

Gateway Treatment with the In-Street Pedestrian Crossing (R1-6) sign An AASHTO Innovation Initiative

The gateway treatment is **small but produces big results**. Yield compliance rates improve dramatically almost immediately after installation. Before the gateway installation (i.e., baseline conditions), many locations had yield rates of less than 10 percent; however, the installation of gateway treatment improved yield rates consistently between 70 and 90 percent in most locations, and as much as 98 percent with RRFBs. The gateway treatment had significant **traffic calming effect** as drivers reduce speed by 4 to 10 mph at both crosswalks and dilemma zones even when pedestrians were not present. The benefits are **immediate and proven sustainable**, as the observed yield rates persisted or improved throughout the study period.

The gateway treatment provides a **very low-cost alternative** to improve pedestrian safety at uncontrolled crosswalks. Alternative countermeasures, including rectangular rapid flash beacons, pedestrian hybrid beacons, and illumination of pedestrian crosswalks, can be effective, yet their installation costs can range between \$20,000 and \$100,000. In contrast, the installation of gateway treatment costs only about \$1,200 to \$1,800 for a typical six-sign configuration. The overall value of the gateway treatment, regarding lower costs and effectiveness, makes it an excellent candidate for systemic improvements.

The gateway treatment is **easily configurable, flexible, and quick to install**. Installation onsite takes **less than 60 minutes**, while its removal takes only about 20 minutes. It can be installed temporarily for an event, seasonally or permanently. The placement configuration can be adjusted in many possible ways: for instance, the signs can be placed more narrowly or wider apart, with options for placement on a pedestrian refuge island and centerline, in gutter-pan or curbside, on one or both sides of the crosswalk, and with or without delineators. The treatment can be installed on through lanes, roundabouts, access ramps and intersections, albeit with varying effectiveness. Please note installation on edge lines, gutter pans and curb top requires permission to experiment by the Federal Highway Administration (FHWA). Contact the Traffic and Safety Section for any proposed locations on state trunkline to ensure compliance to the Michigan Manual on Uniform Traffic Control Devices.

The gateway treatment is **easy to maintain** since the R1-6 signs are portable. Most signs can easily be removed for snow plowing in winter and installed back in the spring. If needed, the signs can be moved temporarily to curbs, while placements on curbs and medians can remain in for plowing. Since the installation and removal of these signs are inexpensive, removal of these signs for winter operations is not likely to be a major burden for highway agencies.

The long-term benefits of gateway treatment are fewer and less severe crashes with **better yield compliance** and reduced speeds. In other words, the pedestrian gateway treatment has a **higher benefit-cost ratio**, where the potential value of user benefits extends well beyond the installation costs. Since no manual interventions, such as a button push, are required, this treatment can be helpful for someone crossing 10 or 20 feet from the crosswalk.

The gateway treatment **supports context-sensitive design solutions**, as transportation agencies are increasingly seeking to incorporate them in roadway designs. The gateway treatment enhances **multimodal accommodation**, which is at the heart of context-sensitive design solutions, by enabling safe access and mobility of pedestrians, and thereby, supporting the goal of safety for all users.

Gateway Treatment with the In-Street Pedestrian Crossing (R1-6) sign An AASHTO Innovation Initiative

The gateway treatment contributes to the integration of roadway facilities with the values of surrounding land use types, especially in residential, business and mixed-use type areas, by improving the mobility and safety of pedestrians at crosswalks. Such integration helps to create **walkable and livable communities**, improve quality of life, and promote health and wellness.

The gateway treatment is proven, inexpensive and highly effective countermeasure for pedestrian safety, which makes it an ideal candidate for **proactive safety planning and implementation**.

The two-sided R1-6 signs, messaging, and multiple installations along the crosswalks make the gateway treatment intuitive for both drivers and pedestrians. The sign alerts both drivers and pedestrians to slow down, watch for each other and pass through the crosswalk facility safely. Furthermore, real-world applications show that the gateway treatment implementation is **likely to be endorsed by drivers, pedestrians, and the surrounding community**.

The gateway treatment supports the philosophy of **performance-based practical design**. When used appropriately, the treatment satisfies all the five objectives of practical designs: (1) safety, (2) corridor context, as the treatment aligns with land use purpose and the intended use of the corridor, (3) cost-effectiveness, (4) public support, (5) optimization of safety, mobility and financial objectives from a performance management perspective.



User Guide for R1-6 Gateway Treatment for Pedestrian Crossings