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Introduction

The purpose of the meeting was to provide members of the Complete Streets Implementation Team (CSIT) an overview of street types, more information on travel lane widths, and an update on changes to the schedule.

Jeff Riegner welcomed all attendees and reviewed the agenda.

Members of the CSIT were provided a copy of the draft minutes from the January 6 meeting in advance. Larry Schoen made a motion to approve the minutes and Chris Eatough seconded the motion. Larry noted he was unsure about the resolution of January's conversation regarding lane width. Jeff responded that the discussion about lane width will continue during today's meeting.

Chad Edmondson noted he does not think the County is moving towards parking on both sides of the street on 26-foot-wide streets. Kris Jagarapu clarified that the minimum width necessary to allow parking on both sides was 28 feet, since that provides enough space for a fire truck. Jeff asked Kris if he was comfortable with how the topic is described in the minutes. Kris responded that when narrower roadways are built the County does not proactively restrict parking, although sometimes the County does make recommendations to developers about restricting parking.

Carl Gutschick provided clarification about the need for a root barrier in relation to the size of the tree zone/buffer, stating that if the tree zone is less than six feet wide measured from the back of the curb a barrier is required, but if it is six feet or wider, a barrier is not required.

Jeff noted that Larry provided editorial comments in advance of the meeting that will be rectified for the final minutes. The CSIT members unanimously approved the minutes as amended.

Jeff led the group through the presentation attached to these minutes.

Street Type

Introduction and Survey Results

Jeff noted that there are more slides included in the presentation deck than there will be time to review during the meeting. The slides are intended for reference and for CSIT members to review on their own time. Some CSIT members had commented that the traditional Functional Classification System has shortcomings in addressing Complete Streets, which was discussed at the January CSIT meeting. During that meeting, two potential approaches were identified:

- Modified functional classification based on land use context (National Cooperative Highway Research Program (NCHRP) Report 855
- Descriptive street types (similar to the Montgomery County draft guidance)

The NCHRB approach has been taken to date. This approach features a matrix with functional classifications listed on the X-axis and land use contexts on the Y-axis. The matrix is filled in with option(s) for typical sections. The draft Montgomery County Complete Streets guidance includes 12 main descriptive street types and a few special street types. CSIT members were asked to provide input via an online survey about how these descriptive street types apply to Howard County Streets. Nine members of the CSIT participated in the survey. Jeff then provided an overview of the survey results, which asked for examples of Howard County streets that correspond with Montgomery County street types.

- *Downtown Boulevards*: responses included Little Patuxent Parkway (5 responses), Maple Lawn Boulevard (4 responses), Route 40, Broken Land Parkway, the Mall Ring Road

- *Downtown Streets*: more mixed-use in character; responses included Twin Rivers Road (3 responses), Main Street in Ellicott City, Day Long Lane in Clarksville, East Market Place, Mango Tree Road, Old Columbia Pike Ellicott City, Merriweather Drive, Wincopin Circle, Maple Lawn Boulevard at MD 216, Cedar Lane
- *Boulevards*: some streets identified were identical to streets identified as Downtown Boulevards; responses included Broken Land Parkway (5 responses), Snowden River Parkway (5 responses), Little Patuxent Parkway (5 responses), Governor Warfield Parkway (3 responses), Centennial Lane, Resort Road
- *Town Center Boulevards*: some streets identified were identical to streets identified as Downtown Boulevards or Boulevards; responses included Little Patuxent Parkway (4 responses) Maple Lawn Boulevard, Lark Brown Road, Oakland Mills Road, Dorsey Hall Drive, Twin Rivers Road, Stanford Boulevard, Dobbin Road, Cedar Lane, Hickory Ridge Road
- *Town Center Streets*: some streets identified were identical to streets identified as Downtown Streets; responses included Main Street in Ellicott City (3 responses), Maple Lawn Boulevard (2 responses), Wincopin Circle (2 responses), Maryland Avenue, Twin Rivers Road, Broken Land Parkway, Mango Tree Road, Frederick Road, Carroll Baldwin Square, Town Center Avenue in the mall area, Foundry Street, Swift Stream Place, North Ridge Road north of US 40
- *Neighborhood Connectors*: tend to follow collector classifications; responses included Oakland Mills Road (3 responses), Montgomery Road (2 responses), Whiskey Bottom Road (2 responses), Cradlerock Way (2 responses), Martin Rod, Old Annapolis Road, Great Star Drive, Murray Hill Road, Columbia Road, Twin Rivers Road, Frederick Road, Gorman Road, Harper's Farm Road, Owen Brown Road, Vollmerhausen Road, Knights Bridge Road
- *Neighborhood Streets*: responses included Green Mountain Circle, Graeloch Road, Moorland Drive, Autumn Wind Circle, Hesperus Drive, Thunder Hill Road, Jerry's Drive, Oakdale Drive, Swansfield Road, Morning Time Lane, Watch Chain Way, Fort Avenue, Huntshire Drive, Madison Street in Savage, Creekside Road, Stevens Forest Road, Farewell Road
- *Neighborhood Yield Streets*: require oncoming vehicles to yield when cars are parked on both sides of the street and function to keep speeds down in residential areas where there are low volumes; responses included Waterfowl Terrace, Fall Rain Drive, Maple Lawn Boulevard, Pine Road in Jessup, Washington Street in Savage, Sewall Avenue, Autumn Wind Circle, Grotto Walk, Northgate Road, Beechfield Avenue, Stonecutter Road
- *Industrial Streets*: responses include Gerwig Lane (2 responses), Freestate Drive (2 responses), Patuxent Range Road (2 responses), Dorsey Run Road (2 responses) Corridor Road (2 responses), Berger Road, Santa Barbara Road, Troy Hill Drive, Assateague Drive, Guilford Rod, McGaw Court, Amberton Drive, Oakland Mills Road, Business Parkway, Red Branch Road
- *Country Connectors*: largely the same as County Roads, responses included Shepherd Lane (2 responses), Daisy Road (2 responses), Folly Quarter Road (2 responses), Highland Road, Union chapel Road, Homewood Road, Gorman Road, Murray Hill Road, Sanner Road, Guilford Road, Brighton Dam Road, Underwood Road
- *Country Roads*: largely the same as Country Connectors, responses included Jennings Chapel Road (2 responses), Hall Shop Road (2 responses), Homewood Road, Long Corner Road, New Cut Road, Triadelphia Road, Ten Oaks Road, Ed Warfield Road, Pindell School Road, Shafersville Road, Folly Quarter Road
- *Major Highways*: several comments that this street type applies primarily to state-maintained highways although there may be some exceptions in interchange areas; responses included Little Patuxent Parkway (2 responses), Columbia Pike

Jeff noted that the results of the survey provided some insight into how these categories apply to Howard County. To better match the Howard County context, the Downtown category could be consolidated with the Town Center category. The Boulevard categories could also be combined. In addition, Howard County has many streets inside private developments that are often un-named, surrounded by parking, and located in mixed-use areas. Other street types present in Howard County include private drives and alleys, dead-end residential streets, and entrance roads to public institutions.

Based on the results of the survey, a suggested path forward is retaining the matrix approach which is based on national and state guidance. The Department of Public Works (DPW) and Department of Planning and Zoning (DPZ) both use functional classifications in many of their activities, so eliminating that system entirely would not be beneficial. Descriptive multimodal street types named to evoke different types of functionality within the network can be fit to the matrix. The next step is to fill in the matrix in consideration of the similarities between typical sections. The typical sections that are discussed during this meeting will be examined for similarities and combined into one descriptive name where appropriate.

Larry agreed with this approach as a transitional step since wiping out the functional classification system is not viable.

Chris commented that the survey results were helpful because they showed that it is not possible to take street classifications from a neighboring jurisdiction and apply them to Howard County, affirming that the CSIT is on the right track with the matrix approach. He thanked members of the CSIT who participated in the survey. Jeff agreed that the survey was very helpful in demonstrating how a descriptive approach could be applied to Howard County.

Draft Typical Sections

Jeff then began reviewing typical sections with the group. He noted that these sections were first presented at the January 2020 CSIT meeting. For the purposes of today's discussion, any reference to lane width was removed in order to focus on the elements in cross section and how they will mesh with land use type and functional classification. The typical sections are organized by land use context and then by street classification. Street sections shown are for new construction that would occur in order to accommodate new development projects. Retrofit projects would require more flexibility, especially in cases where right of way is limited.

Each section is shown with a corresponding level of traffic stress (LTS), which is a measure of comfort for bicyclists. LTS ranges from 1 (best) to 4 (worst). Many communities use LTS 1 or 2 as a guiding principle in developing a bicycle network, with LTS 2 corresponding to an inexperienced adult cyclist. It will be helpful to review the street types before discussing LTS goals for Howard County. Most street types feature two options, one is LTS 1 and the other LTS 2.

Larry noted that he considers LTS 2 facilities appropriate for the "interested but concerned" adult, which would represent a pretty broad population of adults. Jeff responded that the surveys assessing rider risk tolerance may not be precise, but generally 60%-70% of adults are in the "interested but concerned" category, and a handful are considered "enthusiastic and confident" and "strong and fearless." Chris clarified that "interested but concerned" includes both LTS 1 and LTS 2. Larry noted that LTS 1 provides reduced stress riding which would allow to adults to ride side by side without worrying about cars.

Christiana asked how a protected bike lane is classified and asked for a description of which on-road facilities are considered LTS 1. Leah Kacanda responded that on-road facilities that are physically separated from traffic like a protected bike lane would be considered LTS 1. Low-volume low-speed neighborhood streets could also be considered LTS 1. She noted that intersection design must also be considered in order to maintain a low level of traffic stress throughout a corridor. Christiana asked what a bike lane separated by flex posts would be considered. Leah noted that is a good question, and that flex posts do not offer true protection from vehicular traffic, although they do offer a greater reduction in perceived stress than a painted buffer by itself.

Jeff provided LTS charts to explain the methodology, summarizing that the wider the bike lane and lower the speed, the lower the traffic stress. Traffic stress increases with speed, narrower bike lanes, and more vehicular travel lanes. The LTS approach fits in with the methodology described in the Federal Highway Administration *Bikeway Selection Guide* that Larry has mentioned during past meetings. The general concept is pretty intuitive, in that the higher the speed and greater the volume of traffic, the more separation between bicycle and vehicular traffic is appropriate.

Tom Auyeung asked what travel lane width the LTS methodology assumes and whether narrower lane widths make conditions more stressful for cyclists. Jeff responded that the LTS methodology does not consider lane widths, but noted that narrower lane widths decrease speed, which also could lower LTS. Leah highlighted the fact that the charts call for the use of prevailing speed to gauge LTS, but many initial assessments of LTS are done with the posted speed limit because that is the data that is available. She noted that MDOT SHA is currently working on a statewide LTS map which will be available for the County's uses. She noted it is important to pay attention to prevailing speeds, especially when beginning a corridor level analysis. Tom suggested that a bicyclist would feel more pressure from a narrower vehicular lane. Jeff responded that research shows that is not the case. Larry expressed surprise over the types of roads that qualify as LTS 2 even at 35 miles per hour.

Jeff commented that the difference between low and high stress street types will become apparent as the street sections are reviewed. The first sections reflect a suburban land use context, including low-density residential, commercial, and industrial, which comprise the majority of the eastern part of the County. Lower-density residential areas are solely or predominantly residential with buildings set back from the right of way line with lighter walking and bicycling activity and slow to moderate speeds that don't exceed 35 miles per hour. Commercial areas are solely or predominantly commercial and reflect lower to medium density development. Buildings are set back from the right of way line with lighter walking and bicycling activity and slow to moderate speeds that don't exceed 35 miles per hour. Industrial areas are solely or predominantly industrial, with buildings set back from the right of way line and a high percentage of trucks. Some industrial areas can have a higher level of walking and bicycling activity due to people accessing job opportunities, and slow to moderate speeds that don't exceed 35 miles per hour. Jeff noted that each box of the matrix has two options, one that features a higher level of accommodation for bicyclists, and one features an "acceptable" level of accommodation for bicyclists.

Option 1 for a suburban intermediate arterial street type features two lanes in each direction with a shoulder. Although the shoulder could be used by on-road bicyclists, it could also be used for snow storage during plowing, for broken down cars, and to allow emergency vehicles to pass. Outside the curb there is space for a tree and utility zone and a shared-use path on both sides of the streets. The LTS for this configuration would be 1 since the path is separated from traffic. Option 2 features sidewalks instead of paths, and the shoulders would be used for on-road bike lanes. This configuration requires less right of way and decreases the impervious surface area. According to the LTS charts, this street section would be LTS 2 at 35 miles per hour or less, and otherwise would be classified 3 or 4. If the target is LTS 2 or better the street could be designed as Option 2 in areas with low speeds and Option 1 in areas with higher speeds.

Christina asked for feedback from DPW on who is responsible for snow removal on pathways. She noted the County Code is clear that property owners are responsible for clearing sidewalks, but it appears as though clearing pathways falls on the County.

Kris Jagarapu agreed that there would be additional maintenance responsibility on the County with a pathway option. He asked for clarification on whether the shoulder is required for both Option 1 and Option 2. Jeff replied that is open to discussion, but from a highway design perspective most intermediate arterials have a shoulder. In some instances in Howard County those shoulders have been retrofitted to provide an additional travel lane. The shoulder could be narrower in cases where there is a shared use path and wider for the option with on-road bike lanes. Kris noted he wants to compare the amount of impervious area in Option 1 and Option 2. Jeff replied the amount of impervious surface would depend on the widths of each street element.

Cory Summerson asked what type of speeds Option 1 could accommodate while retaining an LTS 1. Jeff replied that Option 1 would provide LTS 1 at any speed since the pathway means that cyclists are totally separated from vehicular traffic. Chris noted that in Option 1, the shoulders would be more for roadway operations as opposed to being used by cyclists.

Larry noted in Option 2 there is a speed assumption that dictates the resulting LTS, and that speeds over 35 miles per hour would result in an unacceptable LTS. He noted that most roads configured in this way would have higher speeds, unless the road is very curvy, or speeds are very high. Jeff responded that it is good to think in terms of prevailing speeds, not just speed limits. Chris noted that speed also depends on block length, since shorter blocks

with a profile similar to this one would have lower speeds. Jeff noted that condition may be unusual in Howard County, since if there are volumes that require a four-lane road, controlled intersections would not be closely spaced. He noted that parts of downtown Columbia may be the exception, but that those areas also may be more mixed-use in character, not suburban. Larry noted the mall ring road may technically be considered LTS 2 due to relatively low speeds, but LTS may be higher at intersections and due to the large amount of turning traffic and driveways. Chris agreed, stating that most multi-lane roads in Howard County would have an LTS 3 or worse due to speeds. Kris noted that the conversation is about intermediate arterials, and that Broken Land Parkway is a major collector or minor arterial depending on the section of roadway.

Jeff reminded the group that the goal is to look at street types combined with land use contexts and that this section is being presented for consideration in a suburban context. He observed there may not be any locations where there are suburban intermediate arterials with speeds of 35 miles per hour or less.

Jeff moved on to share the proposed street types for suburban minor arterials. Both options feature a three-lane section designed to accommodate roughly 20-25,000 cars a day or less. The center lane would function as a two way left turn lane or median. Option 1 features a shoulder intended to accommodate operational needs and shared use pathways on each side of the road which would result in an LTS 1. It is difficult to assess the LTS of Option 2, which would feature sidewalks and on-road bike lanes. If effective speeds are 30 miles per hour or less the road would be LTS 2, otherwise it would be considered LTS 3. LTS 1 could be achieved with on road buffered bike lanes if speeds are 25 miles per hour or less, however minor arterials in suburban contexts would likely not have speeds that low.

Christiana noted that that things are signed for 35 miles per hour and it is known that speed is a factor in mortality in these crashes. She asked what other tools are available to lower vehicular speeds. Jeff responded that the LTS methodology does use prevailing speeds, and that the mean speed and 85th percentile speed are the most useful way to gauge prevailing speeds. He noted that there are a lot of tools for calming traffic on narrower low-volume roadways, but there are fewer techniques available to reduce speeds on higher-volume roadways. Christiana asked about the efficacy of speed cameras. Jeff responded that research shows that regular road users will slow down for the stretch of road where devices are installed, but sometimes increase speed in between those points to make up for lost time. Christiana noted that the system used in England where average speed is assessed between an entry point and exit point may be more effective.

Larry asked if the tools we do have for reducing speed are narrowing lanes and creating more “distractions” like buildings closer to the roadway. Jeff responded in the short term that narrower lanes and side friction created by vertical elements close to the road edge like trees can provide modest reductions in speed. In the long term, higher density areas with more buildings next to the street can be effective, but dense development isn’t an appropriate solution everywhere.

Jeff then provided an overview of major and minor collectors, which feature one lane in each direction with parallel parking on one side of the street, buffered bike lanes, and sidewalks. This street would be classified LTS 1 at speeds of 25 miles per hour or less, LTS 2 at 30 miles per hour or less, and LTS 3 otherwise. Since there are fewer lanes there are more tools to keep traffic speed manageable. Option 2 also features bike lanes, but they do not have a buffer, which would provide LTS 2 at 30 miles per hour or less and otherwise would provide LTS 3.

Kris noted that all of the street types show one lane in each direction except for the intermediate arterial. He noted that there are minor arterials in the County that have more than 20,000 cars a day which may function better as a boulevard type as opposed to a three-lane roadway. Kris noted that intermediate arterials in Howard County include Broken Land Parkway, Little Patuxent Parkway, and Snowden River Parkway. Cedar Lane is a minor arterial, and Old Stockbridge Road is a Major Collector. Jeff asked what Oakland Mills Road is classified. Kris answered it is a major collector. Jeff agreed that street types should be able to accommodate more lanes if necessary based on volume.

Jeff then showed the local street typical section, noting that the combination of low speed and low volume means that bikes can share the lane with vehicles. LTS is calculated for shared streets based on volume, number of lanes, whether there is a centerline, and prevailing speeds and can vary between 1 and 4. Local streets will vary between 1 and 3 depending on speed and volume. The local street cross section is only appropriate for volumes of less than 3,000 vehicles a day. Higher volumes would require a greater accommodation for cyclists to maintain an acceptable LTS.

Kris shared that the County does not put any pavement markings on local streets. Jeff observed that would mean the LTS calculations would be calculated using the top half of the mixed-traffic LTS table. Larry observed that some local roads such as Summer Sunrise Drive have centerlines but not others.

Larry noted that the chance for mode shift is much greater when there is a fully functioning bicycle network. He acknowledged that it may not be appropriate for every street in the County to be LTS 1, but decisions must acknowledge that anything worse than an LTS 1 means that destinations along higher stress corridors will be inaccessible to part of the population by bicycle. A higher LTS network will result in a good part of the population remaining dependent on the use of a private automobile.

Jeff agreed that there needs to be further discussion about what LTS is an appropriate goal for the County. He observed that some communities use LTS 2 as a goal for their bike network, while other communities use LTS 1 with the knowledge it will take a more significant investment. Often, initial investments in a low-stress network are focused on key destinations like schools, parks, and libraries.

Chris observed that one consideration is an increase in LTS caused by new development. For example, a 300-unit residential development may raise volumes on a roadway such that the road is considered LTS 3 instead of LTS 2. He asked whether a policy is necessary to require developers to maintain low stress connections for cyclists in the vicinity of a new development project.

Jeff provided a brief overview of the mixed-use land use category, noting that there are sets of typical sections for the remaining land use types. He noted that two areas explicitly discussed as mixed-use are downtown Columbia and Maple Lawn. The typical sections for mixed-use areas are tighter since those areas generally have higher density development and lower speeds. Some of the typical sections include a separated bike lane instead of a shared use path. Separated bike lanes can be provided at sidewalk level or separated from the sidewalk by a curb. Due to high bicycle and pedestrian volumes in these areas it is important that there be separate spaces for people walking and riding a bicycle. Separated bike lanes could also be located between parallel parking and the curb, and unprotected bike lanes could be located between parallel parking and the vehicular travel lanes. Both of these configurations mean that street trees are further from the vehicular travel lanes, reducing the impact of trees on traffic speeds.

Jeff noted that in rural areas, good bicycle accommodations rely on shared use paths because speeds on rural roads tend to be high.

Jeff asked the CSIT to review the remaining sections and submit questions and comments. Feedback will be used to better understand how descriptive street types can be merged with the matrix approach to develop sections that will better address the needs of all road users.

Larry noted it would be helpful to look at road classifications to determine where these street types might be applied. Jeff responded that that these street types apply to new construction, and that it may be more helpful to think about street types used in recently constructed developments like Maple Lawn and Turf Valley. Looking at roads like Little Patuxent Parkway, Broken Land Parkway, or Twin Rivers Road may not be as relevant as those roads would be retrofitted.

Travel Lane Widths

Jeff moved on to a discussion of travel lane widths. During the last meeting there was a discussion around the difference between 10- and 11-foot lanes There are some circumstances where 10-foot lanes are more appropriate and some circumstances where 11-foot lanes are more appropriate. The purpose of this discussion is to better understand these contexts and be able to apply the appropriate lane width in a given context rather than applying one lane width across all contexts.

Jeff observed that the first question to address is why we would consider different lane widths, and the second question is where they should be applied. The "why" is primarily related to speed, since speed is directly related to fatalities and serious injuries for people walking and bicycling. Lane widths and side friction are the only tools transportation professionals have available to lower speeds on higher classification streets. If lanes are always wide enough to drive very comfortably, they encourage higher speeds. Ten-foot lanes in circumstances where speeds are 45 miles per hour or less are intended to provide the safety benefit of encouraging lower speeds.

Jeff shared a graphic that shows the difference in fatality rates when people are hit by a car traveling 20, 30, or 40 miles per hour, noting the large difference in fatality rates of 10%, 40%, and 80% respectively. AAA found that the risk of severe injury increases by 3.2 percentage points for every 1 mile per hour increase in speed in range of 23-38 miles per hour; risk of death increases 2.8 percentage points for each 1 mile per hour increase in impact speeds between 32-50 miles per hour. If you lower the speed on a street from 35 to 32 miles per hour the risk of death drops from 33 to 25 percent. You can facilitate the reduction in speed by reducing lane widths by one or two feet. This is why so much time has been devoted to discussing the lane width issue.

Jeff explained that a reduction in lane width also reduces the pedestrian crossing distance, allows for more lanes in a constrained right of way, and lowers construction cost. Ten-foot lanes could be used in mixed-use contexts (due to lower speeds and the presence of bike lanes) and on all major and minor collectors except in industrial contexts. Ten-foot lanes would generally not be used directly adjacent to curbs except in constrained retrofit conditions. In circumstances where there is a bus route, 11-foot lanes may be more appropriate.

Jeff shared a photograph of Twin Rivers Road, which currently has an 11-foot travel lane and a five-foot bike lane. He suggested that since this is in downtown Columbia, which is a mixed-use context, a 10-foot travel lane and 6-foot bike lane that would accommodate the door zone would be a more appropriate treatment. Larry noted that NACTO says that a 14.5 foot reach between the edge of curb and outside of the bike lane is optimal, and that this street is not comfortable to ride when there is traffic pulling in and out of parallel parking spaces, when parked car doors are open, or when cars are double parked. Jeff asked Larry whether an additional foot of width in the bike lane would make a difference. Larry responded it would help. Larry noted that it would also help if this was not a double yellow line as cars do not use the oncoming lane to pass around bikes when conditions are tight.

Jeff noted that 11-foot lanes make sense for most intermediate and minor arterials outside of mixed-use contexts, which is the majority of the County. In industrial areas the extra width is necessary to accommodate truck traffic, and in rural areas there is often less side friction and cars travel at a higher rate of speed.

Larry asked for clarification around the use of 11-foot lanes in places where there are a lot of pedestrians or on-street bicycle facilities. Jeff replied that the conversation about on-street bike facilities is best had in consideration of the proposed sections, clarifying that it is not appropriate to claim that reducing lane width by one foot will lower traffic speed by five miles per hour. Research shows that a one-foot lane reduction may result in a two or three mile per hour reduction in speed. This means that reducing lane width by a foot may not lower LTS, which is why on high speed roadways a separate bicycle facility is being proposed. Jeff clarified that there are also locations where wider lanes may be appropriate, such as local streets that are not striped with a centerline. There, a total width of 26 feet is being proposed for local streets with on-street parking. A 24-foot width is being proposed for local streets in less dense residential areas where it is less likely that cars will park across from each other due to the difference in housing type and amount of off-street parking available. These 24-foot yield streets would be similar to those included in the Montgomery County design guidance.

Jeff stated that for many years, 12-foot lanes were considered the standard, and that the 2010 edition of the Highway Capacity Manual mentioned that 10-foot, 11-foot, and 12-foot lanes have the same carrying capacity. He noted that 10-foot travel lanes are now used in many contexts and provided the following examples:

- Harford Road in Baltimore, Maryland
- Montgomery Lane in Bethesda, Maryland
- Bethesda Avenue and Woodmont Avenue in Bethesda, Maryland
- Beall Avenue in Rockville Maryland
- Main Street in Hamburg New York
- Tech Parkway in Atlanta Georgia
- Cultural Trail in Indianapolis, Indiana
- King Street in Honolulu, Hawaii
- Second Street in Long Beach, California
- North Williams Avenue in Portland, Oregon

Jeff asked the group whether applying descriptive street types to the land use and functional classification matrix is a reasonable approach, reiterating that the intent is to use national best practice in a manner that works best for Howard County.

Larry responded that he is trying to reconcile January's presentation with this one, since last month couched 10 feet as the default width and that 11 feet would only be used in select circumstances. He affirmed that the LTS approach is appropriate for bicycle facilities. Jeff paraphrased the text used in January's presentation, sharing that the official statement in the Institute of Transportation Engineers *Traffic Engineering Handbook* states that 10 feet should be the default width at speeds of 45 miles per hour or less. In areas where speeds exceed 45 miles per hour, 10 feet would not be the default. Larry cited Freetown Lane at Atholton High School as an example where the lanes are currently wide and function to encourage higher speeds and discourage walking to school. Although this area isn't urban, narrower lanes in this location would be appropriate. Jeff noted that the technical definition of "urban" is anything within an urbanized boundary. By the federal definition that area of Hickory Ridge would be considered urban.

David Ramsay commented that he is struggling with instances of narrower roadways and the challenges they create for school buses navigating neighborhoods. He cited Oxford Square and Maple Lawn as examples. He offered to take members of the CSIT out on a school bus to give some perspectives on the challenges and concerns Howard County Public Schools has regarding lane width. He noted that he is currently reviewing the site plans for a new development by the racetrack in light of operational issues. Insulated residential communities with one way in and out are a big concern since school buses often cannot navigate these areas. Despite these concerns, David noted that he understands Larry's comments regarding Freetown Road.

Chris noted that Oxford Square has one lane with a curb on each side of the roadway which would make it difficult for a bus driver to navigate. He observed that none of the proposed cross sections have a curb adjacent to the travel lane. David agreed that when buses are confined by the curb it creates more significant challenges, and that the School District has had to put in requests for no on-street parking in order to reach a particular house.

Jeff stated that it would be helpful to have a list of the streets and locations where buses are unable to navigate currently. It would also be helpful to know areas where streets are too wide. These examples can be used to make sure those design features are not incorporated in the proposed street types.

Larry asked if there is a name for widening the roadway at an intersection, to which the project team did not have a response. Jeff added that typical sections are a good starting point for discussion, but the next step is understanding intersection design. Even if lanes are universally narrower it is still important to consider turning radii. Some of the discussions had regarding Maple Lawn were focused on intersections. If a school bus needs to make a turn it has to be accommodated by the design. If a street only has to accommodate a moving truck once a year there only needs to be sufficient space for a three-point turn. Turning radii influence speed, so they should be kept as small as possible to allow for vehicles to turn while slowing traffic to create friendlier conditions for people walking and biking, as well as to reduce crossing distances.

Chris noted that standard bus routes may not go into neighborhoods depending on their size, but there is a door to door service for special needs students. He asked David whether that service always uses smaller vehicles. David responded that most of those routes use a shorter length bus, and that the school district is currently experimenting with smaller vehicles for some areas. They are obligated to remain in compliance with federal laws, but also want students to come out to a bus stop so the bus does not have to do a three point turn to get out of a development.

Jeff asked if there were any other points of discussion regarding street types or lane widths. The discussion from today's meeting will allow for street types and typical sections to be refined. Feedback that streets that are classified as lower functional classifications may have to look like wider functional classifications fits neatly into the idea of having descriptive street types, as it makes clear that streets should be designed to accommodate the volume of traffic and the needs of those who travel along the street.

John Seefried commented that a map that shows what corridors should be prioritized would be helpful. Jeff replied that the map will be a tool to understand where street types would be applied on existing streets. John noted that Larry had stated that an LTS 1 bicycle network would be ideal, but a map would allow the County to understand where limited resources should be directed. Jeff replied that the performance measures developed in support of the Complete Streets policy would also aid in that evaluation.

Schedule Changes

Jeff provided a brief update on changes to the schedule that was provided at the December CSIT meeting. He observed that recent discussions on street type and lane widths are critical since they create a basis for the rest of the Design Manual updates, but there is a goal of reaching resolution soon in order to move on to the next chapters. Staff has been advancing some elements of the Design Manual concurrent with these discussions, for example, the chapter on bridges is underway. Although there has not been sufficient resolution to the outstanding issues to reestablish a schedule, the October deadline is not changing and it is necessary to provide ample opportunity for stakeholders and the public to respond to revisions.

Next Steps

Jeff noted the action items from this meeting:

- CSIT members are to review the street cross sections and provide comments
- CSIT members are to provide examples of streets that do not function well currently due to lane width, i.e. streets that are too wide and do not work well for pedestrians or cyclists, or too narrow and do not accommodate larger vehicular traffic

Larry asked if it would be appropriate to provide streets that do not function well due to issues other than street width. Jeff responded that CSIT members can provide feedback on other street elements although issues identified may be addressed in subsequent parts of the Design Manual.

Larry also asked when the CSIT would begin to see chapters about traffic studies and intersections. Jeff responded that the development of subsequent chapters is dependent on resolving outstanding questions around street types and lane width. Larry requested a revised overall schedule. He observed that it is great to think about these issues in detail and it is clear that a lot of work is being done in the background.

The next CSIT meeting is scheduled for Wednesday, March 3 at 3:00 pm.

Leah Kacanda, AICP