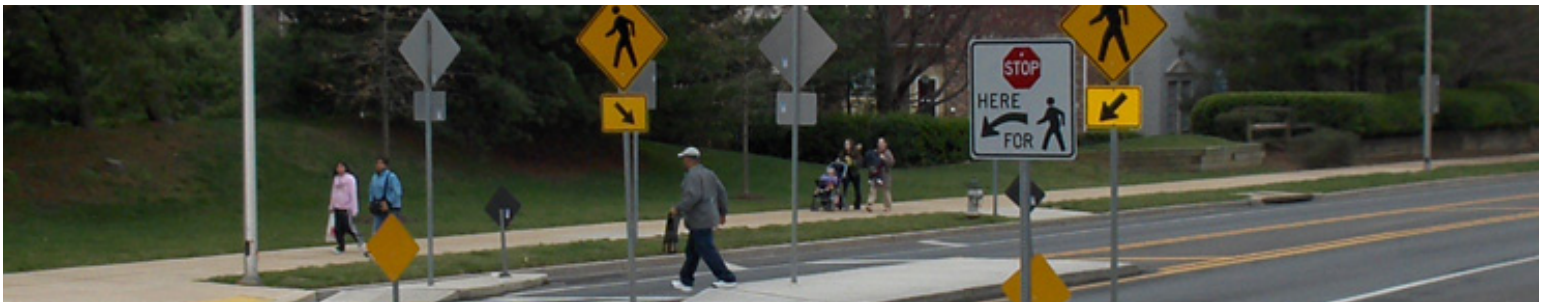
Oregon Greenhouse Gas Reduction Toolkit:

Strategy Report

OREGON SUSTAINABLE TRANSPORTATION INITIATIVE



Pedestrian Crossings

This report describes improvements that can be made to pedestrian crossings to help provide a safe and convenient pedestrian network.

What is it?

Wide streets with long block lengths and high speeds can be a challenge for pedestrians to cross. When convenient crossing points are not identified, pedestrians may cross at unpredictable locations, creating confusion and adding risk to themselves and drivers[1]. Providing safe and convenient pedestrian crossings is a key component to completing a well-connected walking network. It is also a low cost and timely way to encourage pedestrian travel and implement livability and greenhouse gas (GHG) policies. Pedestrian facilities also promote transit use since most transit trips begin or end with a walk.

- **Signalized pedestrian crossings**, either on a timer or user-activated, are particularly useful on busy corridors and can significantly increase pedestrian safety. Signalized pedestrian crossings can also be coordinated with other traffic control systems to help minimize vehicle stop-and-go, thereby reducing unnecessary GHG emissions.
- **Pedestrian refuges, mid-street islands, curb extensions**, and similar physical improvements reduce the crossing distance for pedestrians. These improvements can also have traffic-calming effects and are often included as part of "complete street" design. Reduced crossing distances are especially useful on streets that are congested, wide (two or more travel lanes in each direction), and/or have high vehicle speeds.
- **Painted crossings, raised crosswalk platforms, distinct materials to differentiate from street, lighting, overhead warning signs**, and other high-visibility treatments to help alert motorists to the crossing.
- Adding new crossing opportunities to **increase the overall number of crossings** along a particular street or within a specific area can help improve overall connectivity and is particularly effective near destination-oriented facilities such as schools, transit stops, retail centers, and other areas where pedestrian traffic tends to be heavier.

How well does it work?

The effectiveness of pedestrian crossing improvements at reducing GHG emissions will depend on the scale of implementation, other strategies that are used concurrently, and the availability of funding to make the improvements. The Moving Cooler[2] report provides an estimate of GHG reductions that are possible through implementing a bundle of pedestrian improvements, including crossings. The report estimates a reduction of 74-227 million metric tones of GHG by the year 2050, depending on the aggressiveness of the approach.

Other research[3] has shown the following related results:

- Increased walking and biking has the potential to reduce GHG emissions (carbon dioxide specifically) by as much as 91 million metric tons per year

1 *Federal Highway Administration University Course on Bicycle and Pedestrian Transportation: Lesson 12 Midblock Crossings. US Department of Transportation Federal Highway Administration, July 2006.*

2 *Moving Cooler: An analysis of transportation strategies for reducing Greenhouse Gas Emissions. July, 2009. Pg. 42.*

3 *Climate Smart Communities: Scenario Project, Strategy Toolbox. Metro, August 2011. Website: www.oregonmetro.gov/climatescenarios*

» When pedestrian accommodations are present in a neighborhood, vehicle miles traveled are reduced by at least 2 percent.

How can it benefit my community?

In addition to supporting GHG reduction goals, pedestrian crossing improvements can result in:

» Increased public health through more walking opportunities
» Increased safety for all modes of travel
» Cost savings associated with better pedestrian access to various destinations
» Safer and more convenient routes for students to walk to school
» Improved access to public transit will help promote transit use

What does it cost?

The types of pedestrian crossings described in this report have a relatively low cost when compared with other types of capital improvements[4]. Mid-block crossings must be carefully researched and designed to determine a workable crossing point to move pedestrians across roadways. Depending on the type of crossing, a mid-block crossing could cost anywhere from $20,000 for a very basic treatment to over $1,500,000 for a pedestrian bridge. In Oregon, funding for new crossings may be available through the Oregon Department of Transportation (ODOT).[5]

Where has it been used?

» Many jurisdictions in Oregon have provisions in their development codes or street design standards that permit or require mid-block crossings when block lengths exceed a certain distance. The Model Code recommends: "Where a street connection in conformance with the maximum block length standards in subsection 4 is impracticable, an accessway shall be provided at or near the middle of a block in lieu of the street connection…"[6]
» The City of Corvallis recently constructed four mid-block crossings to improve walking and biking connections at key locations in the city, including a new crossing on a busy street adjacent to an elementary school. The user-activated crossings are solar-powered and were funded by a federal grant through ODOT.[7]
» McMinnville has used a combination of public and private funding to make extensive pedestrian improvements to its downtown area, including mid-block pedestrian crossings. The city has also constructed sidewalk improvements, curb cuts, pedestrian-scale light fixtures, public art, flower pots, street kiosks, and signage/banners. Some of the individual improvements are small, but the cumulative impact on the pedestrian environment has been quite successful.[8]

Where can I learn more?

» Design guidelines for midblock crossings from the Federal Highway Administration: http://www.fhwa.dot.gov/publications/research/safety/pedbike/05085/pdf/lesson12lo.pdf
» Pedestrian- and Transit-Friendly Design: A Primer for Smart Growth. Based on a manual prepared for the Florida Department of Transportation and published by the American Planning Association. Website: http://www.epa.gov/smartgrowth/pdf/ptfd_primer.pdf
» Presentation by Kittelson & Associates on pedestrian crossings: http://www.slideshare.net/kaiblog/kai-pedestrian-mid-block-crossings-presentation
» Sidewalk and trail design guidelines from the Federal Highway Administration: http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/sidewalk2/sidewalks208.cfm
» Pedestrian Countermeasure Policy Best Practice Report, FWHA Safety Program: http://safety.fhwa.dot.gov/ped_bike/tools_solve/fhwasa11017/

The Toolkit is a component of the Oregon Sustainable Transportation Initiative (OSTI), which was formed to address the requirements of Senate Bill 1059 (2010).

For more information, please visit:

http://cms.oregon.gov/ODOT/TD/TP/pages/ ghgtoolkit.aspx

Oregon Department of Transportation

4 *Cambridge Systematics, 2011. Technical Memo 2, Characteristics of Actions & Programs. http://www.deq.state.or.us/aq/toxics/docs/pats/6_14_11onroadGas.pdf*
5 *More information about ODOT funding programs is available here: http://www.oregon.gov/ODOT/TD/TP/pages/funding.aspx and here: http://www.oregon.gov/ODOT/TD/AT/pages/te_obpac.aspx*
6 *More information is available here under Section 3.4.100.G in the Model Code: http://www.oregon.gov/LCD/TGM/docs/modelcode05/pdf/art3.pdf*
7 *More information is available here: http://www.oregon.gov/ODOT/TD/TP/CaseStudy/CorvallisCaseStudy_4_2_13.pdf*
8 *More information is available here: http://www.oregon.gov/ODOT/TD/TP/pages/casestudies.aspx/ocase%20studies*