Office of Safety R&D
Federal Highway Administration

Susanna Hughes Reck
Technology Facilitator

Objective

- To provide a brief overview of the Office of Safety R&D, as well as our research results, and products and services applicable to the local transportation community.

FHWA Safety

- FHWA Office of Safety
- **FHWA Safety R&D**
- FHWA Resource Center (Safety Team)
- FHWA Federal Lands (Safety)
- FHWA NHI

Safety R&D Mission

- To help reduce highway crashes and related fatalities and injuries by developing and implementing a program of nationally coordinated research and technology safety innovations

Safety R&D Teams

- Roadway Team
- Roadside Team
- Safety Management Team
- Advanced Research Team
- Human Centered Systems Team

Safety Research Results & Products

- PB CAT Version 2
- PED SAFE
- Low Cost Safety Evaluations
- IHSDM
- Safety Analyst

PBCAT Version 2.0

- Software utilizing database on different types of crashes between motor vehicle and ped/bike.
- Determine crash type thru series of on-screen questions about the crash
- Recommend countermeasures to specific ped/bike crash types.

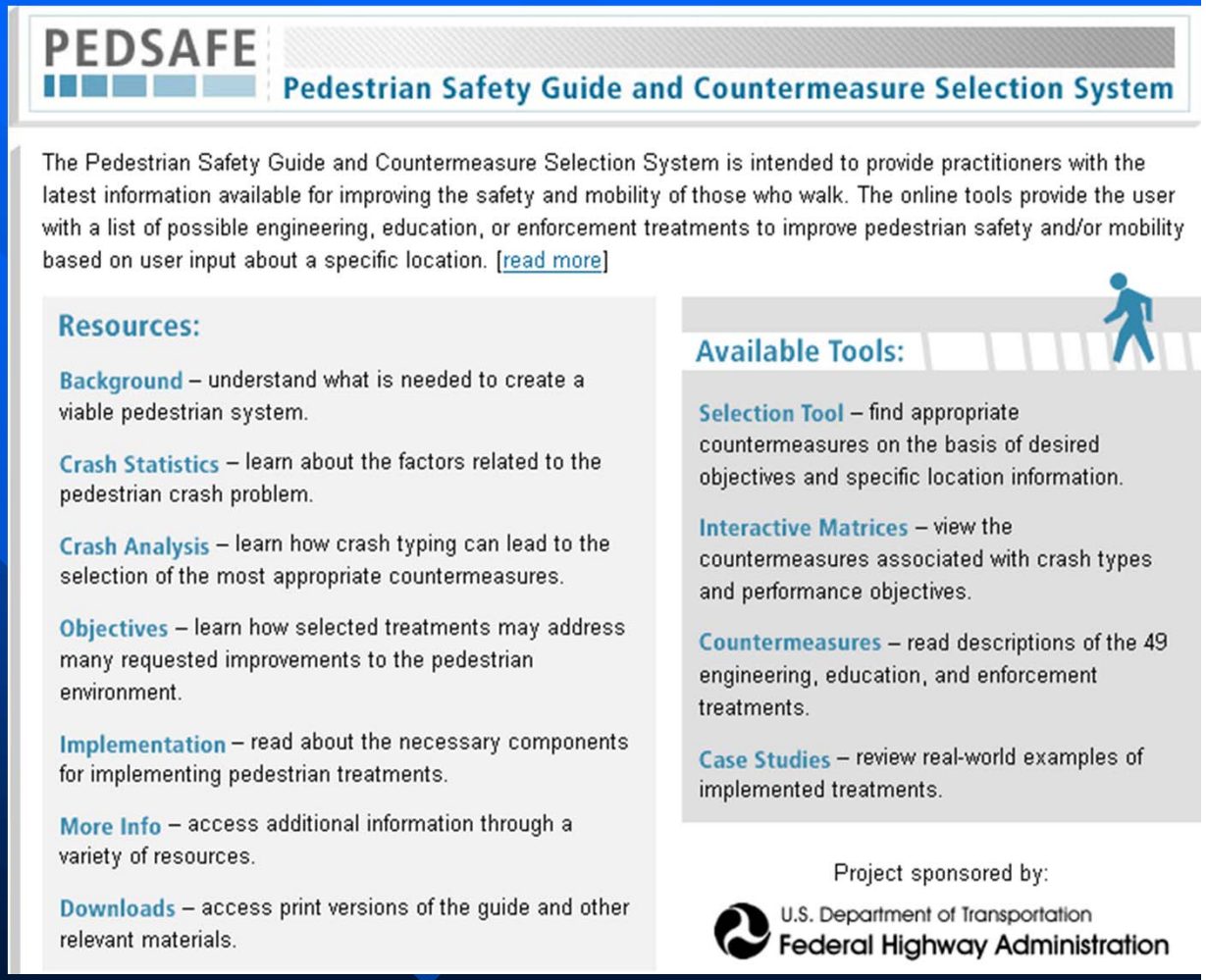
PBCAT Version 2.0

Availability:

- Product will be available Summer 2006
- Contact Ann Do at Ann.do@fhwa.dot.gov
- www.walkinginfo.org

PEDSAFE Project Goal

Assist practitioners with the selection of countermeasures to address pedestrian safety and mobility problems



Selection Tool

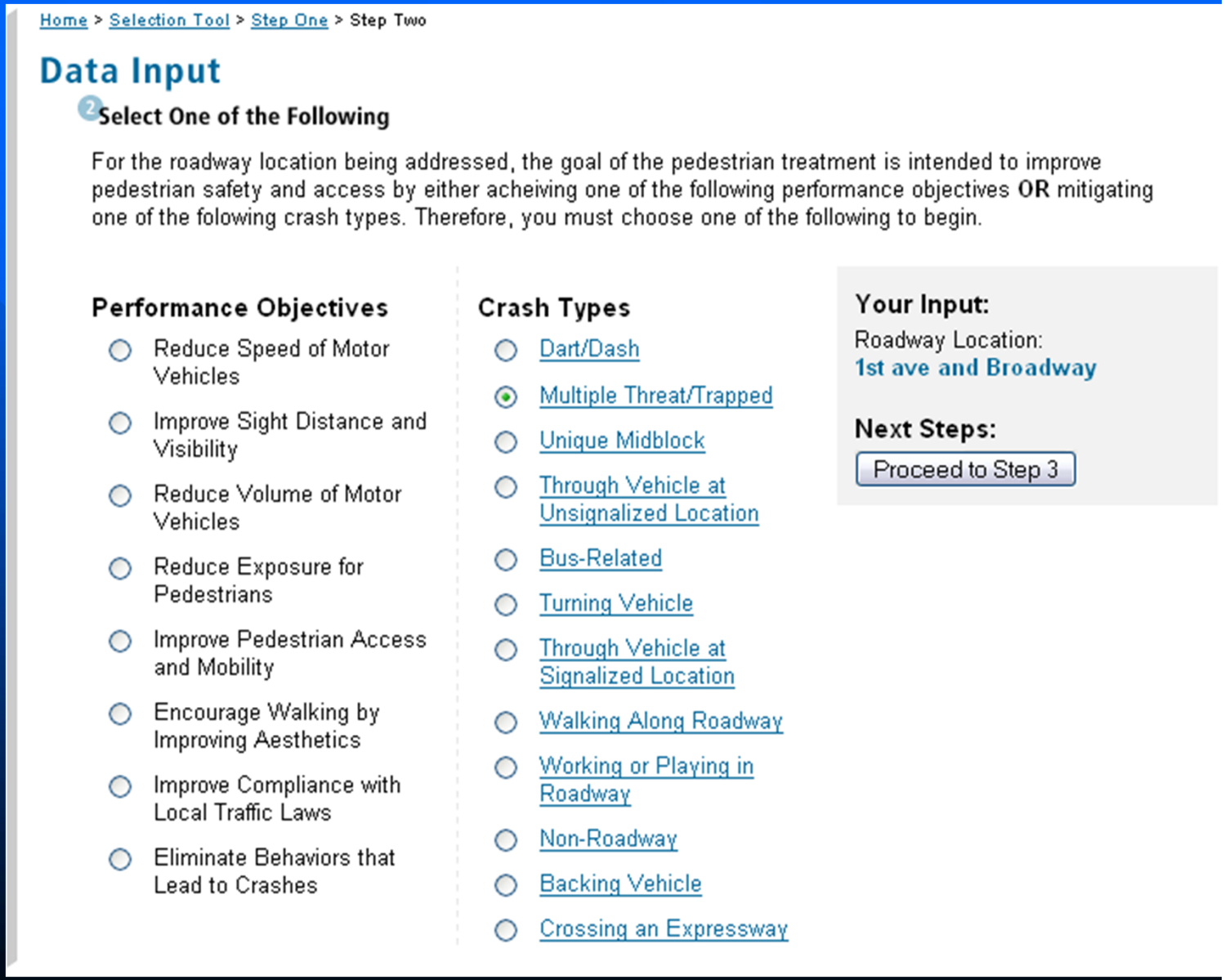
Step 1

Enter location information

Selection Tool

Step 2

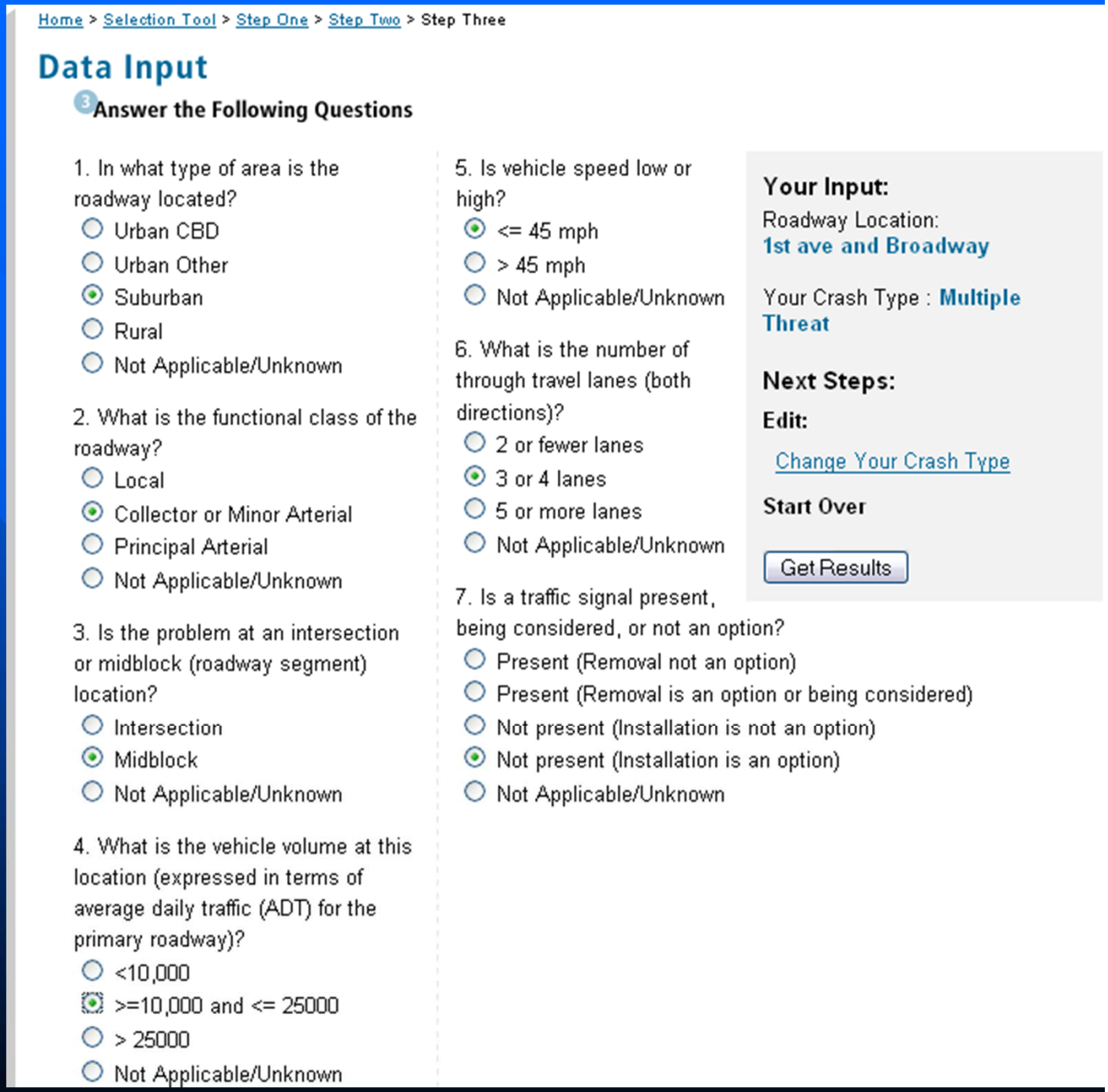
Select crash type to be addressed or desired behavior change



Selection Tool

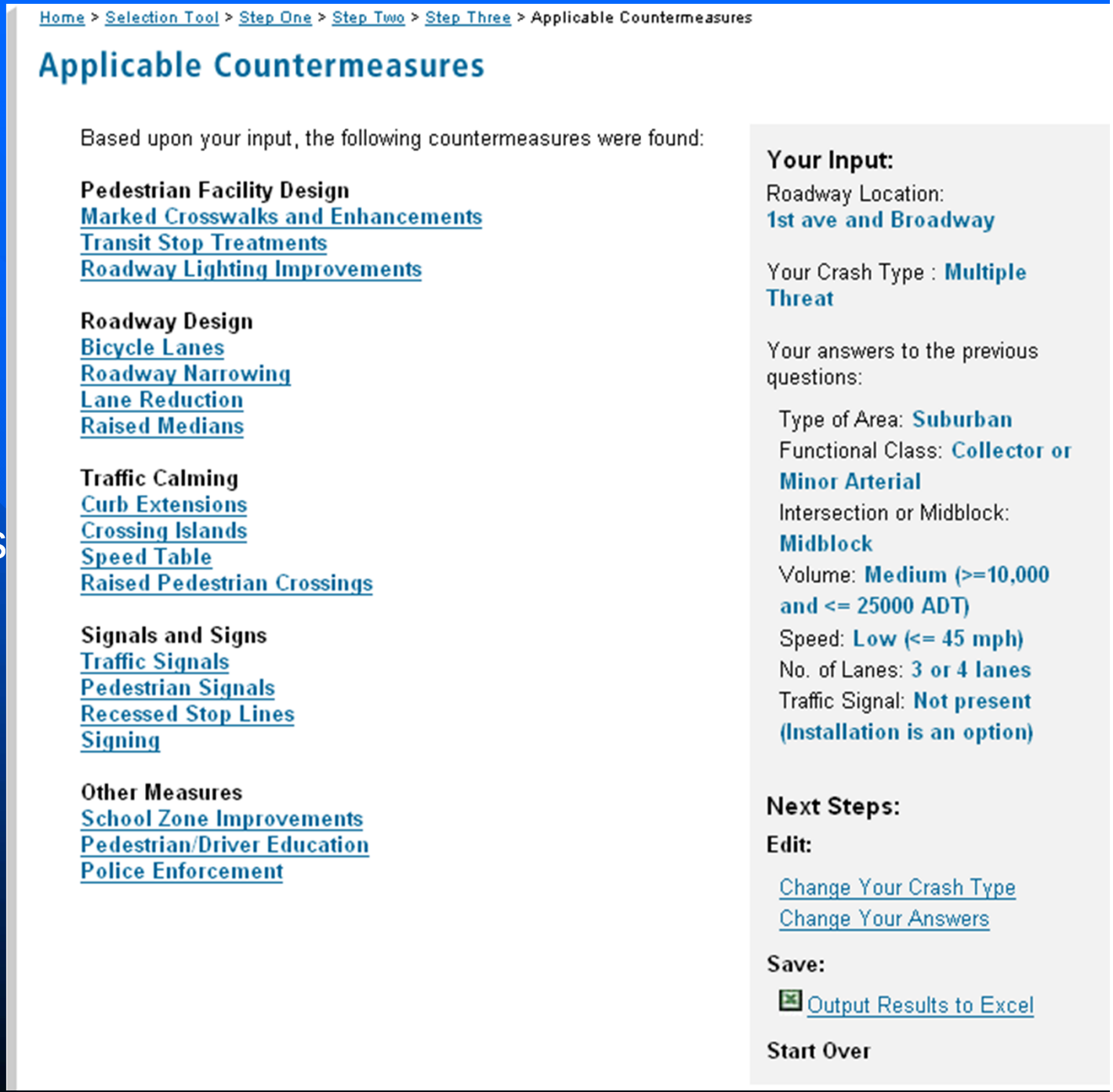
Step 3

Enter geometric and operations data



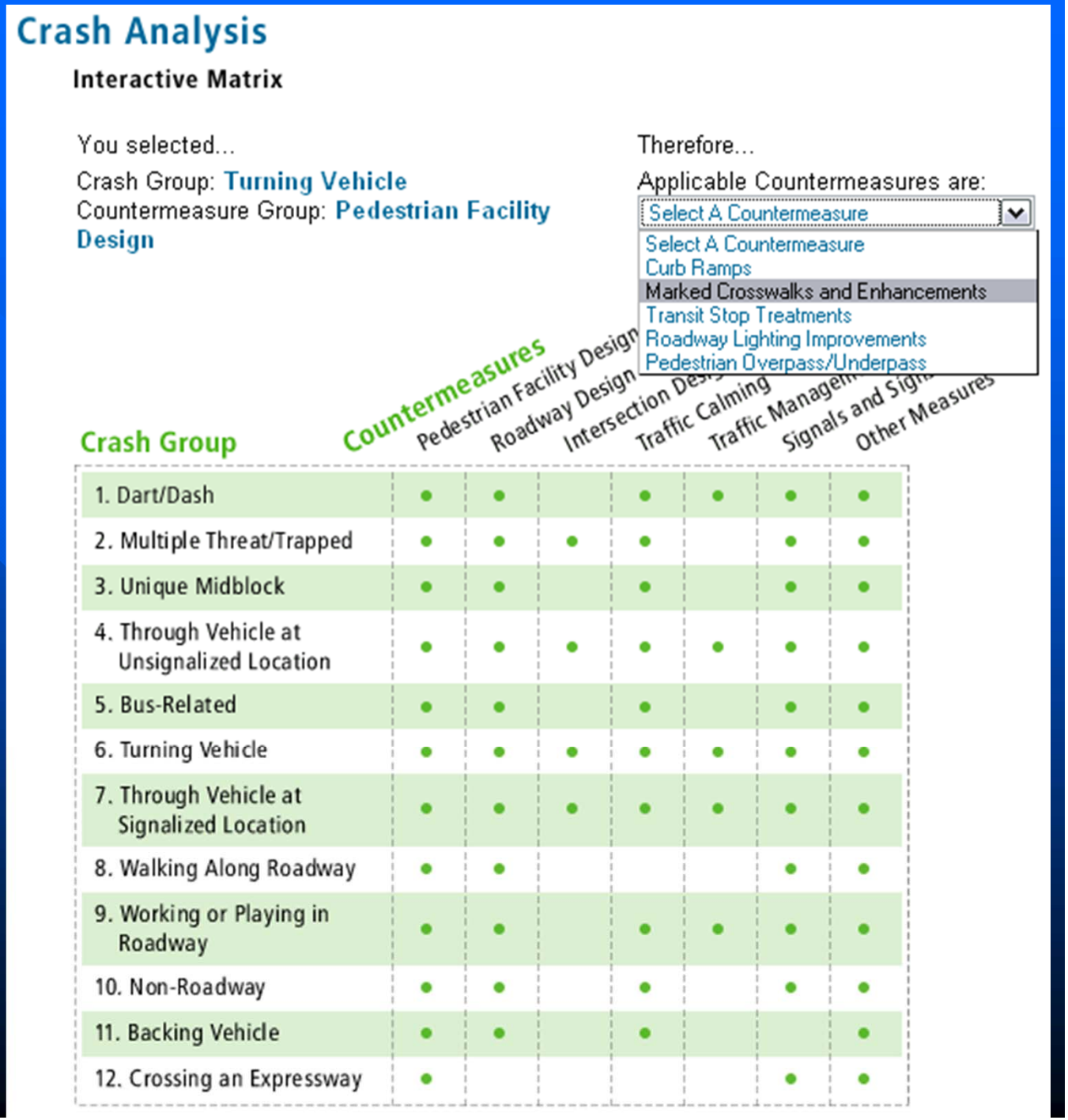
Selection Tool

Results include list of applicable countermeasures



Interactive Matrices

Selecting a cell produces the list of applicable countermeasures



Countermeasures

Each treatment includes:

Purpose

Considerations

Estimated Cost

Case Studies

Curb Radius Reduction:

View Other Roadway Design Treatments

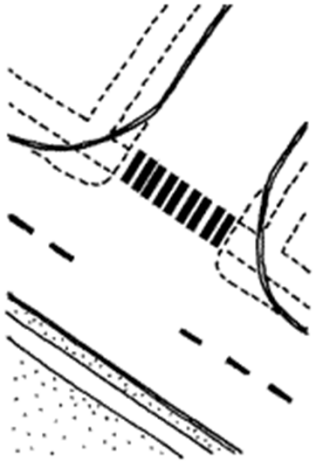
One of the common pedestrian crash types involves a pedestrian who is struck by a right-turning vehicle at an intersection. A wide curb radius typically results in high-speed turning movements by motorists. Reconstructing the turning radius to a tighter turn will reduce turning speeds, shorten the crossing distance for pedestrians, and also improve sight distance between pedestrians and motorists.

Nearby land uses and types of road users should be considered when designing an intersection so that curb radii are sized appropriately. If a curb radius is made too small, large trucks or buses may ride over the curb, placing pedestrians in danger.

Where there is a parking and/or bicycle lane, curb radii can be even tighter, because the vehicles will have more room to negotiate the turn. Curb radii can, in fact, be tighter than any modern guide would allow: older cities in the Northeast and in Europe frequently have radii of 0.6 to 1.5 m (2 to 5 ft) without suffering any detrimental effects.

More typically, in new construction, the appropriate turning radius is about 4.6 m (15 ft) and about 7.6 m (25 ft) for arterial streets with a substantial volume of turning buses and/or trucks. Tighter turning radii are particularly important where streets intersect at a skew. While the corner characterized by an acute angle may require a slightly larger radius to accommodate the turn moves, the corner with an obtuse angle should be kept very tight, to prevent high-speed turns.

- view purpose
- view considerations
- view estimated cost
- view case studies



Adapted from *Making Streets That Work*, Seattle, 1996

view

view

For more Information

- To order a copy: http://safety.fhwa.dot.gov/ped_bike/ped_bike_order.htm
- To use online: http://www.walkinginfo.org/pedsafe/
- For more information, contact:

Tamara Redmon
Pedestrian and Bicycle Safety Program Manager
Federal Highway Administration
Tamara.redmon@fhwa.dot.gov or 202-366-4077

Low Cost Safety Improvements

- FHWA led pooled fund study to evaluate the safety effect of a set of safety improvements.
- Improvements were identified as part of the NCHRP 500 series.
- 80 percent of the guidebook strategies are “tried” or “experimental” (i.e., no good CRFs)

Current Status

- A new task order was recently established for the evaluation of the following 4 strategies:
  - Center two way left turn lanes on two lane roadways (2 to 3 lane conversions)
  - Pavement markings with supplementary messages, such as “stop ahead”
  - Flashing beacons at stop controlled intersections
  - Higher retro-reflectivity sheeting for stop signs.
- Draft report due January 07

Information Resources

- CD available that contains blank databases for installation data for all countermeasures identified in the NCHRP Report 500 Guidebooks
- More information can be found at
- www.tfhrc.gov/safety/evaluations/index.htm

For More Information Contact:

Kerry Perrillo Childress

Kerry.Childress@fhwa.dot.gov

202-493-3318

IHSDM

U.S. Department of Transportation
Federal Highway Administration

Interactive Highway Safety Design Model (IHSDM)

Goal

To marshal the best available knowledge about safety effects of geometrics into a more useful and usable form for highway project planners and designers, and traffic and safety reviewers.

Components

- Evaluation Modules
  - Policy Review
  - Crash Prediction
  - Design Consistency
  - Intersection Review
  - Traffic Analysis
- Basic Services

Intended Usage

- Support project-level geometric design decisions by estimating expected safety and operational performance
- Facility types:
  - Two-lane rural highways (2003)
  - Multilane rural highways (2008)
  - Urban & suburban arterials (2008)

Resources

- May be downloaded free-of-charge at: http://www.ihsdm.org
- Technical support by e-mail at: IHSDM.Support@fhwa.dot.gov
- IHSDM Training Course: #380071A in NHI catalog at http://nhi.fhwa.dot.gov
- Contact Ray Krammes; ray.krammes@fhwa.dot.gov

Safety Analyst

To assist agencies in making better decisions about:

- ✓ Where to make highway safety improvements
- ✓ Determining what improvements to make
- ✓ Evaluating the effectiveness of implemented safety improvements

Scope\Target of SafetyAnalyst and IHSDM

	SafetyAnalyst	IHSDM
Scope	Network-Level	Project-Level
Target	Project Selection Decisions	Geometric Design Decisions

What Tools will be Available in *SafetyAnalyst*?

- Network screening to identify sites with promise for safety improvement
- Diagnosis of safety concerns
- Selection of countermeasures
- Economic appraisal of countermeasures
- Priority ranking of countermeasures
- Evaluation of implemented projects

Target Audience

Professionals involved in deciding:

- ✓ Where to make highway safety improvements
- ✓ Determining what improvements to make
- ✓ Evaluating the effectiveness of implemented safety improvements

How Will *Safety Analyst* Be Implemented?

- *SafetyAnalyst* will be implemented as a set of integrated software tools to perform key steps in the safety management process
- *SafetyAnalyst* will be made available to highway agencies with training and technical assistance
- *SafetyAnalyst* will be maintained as the state of knowledge advances

What Has Been Accomplished Already?

- Project began: April 2001
- Meetings with TWG
- Work plan and Marketing plan
- White Papers with technical approaches to modules
- Functional specifications
- “New Approaches to Highway Safety Analysis” Training course
- Interim Software Package available
- Contact Mike Griffith; mike.griffith@fhwa.dot.gov

Questions?

Susanna Hughes Reck

Technology Facilitator

FHWA Office of Safety R&D

202-493-3313

Susanna.hughesreck@fhwa.dot.gov