

Complete streets: Improving the health and safety of your community

In 2007, 23 pedestrians and seven bicyclists were killed in traffic accidents in Iowa. More than 500 pedestrians and 400 bicyclists were injured. To improve travel safety for pedestrians and bicyclists, many cities around Iowa and the nation are adopting complete streets policies in the design of their streets and roads.

In addition to improving travel safety, complete streets improve the health of both the community and the people living in it. By encouraging people to walk and bicycle, complete streets can reduce carbon dioxide emissions and ease traffic congestion. Increased walking and bicycling also lowers the risk of obesity and the host of health problems that come with it.

Finally, complete streets encourage people to get out of their houses, meet their neighbors, and take pride in their community—something that many neighborhoods lack in our high-tech society. And complete streets policies may soon be required by law (see sidebar, page 7).

What is a complete street?

A complete street is safe, comfortable, and convenient for travel via automobile, foot, bicycle, and transit.

Traditional road design has focused on moving high volumes of motor vehicle traffic as quickly and efficiently as possible. Complete streets aim for lower volumes of motor vehicle traffic moving at slower speeds, which leads to less traffic congestion and improved pedestrian safety. Complete streets also have walkways and bike lanes for pedestrians and cyclists that provide separation from traffic.

What makes a street complete?

Sidewalks

Complete streets have sidewalks that are at least four (and preferably five) feet wide, with an additional space separating pedestrians from motor vehicles in the right-of-way. The area providing separation is frequently a utility strip landscaped with grass, trees, and other vegetation. On-street parking can also effectively separate pedestrians from moving vehicles. At crossings, sidewalks should have curb ramps to make the crossing accessible for wheelchairs and strollers.

Crosswalks

Crosswalks can occur at intersections or mid-block. Mid-block crosswalks should always be delineated with pavement mark-

ings. Crosswalks at intersections should be strategically marked in accordance with the MUTCD. The MUTCD generally recommends the use of marked crosswalks at

- designated school crossings,
- locations where there is a high volume of pedestrian traffic combined with a high volume of vehicular traffic, and
- locations where there may be confusion due to unusual geometrics or traffic operations.

Crosswalk refuges (or median islands) are another option for complete streets. By breaking the crossing into two segments, crosswalk refuges allow pedestrians to focus on one car movement at a time.

Other elements of crosswalk design that can be useful for improving pedestrian safety and accessibility are no-right-turn-on-red signs, countdown signals that let pedestrians know how much time they have to complete the crossing, and in-street “pedestrian crossing,” “stop,” or “yield” signs.

Bicycle lanes

Re-striping the road to create bike lanes is an inexpensive complete streets solution. AASHTO recommends that bicycle lanes



Well-marked bicycle lanes improve travel safety for bicyclists on this high-speed arterial roadway in Ames (photo courtesy of Bradley Grefe, CTRE at ISU).



Complete street sidewalks should be four (and preferably five) feet wide, and should have curb ramps at crossings to be accessible to wheelchairs and strollers (photo courtesy of Bradley Grefe, CTRE at ISU).

be four feet wide when in an open space and five feet wide when next to a curb or parking.

The diamond symbol is no longer used for bicycle lanes. It caused confusion since the diamond symbol is also used for high-occupancy vehicle lanes. The new bicycle lane sign is pictured on page 6. Replace the old signs (and pavement markings) through your city's or county's regular sign maintenance schedule.

Shared lane markings

When a street has insufficient space for a bicycle lane, a shared lane marking is a potential complete streets solution. Shared lane markings are currently being experimented with or used in over 20 cities in the United States. The optimum use of this treatment is on streets with lower speeds. It is not an adequate solution for high-speed suburban arterial roadways.

Transit-friendly features

Bus shelters and pull-outs can make public transit more convenient and accessible for a variety of users. These features are particularly important for high-boarding stops, especially on high-volume roads. Concrete pads with benches and sidewalk

connections can also improve the quality of a moderate-use transit stop. Incorporating trees, lighting, benches, and art can help make a stop attractive and inviting.

For more information

For more information about complete streets and how to incorporate them into your community, visit www.completestreets.org. ■

The Complete Streets Act of 2008

In March 2008, Senator Tom Harkin of Iowa introduced The Complete Streets Act of 2008 to promote streets that are safe, comfortable, and convenient for motorists, bus riders, bicyclists, and pedestrians, including those with disabilities.

If passed, the bill will require that all new construction and reconstruction projects include complete streets policies in their design. For example, if a road is being resurfaced, the new bill could mean that the city or county would have to include a bicycle lane, paved shoulder, or shared-lane marking on the newly surfaced road.

Free web-based concrete materials training available through the National Highway Institute

The National Highway Institute and the Transportation Curriculum Coordination Council are sponsoring free web-based training workshops on Hardened Concrete Properties—Durability (FHWA-NHI-134075). ISU's National Center for Concrete Pavement Technology designed the training based on its manual, *Integrated Materials and Construction Practices for Concrete Pavement (IMCP)*.

The training is intended to help industry practitioners and FHWA, state, and local agency personnel better understand the factors involved in concrete pavement durability. Topics will include permeability, alkali-silica reaction, abrasion resistance, and other durability factors, as well as durability testing methods. Other IMCP modules will be available as they are converted to web-based training.

Registration is available at no charge at www.nhi.fhwa.dot.gov. The training is available to the public and lasts approximately one hour. Contact Ann Gretter, 703-235-1260, ann.gretter@fhwa.dot.gov, for additional subject matter information or Chris Newman, 202-366-2023, christopher.newman@dot.gov, with other questions. ■