

BICYCLING ON SIDEWALKS

There is momentum throughout the country to make our communities more walking- and bicycling-friendly, thereby making them more livable. In trying to accomplish this goal, citizens are challenged by limited physical space, high volumes of vehicular traffic, and overall congestion. The question of whether to permit bicycling on sidewalks is often discussed in the planning process.

As a general rule of thumb, it's not a good idea to encourage bicycling on sidewalks. There are, of course, the occasional exceptions. This document will review the crash data, risk factors, legislation, and design standards that support limits to sidewalk bicycling, the exceptions and additional resources in an FAQ format.

Is it safer or more dangerous to bike on sidewalks?

Bicycling on the sidewalk eliminates the relatively small danger to cyclists of crashes with overtaking motorists, but increases the potential for more common intersection collisions. To follow is an excerpt from the Pedestrian and Bicycling Information Center's web site¹ about sidewalk bicyclists and crashes:

Rather like the situation with riding the wrong way against traffic, there is no specific crash type reserved for bicyclists riding on the sidewalk. However, the fact that the bicyclist was on the sidewalk is a contributing factor in a great many crashes at intersections.

- Motorist turns left in front of cyclist: 42% of bicyclists are on the sidewalk
- Motorist turns left into oncoming cyclist: 15% of bicyclists are on the sidewalk
- Motorist turns right into bicyclist: 31% of bicyclists are on the sidewalk
- Motorist drives out of alley/driveway: 48% of bicyclists are on the sidewalk
- Motorist drives through intersection: 15% of bicyclists are on the sidewalk
- Bicyclist rode out intersection with signal: 24% of bicyclists are on the sidewalk

Once again, the perception is that someone is safer riding on the sidewalk than on the road—and many motorists and even law enforcement officers repeat that message. The problem is that, as the numbers above suggest, bicyclists are not safer on the sidewalk because they become almost invisible to the motorist. When a driver turns, either left or right, or into a driveway or alley, they are simply not looking for, or expecting to encounter, a bicyclist. And even if they do look and see a bicyclist they may still underestimate the speed a rider is traveling on the sidewalk - because it will likely be much faster than a pedestrian.

Furthermore, the quality of the riding surface on most sidewalks is far inferior to the parallel roadway. The vast majority of bicycle crashes that end up with the bicyclist seeking medical attention do not involve a motor vehicle and happen because a rider falls after hitting an obstacle, sliding on gravel or leaves, or loses control. Riding on the sidewalk is fraught with the kind of dangers and obstacles that may increase the chances of that happening.

Bicycle user groups and public agencies alike have produced a wealth of information and literature stressing the need for bicyclists to ride on the road and not the sidewalk.

Are there studies that address risk factors to cyclists on sidewalks?

In 1992, Alan Wachtel and Diana Lewiston authored a report, Risk Factors for Bicycle-Motor Vehicle Collisions at Intersections² that studied bicycle-motor vehicle collisions. As a result, they generated a list of risk factors that are correlated with increased risk of bicycle-motor vehicle collisions and suggested engineering practices that would reduce this risk. One of their conclusions states:

Bicyclists on a sidewalk or bicycle path incur greater risk than those on the roadway (on average 1.8 times as great), most likely because of blind conflicts at intersections. Wrong-way sidewalk bicyclists are at even greater risk, and sidewalk bicycling appears to increase the incidence of wrong-way travel.

In 1996, Bill Moritz conducted a survey of cyclists about their cycling behavior³. Among his conclusions, he found that:

Streets with bike lanes have a significantly lower crash rate than either major or minor streets without any bicycle facilities (38 and 56% respectively). Multi-use trails have a crash rate about 40% greater than would be expected based on the miles cycled on them, while cycling on the sidewalk is extremely dangerous.

What does the law say about sidewalk bicycling?

The universal vehicle code* (UVC) prohibits the operation of motor vehicles on sidewalks, but does allow the operation of bicycles.⁴ Further, though, the UVC provides for local municipalities to regulate or prohibit sidewalk use by other than pedestrians.

New York State appears to be typical in that the Vehicle and Traffic Law⁵ does not regulate sidewalk bicycling. It appears that the General Municipal Law (Section 180)⁶ states that NY municipalities can regulate bike riding on sidewalks. They cannot require that bicyclists use a sidewalk instead of a public roadway, but they can impose limits to sidewalk bicycling.

Whatever policy is adopted in a particular jurisdiction, making this information well known to the bicycling public should be a priority, due to the confusion that exists due to no standard statewide format or policy.

Shouldn't a sidewalk be just for pedestrians?

Sidewalks, by definition, are designed for pedestrians. According to the law, a sidewalk is defined as "That portion of a street between the curb lines, or the lateral lines of a roadway, and the adjacent property lines, intended for the use of pedestrians."

Sidewalk riding has the potential of bringing the cyclist into conflict with pedestrians. Although the crashes are not typically life threatening to either party, certainly the comfort level of the pedestrian is compromised. Many communities ban cycling from downtown sidewalks so as to avoid this conflict.

* Developed by the National Committee on Uniform Traffic Laws and Ordinances, Evanston, Illinois.

What about children bicycling on sidewalks?

Most children are not capable of bicycling in traffic until they are about aged nine or ten. The complexities of traffic are simply too much for their developing bodies and minds. For this reason, many communities allow sidewalk bicycling for children. Young children should be accompanied by an adult to help them navigate through hazards such as driveways and other intersections. It would be a mistake to presume that sidewalks are completely safe from traffic.

Is it OK to allow in-line skaters on sidewalks?

In New York State, bicyclists and in-line skaters are both obliged to adhere to the same vehicle and traffic laws that apply to a driver of a vehicle, with some obvious exceptions, according to section 1231 of the NYS Vehicle and Traffic Law. They must obey all traffic signals, signs and pavement markings. With this in mind, in-line skaters are obliged to follow the same local regulations that govern bicyclists.

Are there any design standards to consider?

Sidewalk riding will be reduced if roadways are designed so that bicyclists not only feel safer and more comfortable on roadways, but, in reality, are safer. The range of possible improvements includes the striping of bike lanes, road surface improvements, and traffic calming to reduce vehicle speeds and volumes.

The question of bike paths, sidewalks or streets being safer for bicyclists is addressed in a section⁷ of the web site of the Pedestrian and Bicycling Information Center. Reference is made to the various bicycle facility types and criteria for selecting appropriate types for different situations.

National guidelines for facility design are found in the American Association of State Highway Transportation Officials (AASHTO) publication, *"Guide for the Development of Bicycle Facilities."*⁸ It states:

Undesirability of sidewalks as shared use paths:

Utilizing or providing a sidewalk as a shared use path is unsatisfactory for a variety of reasons. Sidewalks are typically designed for pedestrian speeds and maneuverability and are not safe for higher speed bicycle use. Conflicts are common between pedestrians traveling at low speeds (exiting stores, parked cars, etc.) and bicyclists, as are conflicts with fixed objects (parking meters, utility poles, sign posts, bus benches, trees, fire hydrants, mail boxes, etc.). Walkers, joggers, skate boarders and roller skaters can, and often do, change their speed and direction almost instantaneously, leaving bicyclists insufficient reaction time to avoid collisions.

Similarly, pedestrians often have difficulty predicting the direction an oncoming bicyclist will take. At intersections, motorists are often not looking for bicyclists (who are traveling at higher speeds than pedestrians) entering the crosswalk area, particularly when motorists are making a turn. Sight distance is often impaired by buildings, walls, property fences and shrubs along sidewalks, especially at driveways. In addition, bicyclists and pedestrians often prefer to ride or walk side by side when traveling in pairs. Sidewalks are typically too narrow to enable this to occur without serious conflicts between users.

It is especially inappropriate to sign a sidewalk as a shared use path or designated bike route if to do so would prohibit bicyclists from using an alternate facility that might better serve their needs.

It is important to recognize that the development of extremely wide sidewalks does not necessarily add to the safety of sidewalk bicycle travel. Wide sidewalks might encourage higher speed bicycle use and can increase potential for conflicts with motor vehicles at intersections, as well as with pedestrians and fixed objects.

How about the New York State DOT design manual⁹?

The New York State DOT (NYS DOT) design manual supports national design recommendations provided by AASHTO, as can be seen in the following excerpt.

18.8.3 Use of Existing Sidewalks as Multi-Use Paths

Adapting an existing sidewalk for use as a multi-use path to accommodate bicyclists in addition to pedestrians or other users is usually undesirable. Existing sidewalks typically are not appropriate for higher speed bicycle use for the following reasons:

1. They are normally designed for pedestrian speeds and maneuverability. Therefore, conflicts may be common between bicyclists and pedestrians walking at lower speeds, especially as they exit stores, parked cars, etc.,
2. Walkers, joggers, skate boarders and in-line skaters can change their speed and direction almost instantaneously leaving bicyclists insufficient time to react to avoid collisions,
3. Disabled persons who may not be able to move easily or quickly, or who may have sight and/or hearing disabilities may not perceive rapidly moving bicyclists, skate boarders, in-line skaters, etc.,
4. Fixed objects such as parking meters, utility poles, sign posts, bus passenger shelters, benches, trees, fire hydrants, mail boxes, vending machines, etc. are potentially hazardous if they are struck by bicyclists or other walkway users,
5. At intersections, motorists often are not looking for and do not expect bicyclists (who are traveling on the sidewalk at higher speeds than pedestrians) to be entering the crosswalk area. This may cause serious conflicts when motorists attempt to make a turn. Additionally, motorists exiting a driveway that intersects with a sidewalk may be unable to avoid conflicts with bicyclists, especially where sight distance is impaired by buildings, walls, fences and/or shrubs.
6. Significant sidewalk bicycle traffic may discourage pedestrian use of the sidewalk. This will be especially true for older or disabled people. It is important to recognize that in areas where adequate facilities are not available to accommodate such uses as bicycling, in-line skating, etc. sidewalks are likely to be used for these purposes.

However, simply providing wider sidewalks as a means of accommodating walkway users other than pedestrians will not normally contribute to their safety. On the other hand, providing wider sidewalks may be reasonable where the variety of users is great but the total number of users is small. As stated above, wider sidewalks tend to encourage higher speed bicycle, in-line skater and skate boarder use and can increase the potential for conflicts between bicyclists and motor vehicles at intersections, as well as between bicyclists, in-line skaters, skate boarders and pedestrians or fixed objects (refer to Sections 18.8, 18.8.1 and 18.8.2).

Are there any exceptions?

There may be situations where placing bicycles on sidewalks is the only, or safest alternative. Both AASHTO and the NYS DOT manual provide guidelines for making that determination and subsequent provisions.

According to AASHTO:

Sidewalk bikeways should be considered only under certain limited circumstances, such as:

- a. to provide bikeway continuity along high speed or heavily traveled roadways having inadequate space for bicyclists, and uninterrupted by driveways and intersections for long distances;
- b. on long, narrow bridges. In such cases, ramps should be installed at the sidewalk approaches. If approach bikeways are two-way, sidewalk facilities also should be two-way.

Whenever sidewalk bikeways are established, unnecessary obstacles should be removed. Whenever bicyclists are directed from signed shared roadways to sidewalks, curb cuts should be flush with the street to assure that bicyclists are not subjected to problems associated with crossing a vertical lip at a flat angle. Curb cuts at every intersection are necessary, as well as bikeway yield or stop signs at uncontrolled intersections. Curb cuts should be wide enough to accommodate adult tricycles and two-wheel bicycle trailers.

In residential areas, sidewalk riding by young children is common. With lower bicycle speeds and lower cross street auto speeds, potential conflicts are somewhat lessened, but still exist. Nevertheless, this type of sidewalk bicycle use is accepted. It is inappropriate to sign these facilities as bicycle routes. In general, bicyclists should not be encouraged through signing to ride facilities that are not designed to accommodate bicycle travel.

The NYS DOT manual states:

When other design alternatives are not feasible and an existing sidewalk must be designated as a multi-use path (with additional width provided), the designer should consider the following:

1. The provision of additional pavement striping and signing to alert motorists and pedestrians to the presence of bicyclists, as well as to warn bicyclists they must exercise caution,
2. The removal or relocation of fixed objects along the sidewalk so that they are less likely to be struck by bicyclists or other walkway users, and
3. Where possible, areas of impaired sight distance for either motorists or pedestrians and bicyclists should be corrected.

It is inappropriate to sign a sidewalk as a bicycle path, bicycle route or multi-use path in order to discourage bicyclists from using a roadway that may be legally used by bicyclists. However, children riding bicycles on sidewalks can be expected in residential areas. This type of sidewalk bicycle use by children is generally accepted.

Where can I go for more information?

The Pedestrian and Bicycling Information Center web sites: <http://www.bicyclinginfo.org/> and <http://www.walkinginfo.org/>

Cornell bicycle and pedestrian education site: www.bike.cornell.edu

Endnotes:

- 1) <http://www.bicyclinginfo.org/matrix/counter2.cfm?record=30&num=3b>
- 2) This article originally appeared in ITE Journal, published by the Institute Transportation Engineers, September 1994, pages 30-35. The complete report can be found on line at: <http://www.bicyclinglife.com/library/riskfactors.htm>
- 3) This paper (# 98-0009) was originally presented at the Transportation Research Board 77th Annual Meeting, January 11-15, 1998 in Washington D.C. The complete report can be found on line at: <http://www.bicyclinglife.com/Library/Moritz2.htm>
- 4) National Bicycling and Walking Study, Case Study 13, A Synthesis of Existing Bicyclist and Pedestrian Related Laws and Enforcement Programs. Publication No. FHWA-PD-93-018. 1993.
- 5) For excerpts about the NYS V & T Law pertaining to bicyclists at the Governor's Traffic Safety Committee web site. <http://www.nysgtsc.state.ny.us/bike-faq.htm#top> and pedestrians: <http://www.nysgtsc.state.ny.us/peds-faq.htm>
- 6) <http://www.assembly.state.ny.us/leg/?cl=48&a=23>
- 7) http://www.bicyclinginfo.org/insight/faqs/bicycle_facilities.htm
- 8) Guide for the development of bicycle facilities. American Association of State Highway and Transportation Officials. 444 North Capitol Street, NW, Washington, DC 20001. 1999. <http://www.aashto.org/aashto/home.nsf/FrontPage>
- 9) http://www.dot.state.ny.us/cmb/consult/hdmfiles/chapt_18.pdf

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