

Crossbikes

Description

A painted green and white ladder bar pattern indicating the extension of a bikeway through an intersection. These are ideally deployed in conjunction with a marked crosswalk.

Intent

1. To increase motorist awareness of and expectation that people will be riding bicycles through an intersection.
2. To encourage increased motorist yielding to people bicycling or walking across an intersection.

Theory

Vibrant pavement markings, together with the presence of people waiting to cross a roadway, contribute to increased awareness and yielding behavior by motorists. This is based on observations that motorists increase their yielding behavior for people on bicycles waiting to cross minor arterials at curb extensions because of their greater prominence at a forward position. Yielding behavior by motorists similarly increases with marked crosswalks. The underlying theory is that “more is better.”

Implementation criteria

Crossbikes are to be implemented at neighborhood greenway crossings of minor collectors. They are to be deployed at intersections where marked crosswalks are also warranted and are to be installed with marked crosswalks.

To be considered:

Cross traffic volumes. Crossbikes are intended to be a stand-alone crossing treatment on collectors with lower volumes, up to 10,000 ADT.

Roadway configuration. These are best deployed as stand-alone treatments on two-way, two-lane roadways. They may also be deployed on one-way two-lane roadways when designed with adequate sight stopping distance. They can be used on multiple lane roadways with median refuges.

Distance from a signalized intersection. They should be deployed at intersections more than 500-feet from a visible traffic signal.

Speed limit. The posted speed on the minor collectors should be 30 mph or less.

Bicycle traffic volumes are not a consideration for their implementation.

Thoughts about the criteria

Volume of bicycles. We are not currently considering crossing volume of cyclists to be a consideration in determining the appropriate crossing treatment. The thinking behind that is we want to provide a good crossing regardless of the number of people crossing. All people using bicycles on the neighborhood greenway should have a safe and comfortable crossing experience.

This is contrary to how crosswalks are implemented, for which crossing volume is an important consideration and is one of the criteria used to determine whether a crossing treatment is needed and what type. Our assumption with crossbikes is that a crossing treatment is needed. We have identified the conditions on the collector street to be crossed as defining whether or not a crossbike treatment is appropriate.

However, a potential weakness of this approach could be revealed when bicycle crossing volumes are high. In that condition there could be frequent interruptions to the orderly progression of motor vehicle platoons on the collector street. This could result in poor behavior on part of motorists (encouraged, in part, by poor behavior on the part of cyclists--see Going Street crossing of MLK).

With high volumes of cyclists there could be an argument for a different treatment: 4-way stop? Red indication?

One of the questions we need to address is how comfortable are we with causing disruption to the flow of motor vehicle traffic in service to a safer bicycle and pedestrian crossing?

Distance from a signalized intersection. We've decided to not place crossbikes within a short distance (500') of a signalized intersection. The initial rationale was that a motorist seeing a green indication just ahead of them may not be paying sufficient attention to a crossbike / crosswalk intersection and will be unlikely to stop. (Of course, if the intersection merits a crosswalk, then perhaps it is not an issue). A secondary issue that arose in further consideration is that queue spillback from the signal through the neighborhood greenway intersection could create an unsafe condition.

On the other hand, being close to a signal could encourage people to yield to those waiting at a crosswalk/crossbike when they see a red indication. In this scenario motorists would recognize that it will cost them nothing to yield to pedestrians/cyclists when they see a red indication ahead of them. I observe this type of behavior on Sandy at Ankeny and 12th. Motorists eastbound on Sandy often yield at refuge area when they see signal at Sandy Burnside red.

Cross traffic volumes. We arbitrarily picked 10,000 ADT (1000 at peak hour) as the cut-off for volumes on the collector street. Higher volumes could still work, but when 10,000 ADT or above we want to more carefully consider the roadway's characteristics. We also set a floor of 5000 ADT (500 at peak hour) below which we assume a crossing treatment is unnecessary because of plentiful and long gaps.

That is the situation for crossing a two-way roadway.

For a one-lane one-way roadway it is possible that we should consider traffic volumes half of those we would consider for a two-lane two-way roadway. The assumption is that one traffic lane experiencing half the traffic volumes of a two-lane two-way roadway would present comparable barriers to crossing.