

RIDOT Crossing Inventory Guides Infrastructure Improvements

Rhode Island Department of Transportation

KEY ELEMENTS:

 **Inventoried Crossing Locations**

 **Applying Systemic Analysis**

The Rhode Island Department of Transportation (RIDOT) inventoried all uncontrolled pedestrian crossing locations on state-maintained roadways to guide a new systemic analysis for safety improvements. The new inventory is integrated into the state’s Transportation Improvement Program (TIP) project scoping and maintenance activities.

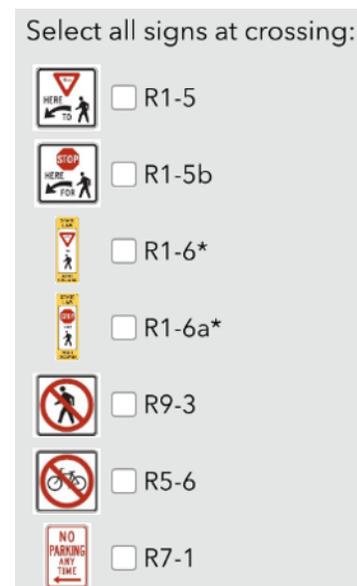
BACKGROUND

In the summer of 2019, the Rhode Island Department of Transportation (RIDOT) undertook an inventory of all uncontrolled pedestrian crossings, approximately 750 crossings, on state-maintained roadways. The inventory supported RIDOT’s new systemic approach to pedestrian safety and complemented its existing hot spot (or crash cluster) analysis.

INVENTORY PROCESS

RIDOT built its crossing inventory data collection upon the state’s existing MIRE (Model Inventory of Roadway Elements) dataset and known uncontrolled pedestrian crossing locations.

MIRE is a federally recommended framework for roadway and traffic features that contains 202 different attributes, such as roadway speed, number of lanes, sidewalk presence, signage, vehicle volumes, and more.¹ RIDOT sent contractors into the field with mobile tablets running the ArcGIS Online survey platform Survey123 to record crossing features (figure 1) such as existing signage, pavement markings, impeded sight lines, and need for vegetation management. This process enabled the field teams to tag geolocated photos and gather attributes across hundreds of sites in a consistent manner. During its field work, RIDOT identified and recorded 100 additional crossing locations that had not been included in the initial database for an approximate total of 750 crossings.



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Figure 1. Graphic. Mobile data collection intake form.

APPLYING THE INVENTORY

After completing the crossing inventory, RIDOT developed a risk assessment scoring system for roadway segments throughout the state, independent of State versus local ownership. The risk assessment included specific attributes that are predictive of pedestrian crashes, such as traffic volume, vehicle speed, population density, existing pedestrian facilities, transit availability, zero vehicle households, and proximity to businesses. RIDOT assigned a weight to each attribute that indicated its contribution to crashes (e.g. low, medium, or high). Scores ranged from 0 to 100, with higher values indicating higher pedestrian crash risk (figure 2).

RIDOT published the segment risk assessment to an internal RIDOT web-based dashboard. RIDOT then overlaid the new crossing inventory with the risk assessment network and applied the STEP countermeasure guidance to recommend safety improvements for each of the crossings. The dashboard enabled RIDOT to easily view locations and access inventory data, photos, roadway characteristics, and potential safety improvements.

OUTCOMES

The inventory and systemic analysis are supporting RIDOT's pedestrian safety improvement prioritization in several ways. When scoping approved TIP projects, the pedestrian crossing risk assessment scores and suggested countermeasures help guide pedestrian focused improvements.

RIDOT also evaluates opportunities to bundle or combine pedestrian safety projects for future TIP project submissions (i.e. resurfacing or bridge replacement projects). Finally, RIDOT is considering the safety improvement recommendations within short-term maintenance activities such as adding pedestrian warning signage and striping. By utilizing maintenance activities, RIDOT ensures that all crossings meet the minimum signage in the MUTCD, signage in poor condition is updated, and observed safety concerns are addressed through enhanced signage.

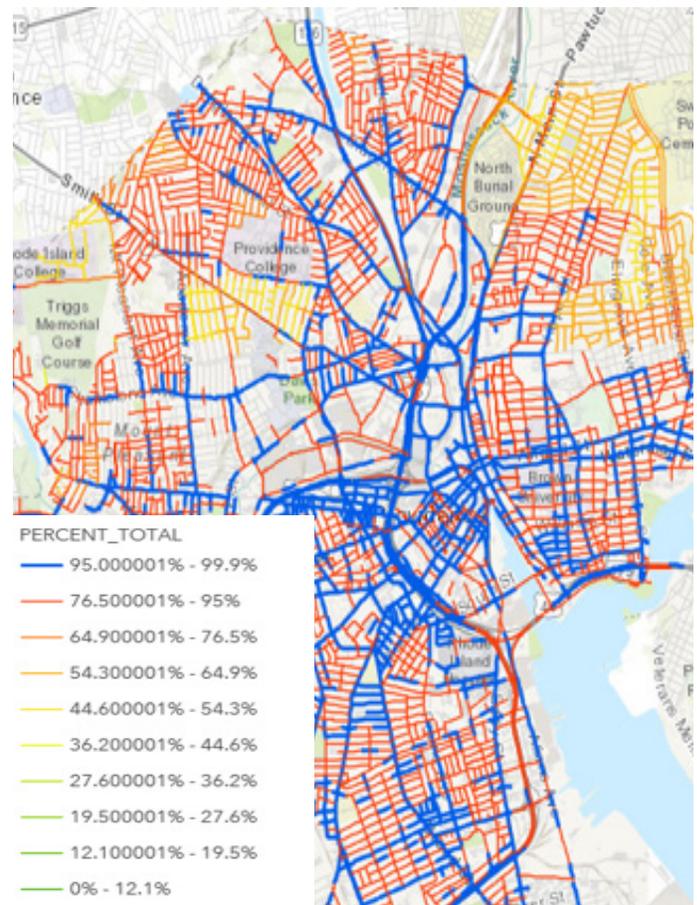


Figure 2. Graphic. Pedestrian risk assessment map, Providence, RI.

References

¹FHWA Roadway Safety Data Program. (2019). "What is MIRE." Last accessed May 13, 2020. <https://safety.fhwa.dot.gov/rsdp/mire.aspx>