December 16, 2021

Sean McCarthy
Village Architect, Village of Sleepy Hollow

Dear Sean:

Thank you for your December 13 emails seeking advice for improving cycling conditions in Edge-on-Hudson.

When designing a building, the key question is who's the target audience. Are you making a factory, a home, or a school?

The same applies with cycling facilities. When the goal is to make people with confident cycling skills feel better, a well designed painted lane can work.[1] When the goal is getting timid folks to run errands by bike, higher levels of protection are warranted.

Chicane in Seattle (@dongho_chang)

To your question of a shared lane system, that can work on low volume streets... if -- and only if -- significant traffic calming is implemented and signs indicate that people driving must give priority to people cycling.

Mini-roundabout with tree in Charlotte (@beyonddc)

Traffic calming measures: Chicanes are great. (See photo, above right.) Speed humps are OK. Raised crosswalks are fantastic. Plantings in intersections are a big help. (See photo, left.) Plus modal filtering, so people can walk and cycle through, but people driving only access a block if it is their destination. (See photo, right.)

Modal filtering in London (@sustrans)

Signs: The best sign has a white silhouette of a person cycling in the foreground and red car silhouette in the background. The text says "Bike street" on top and "Cars are guests" on the bottom. (See image, left.) In addition, "no passing" and "15 mph" signs help to clearly specify safe behavior.

So at Edge, shared streets might work in some locations. Making some guesses of traffic patterns and land use, the locations may include Westward Dr, Maxwell Dr and Horseman Blvd.

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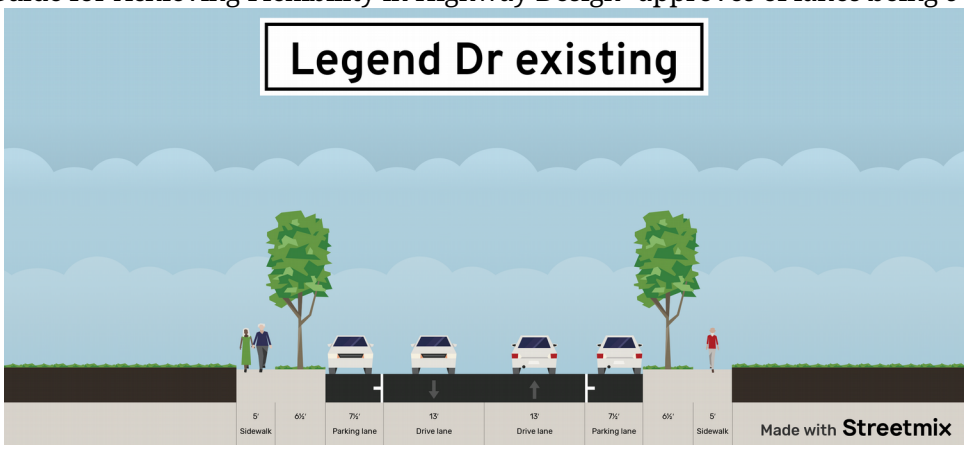
1 *The developer's suggestion is not well designed. A 4 foot bike lane next to parked cars is dangerous. Much of those 4 feet is where car doors open. "Getting doored" is a significant injury mode for people cycling, as is getting hit while veering around an open car door.) NACTO's "Urban Bikeway Design Guide" says that when a cycling lane is placed next to a parking lane the combined with of the parking and cycling lane should be 14.5' wide. On top of that, the developer is only proposing a cycling lane in one direction.*

Legend Dr and Lighthouse Landing will be too busy for a shared street. (Though some traffic calming here is still a good idea to tamp down reckless driving.) Also, Legend Dr will be a key north/south cycling route, directly linking the Manors and the Tarrytown train station area. Locations like these need a protected lane.

The space is there to make it work.

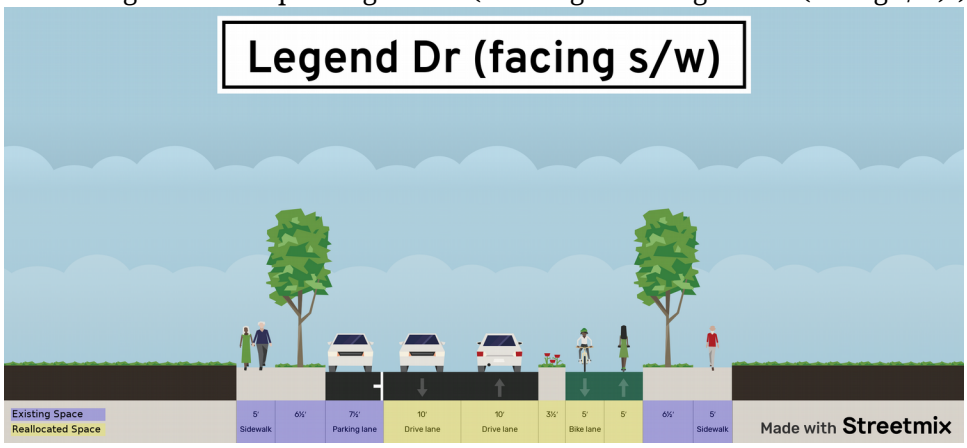
Legend Dr is 41' wide, curb to curb. Lighthouse Landing seems to be the same width. These streets have 13' travel lanes and 7.5' parking lanes. (See diagram: "Legend Dr existing") Thirteen feet is excessive. For locations like Edge-on-Hudson, NACTO's "Urban Street Design Guide" recommends 10' lanes, and AASHTO's "A Guide for Achieving Flexibility in Highway Design" approves of lanes being 9' to 10' wide.



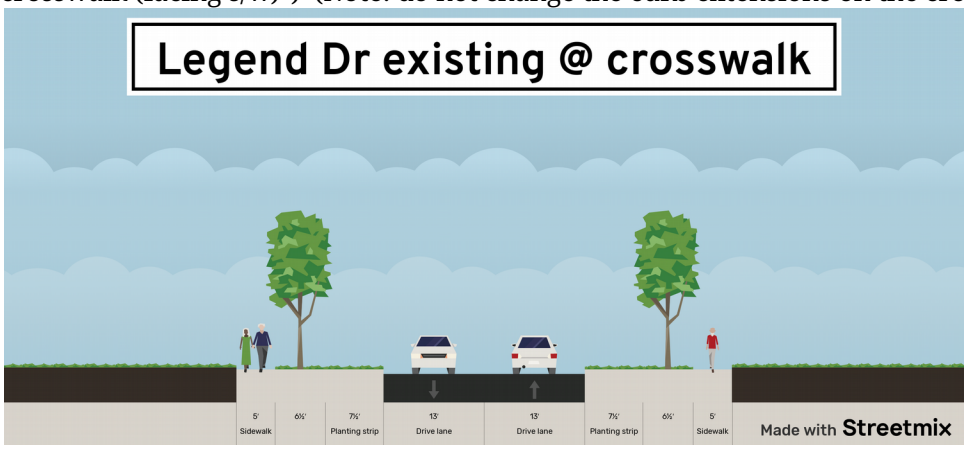
Plus, this development has abundant car parking. Each townhome has a garage (plus most have driveways), the apartment buildings and grocery store have decks or lots, and every street has loads of spots.

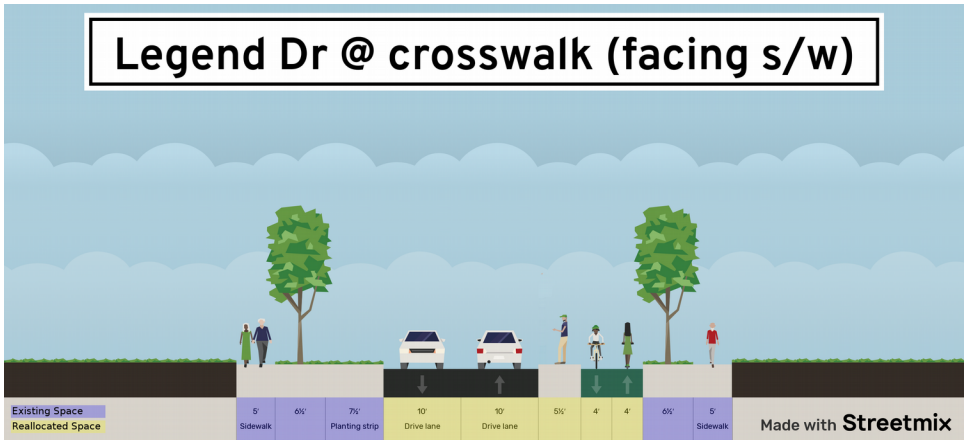
Some of that extra lane width and curb space can be reallocated to become protected mobility lanes for cycling, scooting, wheelchairs, etc.

On Legend Dr there can be a 2-way protected mobility lane along the western curb, and on Lighthouse Landing it can go along the southern curb. These can be established by making the motor vehicle lanes 10' wide and reallocating one of the parking lanes. (See diagram: "Legend Dr (facing s/w)")



At intersections, the parking lanes currently become curb extensions. (See diagram: "Legend Dr existing @ crosswalk") There are 6 locations where the mobility lane would meet the curb extensions. The best long term solution at these spots is replacing the curb extension with the mobility lane. Where the mobility lanes meet crosswalks, build 5.5' wide refuges between the slightly narrowed mobility lanes and the car lanes. This creates an easy to navigate two-stage crossing for people walking. (See diagram: "Legend Dr @ crosswalk (facing s/w)") (Note: do not change the curb extensions on the cross streets.)





For people heading south, these lanes will direct people to the west side of the Beekman Ave roundabout, where they can continue their journeys on River St.

At the north end of Legend Dr, it will be wise to build a 10' wide cycling path and an 8' wide walking path to the northern tip of Edge-on-Hudson's property, with a connection to Kingsland Point Park's driveway.

Beyond Edge-on-Hudson, these ideas tie in with related proposals for a network of safe, direct routes to the two train stations.

Sincerely,

Daniel Convissor