

Description of the City of Ithaca’s Shared Lane Marking (“Sharrows”) Study

The City of Ithaca conducted an engineering study to evaluate the effectiveness of a new type of pavement marking intended to improve the behavior of both bicyclists and motorists. Below is a brief description of the project; those seeking more detailed information are encouraged to contact the DPW Engineering Office.

Description and purpose of marking

The markings, technically termed “Shared Lane Markings” and commonly referred to as “Sharrows,” consist of a bicycle symbol with a double chevron arrow above it. This design began in Denver in the 1990’s as the “Bike-in-House” design (see Figure 1) and has evolved over a number of years into its current form (see Figure 3). Over 50 U.S. cities have experimented with this marking, including: Berkeley, Los Angeles, San Francisco, Washington DC, Chicago, Louisville, Baltimore, Philadelphia, Santa Fe, Burlington, Seattle, and Portland.

The purposes of the markings vary to some degree depending on the context. There are three general purposes:

1. The marking indicates to motorists and bicyclists where a bicyclist should generally ride under normal circumstances,
2. The markings may serve as a way-finding tool for bicyclists by connecting otherwise disjointed bike lanes or bike routes, and/or
3. To raise awareness that bicyclists may be present.

In studies, the presence of these markings has improved motorists’ and bicyclists’ behavior in a number of ways.



Figure 1: "Bike-in-House" markings were first tried in Denver in the 1990's.



Figure 2: Example of sharrows in Paris



Figure 3: Current design of sharrows - example from Pittsburgh.

Those improved behaviors include:

- The markings encouraged bicyclists to:
 - o ride farther away from parked cars (outside of the “door zone”)
 - o follow a more predictable path (reduced weaving around parked cars)
 - o ride with the flow of traffic (reduced wrong-way riding)
- For motorists, the markings increased their awareness that bicyclists may be present and led to more careful passing of bicyclists.
- The presence of the markings also led to a reduction of bicycle riding on sidewalks.

Traffic laws pertaining to bicyclists

The presence of the sharrow markings does not introduce any new traffic rules, but rather, reinforces the existing rules. The existing rules from the NYS Vehicle and Traffic Law and from the Ithaca City Code are summarized as follows:

- Traffic laws apply to bicyclists; bicyclists have the same rights and responsibilities as motorists regarding traffic laws and posted regulations.
- Bicyclists are required to ride within bike lanes (if available), or along the right hand side of the right-most travel lane serving their destination. However, bicyclists may ride outside of bike lanes if avoiding debris or obstacles, if turning, or if the bike lane does not serve the cyclist’s destination. Bicyclists may ride in locations other than the right hand side of the lane for the same reasons that they may ride outside of bike lanes. Bicyclists may ride on the left hand side of one-way streets. Bicyclists may ride on shoulders and in vacant parking lanes, but are not required to ride on either.
- In travel lanes too narrow to share side by side with a motor vehicle (less than 14 feet wide, which would include most city streets), bicyclists may use the full lane (may “take the lane”) to discourage motorists from passing unsafely. Though it is not legally required, common courtesy would encourage bicyclists to move to the right when they feel it is safe to do so in order to allow motorists to pass.
- Bicyclists may not ride more than two abreast, unless riding on a shoulder or off-street path of sufficient width. In any case, bicyclists must ride in single file when being passed by faster traffic or when overtaking slower traffic.
- Bicyclists must first stop before entering the roadway from a private street or driveway.
- In the City of Ithaca, bicyclists may not ride on sidewalks or other areas intended for pedestrian-only use. Exceptions: In the City of Ithaca, children age 10 and under, and anyone who, because of a disability, uses a bicycle as a means of mobility may ride on sidewalks.

Project evolution

In early 2006, the City of Ithaca DPW Engineering Office began to look into the option of using sharrows on streets where bicycle lanes were desired but insufficient space was available due to the presence of on-street parking. It was hoped that the application of these markings would strike a suitable compromise between improving bicyclists' safety and retaining desired on-street parking.

A number of design options were considered in various locations in Ithaca. Input from BPAC (Bicycle/Pedestrian Advisory Council), NYSDOT and others helped to refine this project. Ultimately, it was decided to install the markings along Cayuga St. from Spencer St. to York St. City approval to pursue this project was granted in the fall of 2006.

Because sharrows were not standard pavement markings at the time, special approval to experiment with this marking was required from the FHWA (Federal Highway Administration). This approval was secured in 2007. As a component of this approval, periodic reports were required to be sent to FHWA to detail the progress of the experiment.

The Engineering Office completed the project design in mid-2007 and planned to have the markings installed in spring 2008. In an effort to reduce costs, this project was combined with three other street projects: Green St. repaving project, "Tuning Fork" re-striping project, and the Green St./State St. uphill bicycle lane project. Due to a number of factors, this combination of projects delayed the sharrow project until the fall of 2008; at which point, it was determined that a springtime installation would be preferable.

As soon as weather conditions permitted in the spring of 2009, the sharrow markings were installed along the length of Cayuga St. The installation was performed at night to minimize traffic disruptions (see Figure 4). There was some concern of performing the work at night because of noise impacts, but since the noise impact was relatively



Figure 4: The sharrow markings were installed at night to minimize traffic impacts.



Figure 5: Photo of sharrow marking on Cayuga St. The image shows the correct positioning of a cyclist passing a parked car.

limited in duration (about 2-5 minutes per marking location) this option was selected. In total, 78 markings were installed.

Prior to the installation and following the installation, the Engineering Office provided information to the media and the public regarding the project. The project has been covered by the Ithaca Journal and Ithaca Times newspapers and has been discussed multiple times on WHCU, a local talk radio station. On the City's web site, a FAQ sheet has been posted to answer general questions about the project.

Year-long study

The sharrow markings were evaluated for one year by the Engineering Office to determine what changes in bicyclists' and/or motorists' behavior may result from the markings. Additionally, intercept surveys were used to evaluate the level of public understanding of these markings.

The findings were sent to FHWA in a series of progress reports and a final report (which can be viewed [here](#)).

To provide comments or to request additional information, contact:

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- Email: timlo@cityofithaca.org or kjohnson@cityofithaca.org
- Phone: 607-274-6530

NOTE:

Shared Lane Markings included in 2009 MUTCD

The 2009 edition of the Manual on Uniform Traffic Control Devices (MUTCD) was published in the Federal Register on December 16, 2009 and became effective on January 15, 2010. In this update, the sharrow pavement marking received official approval for use nationwide. This approval occurred approximately halfway into the City's sharrow study.