

Urban Freight Integration with Protected Bike Lanes Chicago, IL

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Overview

The City of Chicago is a leader in promoting and implementing context-sensitive street design solutions. In 2006, the City adopted a complete streets policy to accommodate and balance the needs of all transportation system users, including freight operators, as part of transportation project planning and delivery. In 2013, the City released its Complete Streets Design Guidelines to help implement the 2006 policy.

Recognizing the need for sufficient and safe commercial loading and unloading zones, the City included integration of these zones in their protected bicycle lane designs. Protected bicycle lanes (also referred to as separated bicycle lanes by the Federal Highway Administration) use physical barriers and visual cues such as bollards, curbs, pavement markings, and parked cars to separate bicyclists from motorists and freight operations, helping improve safety for all transportation system users. These facilities help deconflict curbside truck deliveries and can also benefit truck movements along a corridor by separating freight and bicycling

activities with a physical buffer and providing a clearly delineated space for each.

Since 2012, the Chicago Department of Transportation (CDOT) has installed several protected bicycle lanes integrated with loading zones along several commercial corridors in the downtown area. CDOT also installed a modified version of a protected bike lane, buffered only by pavement markings, on a key truck route along Elston Avenue.

Process

Implementing a protected bike lane involves installing a wide buffer zone—typically three to four feet—between a curbside bike lane and a “floating” parking lane. Compared to unprotected bicycle lanes that only use paint markings as visual cues, protected bicycle lanes typically reduce conflict between bicyclists and truck drivers sharing a corridor, reduce speeding of motorists to improve the safety of all road users, and reduce overall bicycle crash rates.

Loading Zone Integration

To integrate loading zones into protected bike lanes, CDOT designed

street corner clearances (areas where parking is prohibited) longer than the typical 20 feet.

This design helps improve visibility for truck drivers who are loading and unloading their vehicles in loading zones, as well as visibility for turning motorists and approaching bicyclists. The buffer zone also allows commercial vehicle drivers to walk hand trucks and dollies away from vehicle and bicycle traffic and to unload directly at the curb cut of a crosswalk rather than mid-block (see Figure 2).

To accompany these efforts, CDOT adapted from the New York City Department of Transportation a set of outreach materials (Figure 2)—which were subsequently adapted by other

Key Accomplishments

- CDOT has integrated freight and loading zones into different types of protected bike lane projects: with loading zones at curbside sites, and along a key truck route to improve safety for freight operators, bicyclists, and other roadway users.
- The bike lane/loading zone implementation clearly delineated truck-to-curb access. CDOT also used nationally-adapted outreach materials for truck operators on how to safely cross protected bike lanes at loading zones.
- The bike lane/truck route implementation led to several safety improvements, including a reduction of speeding motorists from 60 percent to 48 percent, 48-62 percent increase in bicycle ridership, and a 5 percent reduction of the bicycle crash rate.



Figure 1. Delivery trucks unloading along a protected bike lane, with the truck opening into a hatched No Parking area. (Source: CDOT)

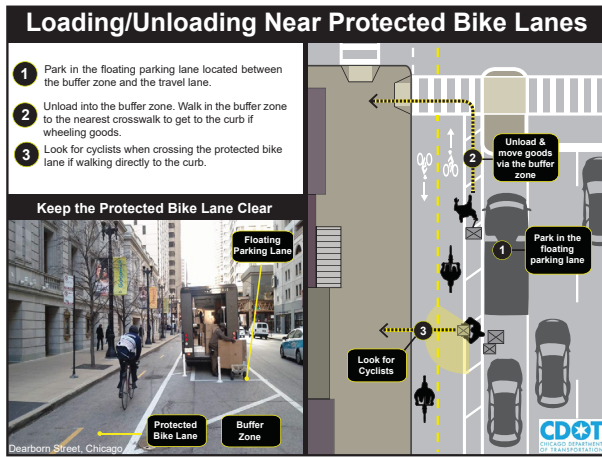


Figure 2. Educational flyer for truck drivers on how to safely deliver from new loading zones across the protected bike lane. (Source: CDOT)

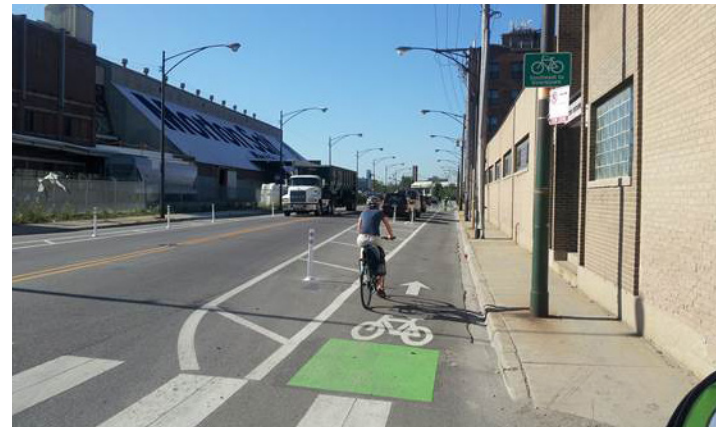


Figure 3. A protected bicycle lane on Elston Avenue. (Sources: CDOT, Streetsblog Chicago)

cities such as Seattle and Atlanta—for truck operators to become aware of and safely use the new loading zones, including their buffer and crosswalk elements.

Corridor Implementation

Elston Avenue is a 9.5-mile long major arterial near downtown Chicago that experiences both heavy truck and bicycle traffic. The southernmost segment of Elston Avenue is surrounded by industrial land uses, and trucks comprise about 21 percent of peak-hour traffic.

In 2012, the City added protected bicycle lanes on Elston Avenue to better separate bicyclists from truck traffic and reduce motorist speeding, aiming to make the roadway safer for all users in this area. However, businesses along Elston Avenue were concerned that the new roadway design would inhibit freight vehicle mobility. CDOT engaged the business community by presenting at meetings and ultimately addressed the community’s concerns by maintaining wider travel lanes (11 feet instead of the typical 10 to 10.5 feet) and by omitting physical separation on most of the corridor (see Figure 3).

Results

Since implementing the enhanced bike lanes along Elston Avenue, CDOT has recorded a reduction in the percent of speeding motorists from 60 to 48 percent, a 5 percent reduction in the bicycle crash rate, and an increase in bicycle ridership by 48 percent in the morning peak period and by 62 percent in the afternoon peak period. According to Mike Holzer, Director of Economic Development for the North Branch Works Industrial Council, the buffered bike

lanes are working well and the local freight community is supportive.

As next steps, CDOT plans to use the Elston Avenue protected and buffered bicycle lane designs as a model for future complete streets efforts in industrial neighborhoods.

Lessons Learned and Recommendations

Through the design and implementation of context-sensitive freight and bicycle facilities, CDOT demonstrated how innovative design elements such as protected bike lanes can not only improve the operating environment for urban bicyclists and pedestrians, but also provide safer and more efficient operation for trucks making curbside deliveries. At the same time, unexpected challenges such as oversize vehicle operations may require agencies to adjust roadway design to achieve consensus with the business community and other stakeholders.

For local jurisdictions seeking to replicate protected bike lanes that incorporate loading zones or protected bike lanes that are in a truck route corridor, it is important to engage all stakeholders early in the process. Outreach and communications materials that include clear visuals can be very effective in explaining proposed designs and sharing expected operational benefits for urban freight.

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