



Memorandum

To: Anna Dearman, AICP, NDOT Walking & Biking Manager

From: Melody Butler, CDM Smith

Date: December 14, 2022

Subject: Two-Way Cycle Track along Edgehill Avenue

The Nashville Department of Transportation is considering a road diet along Edgehill Avenue starting at 21st Street and continuing along Chestnut Street and Wharf Avenue/Charles Davis Boulevard. The road diet would provide for the accommodation of continuous bicycle lanes for approximately 2.7 miles. This memorandum describes the benefits and potential drawbacks of a two-way cycle track along Edgehill Avenue.

The proposed configuration of Edgehill Avenue between 12th Avenue and 8th Avenue was presented at several public events during the Fall of 2022 (BCycle Community Ride and Art Bike Unveiling, Hillside Flats community meeting, and the William Edmondson Arts and Cultural Festival) to gather feedback from local residents who would potentially use the new facility. In general, people were in favor of providing more robust bicycle and pedestrian accommodations; however, they would prefer a two-way cycle track on the north side of Edgehill Avenue over the proposed protected bike lanes on either side of the street. It was also suggested that more landscaping be incorporated into the design to help with beautification.

Two-Way Cycle Track Benefits:

- Per the NACTO Urban Bikeway Design Guide, typical applications of two-way cycle tracks are on streets with few conflicts (driveways and/or intersections) on one side of the street. In general, the northern side of Edgehill has fewer conflicts than the southern side.
- It is also beneficial to have two-way cycle tracks on streets where more destinations are on one side of the street, making crossing less necessary. Between 12th Avenue and 8th Avenue, Carter Lawrence Playground, Rose Park, the Easley Center, and Rose Park Middle School are all on the north side Edgehill Avenue and connect to the Pedestrian Walk Way on the south side via a marked mid-block crossing.

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- The two-way cycle track provides the highest level of protection from motor vehicles with the opportunity to provide a 6-foot raised buffer, which could also be used as a planting island.
- The two-way cycle track facility is more attractive to a wide range of bicyclists (all ages and skill levels).

Two-Way Cycle Track Drawbacks:

- The preferred transit stop design on a facility with bike lanes is to provide a boarding island for riders to stand so that they are not in conflict with bicyclists. The bike lane would typically be oriented behind the boarding island, but there is not enough right-of-way along Edgehill Avenue to accommodate this configuration, even with a conventional bike lane. WeGo has a typical design for a cycle lane stop for constrained locations wherein the bike lane maintains its position next to the travel lane, within the loading area of the bus stop. Cyclists must yield to pedestrians in the loading area. A two-way cycle track would double the distance pedestrians would need to cross to board the bus, thus doubling the number of potential conflicts between loading passengers and cyclists.
- There are WeGo bus routes that use Edgehill Avenue. There are currently three stops on the north side of Edgehill between 12th Avenue and 8th Avenue: at the Hillside Avenue intersection, across from the Pedestrian Walkway, and at the 12th Avenue intersection. There is not currently a bus stop design that accommodates a two-way cycle track, so it would be necessary to create a new design standard for a shared bus stop with a two-way cycle track.
- While there are fewer conflict points on the north side of Edgehill Avenue than the south side, there are still a number of driveways and unsignalized intersections that pose a risk to cyclists. Risks are greater for two-way cycle tracks because drivers are conditioned to look for oncoming traffic as they turn left from the roadway. In the two-way cycle track configuration, cyclists traveling in the same direction as turning vehicles should be extra cautious because drivers will likely not look behind them before turning into driveways.
- Signalized intersections would need to have bicycle signals or exclusive bicycle phases to ensure cyclists do not conflict with motor vehicles entering the intersection. The 12th Avenue and 8th Avenue intersections are already busy intersections. Adding a bike phase would further impede vehicular operations that are being impacted by the reduction of lanes along Edgehill Avenue.
- If maintaining existing roadway width, the centerline of vehicle lanes would need to shift to the south and would then be offset from the normal crown of the road.
- When providing bicycle accommodations, typically want to maintain consistency of bicycle facility as much as possible throughout the corridor. If a two-way cycle track is not feasible

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for a long stretch, this would create the need to transition to conventional bike lanes at multiple locations. These transitions make bicyclists particularly vulnerable because they require cyclists to cross both lanes of travel.

Conclusion

A two-way cycle track often provides a great safety benefit for cyclists when there are few driveway conflicts and places of interest are consolidated on one side of the roadway; however, a two-way cycle track is not recommended along Edgehill Avenue. The vision for this corridor is to provide bicycle facilities from 21st Avenue to Carroll Street/Old Hermitage Avenue. Although some portions of this corridor may be good candidates for a two-way cycle track, the entire corridor would not. Transitioning between conventional bike lanes and a two-way cycle track should be minimized because the transition areas put cyclists in a particularly vulnerable position crossing two directions of traffic. Within a two-way cycle track, cyclists traveling in the same direction as turning vehicles must also be very cautious because drivers are not accustomed to looking behind them before turning into a driveway or side road. From an operational perspective, the bike-only signal phases will cause further delays to the signalized intersections at 12th Avenue and 8th Avenue, which will already be impacted due to the reduction in travel lanes along Edgehill Avenue. Finally, while much of the existing development and places of interest are along the north side of Edgehill Avenue, this area is developing rapidly and there are plans for more residences and retail uses along the south side of Edgehill Avenue between Hillside Avenue and 8th Avenue. Therefore, a two-way cycle track along Edgehill Avenue is not recommended at this time.

cc: [Click here to enter name]