Here is a photo of a typical speed bump:

And here is a photo of a typical fire-friendly speed cushion:

The primary factor that controls speed is the spacing of the bumps or cushions. If they're closer together, for example one per block, they can typically get traffic down to around 25mph, plus or minus a few mph depending on other roadway characteristics. If they're farther apart, people can go faster between them. Speed cushions have wheel cutouts for emergency response vehicles, reducing delay by a large factor and saving lives through quicker response times. Typical-size cars and trucks can only fit one wheel through a notch, but not both, so they still slow down but not quite as much as speed bumps. Speed cushions can still get speeds down to 25mph, but probably not 20mph. However, even speed bumps have not been effective at getting speeds below about 22mph, so the fact is we're running into the inherent limitations of this type of traffic calming device. Our aspirational goal is to reach 20mph on neighborhood greenways, but we will need to employ other traffic calming methods in addition to speed bumps or cushions to actually reach that goal on many streets. Thankfully, many of these other

traffic calming methods can also be designed in a way that accommodates emergency response without causing too much delay. For example, here is a list of other traffic calming tools available to us should we need them:

- Diverters
- Semi-diverters
- Raised intersections
- Neckdowns (curb extensions)
- Alternating one-way streets
- Chicanes (for example, alternate-side parking)

Overall, we think the use of speed cushions represents a reasonable compromise between the need for traffic calming (including on neighborhood greenways) and the need for fast and reliable emergency response times. We need to make trade-offs in transportation, and this seems to be an acceptable balance. We also want to stress again that on neighborhood greenways our policy is to use all available tools, not just speed bumps or cushions, if needed to reach our goals.

PBOT staff last week mapped the overlap between Emergency Response Routes and neighborhood greenway, both existing and planned, and found very little overlap citywide. The segments that overlap are short and we are confident those can be managed on a case-by-case basis. Similarly with the transit overlap, there are few cases of overlap and the ones that are there can be managed through the use of traffic calming and by applying our classifications. We do not recommend any map or classification changes based on this analysis.

Regarding 20th Ave in particular, we reached out to our Safety Team and verified that while there is an active project to improve the Harrison Neighborhood Greenway, there is no proposal currently on the table for diversion on the 26th/Harrison/30th route. After the current improvement project, PBOT will collect data and determine whether those improvements are sufficient. The change in classification from Neighborhood Collector to Local gives us the ability to use diversion in the future, but it may not be necessary. If in the future we decide to use diversion, there will be a public process that will include outreach with people on 20th Ave and an analysis of where the traffic is likely to go. For now, what PBOT can commit to for 20th Ave is the following:

- Replace the missing speed limit sign referenced in testimony (a work order has already been issued)
- Add marked crosswalks at the 20th/Harrison intersection as part of the neighborhood greenway project
    - This will increase visibility of the crossing, highlight its importance for pedestrians including kids walking to school, and will likely improve compliance at the stop signs.
    - PedPDX, the update to the pedestrian Master Plan, is developing new crossing spacing guidelines and prioritizing projects, so additional crossings along 20th Ave may end up being recommended through that process.