipate how many pedestrians might cross once a signal is installed. A median island and a two-stage pedestrian crossing help reduce impacts on traffic flow: the pedestrian stops one direction of traffic at a time, and the two crossings are separated at a fenced-in median island.

Do you install traffic signals based on anticipated pedestrian volumes? Yes / No

If yes, please state your policy: \_\_\_\_\_

If not, what change(s) need to be instituted so warranted signals are provided?

\_\_\_\_\_

\_\_\_\_\_

### *Overcrossing or Undercrossing*

These solutions are appealing because they give the impression of complete separation of pedestrians from motor vehicle traffic. In practice, this rarely occurs because:

1. Overcrossings and undercrossings are expensive and cannot be provided at most locations where pedestrians want to cross.
2. Undercrossing are often prone to security problems due to low visibility.
3. The out-of-distance travel is so inconvenient many pedestrians will refuse to walk this extra distance and cross at-grade.
4. Overcrossings or undercrossings are seldom used, and motorists are frustrated when they see pedestrians crossing in the vicinity of an overcrossing or undercrossing; this in turn increases the risk to pedestrians crossing at grade.

The high cost of an overcrossing or undercrossing makes them impractical for all but a few locations.

### Improving Overcrossings and Undercrossings

Do you install separated crossings based on well-defined criteria? Yes / No

If yes, please state your policy: \_\_\_\_\_

If not, what change(s) need to be instituted so separated crossings are provided only where warranted? \_\_\_\_\_

\_\_\_\_\_

### *Marked Crosswalks Without Additional Crossing Treatments*

Marked crosswalks (without additional crossing treatments) should only be installed where there is an expectation of a significant number of pedestrians such as near a school, park or other generator. Without the associated features mentioned so far (islands, curb extensions, illumination etc.), marked crosswalks on their own do not



necessarily increase the security of a pedestrian crossing the street. The most recent study on marked crosswalks can be downloaded at <http://www.walkinginfo.org/rd/devices.htm>. In general, the results can be summarized as follows:

- Two-lane roads: no significant difference in crashes.
- Multilane roads (three or more lanes):
  - Under 12,000 ADT: no significant difference in crashes.
  - Over 12,000 ADT without median: crashes at marked crosswalks > crashes at unmarked crosswalks.
  - Over 15,000 ADT and with median: crashes at marked crosswalks > crashes at unmarked crosswalks.

The study also made the following observations:

- Medians reduce crashes by 40 percent.
- Pedestrians over 65 are over-represented in crashes relative to crossing volumes.
- No evidence was found to indicate that pedestrians are less vigilant in marked crosswalks.
- Looking behavior increased significantly after crosswalks were installed.

Do you have a program for evaluating, upgrading and installing marked crosswalks at unsignalized locations? Yes / No

If yes, please state your policy: \_\_\_\_\_

If not, what change(s) are needed to ensure that this occurs?

\_\_\_\_\_

\_\_\_\_\_

Textured and/or colored crosswalks are another popular request. In reality, they are often less visible to motorists than white marked crosswalks, may create maintenance problems, and are difficult for pedestrians with disabilities to negotiate.

### Improving Marked Crosswalks

Using high visibility markings ensures that motorists see the crosswalk as well as the pedestrian.

Do you routinely install high-visibility crosswalks? Yes / No

If yes, please state your policy: \_\_\_\_\_

If not, what change(s) need to be instituted to ensure that high-visibility crosswalks are provided?

\_\_\_\_\_

\_\_\_\_\_

Crosswalks with advance stop bars (or yield lines) help prevent “multiple-threat” crashes on multilane streets. These occur when a motorist in the outside lane stops to let a pedestrian cross and—by stopping so close to the crosswalk—masks a vehicle in the adjacent lane who is not slowing down. The second motorist does not have time to react, and the pedestrian is struck at high speed. The advance stop bar (or yield line)

encourages the first motorist to stop back 9.1 m (30 ft)—plus or minus a distance—so the pedestrian can see if a motorist in the second lane is not stopping. This enables the pedestrian to wait or even pull back if he has started to proceed into the second lane.

Do you routinely install advance stop bars at crosswalks on multilane streets?

Yes / No

If yes, please state your policy: \_\_\_\_\_

If not, what change(s) need to be instituted to ensure that advance stop bars are provided?

\_\_\_\_\_  
\_\_\_\_\_

Proper signing increases the motorist's awareness of a pedestrian crossing.

Do you routinely provide signing at pedestrian crossings? Yes / No

If yes, please state your policy: \_\_\_\_\_

If not, what change(s) need to be instituted to ensure that signing is provided?

\_\_\_\_\_  
\_\_\_\_\_

Illumination increases the motorist's ability to see pedestrians crossing the road.

Do you routinely provide illumination at pedestrian crossings? Yes / No

If yes, please state your policy: \_\_\_\_\_

If not, what change(s) need to be instituted to ensure that illumination is provided?

\_\_\_\_\_  
\_\_\_\_\_

#### **IV. Intersection Geometry**

Intersection geometry has a profound effect on pedestrian safety as it determines to a large extent whether or not motorists will perceive pedestrians, the length of crosswalks, and the speed of approaching and turning vehicles.

Do you have an intersection design policy that takes pedestrian safety into account?

Yes / No

If yes, please state your policy: \_\_\_\_\_

If not, what change(s) need to be instituted to ensure that pedestrian safety is considered?

\_\_\_\_\_  
\_\_\_\_\_

Tighter radii benefit pedestrians by shortening the crossing distance, bringing crosswalks closer to the intersection, increasing visibility of pedestrians, and slowing right-turning vehicles. The appropriate radius must be calculated for each corner of an intersection; difficult turns for the occasional event are acceptable (for example a large moving truck turning onto a local street).

- Do you routinely encourage tight radii at urban/suburban intersections? Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure that tight radii are provided?

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Pork-chop islands between an exclusive right-turn lane and through lanes shorten the crossing distance, reduce pedestrian exposure and improve signal timing. The island enables pedestrians and motorists to negotiate one conflict separately from the others. The island should have the longer tail pointing upstream to the approaching right-turn motorist; so motorists approach at close to 90° and are looking at the crosswalk. The crosswalk is placed one car length back from the intersecting street so the motorist can move forward once the pedestrian conflict has been resolved. The right-turning motorist can focus on traffic and the pedestrian can focus on cross or through traffic.

- Do you routinely provide pedestrian-friendly pork-chop islands (long tail design) at right-turn lanes? Yes / No
- If so, are they designed to enhance pedestrian safety?
- If not, what change(s) need to be instituted to ensure that well designed islands are provided?

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Median islands channelize and slow down left-turning vehicles. An island provides pedestrians a refuge for long, unsignalized crossings or if a conflict cannot be avoided, though signalized intersections should be designed to allow pedestrians to cross the entire street during a single signal cycle.

- Do you routinely provide median islands at intersections? Yes / No
- If so, are signals times so pedestrians can cross in one cycle?
- If not, what change(s) need to be instituted to ensure that islands are provided?

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Proper crosswalk and curb ramp placement and design ensures that all users cross in crosswalks, close to the intersection, where motorists can see them, and without undue delay. Ramps (wings not included) must be wholly contained within the marked crosswalk. Poorly placed or oriented ramps force wheelchair users to make long detours and they may not cross in the allotted time at a signalized intersection; they may be crossing outside the crosswalk lines where motorists do not expect them.

- Do you routinely provide crosswalks and ramps at all corners of all intersections?  
Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If so, are they designed to enhance pedestrian safety?

- If not, what change(s) need to be instituted to ensure that crosswalks and ramps are provided?

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## V. Signalized Intersections

All signalized intersections where pedestrians are reasonably expected to cross should have the elements described in the following sections.

Pedestrian signals ensure that pedestrians know when the signal phasing allows them to cross, and when they should not be crossing. On one-way streets a pedestrian approaching from the opposite direction cannot see the vehicle signal heads and may not realize an intersection is signalized, nor know when it is safe to cross. Left turn arrows are not visible to the pedestrian.

- Do you routinely provide pedestrian signals at signalized intersections? Yes / No

If yes, please state your policy: \_\_\_\_\_

- If not, what change(s) need to be instituted to ensure that pedestrian signals are provided?

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Marked crosswalks indicate to the motorist where to expect pedestrians and help keep the crossing area clear of vehicles. All legs of a signalized intersection should be marked.

- Do you routinely provide marked crosswalks at signalized intersections? Yes / No

If yes, please state your policy: \_\_\_\_\_

- If not, what change(s) need to be instituted to ensure crosswalks are provided?

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It is important to provide a WALK signal long enough to get pedestrians started, and a clearance interval long enough to ensure that a pedestrian can fully cross the street. Traditionally, 1.2 m/s (4 ft/s) is assumed adequate, though 1.1 m/s (3.5 ft/s) or even 0.9 m/s (3.0 ft/s) may be appropriate at locations that have a substantial number of older pedestrians or pedestrians with mobility impairments.

- Are your signals timed to give pedestrians adequate time to cross? Yes / No

If yes, please state your policy: \_\_\_\_\_

- If not, what change(s) need to be instituted to ensure enough time is provided?

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Push buttons should be located where a pedestrian who is in a wheelchair or is visually-impaired can easily reach them, and positioned so that they clearly indicate which

crosswalk the button regulates. Push buttons mounted on two separate pedestals work best, as it is nearly impossible to place two push buttons correctly on one signal pole. Push buttons are not needed in downtown/central business districts and other area of high pedestrian use where pedestrians can be expected at every signal cycle.

Do you routinely place pedestrian push buttons where they can be reached?

Yes / No

If yes, please state your policy: \_\_\_\_\_

Do you routinely avoid using pedestrian push buttons in downtown/central business districts and other areas of high pedestrian use? Yes/No

If not (either question), what change(s) need to be instituted to ensure that push buttons are accessible?

\_\_\_\_\_

Signal timing techniques to reduce the incidence of crashes that occur while the pedestrian is crossing with the WALK signal include:

1. Protected left-turn phases that allow pedestrians to cross without interference from left-turning motorists. Red (then green) left turn arrows make it clear to motorists they must wait before turning (especially important where there are double right or double left turns).

Do you routinely provide protected left turns at signalized intersections? Yes / No

If yes, please state your policy: \_\_\_\_\_

If not, what change(s) need to be instituted to ensure that protection is provided?

\_\_\_\_\_

2. Lead Pedestrian Intervals (LPIs) reduce conflicts between turning vehicles and pedestrians when turning vehicles encroach onto the crosswalk before pedestrians leave the curb. The LPI releases pedestrians 3 to 5 seconds prior to the green light for vehicles so pedestrians can enter and occupy the crosswalk before turning motorists enter it.

Do you provide an LPI at signalized intersections with known turning conflicts?

Yes / No

If yes, please state your policy: \_\_\_\_\_

If not, what change(s) need to be instituted to provide a LPI where helpful?

\_\_\_\_\_

3. Pedestrian countdown signals indicate to the pedestrian how much time is left in the pedestrian clearance interval, encourage pedestrians to finish crossing before the crossing time runs out, and reduce the number of pedestrians who initiate a crossing too late in the cycle.

- Do you provide countdowns at signalized intersections where it would help?  
Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If not, what change(s) need to be instituted to provide countdowns where helpful?  
\_\_\_\_\_  
\_\_\_\_\_

## VI. Other Techniques to Create a Better Pedestrian Environment

### *Road Diets*

Reducing the number of travel lanes a pedestrian has to cross can be beneficial to all users. A well-documented technique takes a four-lane undivided street (two lanes in each direction) and reconfigures it to two travel lanes, a center-turn lane, and two bike lanes (without changing the curb lines). The benefits for pedestrians include fewer lanes to cross and slower traffic speeds. The center-turn lane also creates space for pedestrian crossing islands. The bike lanes add a buffer for pedestrians as well as a place for bicyclists to ride. Variations include reducing a multilane one-way street by one lane; narrowing the travel lanes to slow traffic and create space for bike lanes; or moving the curbs in to narrow the roadway.

- Do you routinely consider reducing the number of travel lanes where practical?  
Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure that road diets are considered?  
\_\_\_\_\_  
\_\_\_\_\_

### *Arterial Street Design*

High speeds make it harder to avoid a crash and increase the severity of a crash or the likelihood of a fatality. Speed reduction should be a primary tool in reducing pedestrian crashes. Simply lowering speed limits is usually ineffective. Streets must be redesigned to encourage lower speeds.

- Are your design standards predicated on slow speeds in urban environments?  
Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure that speeds are reasonable in urban areas?  
\_\_\_\_\_  
\_\_\_\_\_

### *Residential Street Design and Traffic Calming*

Residential streets built in the last few decades are often wide and barren, encouraging speeds higher than appropriate for streets where children can be expected. Good

residential street designs are narrow and have on-street parking, tight curb radii, short block length, buffered sidewalks with street trees, short building setbacks, and street-lights.

- Have you adopted pedestrian-oriented residential street design standards? Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If not, what change(s) need to be instituted to change your standards?

\_\_\_\_\_

\_\_\_\_\_

Traffic calming slows traffic inside neighborhoods. Common techniques include speed tables or humps, traffic circles, diverters, chokers, and chicanes to break up long, straight streets.

- Do you routinely consider traffic calming on neighborhood streets? Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If not, what change(s) are needed to institutionalize traffic claming?

\_\_\_\_\_

\_\_\_\_\_

## VII. Transit-related Crashes

Many crashes involve a pedestrian crossing the street to access transit. All street-crossing techniques are applicable to transit stops. Transit providers and road authorities should ensure that all transit stops are accessible to all pedestrians. The following policies are recommended:

All stops should consider the safety of the pedestrian crossing—not necessarily a marked crosswalk at each stop location; rather, locating stops where it is possible for a pedestrian to cross safely at or very near the stop.

- Do you collaborate with transit providers to ensure pedestrians can cross the street wherever there is a transit stop? Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure that transit stops are safer?

\_\_\_\_\_

\_\_\_\_\_

Provide a safe place to stand and wait at transit and school bus stops, even if there are no sidewalks. Transit stops with a lack of space push people out into the roadway.

- Do you collaborate with transit providers to ensure stops have a hard surface? Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure transit stops are paved?

\_\_\_\_\_

\_\_\_\_\_

Sidewalks or paved shoulders provide pedestrian access to all transit stops.

- Do you collaborate with transit providers to ensure stops are accessible? Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure transit stops are accessible?

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Lighting should be provided at or near all bus stop locations.

- Do you collaborate with transit providers to ensure stops are lit? Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure transit stops are lit?

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The transit agency should also review all its stop locations to facilitate access and crossing. Techniques include:

1. Eliminating or moving transit stops in areas that are hard to cross.
2. Consolidating closely-spaced stops to limit the number of crossings and improve transit efficiency (as the buses stop less often).
3. Moving stops to a location where it is easier to cross. In general, farside locations are preferred for pedestrian safety, as pedestrians can cross behind the bus and the bus can leave without having to wait for pedestrians to cross. However, there are locations where a nearside stop may be safer and better for operational reasons.
4. Placing crosswalks (where warranted) behind the bus stop at midblock locations so pedestrians can cross behind the bus, where they can see oncoming traffic; it also enables the bus driver to pull away without endangering pedestrians.

Transit providers also have their concerns:

1. Bus stops should be easily accessible: a stop should not be moved to a far side location if this location requires a lot of out-of-direction travel for users.
2. Bus stops should be located where the motorist can easily stop and move back into traffic again.
3. Bus stops need to be located where passengers with disabilities can board the bus.

- Do you collaborate with transit providers to ensure stops are practical? Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure transit stops meet the transit provider's needs?

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## VIII. Planning Solutions

### *Land Use and Site Design*

Land use patterns impact pedestrian crashes and the general feasibility of walking. Pedestrian crash severity is higher in suburban, auto-oriented locations where speeds are faster and motorists do not expect pedestrians. Pedestrian crashes are less severe in established, traditional urban areas where motorists are more aware of pedestrians. Sample land use and site design techniques that can encourage more walking and help manage speed and therefore affect crash rates include:

Buildings should define streets. Buildings located at the back of the sidewalk give the motorist sense of enclosure; buildings set back with large parking lots in front create wide high-speed roads. Mixed-use development can encourage walking trips and enhance the pedestrian environment. Buildings with retail on the bottom and housing on the top encourage pedestrian activity.

Street connectivity encourages walking because of the reduced travel distance to reach destinations (cul-de-sacs without connector paths reduce pedestrian connectivity).

Parking should not be placed between the sidewalk and buildings; on-street parking can be a very effective way to slow traffic and encourage pedestrian-oriented development. The principles of access management should be extended to parking: single lots serving multiple stores are preferred over single stores each with its own parking lot and driveway.

- Have you adopted city codes for future development that create a pedestrian-friendly environment? Yes / No
- If yes, please state your policy: \_\_\_\_\_
- If not, what change(s) need to be instituted to change codes?  
\_\_\_\_\_  
\_\_\_\_\_

## Appendix I: Checklist for Pedestrian Safety Action Plan Elements



This checklist provides effective and commonly used elements of a Pedestrian Safety Action Plan (PSAP). The template generally follows the outline of the *How to Develop a Pedestrian Safety Action Plan* guide.

To the extent possible, please fill in the blanks prior to the training workshop. On day two of the training workshop, this checklist will be used to conduct a guided exercise to create an outline that can later be used as a basis for a PSAP.

### I. Goals and Objectives

Commitment to safety for all modes should be the number one goal and priority of state and local transportation agencies. Once this commitment is made, it allows transportation agencies to allocate funds to reducing all crash types, including pedestrian crashes.

Do you have a clearly stated commitment to safety as your number one priority?

Yes / No

If yes, please state: \_\_\_\_\_

If not, what change(s) need to be instituted to ensure that safety becomes the number one priority of your agency? \_\_\_\_\_

Clear objectives are needed for a pedestrian plan to be successful in reducing pedestrian crashes. They allow for the development of practical and achievable strategies; they also provide a way to measure progress over time. To be effective, objectives must be specific and measurable.

Do you have a clearly stated objective for reducing pedestrian crashes? Yes / No

If yes, please state: \_\_\_\_\_

- If not, what change(s) need to be instituted to ensure that objectives are adopted?

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## II. Stakeholders

Individual stakeholder involvement is an excellent way to get a better product. Public stakeholders should be viewed as partners who are the on-the-ground scouts who can identify problems, needs and opportunities. To be effective, stakeholders must be involved in a regular, ongoing and systematic way.

- Do you routinely provide for individual stakeholder involvement? Yes / No

- If yes, please describe: \_\_\_\_\_

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- If not, what change(s) need to be instituted to ensure that stakeholders are routinely involved?

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A Pedestrian Advisory Board (PAB) is another excellent way to get a better product. They also build public support for policies, programs, and projects to reduce pedestrian crashes. To be effective, stakeholders must be involved in the review of policies, programs and projects.

- Do you have a PAB that regularly reviews policies, programs, and projects?  
Yes / No

- If yes, please describe: \_\_\_\_\_

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- If not, what change(s) need to be instituted to ensure the creation of an effective PAB?

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Public agency staff in other agencies are also stakeholders. Building positive, working relationships is essential for coordination on regional planning issues; it also provides a way to coordinate on solving specific problems such as identifying high crash locations where additional enforcement may be needed, and coordinating transit stops with crossing locations.

- Do you routinely coordinate with other agencies on crash, transit, etc., issues?  
Yes / No

- If yes, please describe: \_\_\_\_\_

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- If not, what change(s) need to be instituted to ensure you coordinate with other agencies?

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### III. Data Collection

Computerized, timely, geo-coded pedestrian crash data are essential to identify high-crash locations, corridors, and/or larger areas and to select appropriate improvements to make conditions safer for pedestrians and other roadway users.

- Do you routinely collect pedestrian crash data? Yes / No
- If yes, please describe: \_\_\_\_\_  
\_\_\_\_\_
- If not, what change(s) need to be instituted to ensure that crash data are routinely collected?

Pedestrian counts along with crossing observations can be very useful in understanding pedestrian behavior and in considering the need for facilities. Counts and behavior studies, when combined with crash data, can also provide insights into specific crash causes and potential countermeasures.

- Do you routinely collect pedestrian counts and complete crossing observations? Yes / No
- If yes, please describe: \_\_\_\_\_  
\_\_\_\_\_
- If not, what change(s) need to be instituted to ensure that pedestrian counts and observations are routinely completed?  
\_\_\_\_\_  
\_\_\_\_\_

Sidewalk and marked crosswalk (at uncontrolled locations) inventories help identify system gaps and unsafe conditions. When combined with crash data, pedestrian counts, and traffic characteristics, they can be very useful in prioritizing locations for countermeasures and other improvements.

- Do you routinely inventory sidewalks and marked crosswalks? Yes / No
- If yes, please describe: \_\_\_\_\_  
\_\_\_\_\_
- If not, what change(s) need to be instituted to ensure that inventories of sidewalks and marked crosswalks are routinely completed?  
\_\_\_\_\_  
\_\_\_\_\_

Inventories of traffic characteristics (such as ADT, road widths, and speeds) help identify likely crash locations. When combined with actual crash data and pedestrian counts, they can be very useful in prioritizing locations for countermeasures and other improvements.

- Do you routinely inventory roadway ADT, widths and speeds? Yes / No
- If yes, please describe: \_\_\_\_\_  
\_\_\_\_\_

- If not, what change(s) need to be instituted to ensure that ADT, width and speed information is routinely collected and coded?
- \_\_\_\_\_
- \_\_\_\_\_

#### IV. Analyzing Information and Prioritizing Concerns

Categorizing pedestrian crash data should be done to determine whether they are occurring at a) spot locations, b) along corridors, c) in a neighborhood area, or d) throughout an entire jurisdiction (poor standard practice such as failing to install pedestrian indicators at signals). Once categorized, this information can be used to focus resources and prioritize projects.

- Do you routinely categorize pedestrian crash data? Yes / No
- If yes, please describe: \_\_\_\_\_
- \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure that crash data is routinely categorized?
- \_\_\_\_\_

Conducting field reviews and safety audits can be used to identify how each pedestrian crash occurred, and what may be done to prevent future similar crashes. The outcome is a list of improvements that can be implemented to address those crashes and enhance safety.

- Do you routinely conduct field reviews and safety audits? Yes / No
- If yes, please describe: \_\_\_\_\_
- \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure that field reviews and safety audits are routinely completed? \_\_\_\_\_
- \_\_\_\_\_

Crash typing describes the pre-crash actions of the parties involved. When crashes are “crash typed,” a pattern often emerges that helps identify what the problem is and what countermeasures are generally related to each crash type. Crash typing is particularly useful in developing education and enforcement strategies.

- Do you routinely “crash type” your pedestrian crash data? Yes / No
- If yes, please describe: \_\_\_\_\_
- \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure that crash typing is routinely completed? \_\_\_\_\_
- \_\_\_\_\_

Prioritizing pedestrian safety improvements is the final step once all appropriate data has been collected. Priorities should be established based on a variety of factors including safety consequences, cost, travel demand, availability of right-of-way, federal

and/or state mandates and public support. Solutions can be phased and divided into temporary or permanent improvements.

- Do you routinely prioritize (rank) pedestrian safety improvements? Yes / No
- If yes, please describe: \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure that safety improvements are routinely prioritized? \_\_\_\_\_

## V. Providing Funding

Routine accommodation for pedestrians in all projects, programs and maintenance activities is the most cost-effective funding strategy for reducing pedestrian crashes and encouraging more walking. The majority of pedestrian infrastructure is built in conjunction with other projects. It allows for significant improvements over time, even if there is no special funding available for pedestrian safety improvements.

- Do you routinely include pedestrian safety improvements in all projects, programs, and maintenance activities? Yes / No
- If yes, please describe: \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure that pedestrian safety improvements are included? \_\_\_\_\_

Dedicated funds and set-asides for pedestrian projects allow for immediate action in addressing high crash locations, corridors, and other targeted areas. They can be federal, state or local funds and are often a percentage of another fund.

- Do you routinely set aside funds that are dedicated to pedestrian safety? Yes / No
- If yes, please describe: \_\_\_\_\_
- If not, what change(s) need to be instituted to ensure that funds are routinely set aside? \_\_\_\_\_

## VI. Creating the Pedestrian Safety Action Plan

A Pedestrian Safety Action Plan focuses resources on making the changes that reduce the greatest number of pedestrian crashes. To be effective, it must provide a framework for involving stakeholders, collecting and analyzing data, selecting countermeasures, developing implementation strategies and providing funding.

- Do you have a Pedestrian Safety Action Plan that includes all these elements?  
Yes / No

- 
- If yes, please describe: \_\_\_\_\_  
\_\_\_\_\_
- If not, what change(s) need to be instituted to ensure that a comprehensive plan is created? \_\_\_\_\_  
\_\_\_\_\_

Evaluation of results ensures that implemented solutions are effective in reducing crashes and improving the safety and accessibility of pedestrian facilities; it also helps ensure future funding opportunities if the plan is perceived as a success. Success should be measured against the objectives set forth in the Pedestrian Safety Action Plan—typically to reduce pedestrian crashes by a certain percentage.

- Do you routinely evaluate results of your efforts to reduce pedestrian crashes?  
Yes / No
- If yes, please describe: \_\_\_\_\_  
\_\_\_\_\_
- If not, what change(s) need to be instituted to ensure that regular evaluation occurs?  
\_\_\_\_\_  
\_\_\_\_\_