



RHODE ISLAND PUBLIC TRANSIT AUTHORITY



# COMMUNITY TRANSPORTATION SAFETY TOOLKIT

November 2025

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# Purpose of the toolkit

This toolkit serves as a practical resource for Rhode Island communities that developed Safety Action Plans (SAPs) through the Rhode Island Public Transit Authority (RIPTA) [Safe Streets for All \(SS4A\) program](#). It is designed to support the next phase of implementing roadway safety improvements.

Rather than serving as a technical design guide, the toolkit offers visual examples of how various safety enhancements might appear once constructed, along with descriptions of their potential benefits. These illustrations complement the SAPs by helping communities better understand and envision potential changes.

The countermeasures featured in both the SAPs and this toolkit should be viewed as a “menu” of strategies that communities can consider as they plan and prioritize enhancements to their streets and sidewalks. These strategies align with the [Federal Highway Administration \(FHWA\) Proven Safety Countermeasures initiative](#), which aims to reduce roadway fatalities and serious injuries across the country.

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*NOTE: The illustrations provided are for conceptual planning purposes only. They are not engineering drawings, construction documents, or detailed design specifications, and should not be relied upon for permitting, regulatory approval, or construction. The preparer assumes no liability for any use, misuse, or misinterpretation of the illustrations.*







## Crossing the street

**Strategies to improve safety and accessibility for people walking or using mobility devices include a range of treatments. Lower-cost options, such as improved signage and refreshed crosswalk striping, can make streets safer immediately, while higher-cost improvements, like curb extensions and raised crosswalks, provide additional protection and visibility.**

**Together, these enhancements help pedestrians reach their destinations safely, whether that is school, work, errands, a bus stop, or local shops, supporting a more accessible and walkable community.**

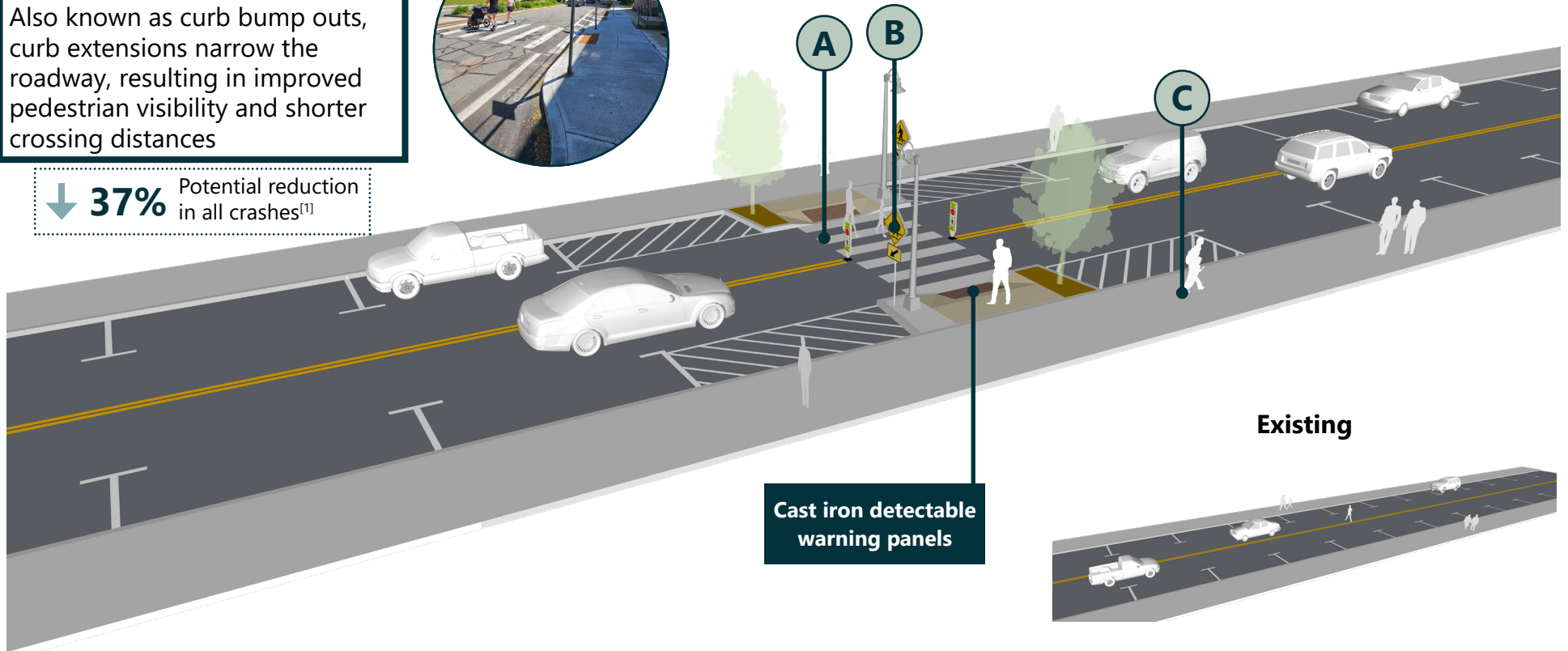
**Strategies** are described on pages 4 and 5



## Curb extensions

Also known as curb bump outs, curb extensions narrow the roadway, resulting in improved pedestrian visibility and shorter crossing distances

↓ **37%** Potential reduction in all crashes<sup>[1]</sup>



## Crossing the street

### A Continental style crosswalks

Wide crosswalk stripes parallel to the direction of travel that improve crosswalk visibility, especially when striped with retroreflective paint

↓ **40%** Potential reduction in pedestrian crashes<sup>[2]</sup>



### B Pedestrian warning signage

High-visibility retroreflective signage to alert drivers of a mid-block crosswalk, encouraging drivers to yield to people crossing the street

↓ **25%** Potential reduction in pedestrian crashes<sup>[2]</sup>



### C Wide and level sidewalks

A pathway at least five feet wide (four feet wide at obstructions such as utility poles), providing safe and accessible paths for people walking or using a mobility device

↓ **65%+** Potential reduction in pedestrian crashes<sup>[3]</sup>





## Raised crosswalks

Pedestrian crossings that are elevated above the roadway surface, improving pedestrian visibility while encouraging slower vehicle speeds

↓ **45%** Potential reduction in pedestrian crashes<sup>[4]</sup>



## Crossing the street



Existing

D

### Daylighting with flex posts and striping

Restricting parking near crosswalks improves visibility of pedestrians by using striping, flexible delineator posts, or other tools to prevent illegal parking\*

↓ **30%**  
Potential reduction in pedestrian crashes<sup>[5]</sup>



E

### Rectangular rapid flashing beacons (RRFBs)

Pedestrian-activated warning devices that use high-intensity LED lights to catch the attention of drivers as they approach the crosswalk

↓ **47%**  
Potential reduction in pedestrian crashes<sup>[6]</sup>



F

### Pedestrian-scale lighting

Low-height lighting to illuminate sidewalks and crosswalks, increasing visibility and sense of security for people walking at night

↓ **42%**  
Potential reduction in pedestrian crashes at intersections<sup>[7]</sup>



Additional strategies

\* State law (§31-21-4): No parking 20 ft from crosswalks at an intersection; 30 ft from flashing beacons, stop signs, or traffic signals.



## Traveling on a roadway

Safety enhancements for people traveling along a roadway should address the needs of all users and vehicle types. Lower-cost strategies, utilizing striping, signage, and speed cameras, can help reduce vehicle speeds and improve safety for everyone. More extensive projects, including full roadway reconstruction, can transform corridors into safer, more efficient spaces that better balance the needs of drivers, bicyclists, and pedestrians.

**Strategies** are described on pages 7 to 10

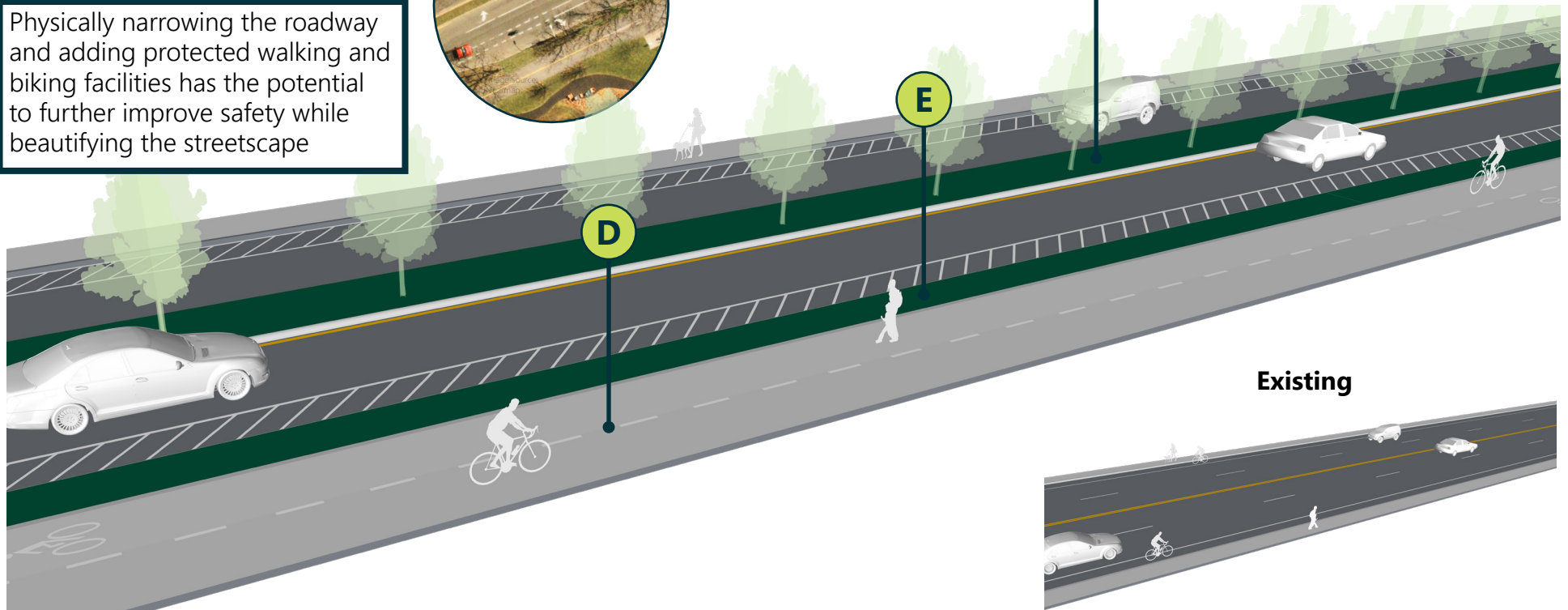






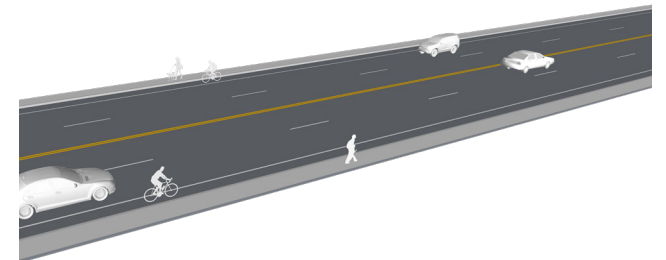
## Lane reconfiguration (high-cost)

Physically narrowing the roadway and adding protected walking and biking facilities has the potential to further improve safety while beautifying the streetscape



## Traveling on a roadway

Existing



### D Shared use paths

Physically separated paths for people walking or biking make roads safer and more comfortable for vulnerable road users—those at greater risk, such as pedestrians and bicyclists

↓ **53%**

Potential reduction in bike crashes<sup>[9]</sup>



### E Green infrastructure

Green infrastructure can help better manage stormwater while serving as a buffer between the roadway and the sidewalk or shared use path



Increased comfort with separation from the roadway



### F Raised medians

Raised medians can help improve safety by separating opposing traffic and providing refuge for pedestrians, while trees can encourage slower driving by visually narrowing the roadway

↓ **56%**

Potential reduction in pedestrian crashes with refuge island<sup>[12]</sup>





## Access Management

Access management techniques along a commercial corridor aim to improve roadway safety by reducing turns in and out of driveways, managing turning movements, and creating more predictable travel patterns for drivers, pedestrians, and bicyclists

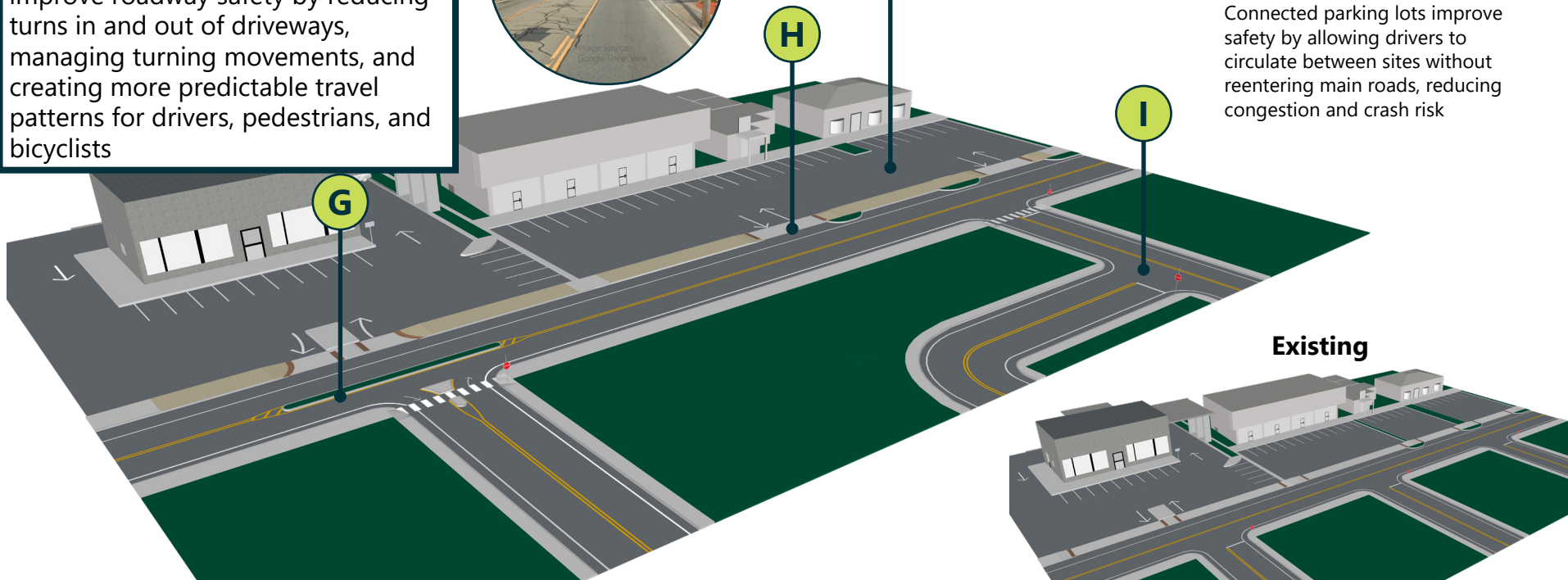
↓ **25-31%**

Reduction in fatal and injury crashes<sup>[13]</sup>

## Traveling on a roadway

### Connected Parking Lots

Connected parking lots improve safety by allowing drivers to circulate between sites without reentering main roads, reducing congestion and crash risk



**G**

### Left turn restrictions

Strategically restricting left turns and diverting traffic to intersections and consolidated driveways helps reduce the number of vehicle conflict points along a corridor



Reduces the number of angle crashes



**H**

### Shortened and consolidated driveways

Consolidating and shortening driveways helps make a corridor more walkable by increasing sidewalk coverage and reducing the number vehicle-pedestrian and vehicle-vehicle conflicts



Improves comfort and safety for pedestrians



**I**

### Minor road consolidation

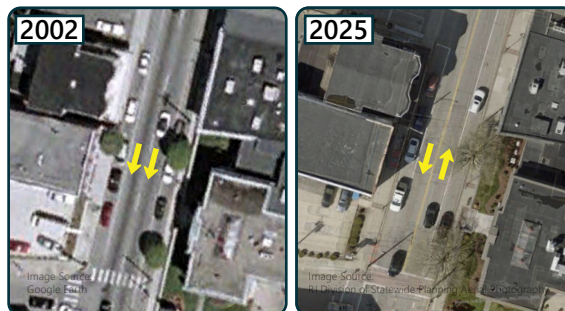
Connecting minor roads consolidates entry/exit points to the main road, reducing the overall number of potential conflict points along a corridor

Fewer potential points for crashes

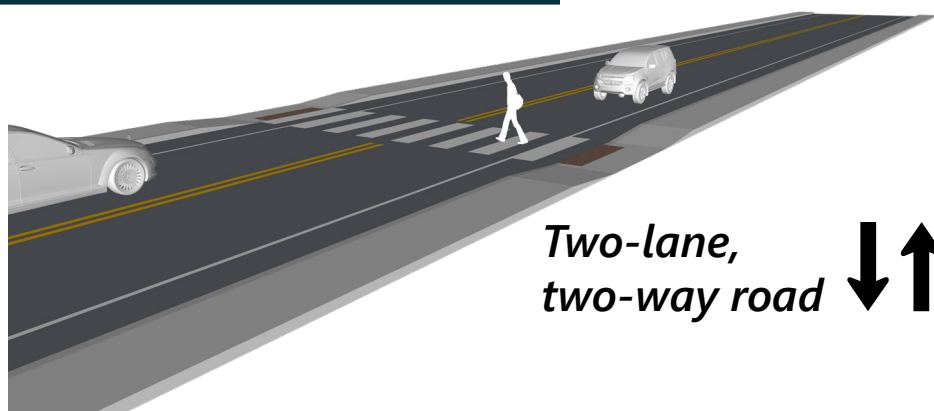


## One-way to two-way conversion

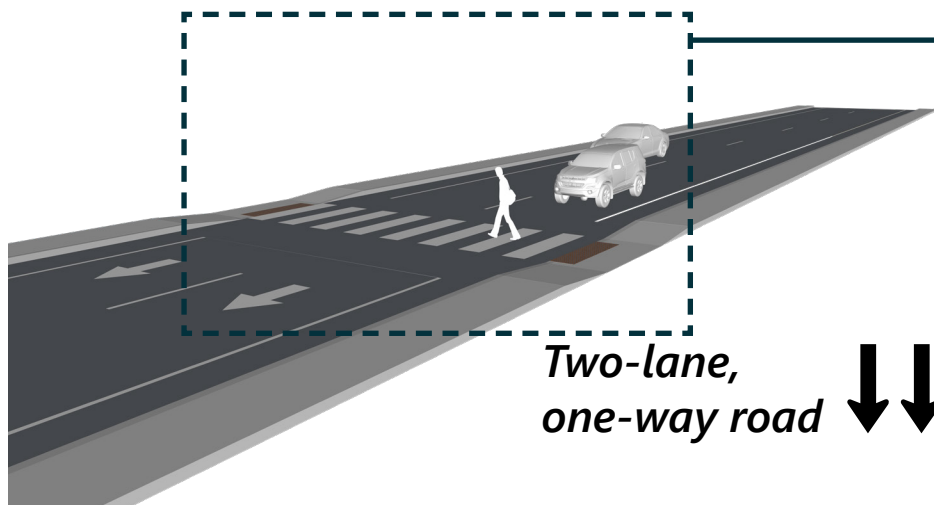
Converting streets from one-way pairs to a two-way network can significantly improve multimodal safety by mitigating “multiple-threat” pedestrian crashes; two-way conversion also slows vehicle speeds by narrowing lanes while promoting more balanced traffic distribution in the overall road network



Converting Main Street in West Warwick from one-way to two-way improved the pedestrian experience in the city's Arctic Village commercial district



*Two-lane,  
two-way road* ↓ ↑

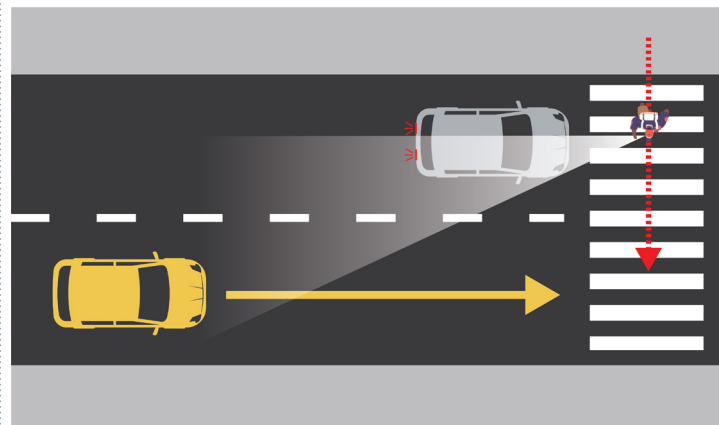


*Two-lane,  
one-way road* ↓ ↓

## Traveling on a roadway

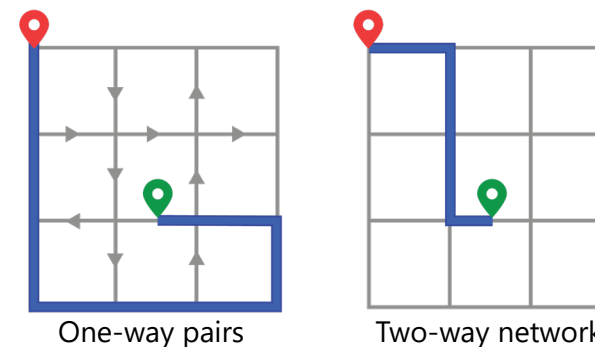
### Key benefits of two-way streets

> Decreases the risk from “multiple-threat” crashes



Two-way streets make it easier for pedestrians and drivers to see each other at crosswalks

> **Improves multimodal connectivity within the street network**



Two-way streets create more direct connections to destinations, improving access to businesses while making the network safer and more welcoming to pedestrians and bicyclists





## Navigating an intersection

Intersections are where many crashes and conflicts occur, making targeted safety improvements especially important. Lower-cost treatments, such as updated signal timing, curb extensions, and high-visibility crosswalks, can enhance visibility and reduce turning speeds. Larger-scale redesigns, such as roundabouts or other geometrical changes, not only improve safety but also make it easier and more intuitive for all users to navigate complex intersections.

**Strategies** are described on pages 12 to 14





# Roundabouts

Roundabouts improve safety by reducing the number of conflict points in an intersection, while also reducing the severity of crashes



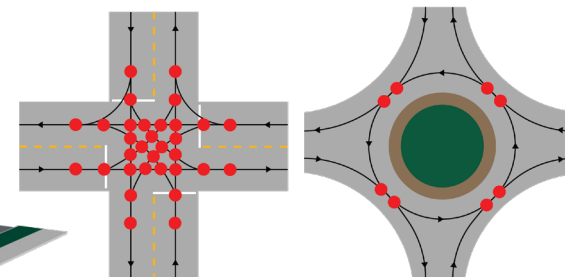
↓ **78-82%**

Reduction in fatal and injury crashes<sup>[14]</sup>

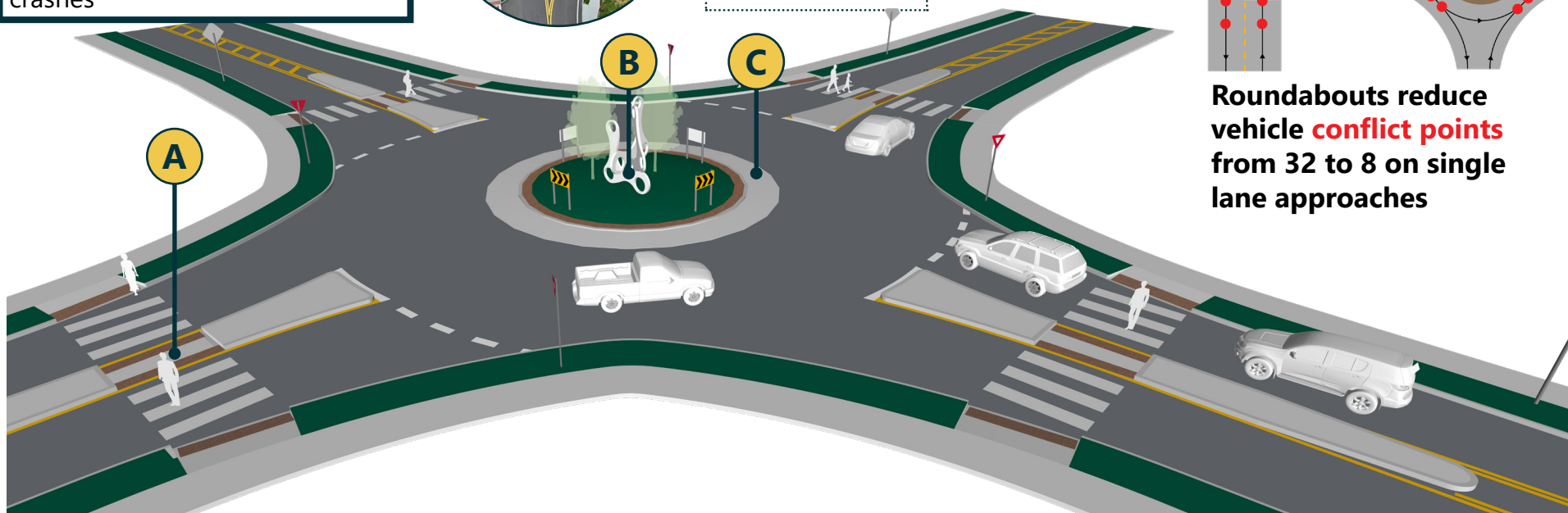
↓ **30-40%**

Reduction in pedestrian crashes<sup>[15]</sup>

## Navigating an intersection



Roundabouts reduce vehicle **conflict points** from 32 to 8 on single lane approaches



**A**

### Refuge islands

Roundabouts typically incorporate refuge islands at crosswalks, enhancing safety for pedestrians through the intersection

↓ **56%**

Potential reduction in pedestrian crashes<sup>[12]</sup>



**B**

### Gateway treatments

The central islands of roundabouts can serve as a gateway space by incorporating elements such as public art, landscaping, or gateway signage to create a visual identity and sense of place



Serve as a visual cue for drivers to slow down



**C**

### Truck aprons

A raised surface that can be driven over enables roundabouts to accommodate the wider turns of larger vehicles, such as trucks, buses, and emergency vehicles



Allow for more compact, safer roundabouts while enabling truck turns





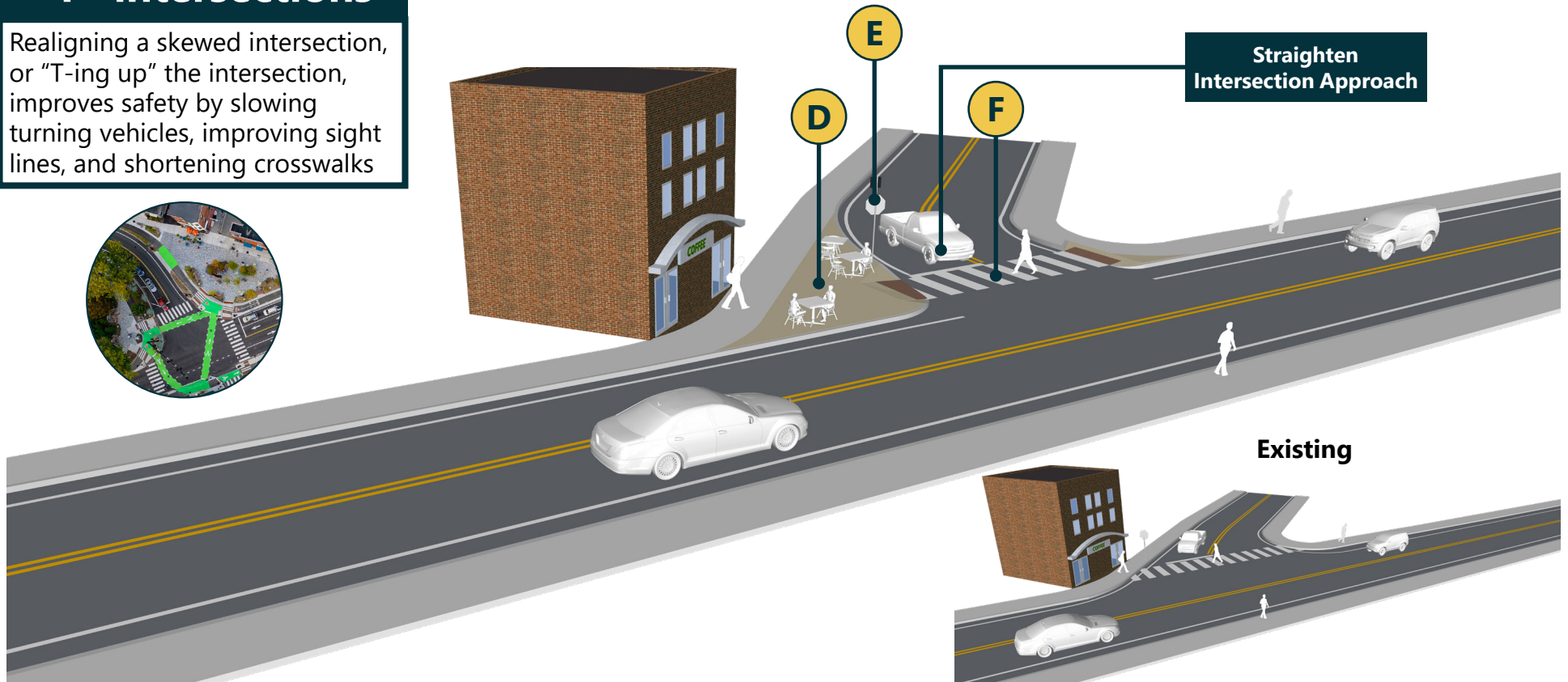
# "T" intersections

Realigning a skewed intersection, or "T-ing up" the intersection, improves safety by slowing turning vehicles, improving sight lines, and shortening crosswalks



## Navigating an intersection

Straighten Intersection Approach



D

### New public spaces

T-ing up an intersection often frees up space for other uses, including outdoor dining, small parks, or other types of public spaces



Activity at the corner creates a more human-scale roadway



E

### Flashing stop signs

A standard STOP sign equipped with flashing LED lights around its border helps draw driver attention and improve the likelihood that a driver will stop

↓ 41%

Potential reduction in angle crashes<sup>[16]</sup>



F

### Shortened crossings

Reducing the distance pedestrians travel in the roadway lowers exposure to vehicle conflicts and improves safety, especially for children, seniors, and those with limited mobility



More comfortable for all pedestrians

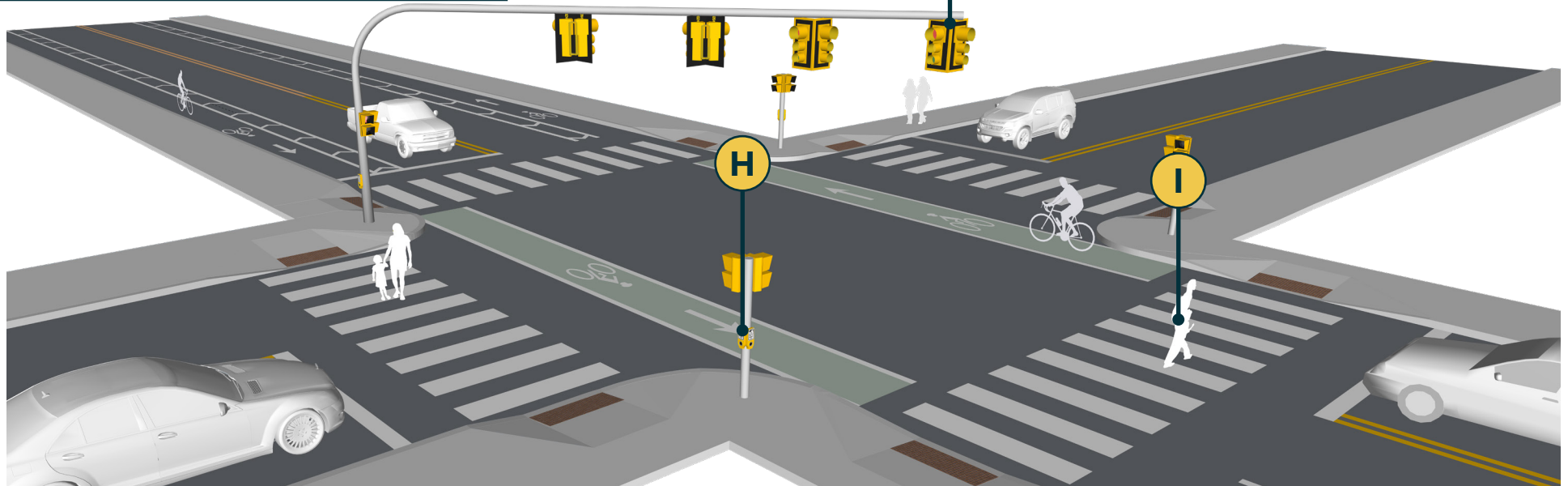


# Signalized intersections

A signalized intersection with crosswalks and accessible pedestrian signals improves safety by giving pedestrians clear, dedicated times to cross and making movements more predictable for drivers



## Navigating an intersection



### G Backplates with yellow retroreflective borders

A retroreflective yellow border around signal heads significantly improves visibility both at night and during the day, making it more likely that a driver will see the signal

↓ **15%**  
Potential reduction in all crashes<sup>[17]</sup>



### H Pedestrian signals and push buttons

Accessible pedestrian signals (APS), including audible tones and speech messages, improve safety for all pedestrians by clearly indicating when it is safe to cross the street

Contributes to a safer, more accessible sidewalk network



### I Leading pedestrian intervals

A traffic signal configuration that starts the "WALK" signal a few seconds before vehicles get a green light, making pedestrians more visible in crosswalks and reducing turning vehicle conflicts

↓ **13%**  
Potential reduction in pedestrian crashes<sup>[18]</sup>







## Taking the bus

Safe and convenient access to transit begins with well-designed bus stops and the streets that connect to them. Strategies in this section focus on safety from the perspective of bus riders, who are pedestrians at the start and end of their trips. These enhancements strengthen the overall transit experience and support more reliable, equitable mobility.

**NOTE:** This section provides general safety and accessibility considerations for roads with bus stops—for more details on bus stop design, refer to the **Rhode Island Bus Stop Design Guide**

**Strategies** are described on page 16

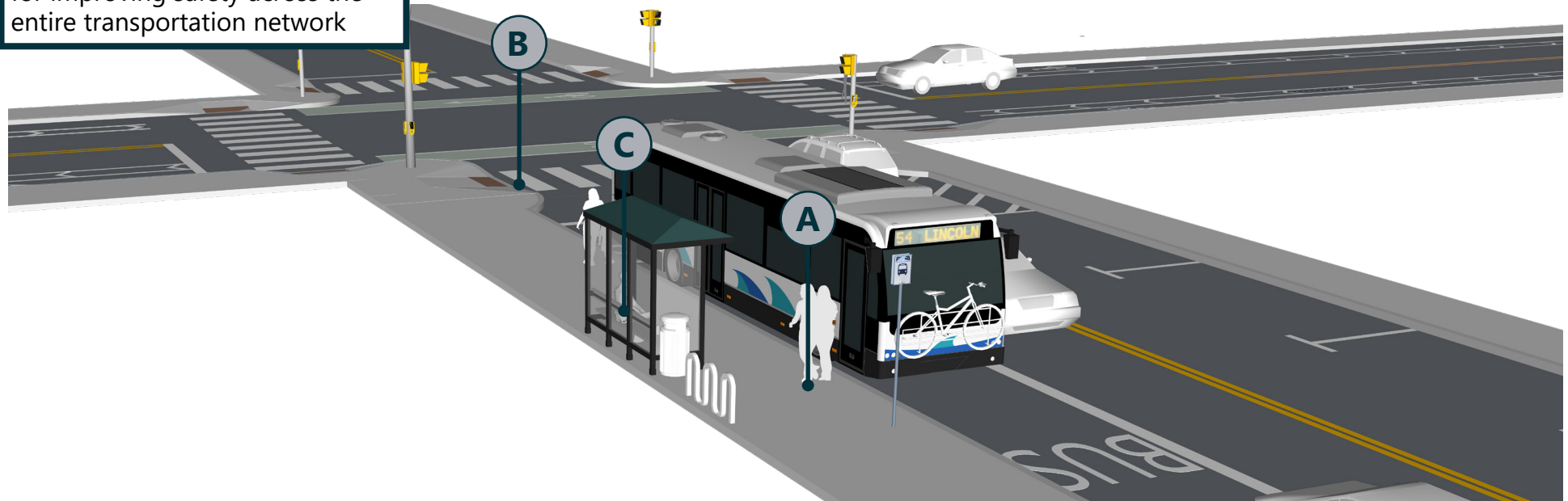




## Bus stops

Since all bus riders start and end their trips as pedestrians, providing safe and comfortable access to bus stops is essential for improving safety across the entire transportation network

See the **Rhode Island Bus Stop Design Guide** for more details on bus stop design



### A Accessible landing areas

Bus passengers need a paved, flat, level surface at the front door to get on and off safely; an open, obstacle free space (clear zone) should also be provided at the rear door



Allows all passengers to safely get on and off the bus



### B Pedestrian access

A clear, level sidewalk from the bus stop to a crosswalk is an important safety consideration to ensure passengers can safely get to where they need to go



Connects passengers to a sidewalk network



### C Bus stop amenities

Amenities such as bus shelters, benches, lighting, trash barrels, and bike racks can contribute to a safer and more comfortable experience for bus passengers



Provides comfort and visibility for people waiting for the bus

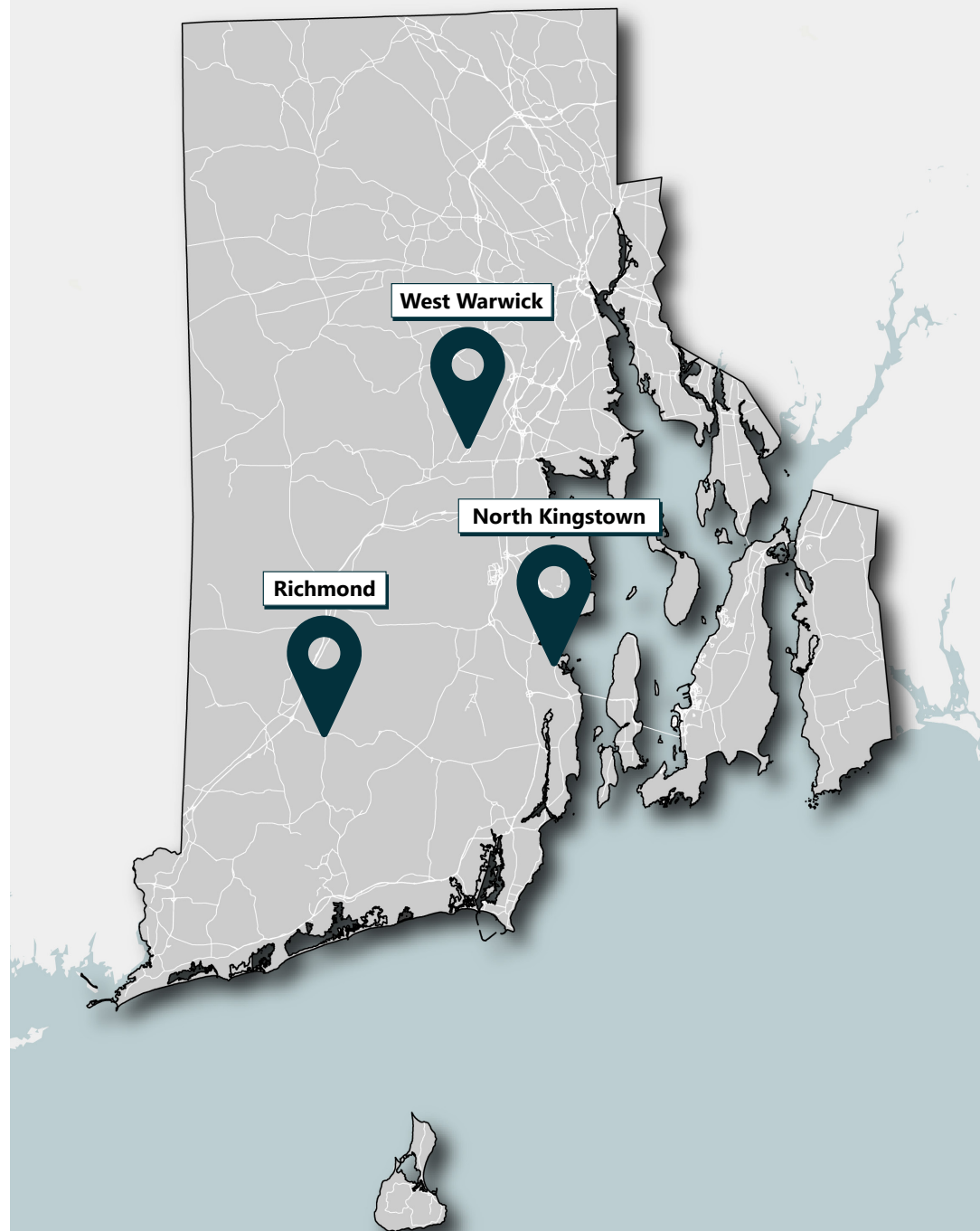






**Across Rhode Island, both state and local partners are putting safety strategies into practice. The following spotlights highlight a range of projects that have improved safety, accessibility, and quality of life for all road users.**

**As municipalities and state agencies pursue funding for safety improvements, these examples demonstrate how safety-focused design can transform streets and strengthen connections within and between communities.**





## West Warwick

Main Street in West Warwick's Arctic Village is an example of how safety enhancements can improve the pedestrian experience in a commercial district, making it easier and more comfortable for people to access businesses, municipal services, and bus stops.



**One-way to two-way conversion**



**Pedestrian-scale lighting**



**Curb extension**



**Cast iron detectable warning panel**



**Improved access to/from bus stops**





# North Kingstown

Improvements to the intersection of Boston Neck Road, Hamilton Allenton Road, and Salisbury Avenue created a safer environment for all travelers, including children accessing Hamilton Elementary School.



Backplates with yellow retroreflective borders



Minor road consolidation



Continental style crosswalks



Pedestrian signals and push buttons





# Richmond

The roundabout at the intersection of Route 138, Route 112, and Carolina Nooseneck Road in Richmond improved traffic circulation and enhanced safety for all road users. The design slows vehicles, reduces conflict points, and makes it easier for pedestrians, including children traveling to Richmond Elementary School, to navigate the intersection safely.



Wide and level sidewalks



Truck apron



Gateway treatment



Refuge islands





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