

Montgomery County Complete Streets Design Guidelines Work Session #4

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RECOMMENDATION

Staff is seeking Planning Board comments on the Public Draft of the Montgomery County Complete Streets Design Guidelines version 1.0. Planning staff and Andrew Bossi, from the Montgomery County Department of Transportation, will summarize and review the guidelines as well as public testimony received as part of the Public Hearing held on July 23, 2020. This review is anticipated to take 4 to 5 work sessions. Work Session #4 will focus on prioritization, intersections and green streets. At the end of all work sessions and at the Planning Board's direction, staff will consolidate Planning Board comments into a letter to the County Executive and the County Council. Staff will also draft applicable revisions to the guidelines document, which will be forwarded to the County Executive and the County Council along with the letter for further review and consideration.

INTRODUCTION

A public draft of the Montgomery County Complete Streets Design Guidelines (CSDG) version 1.0 has been prepared jointly by Montgomery Planning and the Montgomery County Department of Transportation. This document was provided to the Planning Board for the June 23 Public Hearing. We recommend that Planning Commissioners bring this document to all work sessions.

PUBLIC TESTIMONY

Public testimony received as part of the July 23, 2020 Public Hearing was provided in the September 10, 2020 staff report on Work Session #1.

Work Session # 4 – Summary of Prioritization, Intersections and Green Street Elements

Work Session # 4 will focus on a summary presentation of the prioritization, intersections, and green streets portions of the guide (Chapter 6 for intersections, Chapter 7 for green streets and parts of Chapter 3 for prioritization). There are 54 comments in these categories, which are provided in Attachment A, along with a staff response for each comment. Staff is requesting Planning Board review of these comments and feedback on the corresponding responses.

Attachment A
Summary of Comments Received and Proposed Responses
Work Session #4

Comment #	Who made the comment?	Page Number	Section	Comment	Subject Area	Draft Response
15	Kristy Daphnis, Chair PBTSAC			You've provided the legal definition of a crosswalk, which is helpful. Could you also provide a few visual depictions of legal crosswalks?	Intersections	Photo and narrative already included on p144, in addition to many photos & figures elsewhere. Will add a photo of an unmarked crosswalk on p146.
17	Kristy Daphnis, Chair PBTSAC			Please consider further public and stakeholder engagement before making final decisions on the content and prioritization in Figures 3-3, and 3-4. Please also consider reducing the minimum crossing distances across the board, or, define clear thresholds for showing necessity, and make these thresholds relatively low.	Prioritization	A Planning Board public hearing was held on July 23, 2020, and we also expect a Council Public Hearing. The crossing distances have been vetted between MCDOT and Montgomery Planning, and we are comfortable with these numbers at this time.
39	Melvin Tull			Whether Montgomery County climate change efforts should include painting road surfaces heat reflective white	Green Streets	Inconsistent with national pavement marking standards and outside scope of study. Such paint would be an ineffective and a maintenance-heavy action, and the paint itself a potential environmental issue. The guide does not preclude concrete pavements (whitening) as an option. Any future climate change suggestions can be included in future versions.
41	Jane Lyons, Center for Smart Growth	57		We recommend that bikeways be listed as a high priority for downtown boulevards, downtown streets, town center boulevards, and town center streets.	Prioritization	We will make these edits.
68	Peter Gray, WABA	56		The guidance for Street Buffer, Bikeways and Pedestrian Clear Zone that for breezeways, the Bikeway priority is high, is directly on point and should be followed at all times.	Prioritization	No change needed.
69	Peter Gray, WABA	57		The priority for Bikeways on Downtown Boulevards, Downtown Streets, Boulevards and Town Center Streets should be changed to High, instead of Medium, equal to that of Pedestrian Clear Zones. An example of this is the urgent need for a protected bike lane on Fenton Street in downtown Silver Spring.	Prioritization	We will make these edits.
70	Peter Gray, WABA	131	Figure 6-15	We applaud the requirements for Protected intersections, bike boxes and two-stage queue boxes on all types of roads.	Intersections	No change needed.
71	Peter Gray, WABA	136		We also endorse the guide's note that "mixing zones are not recommended for interim separated bike lanes.." With many examples spread through the Washington region, we know that these do not adequately mitigate the risks. Dedicated bike signals are far preferable.	Intersections	No change needed.
84	Dan Wilhelm, GCCA President	132		Roundabouts. We have found that the mini roundabout shown in Figure 6-16 does not provide enough space for large vehicles to go around them. Rather, the back wheels just go over the planted area in the middle. We had them removed for that reason in Colesville.	Intersections	Mini-roundabouts can be designed to provide enough space for large vehicles. Per the 2nd paragraph of p132: the landscaped area at the center is optional. Mini roundabouts can be designed to be fully traversable, if necessary.

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123	Gil Chlewicki	54-55	3.2	Max Spacing for Protected Crossing - 400' max spacing between crossings can create significant safety issues for vehicular traffic and is generally unrealistic from a funding standpoint. Spacing should be based on context and need. Max spacing value is unadvisable.	Intersections	Signals in an urban context are often 400 feet apart. Also these are guidelines. These are goals that we should aspire toward, but yes there may be some cases where achieving the spacing might not be feasible or make sense.
124	Gil Chlewicki	54-55	3.2	Max Spacing between signals - Again will be context based. Values are mostly unrealistic.	Intersections	This comment likely refers to the "Generally Accepted *Minimum* Spacing for Signalized Intersections." This metric is intended to keep signals from overlapping and conflicting operationally (noting Gil's previous comment #123). These are guidelines, and signals can be more closely spaced if it is necessary to do so. One such example may be found at 29/Bonifant and 29/Thayer.
140	Gil Chlewicki	118-157	6	Again, the focus here is too much on urban environments and not enough on suburban and rural contexts.	Intersections	By their higher volumes and more multimodal nature: Downtown and Town Center contexts are inherently the more complex. All the sections in Chapter 6 appear to be just as applicable to non-urban contexts.
141	Gil Chlewicki	118	6.1	Intersection safety is much more complex than making an intersection as compact as possible. If not done properly, compact intersections can increase crashes for all users.	Intersections	No changes. The guide says to make them compact; not as compact as possible. Overly large intersections are themselves a risk.
142	Gil Chlewicki	121-127	6.3 - 6.5	Complete support for the write-up here in an urban context. But this will not be true in many suburban contexts and can be particularly problematic in rural contexts. Trucks are not the only concern. Farm equipment, vehicles with trailers, and RVs will have issues with tight radii at intersections.	Intersections	On p123 the guide calls out that larger vehicles may be used if they comprise a sizeable volume of traffic. At the end of p123 we might call-out that Rural facilities, in particular, might use turning templates for various types of farm machinery.
143	Gil Chlewicki	128-129	6.6	Recessing the stop bar increases the intersection dimension for motorists. This is both an operational and safety issue for motorists. Operationally, it requires an increase in the yellow clearance time (along with not allowing RTORs). Safety-wise there is a greater chance a vehicle will not clear the intersection before the next phase, creating dangerous angle crashes. So context again becomes very important here. Recessing the stop bar can work in urban environments better than suburban or rural contexts.	Intersections	Recessing the stop bar is a retrofit improvement, meaning that it would primarily be used on existing streets where geometry is tight and the street cannot be widened to safely accommodate adequate right turns for the design vehicle. The safety risks associated with vehicles needing longer time to clear an intersection is addressed by recalculating the clearance interval. This will indeed have some operational impact, but this is an acceptable trade-off given our Vision Zero commitment. Future transportation analyses will indeed have to account for this. Master plan analyses utilize MCDOT signal timings, which would include these clearance intervals, and therefore these impacts will be accounted for in meeting a master plan's transportation goals.

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144	Gil Chlewicki	130	6.7	Channelized Right Turn Lanes are not always bad for pedestrians and can be an important safety element for motorists and cyclists when designed properly. There is mixed data on channelized right turn lanes when it comes to pedestrians in general, especially in the suburban and rural contexts.. And there are now "smart" channelized right turn lanes that control the speed and flow of drivers much better. There should not be any specific discouragements of these elements in general as there needs to be flexibility for all users and it is possible that this can be designed to be advantageous for pedestrians too. Instead, just focus on how to design them properly.	Intersections	<p>In a mature transportation network, there is not really any need to advocate for more channelized right-turn lanes. As a policy, this guide is advocating to remove them where feasible, particularly where they conflict with safe pedestrian and bicycle access.</p> <p>This guide, as part of the County's Vision Zero effort, is not as concerned with delay to vehicles as it is with safety for all users. Channelized turn lanes do provide greater throughput per lane but also result in higher turning speeds, when drivers are actively engaged in multiple activities including looking for gaps in the crossing street.</p> <p>p130 allows exceptions where channelized rights may remain, albeit with a more robust directive on improving their safety. This appears to correspond to the comment's suggestion.</p>
145	Gil Chlewicki	131	6.8	Roundabouts should never be discouraged or require engineering judgment. Roundabouts are a clear measure of virtually eliminating all severe and fatal crashes for all users. The fastest way to accomplish Vision Zero is to convert all intersections to roundabouts. (I don't think there has been a single pedestrian death at a roundabout in the US!) There are of course other considerations to whether an intersection should be a roundabout. Roundabouts should minimally be recommended for neighborhood connectors, neighborhood streets, and town center streets.	Intersections	<p>Roundabouts are not being discouraged. Roundabouts are a very safe and effective form of traffic control. One of the major problems with installing roundabouts is the different right of way needs compared to a conventional intersection. Hence, the need for careful review and use of engineering judgment.</p> <p>However, it is also worth bearing in mind that roundabouts can introduce accessibility issues that need to be resolved and incorporated into their designs.</p>
146	Gil Chlewicki	132-134	6.9	For design considerations, skewed intersections are often a great reason to install a roundabout and often it does not require any significant realignment. The Design Considerations section should simply ask readers to refer to the latest roundabout guidance. Note that the 3rd edition of the NCHRP (spelling in text) roundabout guide should be coming out sometime next year.	Intersections	<p>The Design Considerations section includes the following text on page 133: "Refer to the MdMUTCD, MDOT SHA's Roundabout Design Guidelines, and NCHRP Report 672 Roundabouts, An Informational Guide"</p>
147	Gil Chlewicki	134	6.09	Multi-lane roundabouts can be very effective in areas with high levels of bicycle and pedestrian activity. Two MD examples are the multi-lane roundabouts in Maple Lawn, just across the county border up US 29, and the Towson roundabout in Baltimore County. In an urban low-speed environment, multi-lane roundabouts can be great for pedestrians and cyclists. They can become more problematic in higher speed suburban and rural contexts. Please remove the anti-recommendation of multi-lane roundabouts as once again, it depends on contexts.	Intersections	<p>Page 134 in the CSDG states that:</p> <p>"multi-lane roundabouts are not recommended in areas where high or moderate levels of pedestrian and bicycle activity are anticipated. Where multi-lane roundabouts are required, enhanced pedestrian treatments like RRFBs should be considered to enhance driver awareness of pedestrians and bicyclists entering the crosswalks."</p> <p>As written, multi-lane roundabouts are therefore allowed in most suburban and rural settings, where appropriate.</p>

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148	Gil Chlewicki	118-157	6	This section should also introduce the option of other innovative intersections. Montgomery County has jughandles (US 29/Fairland and Blackburn roads), Median U-Turn Intersections (US 29/MD 193), Quadrant Roadway Intersections (MD 586/Randolph Road) and elements of a Continuous Flow Intersection (Randolph Road/Parklawn Drive). These innovative intersections can have significant safety and operational advantages for all users when designed properly.	Intersections	Innovative intersections do exist in Montgomery County; however, they are often the product of outdated design decisions or constrained right of way. The Guide does not preclude consideration of such designs, and MCDOT considers these sorts of alternative solutions where they have merit.
149	Gil Chlewicki	135	6.10	The County's preferred standard for curb ramps is considered a Best Practice for ADA when it comes to low-vision pedestrians and wheelchair alignments.	Intersections	No change needed.
150	Gil Chlewicki	136	6.11	Protected Intersections are great in urban environments. It gets more complicated though in suburban and rural contexts. They should not be the default treatment for all contexts.	Intersections	Per the Bicycle Master Plan: Protected Intersections are required wherever separated bike lanes are provided, and it should be noted that separated bike lanes tend to be provided in more urban environments.
151	Gil Chlewicki	137	6.11	Two-stage Turn Queue Boxes should include an option where RTOR would still be permissible. Again, context matters. In suburban environments, RTOR can be a necessary design feature.	Intersections	The reference to No Turn On Red is a "should" statement. Therefore, right-turns on red can still be allowed based on engineering judgment.
152	Gil Chlewicki	137	6.11	Bike Boxes can be problematic in suburban and rural contexts to vehicle safety and operations	Intersections	No changes. Bike boxes can and do work in suburban & rural areas.
154	Gil Chlewicki	139	6.11	For Traffic Signals and Bicycles, change to the minimum yellow and red clearance interval.	Intersections	We will make this edit.
155	Gil Chlewicki	162-173	7	An element of a "Green Street" that gets left out is the ability to minimize vehicular stops, which creates emissions and affects air quality.	Green Streets	The intent of Chapter 7 is to make our streets designs greener and more sustainable. Selection of intersection improvements should consider environmental benefits as well. As the State moves toward it's goal of an all-electric vehicle fleet: the effects of emissions on air quality will become a lessened consideration.
160	Gil Chlewicki	211	9.3	Elimination of turn lanes outside of slow-speed urban contexts can significantly increase vehicular crashes.	Intersections	The Guide does not so much address eliminating turn lanes as it does eliminating *channelized* turn lanes. Turn lanes have an important function to help vehicles decelerate and to provide storage for stopped vehicles waiting at an intersection. However, right-turn lanes used for acceleration and deceleration should be used selectively. The 1st paragraph on p211 doesn't require the elimination of all turn lanes, but it does encourage consideration of eliminating turn lanes as part of road diets and efforts to slow and calm traffic. This applies only to situations where road diets are under consideration in the first place.
171	Miriam Schoenbaum			No channelized right turn lanes. Also, no right-in-right-out driveways with islands.	Intersections	Page 130 in the Guide addresses channelized right turn lanes, and seeks to curtail their use. RIRO driveways will be evaluated by Montgomery Planning in a future access management study.

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172	Miriam Schoenbaum			No multi-lane roundabouts.	Intersections	Page 134 in the CSDG states that "multi-lane roundabouts are not recommended in areas where high or moderate levels of pedestrian and bicycle activity are anticipated. Where multi-lane roundabouts are required, enhanced pedestrian treatments like RRFBs should be considered to enhance driver awareness of pedestrians and bicyclists entering the crosswalks."
174	Miriam Schoenbaum			The control vehicle should not be a 47' fire truck (Fire & Rescue should buy smaller equipment), and the design vehicle should not be a 30' truck. Both are too big. No more building wider/faster roads so that Fire & Rescue can more easily access the severe/fatal crashes caused by the wider/faster roads.	Intersections	This guidance was developed in coordination with the Montgomery County Fire and Rescue Service to ensure that fire and rescue vehicles can negotiate county roads. We cannot build streets that are wholly inaccessible to Fire & Rescue. This guide establishes a distinction between design vehicle & control vehicle specifically to reduce the effects of larger vehicles on design. This is more progressive than where we are today.
175	Miriam Schoenbaum			The default corner radius should be 10', not 15'.	Intersections	The default on some streets per the guide is 10' or 15' on most street types, and 25' when one of the intersecting streets is an Industrial Street. Radii of 10' could be used as long as the effective corner radius is adequate to allow design vehicles to perform a turn and stay within their travel lane.
176	Miriam Schoenbaum			Where ROW is insufficient for adding pedestrian/bicyclist facilities without reallocating road space away from cars, road space should be reallocated away from cars.	Prioritization	The CSDG tries to rightsize the treatment of modes other than motor vehicles by improving standards for pedestrian and bicycle travel. This guide does this by shrinking the motor vehicle space with narrower travel lanes, and by designating areas such as Parking & Medians as low priorities for most street types. The elimination of existing travel lanes can be considered in areas with high traffic history. Similar to Old Georgetown Road, these types of road diets are now being considered by SHA and MCDOT where they make sense on other multilane roads within the County.
230	Jack Cochrane, Montgomery Bicycle Advocates	57		Bikeway priority (p. 57) – The priority of "Bikeway" should be high on any master-planned bikeway.	Prioritization	We agree with this change for Downtown Boulevards, Downtown Streets, Town Center Boulevards, and Town Center Streets.
233	Jack Cochrane, Montgomery Bicycle Advocates	138		Bike crossing markings (p. 138). We wholeheartedly support the dimensions specified for bike crossing markings – the "green bars". The guide stipulates 2' wide green bars separated by 2' wide gaps. This 1-to-1 ratio of gaps to bars is crucial. Wider gaps make the bars less noticeable to drivers and more difficult to pick out in the ocean of white crosswalk bars seen at some intersections. Fig. 8-6 (p. 182) demonstrates the noticeability problem: there's only a single bar between the driveway edges, and emerging drivers might not realize it's a bike crossing. I also recommended using a photo of a crossing that meets the standard.	Intersections	We will look into providing a photo of a bikeway showing these marking dimensions.
240	Pedestrian Master Plan Advisory Committee	155-157		Should add a part on Exclusive Pedestrian Intervals (Barnes Dance)	Intersections	We will make this edit.
243	Project Team	57		What's the utility of including Travel Lane Width in the Priorities Table? The defaults are already the minimums; Low / Med / High have no meaning here.	Prioritization	We will make this edit.

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244	Project Team	57		Dedicated Transitways are High Priority in each case where they are present. How much effect do we really see if a transitway is 13' vs 12'? Or if the buffer is 6' vs 2'? Could Transitways be Medium? There have been a few test-runs where I've found that I'd have rather pulled 5' out of the transitway than bikeways or buffers, assuming a bus still runs just fine in that remaining width. (and if we can't operate fine at 12' ... why are we allowing it?)	Prioritization	We will make this edit.
257	Project Team	123	6.4	Add a footnote to the references to WB-40, WB-50, WB-62 clarifying that these are different-size tractor trailers.	Intersections	We will make this edit.
269	MDOT SHA - D3 Traffic	123	6.4	It should be noted that SHA typically considers a SU-40 or 50 as the standard design vehicle. The County considers a SU-30.	Intersections	We will make this edit.
270	MDOT SHA - D3 Traffic	129	6.6	MDOT SHA's Context Driven Toolkit considers Centerline Hardening as an Innovative Treatment. The application is currently being evaluated by the Office of Traffic and Safety.	Intersections	No changes needed.
271	MDOT SHA - D3 Traffic	144	6.13	Continental crosswalks are identified as the prime crosswalk treatment at intersections and uncontrolled crossings in Montgomery County which is consistent with Context Driven Guideline's use of "shall" in Zones A through C.	Intersections	No changes needed.
272	MDOT SHA - D3 Traffic	149	6.13	It should be pointed out that the document highlights the use of forecasted non-motorized travel to justify signal warrants.	Intersections	This appears to be a comment intended more for other MDOT SHA staff to be mindful of, and does not appear to seek any action from the CSDG. No changes needed.
273	MDOT SHA - D3 Traffic	155	6.13	For the signal phasing for pedestrian discussion, is the County's policy to include the yellow and red clearance interval with the pedestrian walk time under further consideration?	Intersections	No changes needed. This is too operational a detail for the Guide.
275	MDOT SHA - OOTS	59, 131	3.4, 6.8	Under the Intersections section, it may be recommended to change pedestrian lighting to "Pedestrian/Highway Lighting", or change the requirements to optional on some of the higher speed roadways if it stays Pedestrian Lighting. Not all intersections will/should have pedestrian scale lighting.	Intersections	We do not agree with this comment. Highway Lighting does not meet the same needs for highlighting vulnerable users such as pedestrians, and this remains an important feature to include in intersection design along all roadways with pedestrians.

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276	MDOT SHA - OOTS	59, 131	3.4, 6.8	<p>Protected intersections, bike boxes, two-stage queue boxes may not be feasible/appropriate on all country connectors, country roads, and major highways based on mobility/accessibility needs, fiscal restraints, maintenance, etc., especially on state-owned and maintained roadways.</p> <p>It states that these design features are required, but it is recommended to perhaps put recommended instead of required for various street types.</p>	Intersections	<p>This is not intended to say that *all* of these are required at every intersection: a protected intersection AND bike boxes AND queue boxes, etc.</p> <p>Edit the tables on p59 and p131 to add an "or" so that the row headers read "Protected Intersections, Bike Boxes, or Two-Stage Queue Boxes". These would be used case-by-case, as applicable.</p> <p>However, these types of treatments do remain applicable where their associated bikeway facilities are themselves located.</p>
280	MDOT SHA - OOTS	137	6.11	<p>It should be noted that Bike Boxes have interim approval from FHWA. Also the link to the appropriate FHWA IA should be included for bike boxes and two-stage turn queue boxes, similar to how its linked for bicycle signal faces.</p>	Intersections	We will make this edit.
282	MDOT SHA - OOTS	147	6.13	<p>Doesn't include RRFB as an option - is it included in the Pedestrian Hybrid Beacon category or not included at all?</p>	Intersections	RRFBs are included on p151. No changes needed.
283	MDOT SHA - OOTS	150	6.13	<p>Last sentence should read "conform" instead of "confirm."</p>	Intersections	We will make this edit.
284	MDOT SHA - OOTS	151	6.13	<p>Mentions that MDOT has been granted approval for use of RRFB's in all municipalities within the State; however, this just means that MDOT SHA reviews, approves, and tracks the locations within the State on behalf of FHWA.</p> <p>This is true for all Interim Approvals (IAs) by FHWA; therefore, similar comments should be made for all IA treatments and approval from MDOT SHA should always be requested per section 1A.10 of the MdMUTCD.</p>	Intersections	We will make this edit.
285	MDOT SHA - OHD-ICD	153	6.13	<p>It is recommended to have the MdMUTCD referenced instead of the Federal MUTCD.</p>	Intersections	We will make this edit.
301	MDOT SHA - OHD-ICD	131	6.8	<p>Figure 6-15. Design Guidance for Intersections by Street Type - Intersections - Pedestrian Recall on Signals: - Missing an "X" under "Industrial Street"</p>	Intersections	We will make an edit, though per p59: it should be an O (Optional) rather than X (Not Permitted).

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302	MDOT SHA - OHD-ICD	142	6.12	<p>Figure 6-24. Bus Bulb Design - Figure shows 6-foot curb bump out with sidewalk leading up to the clear area for the bus drop-off and pick-up.</p> <p>- The figure shows features that do not align with the rest of the CSDG. For example, the figure shows 4-foot minimum sidewalk width, however, the CSDG outlines the minimum width for sidewalk is 6 feet.</p> <p>- Consider updating Figure 6-24 or creating new figure to ensure it aligns with the rest of the document.</p>	Intersections	We will make this edit.
307	Project Team	57	3.3	What is the purpose of the N/A's for Dedicated Transitways on some streets?	Prioritization	We will assign a priority for Dedicated Transitways on Town Center Streets.
308	Project Team	57	3.3	Country Connector & Country Road - Shoulder entries each have an asterisks, but I don't think the asterisk applies to either.	Prioritization	We will make these edits.
309	Project Team	57	3.3	<p>Maintenance Buffer is N/A for the Downtown types, corresponding to their 0' on p55.</p> <p>But it's given a Low priority for the Town Center types, despite also being 0' on p55.</p>	Prioritization	We will make these edits.