



Rhode Island's Complete Streets Action Plan



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Complete Streets are road systems designed to accommodate all users to include pedestrians, bicyclists, automobiles, and transit. They are designed to balance the safety and access needs of all road users. Streets designed with this principle in mind will help create a more multi-modal street network. Complete Streets promote more livable communities.

Integrating Complete Streets . . . the RIDOT project lifecycle experience

Planning

Engage stakeholders during project visioning

Enact reforms and updates to policies

Scoping

Include stakeholders in scope of work development

Integrate new and revised policies in project scope development

Design

Incorporate Road Safety Audits and public outreach in design process

Formalize updated policy through design directives

Implementation

Include stakeholder and public outreach throughout implementation

Develop project implementation plans

Legislation and Policy Updates

In June 2012, the Rhode Island General Assembly passed the Complete Streets law to integrate multiple transit options into the design and construction of the state's transportation system. This provides safe access to all users, regardless of how they traveling.

This report presents several case studies that showcase the progress the Rhode Island Department of Transportation (RIDOT) has made in implementing the Complete Streets design principles.

JUN 2012

The Rhode Island General Assembly enacted General Law 24, Chapter 16, "to address Complete Streets Design Principles." The guiding principle of the law states:

These features of Complete Street design shall include, but not be limited to: sidewalks, paved shoulders suitable for use by bicyclists, lane striping, bicycle lanes, share the road signage, road diets, roundabouts, crosswalks, pedestrian signals, bus pull outs, raised crosswalks, and traffic calming measures.

JUL 2012

RIDOT issued a policy directive on Complete Streets design consideration.

It required that all consultants working on RIDOT transportation improvement projects consider people of all ages and abilities, and all appropriate forms of transportation.

Community Involvement...the key to success

RIDOT's experience has been coordinating with the community and our partners is the foundation for a successful Complete Streets program. RIDOT has forged relationships with many key stakeholders to help propel Complete Streets implementation forward:

Grow Smart Rhode Island

Rhode Island Coalition for Transportation Choices

Rhode Island Statewide Planning

Aquidneck Island Planning Commission (AIPC)

Sierra Club – Rhode Island Chapter

Providence Bicycle and Pedestrian Advisory Commission (BPAC)

Rhode Island Public Transit Authority (RIPTA)

Bike Newport

American Association of Retired Persons (AARP)

Federal Highway Administration (FHWA)

Municipalities, local community groups, elected officials, business owners, residents, and other stakeholders tailored to each project

AUG 2012

RIDOT launched the Vulnerable Road Users Safety Action Program. RIDOT offered training for municipalities on how to complete a safety action plan for vulnerable road users, including pedestrians, bicyclists, moped operators and motorcyclists. The training included a case study in the City of Newport that can be used as a template for other communities to follow. The template provides a menu of options for communities that are designed to increase safety and awareness of all road users.

RIDOT also participated in numerous public workshops and conferences focused on Complete Streets and how planners, engineers, and other stakeholders can embrace Complete Streets.

OCT 2013

RIDOT approved the Institute of Transportation Engineer's (ITE) Designing Walkable Urban Thoroughfares: A Context Sensitive Approach as standard operating procedure. This design manual can be referenced for the design of any road. This manual considers transportation needs beyond motorized vehicles and offers solutions such as narrower lane widths, slower design speeds, bicycle lanes, road diets, roundabouts, raised crosswalks, curb extensions, bus pull-outs, and pedestrian signalization.

NOV 2013

RIDOT issued a policy directive on the consideration and use of proven crash countermeasures in projects. These crash countermeasures include roundabouts, managing curb cuts and access to properties, road diets, and pedestrian crossing beacons.

RIDOT issued a policy directive on the implementation of accessible pedestrian signals. The directive calls for the installation of accessible pedestrian signals on all new projects involving upgrades of pedestrian signal accommodations. All consultants working on RIDOT transportation improvement projects must consider people of all ages and abilities, and all appropriate forms of transportation.

Progress To Date

50+ Road Safety Audits (RSAs) conducted

3 RSAs at transit hubs – Interlink, Wickford Junction, and Kennedy Plaza

10+ road diets implemented with **10+** planned

5+ miles of new bike lanes

20+ miles of roadways with shared lane markings

5+ miles of trails/shared use paths

30+ Complete Street intersection improvements

10 roundabouts installed; **33** in planning or design



Aquidneck Island Improvements

Portsmouth, Middletown, Newport, RI

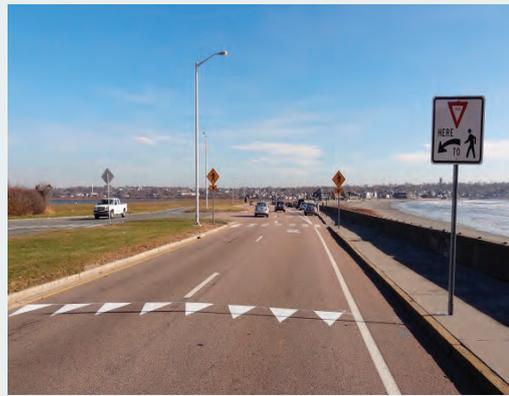
The Aquidneck Island Transportation Study (AITS), completed in July 2011, identified opportunities to incorporate Complete Streets design principles across the island. One major element of the study was the construction of the Aquidneck Island Bikeway. This bikeway will connect existing bicycle facilities with planned facilities, ultimately providing an 18-mile, non-motorized connection on the west side of Aquidneck Island from the Sakonnet River Bridge in Tiverton/Portsmouth to Easton's Beach in Newport. The bikeway will connect to the new Sakonnet River Bridge bike path in the north, and to the East Bay Bike Path and the Blackstone River Bikeway over the Mount Hope Bridge to the west.

Construction of this bikeway will provide access to educational and recreational opportunities. A centerpiece is the proposed 15-acre Greene Lane Park facility, which is planned to offer an ADA-accessible salt water fishing pier, swimming, picnicking, bird watching, interpretive signs, adjacent walking trails, bikeway connections, and an Old Colony Railroad stop.

Additional educational opportunities include a mussel aquaculture farm, the Battle of Rhode Island historic site, the Patriots Park Memorial site, and Fort Butts – the site of a major Revolutionary War land battle.

During the development of the AITS and subsequent design stages of various projects, a comprehensive outreach campaign was conducted with stakeholder groups, including: AIPC, RIPTA, Bike Newport, City of Newport, state representatives, AARP, and the Sierra Club.

Several components of the bikeway have been installed. RIDOT has used the following implementation mechanisms to facilitate the overall Complete Streets connection: Rhode Island Strategically Targeted Affordable Roadway Solutions (RI*STARS), RIDOT work orders/maintenance activities, resurfacing contracts, and programmed projects.



Enhanced pedestrian crossings



Memorial Boulevard road diet



Pedestrian countdown timers



Comprehensive outreach



Marked Shared Lanes

- Anthony Road (proposed)
- Boyds Lane (proposed)
- Cory's Lane (proposed)
- Coddington Highway
- Memorial Boulevard



Bike Lanes/ Paved Shoulders

- West Main Road (North of Rt. 24)
- Burma Road
- Coddington Highway
- America's Cup Avenue
- Memorial Boulevard



Shared Use Paths

- Sakonnet River Bridge
- Between Cory's Lane & Burma Road



Enhanced Pedestrian Crossings

- America's Cup Avenue
- Memorial Boulevard



Road Diets

- Bristol Ferry Road
- West Main Road
- Coddington Highway
- Memorial Boulevard
- East Main Road



Exchange Street Bus Livability

Providence, RI

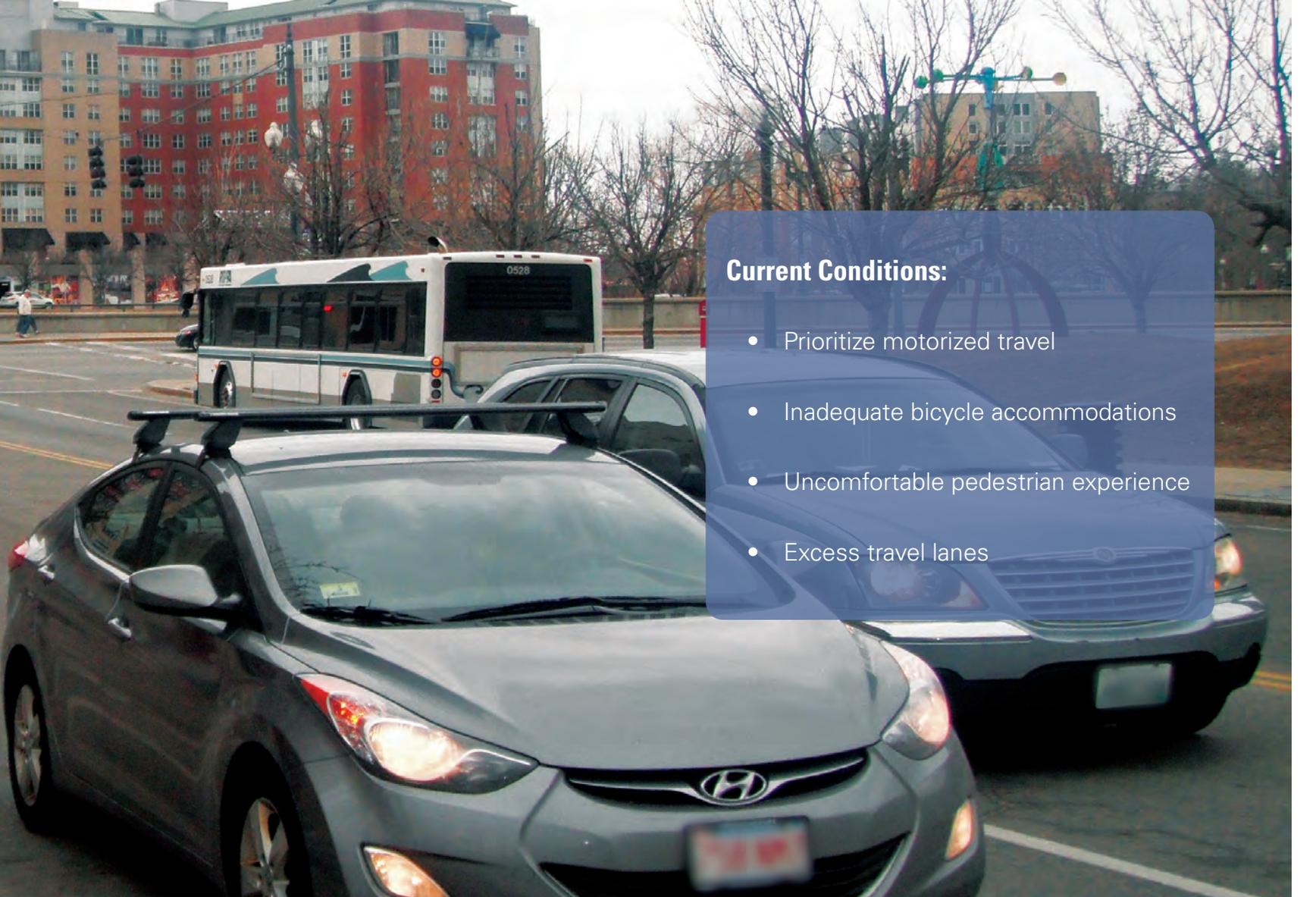
The intent of the Exchange Street Bus Livability Project is to improve the access and safety for pedestrians, bicyclists, and users of RIPTA buses and trolleys. The project extends from Providence Station to Burnside Park/Kennedy Plaza.

The Providence train station currently hosts AMTRAK and MBTA commuter rail service. Providence Station ranks 14th nationwide in terms of AMTRAK passenger volume and is ranked as one of the top three busiest stations in the MBTA commuter rail system. Over the last decade, the trackside/platform capacity of the station has been expanded by lengthening the passenger platforms, however, the curbside intermodal capacity remains as originally constructed in the early 1980s.

The project objectives include design and construction of ADA compliant sidewalks, crosswalk improvements, street furnishings, plantings, and pavement graphics on Exchange Street. The project also incorporates features complementary

to the new RIPTA R-Line shelter at the station plaza, along with the coordination of downtown wayfinding signage to promote a friendlier connection between the station and RIPTA facilities at Kennedy Plaza.

This project provides improved non-motorized connections between the two major transportation hubs in Providence. It promotes a friendlier and ADA-compliant travel path for pedestrians who use commuter rail and bus transit services. A centerpiece for bicyclists will be a bicycle lane and the first bus/bike lane in the state providing a highly visible designated space for bicyclists. The Exchange Street project will be coupled with the planned intermodal improvements at Providence Station, including expanded bicycle parking and enhanced pedestrian accommodations.



Current Conditions:

- Prioritize motorized travel
- Inadequate bicycle accommodations
- Uncomfortable pedestrian experience
- Excess travel lanes



Marked Shared Lanes
Bus/Bike Lanes

Integrates RIPTA Rapid Bus (R-Line)



Bike Lanes/ Paved Shoulders

Along Exchange Street corridor

Added bicycle parking



Enhanced Pedestrian Crossings

Crosswalk upgrades

High-visibility signing



Road Diets

Along Exchange Street corridor



Atwells Avenue

Providence, RI

Atwells Avenue is a central artery through historic Federal Hill in Providence. It is a vibrant urban street where people drive, walk and bike to the various shops, restaurants, jobs and housing located in the area.

In 2010, the Federal Hill Commerce Association convened RIDOT, elected officials, city officials and other stakeholders to discuss pedestrian safety along Atwells Avenue; this was in response to a series of crashes involving pedestrians. RIDOT collaborated with the City of Providence to conduct a pedestrian Roadway Safety Assessment (RSA), which included a team of safety, traffic and highway engineers, as well as local law enforcement and commerce association members.

RIDOT and FHWA presented its preliminary findings to elected officials, city officials and business owners at the Providence Safety Complex in December 2010. A wide range of suggestions addressed all road users. The installation of bump-outs at

unsignalized intersections along the corridor was proposed to have the greatest impact as they narrow the roadway to calm traffic speeds, reducing crossing widths and pedestrian exposure. This work also helps reduce obstructions, provide improved visibility of intersections, and help enhance signing treatments.

To facilitate the implementation of the RSA options, a Recommendation and Action Plan was developed that identified responsible parties and timelines. Over the last couple of years, we have put out several projects with the cooperation of the City of Providence that have implemented pedestrian safety and traffic calming measures along this stretch of road.



Current Conditions:



Pedestrian crosswalks were faded and inconspicuous



This resulted in pedestrians crossing midblock



Space for parked vehicles was limited, which resulted in crashes



Pedestrian signs were installed making crosswalks more visible



Marked Shared Lanes

Buffer between travel lanes and on-street parking to protect bicyclists



Enhanced Pedestrian Crossings

Curb extensions along the corridor
 Enhanced crossings with high-visibility signing and flashing beacons
 Pedestrian countdown timers



Road Diets

Reduced pedestrian crossing widths
 Narrower travel lanes, reduced travel speeds to improve safety



Roundabouts

Statewide Implementation

Roundabouts are designed to accommodate mobility for all users. By reducing speeds and requiring all vehicles to yield, roundabouts balance the needs of vehicles, pedestrians, and bicyclists. In addition to enhancing safety, roundabouts improve air quality through reduced vehicle emissions and complement aesthetics through landscaping. Vehicles circulating through the roundabout do so at lower speeds equivalent to a bicyclist.

Benefits

Slower vehicle speeds and fewer conflict points

Under 30 MPH

Conflict points reduced from 32 to 8

Community benefits

Traffic calming

Aesthetics and more green spaces

Reduced paved areas

More efficient traffic flow

30-50% increase in traffic capacity

65% reduction in vehicle delays

52% reduction in vehicle stops

Reduced vehicle emissions and fuel consumption:

32% reduction in carbon monoxide

34% reduction in nitrous oxide

37% reduction in carbon dioxide

42% reduction in hydrocarbons

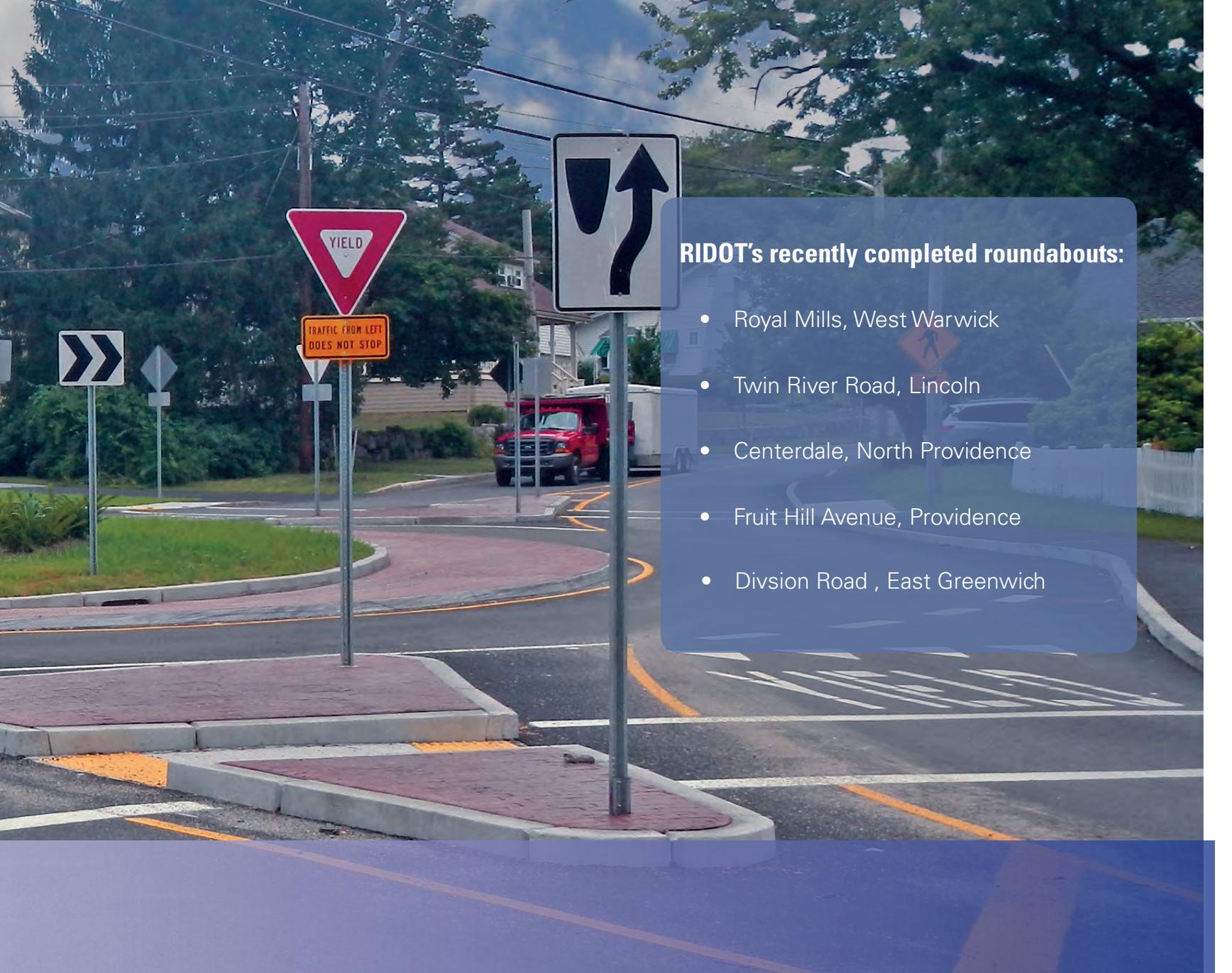
Reduced number and severity of crashes

30-40% reduction in pedestrian crashes

39% reduction in all crashes

76% reduction in injury crashes

90% reduction in fatal crashes



RIDOT's recently completed roundabouts:

- Royal Mills, West Warwick
- Twin River Road, Lincoln
- Centerdale, North Providence
- Fruit Hill Avenue, Providence
- Divsion Road , East Greenwich



**Marked Shared Lanes
Bus/Bike Lanes**

Bicyclists use the roundabouts like a vehicle



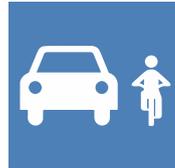
**Bike Lanes/
Paved Shoulders**

Slower vehicle speeds
Enhanced bicycle accommodations



Enhanced Pedestrian Crossings

Slower vehicle speeds
Improved crosswalks where vehicles yield
Splitter/refuge islands



Road Diets

Narrowed travel lanes at the roundabouts



Integrating Complete Streets into General Roadway Resurfacing (1R Projects)

Statewide implementation

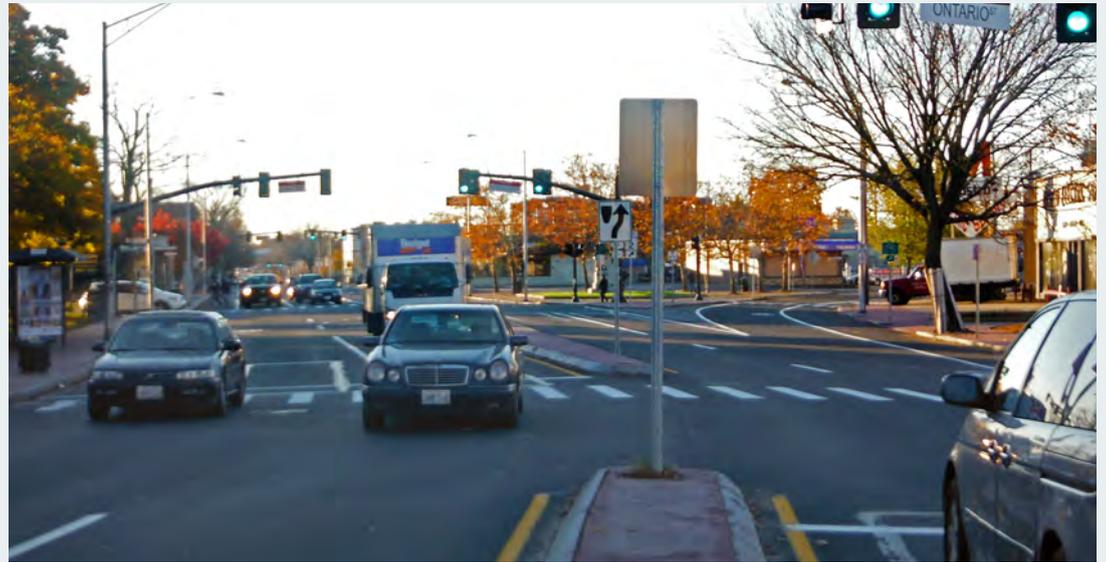
Route 44 - Chepachet

Streetscape enhancements include upgraded sidewalks, granite curb crosswalks, period-style light posts, mid-block stamped concrete crosswalks, wood sign posts and a minimalistic approach to signage.

The design considerations included traffic calming, parking, reduced signage, and future expansion of street lighting. Currently under design is the construction of a roundabout at the intersection of Route 44 and Route 100 (Money Hill Road) to replace the existing traffic signal, eliminate turning movement conflicts, and create a green space as a focal point.

1R, or Resurfacing, projects involve:

- New pavement surface
- Curb and sidewalk replacement
- Drainage improvements
- Traffic signal installation
- Guardrail improvements
- Signage & striping



Elmwood Avenue – Cranston/Providence

As part of a typical resurfacing project, RIDOT performed a Road Safety Assessment to address safety concerns for students crossing Elmwood Avenue at various points along the corridor. The Department worked with numerous stakeholders, including community and neighborhood members, local crossing guards, school department officials, and the Providence Police Department.

Hartford Avenue – Johnston/Providence

Along Hartford Avenue, RIDOT performed a Road Safety Assessment to address safety concerns, and worked with stakeholders, including community members, RIPTA, and the Providence Police Department.



Bike Lanes/ Paved Shoulders

Elmwood Avenue

Aquidneck Island projects



Enhanced Pedestrian Crossings

HAWK signals

School zone flashing lights



Road Diets

Elmwood Avenue

Hartford Avenue

Complete Streets in Rhode Island:

10

Roundabouts Constructed

5+

Miles of New Bike Lanes

5+

Miles of New Shared Use Paths

5

Enhanced Pedestrian Crossings

10+

Road Diets Implemented



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