Context Guide
Pedestrian Safety Action Plan
Toolkit
Case Studies
Web Portal
Training
Context Driven
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
Spring 2021 Update

Context Driven

Context Guide — **DEFINE** the context.

Pedestrian Safety Action Plan — **IDENTIFY** our needs, **PLAN** our actions.

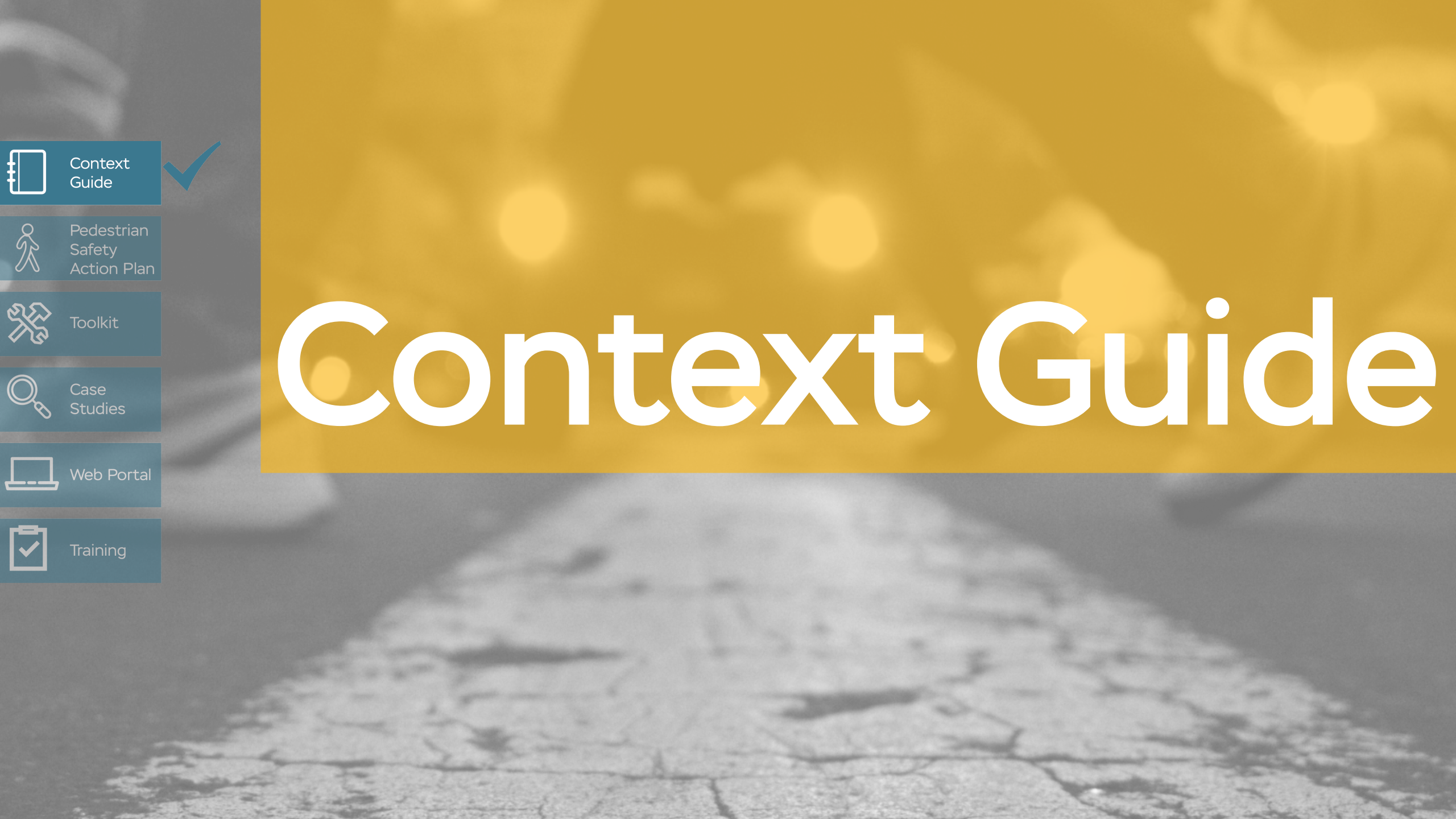
Toolkit — **PROVIDE** the tools for change.

Case Studies — **SHOW** where these strategies have worked.

Web Portal — **COMPILE** information.

Training — **INVEST** in people.

6 components, **1** effort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Completed

Describes six contexts in Maryland that influence **how** roadways will be designed.

Context will influence types of safety improvements.

Each context strikes a different balance between **mobility and access**.

Urban Core

Urban Center

Traditional Town Center

Suburban Activity Center

Suburban

Rural

Context Guide

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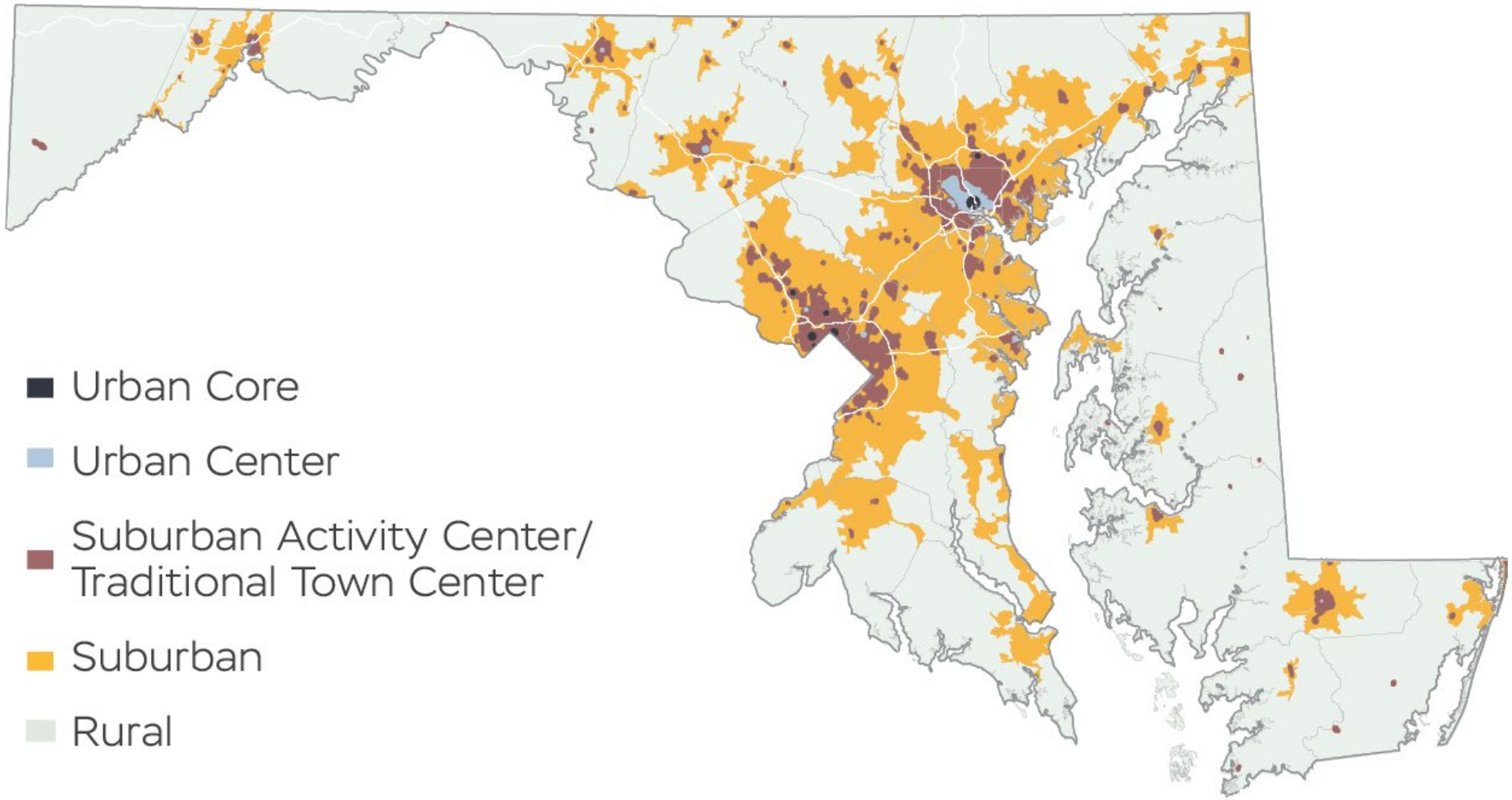


Context Guide

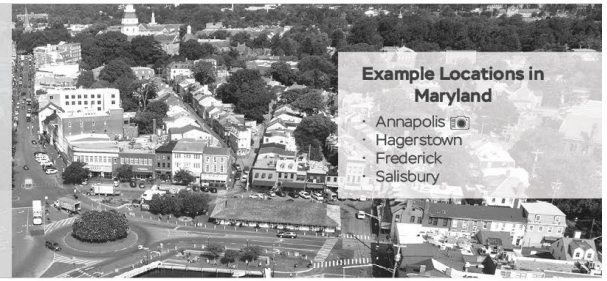
- Context Guide
- Pedestrian Safety Action Plan
- Toolkit
- Case Studies
- Web Portal
- Training

URBAN CENTER

Similar to Urban Core, the ***Urban Center*** context is characterized by a high diversity of uses, including multi-family residential, office, retail, entertainment, civic, and cultural facilities, while having a moderately high-density of development. Urban Center areas are typically characterized by mid-rise structures, minimal setbacks, a variety of street wall frontages, and off-street parking. Urban Centers may be either large commercial business districts in historic towns or newer transit-oriented developments centered around a metro station. Because of its development density and diversity of uses, this land-use pattern generates a moderate to high volume of non-motorized trips. While the need for mobility through these areas does exist, it is exceeded by the need for internal circulation within this context. These areas represent less than 0.1% of the land area in the State.

Urban Center

Destinations in the Urban Center, like those in the Urban Core, are abundant and should be easily accessed. There are many points of interest that are typically accessible by multiple means of travel.



SAMPLE SCENARIO
COUNTERMEASURES

CONTINENTAL CROSSWALK STRIPING

(For all crosswalks in this context) Promotes the highest driver compliance and is the most visible of all crosswalk markings[9]

RIGHT-ON-RED RESTRICTION

Reduces right-turn injury crashes by 38%[10]

30-MPH SPEED LIMIT

(Maximum speed within this context) Decreasing speed from 40 mph to 30 mph reduces possibility of a severe injury or fatality by 25%[4]

ON-STREET BIKE LANE

Maryland crash data demonstrates a reduction in on-street bicycle crashes by 77%

RAISED CROSSWALK

Reduces pedestrian crashes by 46%[13]

PEDESTRIAN HYBRID BEACON

Reduces pedestrian crashes by 69%[12]

LEADING PEDESTRIAN INTERVAL

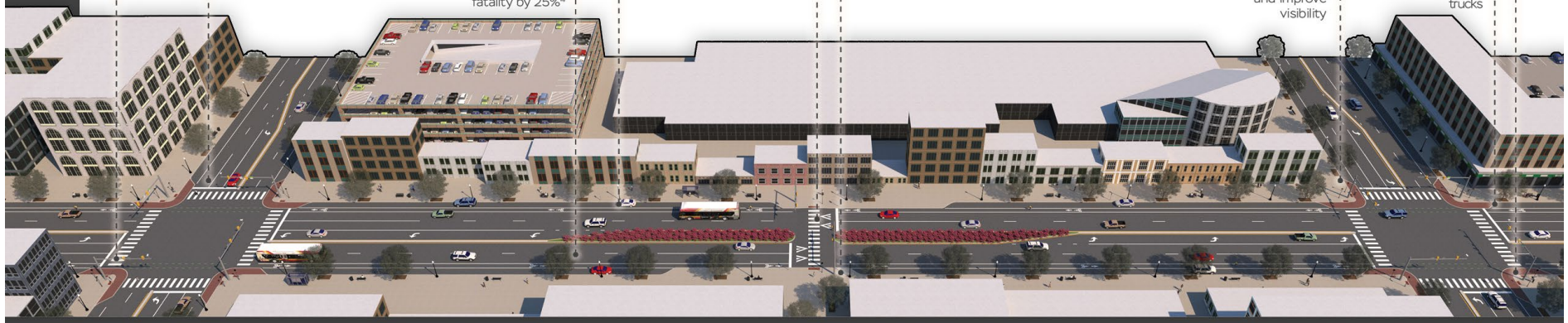
Reduces pedestrian crashes by 60%[11] and can also provide prioritization to bicycles

CURB EXTENSION

Narrows the roadway both visually and physically to shorten the crossing distance for pedestrians and improve visibility

MOUNTABLE CURB

Slows turning passenger vehicles while accommodating the turning movements of larger trucks



SAMPLE SCENARIO
SAFETY AND OPERATIONAL CHALLENGES

Pockets of density in the Urban Center necessitate ample pedestrian accommodations mixed with safe multimodal circulation for those who may be passing through the space.

PROJECT AREAS of need

TRAFFIC OPERATIONS ● **SAFETY** ● **ACCESSIBILITY** ○ CONNECTIVITY ○ STATE OF GOOD REPAIR ○ **QUALITY OF SERVICE** ●

SAMPLE SCENARIO
COUNTERMEASURES AND BENEFITS

The original five-lane typical section with a two-way left-turn lane was designed primarily for vehicular mobility. Despite being on a major bicycle route, bicycle facilities were limited to share the road, and a major, mid-block pedestrian generator led to safety issues due to uncontrolled crossings. The roadway was re-purposed to reduce pedestrian crashes, improve bicycle comfort, and create more direct pedestrian routes between major trip generators.

Context Guide
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Toolkit
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Web Portal
Training
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- Context Guide
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- Web Portal
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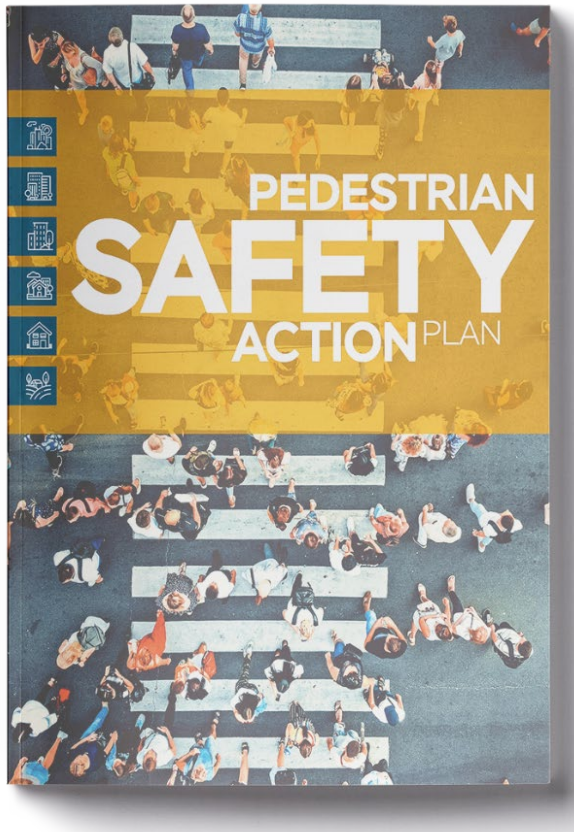
In progress

Identifies areas of need for future pedestrian safety improvements by examining crash data, existing conditions, and public input.

Improvements will be **prioritized** within each area of need.

Information and results from the Toolkit and the Context Guide will **inform recommendations.**



Pedestrian Safety Action Plan

- Context Guide
- Pedestrian Safety Action Plan
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- Case Studies
- Web Portal
- Training

Coordinate

Support agency partner and peer pedestrian and bicycle safety programs

Deliver

Ensure road improvements deliver context driven objectives

Invest

Direct investment and implement countermeasures where there are known pedestrian and bicycle safety challenges

Innovate

Leverage innovation and technology to improve pedestrian safety

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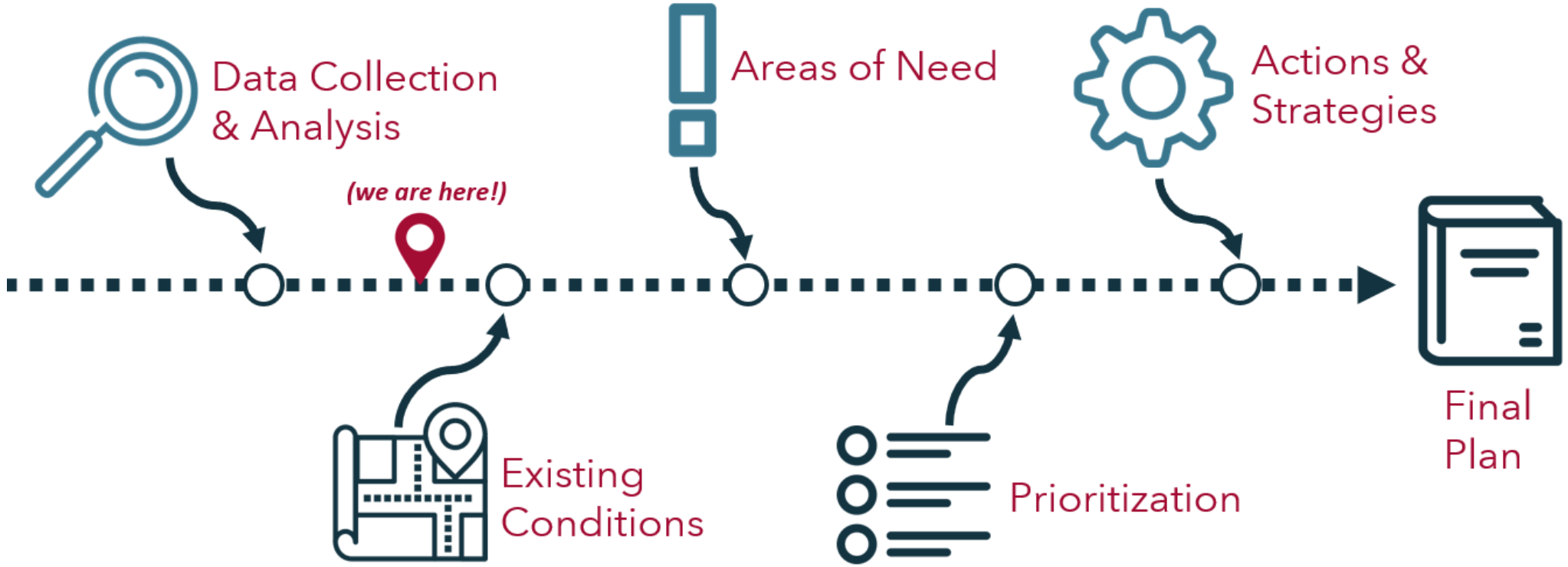

Context Guide

Pedestrian Safety Action Plan

Toolkit

Case Studies

Web Portal

Training

Toolkit

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- Context Guide
- Pedestrian Safety Action Plan
- **Toolkit**
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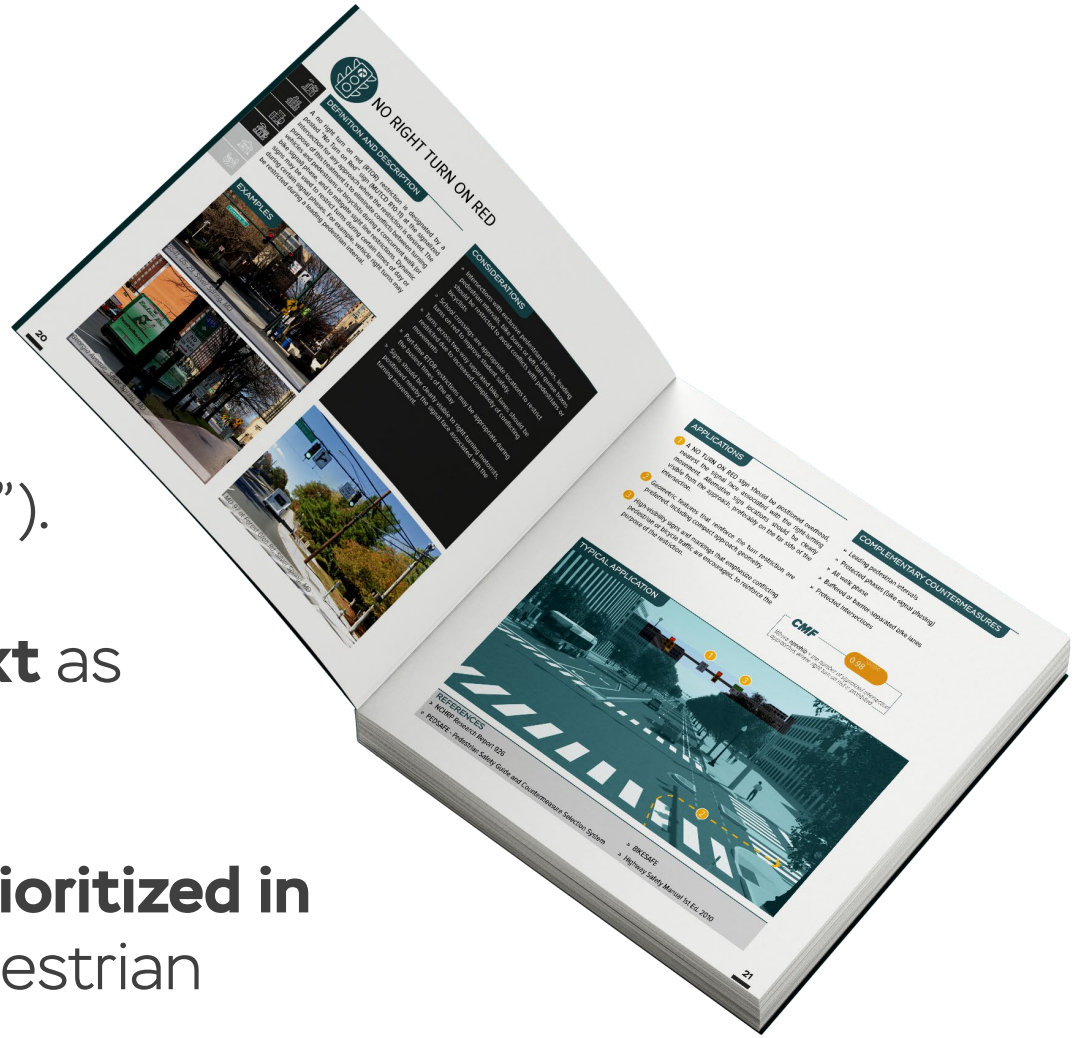
In progress

Provides specifications for safety improvements ("countermeasures").

Connects improvements to context as outlined in the Context Guide.

Toolkit countermeasures will be **prioritized in areas of need** identified in the Pedestrian Safety Action Plan.



NO RIGHT TURN ON RED

DEFINITION AND DESCRIPTION

A no right turn on red (RTOR) restriction is designated by a posted "No Turn on Red" sign (MUTCD R10-11) at the signalized intersection for any approach where the restriction is desired. The purpose of this treatment is to eliminate conflicts between turning vehicles and pedestrians or bicyclists during a concurrent walk (or bike signal) phase, and to mitigate sight line restrictions. Dynamic signs may be used to restrict turns during certain times of day or during certain signal phases. For example, vehicle right turns may be restricted during a leading pedestrian interval.

EXAMPLES

8541, US-29, Silver Spring, MD

Georgia Avenue, Silver Spring, MD

CONSIDERATIONS

- Intersections with exclusive pedestrian phases, leading pedestrian intervals, bike boxes or left-turn queue boxes should be restricted to avoid conflicts with pedestrians or bicyclists
- School crossings are appropriate locations to restrict turns on red to improve student safety.
- Turns across two-way separated bike lanes should be restricted due to increased complexity of conflicting movements
- Part-time RTOR restrictions may be appropriate during the busiest times of the day
- Signs should be clearly visible to right-turning motorists, positioned nearby the signal face associated with the turning movement.

MD 97 at Forest Glen Rd, Silver Spring, MD

APPLICATIONS

1. A NO TURN ON RED sign should be positioned overhead, nearest the signal face associated with the right-turning movement. Alternative sign locations should be clearly visible from the approach, preferably on the far side of the intersection.
2. Geometric features that reinforce the turn restriction are preferred, including compact approach geometry.
3. High-visibility signs and markings that emphasize conflicting pedestrian or bicycle traffic are encouraged, to reinforce the purpose of the restriction.

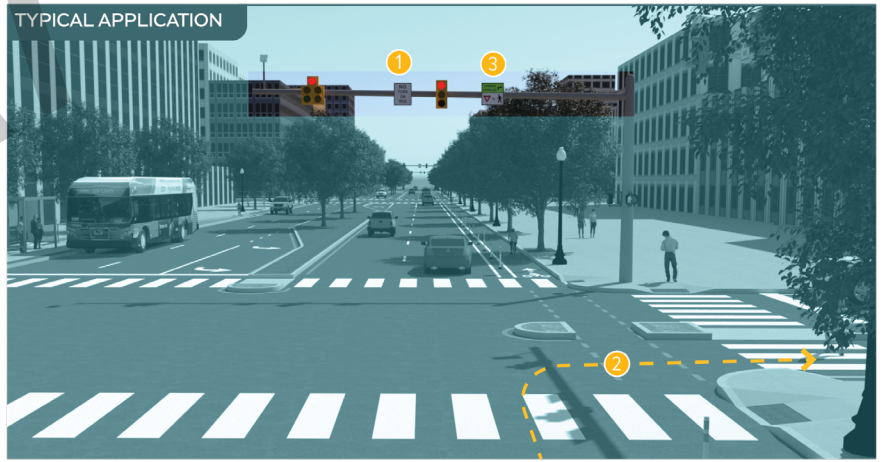
COMPLEMENTARY COUNTERMEASURES

- Leading pedestrian intervals
- Protected phases (bike signal phasing)
- All walk phase
- Buffered or barrier-separated bike lanes
- Protected intersections

CMF $_{nprohib}$ 0.98

*Where **nprohib** = the number of signalized intersection approaches where right turn on red is prohibited*

TYPICAL APPLICATION



REFERENCES

- NCHRP Research Report 926
- PEDSAFE - Pedestrian Safety Guide and Countermeasure Selection System
- BIKESAFE
- Highway Safety Manual 1st Ed. 2010

DRAFT

Context Guide

Pedestrian Safety Action Plan

Toolkit

Case Studies

Web Portal

Training

Case Studies

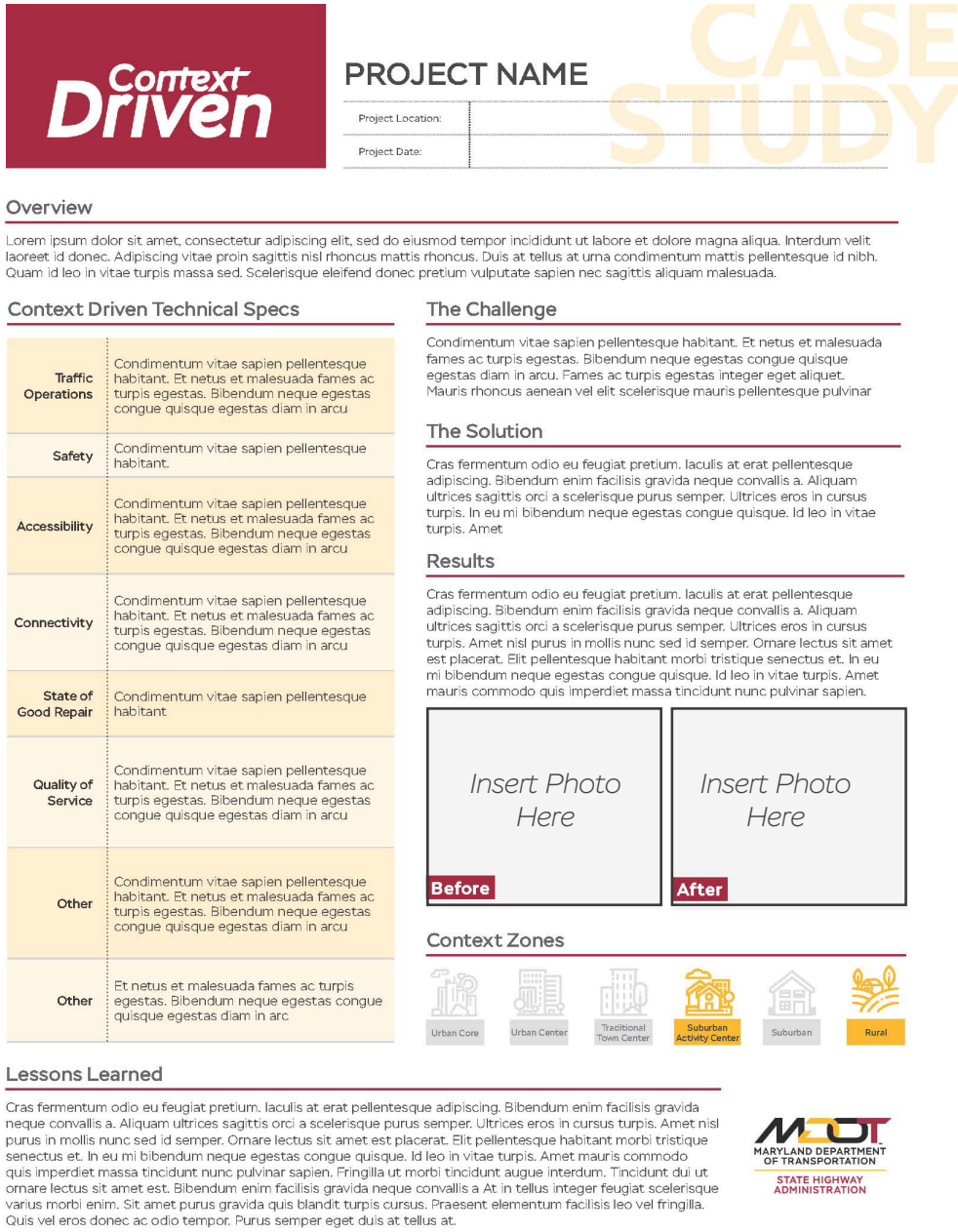
Case Studies

- Context Guide
- Pedestrian Safety Action Plan
- Toolkit
- Case Studies
- Web Portal
- Training

Pending

Context Driven Case Studies will **showcase best practices** in support of Toolkit countermeasures.

Classifies case studies by context so practitioners can locate examples that are **applicable to their communities.**



Context Driven

PROJECT NAME

CASE STUDY

Project Location:

Project Date:

Overview

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Context Driven Technical Specs

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Safety	Condimentum vitae sapien pellentesque habitant.
Accessibility	Condimentum vitae sapien pellentesque habitant. Et netus et malesuada fames ac turpis egestas. Bibendum neque egestas congue quisque egestas diam in arcu
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State of Good Repair	Condimentum vitae sapien pellentesque habitant
Quality of Service	Condimentum vitae sapien pellentesque habitant. Et netus et malesuada fames ac turpis egestas. Bibendum neque egestas congue quisque egestas diam in arcu
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The Challenge

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The Solution

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Insert Photo Here

Before

Insert Photo Here

After

Context Zones

Urban Core | Urban Center | Traditional Town Center | Suburban Activity Center | Suburban | Rural

Lessons Learned

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Pedestrian Safety Action Plan

Toolkit

Case Studies

Web Portal

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Web Portal

Web Portal

- Context Guide
- Pedestrian Safety Action Plan
- Toolkit
- Case Studies
- Web Portal
- Training

In Progress

A single Context Driven Web Portal is being developed for content for all six components.

A new section of the web portal will be added for each component, and **online public involvement will be centralized on this web portal.**

The Context Driven Web Portal will be a one-stop-shop for practitioners and the public.

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Pedestrian Safety Action Plan

Toolkit

Case Studies

Web Portal

Training

Training

Training

- Context Guide
- Pedestrian Safety Action Plan
- Toolkit
- Case Studies
- Web Portal
- Training

In Progress

Context Driven is a complex effort. **Training on how to implement the guidance and recommendations of Context Driven** will be provided to the public, MDOT staff, local governments, elected officials, industry/advocacy/interest groups.

Investing in training and communications will be essential to increasing awareness and facilitating change.

Recap

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- Pedestrian Safety Action Plan
- Toolkit
- Case Studies
- Web Portal
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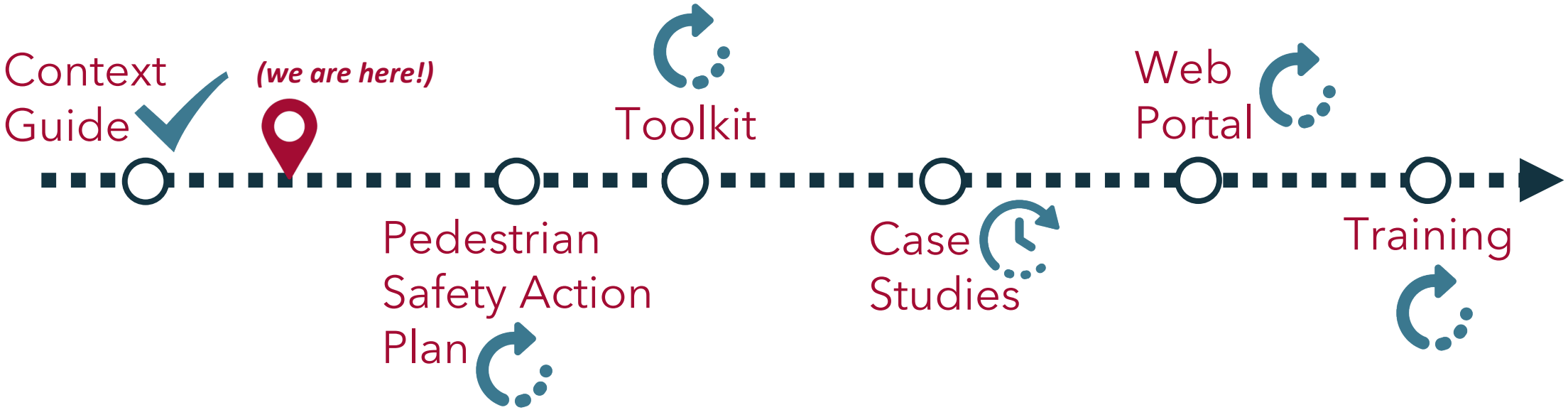
- Pedestrian Safety Action Plan
- Toolkit
- Case Studies
- Web Portal
- Training



Context Guide

Pedestrian Safety Action Plan

Toolkit

Case Studies

Web Portal

Training

Contact

Contact

- Context Guide
- Pedestrian Safety Action Plan
- Toolkit
- Case Studies
- Web Portal
- Training

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More Information:

roads.maryland.gov/contextdriven