Oregon
Kate Brown, Governor

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Docket Management Facility
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Washington, D.C. 20590-0001

Subject: **FHWA Docket No. FHWA-2020-0001**
National Standards for Traffic Control Devices

Attached below are comments from the Oregon Department of Transportation (ODOT) and Oregon Traffic Control Devices Committee (OTCDC) concerning the latest rulemaking notice for the national MUTCD revision. We have conducted a review of the proposed MUTCD text, figures, and tables and have compiled our comments and suggested changes.

We appreciate FHWA extending the comment period an additional 60 days. As we discussed in our request for additional time, this helped our collaborative review process. However, even with the time extension, we needed to limit the scope of our comments in order to meet your deadline. Had the comment period been longer, the scope of our comments could have been more informative to your update effort.

In addition to the comments below, we would like to highlight four areas of concern for consideration:

1. We agree that policies, directives, manuals, specifications, standard drawings, or similar documents related to traffic control devices must conform to the MUTCD. However, requiring that these documents also be considered as supplements to the MUTCD and go through the process defined in 23 CFR 655.603(b)(1) is an unnecessary requirement that will add significant delay to existing processes that keep those documents current with safety research and the unique needs at each agency. This change is inconsistent with your stated intention for this NPA of streamlining processes and reducing burdens on state and local agencies.

2. We recognize that wider longitudinal pavement markings can improve machine vision and may reduce road departure crashes. However, we encourage inclusion of an option to use a 4 to 6-inch normal width line where those lines are optional to begin with.

   Requiring wider lines where used – regardless of traffic volume – may introduce a potential barrier to installing a safety feature. This new requirement may lead some road authorities to choose to omit a center line or edge line where those lines are optional, even if installing the lines would improve safety. Added costs related to additional material and ongoing maintenance may make the installation impractical. In addition, many agencies with narrow roads may decide that wider lines will narrow the apparent width of lanes for vehicles, making the wider lines undesirable even if overall pavement width does not change.

3. The addition of traffic control devices for walking and biking facilities in this NPA can help jurisdictions in Oregon advance our active transportation goals. However, there are several new standards in Part 9, particularly related to separated and buffered bicycle lanes, which would be better as guidelines in practice given the complex realities of the urban contexts these facilities serve. These include but are not limited to standards related to buffer markings, two-stage turn boxes, and extensions through intersections.

   Similarly, in Part 4 related to bicycle signals, the standards and guidelines presented in this NPA do not represent best practices presented in NCHRP Web-Only Document 273. ODOT and the OTCDC recommend updating those Part 4 standards and guidelines accordingly.

   In addition, road authorities in Oregon uniformly use the Helmeted Bicyclist Symbol when marking a bicycle lane. We encourage you to add this symbol back in Figure 9E-1 as an option to mark bicycle lanes.

4. While not directly stated within the NPA, ODOT is particularly concerned with FHWA's statement at the AASHTO Committee on Traffic Engineering's December 2020 mid-year meeting that state transportation agencies are responsible for enforcing MUTCD compliance within their respective states. This is inconsistent with the opening paragraph in Section 1D.04: "The responsibility for the design, placement, operation, maintenance, and uniformity of traffic control devices in compliance with the provisions of this Manual shall rest with the public agency or the official having jurisdiction…" Also, under Oregon law ODOT only has regulatory authority over placement and control of traffic control devices on state highways and cannot enforce compliance with the MUTCD on local or county roads (ORS 810.010, ORS 810.210).

In addition to these issues, there were several cross-reference and grammatical errors we did not include in our comments. We trust FHWA will complete a rigorous quality control process to ensure these errors are resolved in the final version.

Looking to the future, we encourage FHWA to frequently update or revise the MUTCD. An MUTCD that is responsive to the latest safety research and best practices can help agencies address rising deaths and serious injuries of vulnerable road users and adapt to rapidly evolving changes to the nation's transportation network, such as integration of automated vehicle technology.

We appreciate the work FHWA has put into this NPA. If there are any questions or further clarification on our comments is needed, please contact Michael Kimlinger at 503-986-3606.

Sincerely,

Michael Kimlinger Apr 7 2021 10:37 AM

Joseph J Marek

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Courtesy Copies to:
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Comments on Docket No. FHWA-2020-0001 National Standards for Traffic Control Devices; the *Manual on Uniform Traffic Control Devices for Streets and Highways*; Revision

Please use this form to provide comments on the Notice of Proposed Amendments for the MUTCD.

INSTRUCTIONS:

1. Add your name or organization name where indicted in the footer of this form.
2. Use Table 1 to provide your original comments.
3. Use Table 2 to indicate your agreement with a comment that another commenter has submitted to the docket.
4. Do not adjust formatting of the rows and columns; text will automatically wrap and expand the row height as you type.
5. To add rows to this form, use the "Insert Rows" function, or hover just outside the left edge of the row below which you would like to add a row and click the encircled "+" that appears.
6. If you choose to provide a letter to accompany this comment form, please **print the document as a PDF**; **please do not scan a hard copy**. This will assist FHWA with cataloging your comments.

TABLE 1. ORIGINAL COMMENTS ON PROPOSED CHANGES. Please indicate the applicable proposed Section numbers in the far-left column. In the next three columns, please indicate your agreement, disagreement, or whether the column is applicable to your response by placing a, "YES," "NO," or "N/A" in the appropriate column of the row. If you agree with a proposed change, then there is no need to fill out the additional columns beyond the first two. However, it can be helpful to explain why you agree with a proposed change based on your objective experience as a roadway operator and/or empirical data. If you disagree in part or in whole, then please provide additional information that FHWA may find helpful.

Proposed Section Number(s)	Agree with concept and text as proposed	Agree with concept; suggested rewording of text in Comments	Disagree with concept	Comments *Please include justification for your position based on objective experience and empirical data. If there is a specific statement with which you take exception, please provide the Page and Line numbers from the mark-up version of the proposed MUTCD text.*
1A.05	NO	YES	N/A	Page 05, Lines 01-02. Oregon DOT and OTCDC recommend not including ITE's "Guidelines for Determining Traffic Signal Change and Clearance Intervals" in the list of documents. These guidelines are widely unaccepted by state practitioners and a pooled-fund study is underway to study application of change intervals (TPF-5(470)).
1B.02	NO	N/A	YES	Page 08, Lines 14-16. Oregon DOT and OTCDC agree documents related to traffic control devices need to conform to the MUTCD. However, making those documents supplements to the MUTCD is an unnecessary requirement that will add significant delay to existing processes that keep those documents up-to-date with safety research and unique needs at each agency. Oregon has 11 Certified Local Public Agencies and hundreds of other road authorities. Does FHWA expect FHWA Oregon Division to certify documents from those agencies and Oregon DOT as being in substantial conformance to the MUTCD as Oregon DOT currently does with the Oregon Supplement to the MUTCD?

1B.02	NO	N/A	YES	Page 08, Lines 18-20. Oregon DOT and OTCDC recommend removing this paragraph if lines 14-16 remain. If the documents listed in lines 14-16 (including specifications and standard drawings) are supplements to the MUTCD and interim approval devices should not be included in supplements, this adds significant unnecessary work for agencies. For example, RRFBs have been an interim approval device for over a decade and Oregon DOT has standard details and specifications to expedite construction of RRFBs that conform to IA-21. There have also been cases where interim approvals do not provide sufficient guidance to meet a road authority's needs. For example, when are RRFBs appropriate for a crossing? When are left and right-side RRFBs insufficient for the context of a crossing (when should extra supplemental RRFBs be considered)? In bike lanes, where should green pavement be prioritized? Agencies cannot leave these questions unanswered until the next edition of the federal MUTCD if FHWA only updates it every decade or so.
1B.03	YES	N/A	N/A	Table 1B-1. Oregon DOT and OTCDC support these compliance dates as proposed.
1C.02	NO	N/A	YES	Page 24, Line 36. If "side roadway" will be added to the list of things that do not create an intersection, please define what "side roadway" is. As currently written, "side roadway" for a state DOT could be an arterial for a city. This is inconsistent with the "Side Road" intersection warning signs (Section 2C.42). This is also inconsistent with ORS 801.320 definition of an intersection. If "side roadways" do not create intersections, this would also eliminate most crosswalks (see MUTCD definition of crosswalk) unless "side roadway" is narrowly defined.
1C.02	NO	YES	N/A	Page 31, Lines 18-21. Definition of shoulder - Oregon DOT and OTCDC recommend adding pedestrians as a user of shoulders. Oregon statute (ORS 801.480) includes pedestrians as users of shoulders. The 2000 version of the Uniform Vehicle Code also says pedestrians use shoulders where sidewalks are not available (Section 11-503 - Pedestrians on Highways).
2A.17	NO	N/A	YES	Page 56, Lines 4-8. Either requiring solar panels to be mounted behind a sign or below it is not feasible in Oregon. We agree that the crashworthiness of a sign should not be diminished. Having the solar mounting behind a sign in a place like Oregon (at higher latitudes and with seasonally poor solar exposure) will not allow the solar panel to collect enough energy. This would be especially true for south facing signs, where the solar panel cannot cast a shadow on the sign if mounted above. Having the solar panel mounted below the sign would not be a viable option in Oregon; electronic signs and portable CMS that are easily reachable by the public have been vandalized or stripped for parts. IA-21 requires RRFBs on both sides of a crossing - the best way to deal with this new requirement would be mounting solar panels on separate posts, which would have substantial budget impacts. Oregon DOT could not find a record of a compliant of a solar panel casting a shadow on a sign.

2B.66	NO	N/A	YES	Figure 2B-29. Oregon DOT and OTCDC do not agree with the layout of signs R12-7 and R12-7aP. Oregon DOT has been working with the NCUTCD and our local emergency responders to the best way to post for bridges that have weight limits for Emergency Vehicles. We would prefer signs R12-7 and R12-7aP look like sign R12-6 with axels and not with the wording of Single, Tandem, and Gross. Oregon DOT does load ratings by axels and emergency responders we have worked with are ok with this style.
2C.13	NO	N/A	YES	Page 127, Line 48 thru Page 128, Line 4. Oregon DOT and OTCDC recommend removing the prohibition on flashing sign legends on the Vehicle Speed Feedback sign. Flashing can get motorists' attention and is typically set to flash if the vehicle speed is 5 - 10 mph over the posted limit - when the sign message is of greatest value. Many agencies also use white as the background of the radar feedback sign for low volume roads - the cost of replacing them would be substantial. Recommend allowing white background color as an option.
3A.03	NO	YES	N/A	The color list in Section 3A.03 should include green, related to bike markings, in accordance with Part 9.
3A.04 & 3B.09	NO	YES	N/A	Page 337, Lines 29-34; Page 348 Lines 9-10. 2. Oregon DOT and OTCDC recognize that wider longitudinal pavement markings can improve machine vision and may reduce road departure crashes. However, we recommend including an option to use a 4 to 6-inch normal width line where those lines are optional to begin with. Requiring wider lines where used – regardless of traffic volume – may introduce a potential barrier to installing this safety feature. This new requirement may lead some road authorities to choose to omit a center line or edge line where those lines are optional, even if installing the lines would improve safety. Added costs related to additional material and ongoing maintenance may make the installation impractical - the proposed change will increase the cost to install markings by 50% due to the additional required material, and increase costs to maintain markings 25-30%, depending on the agency. In addition, many agencies have narrow roads and may decide the wider lines will narrow lanes too much for vehicles or their pavement marking equipment, even if overall pavement width is not changed. Without a compliance date, it would seem to mean this new requirement is actually a recommendation. If that is in fact what it is, then we recommend FHWA change this standard to a recommendation.
3B.05	NO	YES	N/A	Page 343, Line 9. Oregon DOT and OTCDC recommend changing the statement "Two-way left-turn lane markings should not extend to intersections." Allowing an option for minor intersections or an ADT cut-off would be preferred where there is no crash history of conflicting lefts. Is there crash data supporting this change or just a presumed safety increase? Systemic transitioning TWLTLs to left turn lanes may also be a major financial impact.
3B.19	NO	YES	N/A	Page 358, Line 9. Oregon DOT and OTCDC recommend changing this standard back to guidance. Restricting the advance stop bar to 20-50' with a standard does not allow for design flexibility when intersection geometry conflicts with that range.

3B.25	NO	YES	N/A	Page 363, Lines 31-32. Oregon DOT and OTCDC recommend changing guidance D to an option. We agree that chevron markings can be helpful in exit and entrance gores but changing this to a recommendation will mean placing marking crews in gore areas to install and maintain the markings where they may not have a significant safety benefit for the traveling public. We recommend using a more prioritized approach to using gore chevrons instead of blanket use of them.
3B.25	YES	N/A	N/A	Page 364, Lines 6-8. Oregon DOT and OTCDC recommend changing this to an option or leaving the decision to engineering judgement to prioritize areas that should have diagonal markings instead of a blanket recommendation. "Diagonal markings for opposing directions of traffic should be used...in flush median areas between double solid yellow center line markings..." This could cause significant financial impacts as well as put workers in roadway medians to completed line work that a truck cannot do.
3B.31	NO	YES	N/A	Figure 3B-29 is missing.
3D.04	NO	YES	N/A	Page 375, Lines 42-44. The first standard statement says that a yield line shall be used and references Figure 3D-2. Figure 3D-2 shows the yield lines as optional. Oregon DOT and OTCDC recommend removing the optional note from yield lines in the figure.
3D.06	NO	N/A	YES	Page 376, Lines 23-26. This wording in the NPA is inconsistent with NCHRP Report 672. The NCHRP report states that arrow markings are not necessary for single lane approaches as well as double lane where the left lane is a through/left movement and the right lane is a through/right movement. Section 3D.06 states that lane-use arrow markings should not be used for single lane approaches and two-lane approaches where the left lane is for left turns and the right lane is for through and right turns. Oregon DOT and OTCDC recommend changing this to be consistent with the NCHRP report, i.e. have this guidance for two-lane approaches where the left lane serves left and through and the right serves through and right. If this is not changed, we recommend changing the "should not" to a "may". NCHRP Report 672 states that these are not necessary, not that they should not be used. Changing to an option will leave the option if it could possibly help improve guidance traversing a circular intersection.
3H.03	YES	N/A	N/A	Page 390, Lines 26-27. Aesthetic treatments within crosswalks should only be used on roadways with a speed limit of 30 mph or less.

3H.03	NO	N/A	YES	Page 390, Lines 29-34. Multiple agencies in Oregon desire to have aesthetic crosswalks that do not fit the example geometrics, patterns, or colors shown in Figure 3H-1. If lines 36-38 are supposed to reference Paragraph 5 (the support paragraph starting "Examples of materials for the interior...") instead of 4 (the guidance paragraph that starts "Aesthetic treatments within..."), that would make the examples in Figure 3H-1 standards. To improve understanding of this standard, Oregon DOT and OTCDC recommend providing support information that explains why the colors are limited to the examples. Many agencies believe that other colors do not decrease the safety of a crosswalk and would like more information that shows why the colors are being limited. Safety considerations or research findings in a support statement would help.
3H.03	NO	YES	N/A	Page 390, Lines 36-38. "…multiple color arrangements counter to Paragraph 4" is not a clear statement. It seems like this should reference Paragraph 5 (support paragraph starting with "examples of materials..."). We recommend double-checking which paragraph to reference. If Paragraph 4 is correct (guidance paragraph "Aesthetic treatments within..."), then recommend rewording to make intent of "multiple color arrangements" clearer because Figure 3H-1 shows examples with multiple color arrangements.
4A.05	NO	YES	N/A	Page 405, Line 18. Oregon DOT and OTCDC recommend removing the word "cautiously" as it puts the burden on the person riding the bike to enter the intersection when safe which is the purpose of providing a green bike indication. Language should match the language used for other vehicle signals.
4B.05	NO	N/A	YES	Page 411, Line 19. Oregon DOT and OTCDC recommend removing the "to reduce vehicular conflicts" clause in item M. A roundabout may be a good alternative to a signal for reasons other than reduction of vehicular conflicts. The new language is unnecessarily specific.
4C.01	NO	N/A	YES	Page 412, Line 4. The new wording makes it seem as if engineering study is not needed for a temporary location.
4D.02	NO	N/A	YES	Page 423, Lines 31-32. Oregon DOT and the OTCDC recommend changing this guideline to a standard. Providing countdown pedestrian signal heads at open, signalized crosswalks can improve safety for negligible additional cost (FHWA-SA-014). Oregon has treated pedestrian signal heads as a basic element at signalized intersections, similar to a left turn signal head for a left turn phase, instead of something that is recommended in typical situations. Pedestrians are present even in rural settings - even if the most frequent pedestrians are our coworkers trying to safely access signal equipment on an opposite corner. Relying on vehicle signal indications to guide pedestrians ignores the needs of pedestrians. Vehicle signal indications do not inform pedestrians about whether they have enough time left in the phase to complete their crossing, and in some cases, pedestrians cannot even see the vehicle signal indication. For example, pedestrians walking against the direction of traffic on one-way streets do not face vehicle signal heads to help them determine when they can cross.

4D.05	NO	N/A	YES	Page 427, Lines 1-3. Some agencies like Portland use use yellow backplates for bicycle signals and transit signals to differentiate the signal head. We recommend changing this standard to a guidance statement to allow flexibility where it is needed in complex urban environments.
4F.02	NO	N/A	YES	Page 440, Line 15. This seems to prohibit right-turn flashing yellow or flashing red arrows when opposed by permissive lefts. This does not seem to be the intent of other sections. We recommend making this section consistent with other related sections.
4F.03	NO	YES	N/A	Page 441, Lines 42-44. Part A - Oregon DOT and OTCDC recommend changing the statement for placement of signal head over shared left-turn/straight-through to something like "Optimal placement is considered over the combined lane."
4F.17	NO	YES	N/A	Page 457, Lines 36-39. "Engineering practices for determining the duration of yellow change and red clearance intervals can be found in “Guidelines for Determining Traffic Signal Change and Clearance Intervals: A Recommended Practice of the Institute of Transportation Engineers” (see Section 1A.05)." The recommendations for left-turn change (yellow) intervals in the “Guidelines for Determining Traffic Signal Change and Clearance Intervals: A Recommended Practice of the Institute of Transportation Engineers” have not been widely accepted by engineering practitioners and a pooled-fund study is underway to study application of change intervals (TPF-5(470)). Oregon DOT and OTCDC recommend removing this reference.
4H.01	NO	N/A	YES	Page 464, Lines 26-31. Oregon DOT and OTCDC recommend changing these standard statements to guidance. While this is consistent with IA-16, as standards these are too restrictive to meet needs in complex urban environments these are most likely to be used. This can lead agencies to decide to use other signal types to get around these requirements, such as using circular indications where bicycles approach from a separated facility (example: https://www.google.com/maps/@44.9313939,-123.0357284,3a,90y,16.82h,77.57t/data=!3m6!1e1!3m4!1sMEYOHJP-9KYFaYVJbqZ_lA!2e0!7i16384!8i8192).
4H.02	NO	YES	N/A	Page 464, Lines 45-46. Oregon DOT and OTCDC recommend clarifying whether the prohibition to operating perpendicularly applies to "scramble" type operations or corner mixing areas such as those tied to multi-use paths.
4H.02	NO	N/A	YES	Page 465, Lines 01-02. Portland Bureau of Transportation has installed bicycle signal faces at PHB locations. Recommend changing to a guidance statement.
4H.04	NO	N/A	YES	Page 465, Lines 25-29. Oregon DOT and OTCDC recommend making use of R10-40 series a recommendation or option instead of a standard. These signs may be unnecessary in some cases. Recommend allowing engineering judgement to select where these signs are necessary based on local conditions at the intersection. This would also affect 4A.05.
4H.05	NO	YES	N/A	Page 465, Lines 45-48. Does the reference to R10-35/R10-35a really mean the R10-40 series? Without a figure showing R10-35, the text in this proposed standard is unclear.

4I.01	NO	YES	N/A	Page 469, Lines 4-6. Oregon DOT and OTCDC recommend expanding the support text to include bicycle traffic (in certain cases). Oregon has multi-use paths that cross streets at signalized intersections where pedestrian signal heads provide direction to all non-motorized users. Examples below. https://www.google.com/maps/@45.4559718,-122.5989929,3a,75y,103.92h,81.39t/data=!3m6!1e1!3m4!1syXxbWOSVctzkNyitI0ltwQ!2e0!7i16384!8i8192!5m1!1e3 https://www.google.com/maps/@44.5543202,-123.2896826,3a,44.4y,74.98h,85.09t/data=!3m6!1e1!3m4!1sRafjBI4H3bJsZnUOZnzzrA!2e0!7i16384!8i8192!5m1!1e3
4I.05	NO	N/A	YES	Figure 4I-2 shows a minimum 1' offset from the wing of a ramp or top of the flat landing area for a push button location. It is unclear what purpose this serves and in many intersections space constraints make this challenging to achieve while maintaining a 4-foot clear path. Oregon DOT and OTCDC recommend removing this dimension as it is misleading and does not appear in the guidance statements.
4I.06	NO	N/A	YES	Page 473, Lines 32-35. Portland Bureau of Transportation operates PHBs with solid red indications during portions of the pedestrian clearance interval. Recommend changing line 34 to read "… signal indication, a flashing or solid red…"
4J.02	NO	N/A	YES	Page 478, Line 6. Portland Bureau of Transportation has installed bicycle signal faces at PHB locations. Recommend changing to a guidance statement.
4K.01	NO	YES	N/A	Page 480, Lines 44-47. ODOT and OTCDC recommend retaining this as an option instead of changing to guidance for installing APS at signals with the pedestrian phases recalled.
4K.03	NO	N/A	YES	Page 482, Lines 12-20. This text forces the hand of road authorities to only use one option depending on the positioning of the pushbuttons in an intersection quadrant, which can lead to different messaging at different quadrants of an intersection. An agency could elect to use speech walk messages for consistency at an intersection regardless of the button positioning, which would not be allowed by this language. Oregon DOT and OTCDC recommend allowing the use of speech walk messages OR percussive tones for buttons 10+ feet apart.
4L.01	NO	YES	N/A	Page 488, Lines 05-07. Road authorities in Oregon have installed overhead RRFBs on multilane roadways in some cases to limit maintenance issues related to drivers repeatedly knocking down RRFB poles. Oregon DOT and OTCDC recommend amending the guidance text to "…should be installed on the median or overhead…"
4L.02	NO	YES	N/A	Page 488, Lines 17-18. "If used at intersections, the design of the RRFBs shall conform to the requirements for post mounted or overhead placement described in paragraph X." The paragraph number should be listed. The "X" is presumably a typo/placeholder.

4L.03	NO	YES	N/A	Page 489, Line 43. Oregon DOT and OTCDC recommend "cross traffic may not stop" in addition to the "yellow lights flashing" message to more accurately describe the situation pedestrians face at RRFB-enhanced crosswalks.
4S.03	NO	YES	N/A	Page 503, Line 14. Oregon DOT and OTCDC recommend "cross traffic may not stop" in addition to the "yellow lights flashing" message to more accurately describe the situation pedestrians face at RRFB-enhanced crosswalks.
4U.02	NO	YES	N/A	Page 509, Line 36. Oregon DOT and OTCDC recommend "cross traffic may not stop" in addition to the "yellow lights flashing" message to more accurately describe the situation pedestrians face at RRFB-enhanced crosswalks.
5A.04	NO	YES	N/A	Page 459, Lines 11-14. Reference to 1A.12 is typo - should be 1D.12
5A.04	NO	YES	N/A	Page 512, Line 35. Oregon DOT and OTCDC recommend editing the word "jurisdiction" at the end of line 35 to "jurisdictions."
5A.04	YES	N/A	N/A	Page 512, Lines 30-32. Guidance for traffic control device maintenance policies may increase maintenance requirements, with potential budget and/or tort liability impacts.
5A.04	YES	N/A	N/A	Page 512, Lines 33-34. Guidance for planning for temporary or emergency traffic control will have potential budget impacts. Would potentially limit the ability to use roll-up emergency signs and require stockpiling static signs instead. Would be challenging to accomplish this level of pre-planning for emergencies across agency lines.
5B.02	NO	YES	N/A	Oregon DOT and OTCDC recommend re-wording requirements for wider lines based on criteria, due to budgetary impacts. As currently written, this will affect any high-speed roadways including lower volume roads. Increase of normal-width longitudinal lines to 6" (from 4") and wide lines to 10" (from 8") are a change to Oregon DOT standard and will have a budgetary impact to projects as well as maintenance budgets. This will reduce width available for travel lanes or require widening for additional lane width, which will add costs to projects and/or increase numbers of design exceptions sought on projects (also a cost to projects due to staff time/resources). Adding chevron markings to gore areas is also change to Oregon DOT standard (currently an optional practice), which will be a budgetary impact and would expose marking crews to traffic in gore areas, even if there is no record of problems at a gore area.

5B.04	NO	N/A	YES	Page 514, Lines 26-36. Oregon DOT and OTCDC recommend changing this standard to guidance. Given current marking removal technology/masking technology and funding, this standard is not feasible. Proposed changes to this section for pavement marking obliteration without scarring would be a significant impact to project budgets and may require additional paving, time to complete work, etc. The effectiveness of complete removal of pavement markings varies greatly depending on the marking material, the method used to remove markings, and the pavement surface (asphalt vs. concrete vs. bridge deck with waterproof membrane and the age of these surfaces). Placing requirements on road authorities to maintain and completely remove temporary pavement markings in work zones brings up tort liability concerns.
5B.06	NO	N/A	YES	Page 515, Lines 12-14. Oregon DOT and OTCDC recommend changing this guidance to an option. Guidance that bicycle facilities "should be segregated from other vehicle traffic using physical barriers when practicable" does not meet context/facility type guidance for many roadways. Constructing separate bicycle facilities would require significant cost, right-of-way impacts, and may introduce concerns and issues at intersections that may not have been considered in this guidance (which appears to be for through traffic along a corridor, not turning traffic at driveways and intersections). We are disagreeing because this guidance is not feasible. In addition, the MUTCD should not dictate what kind of bicycle facility to provide - those should be left to guidance documents outside the MUTCD. The MUTCD should provide standards and guidelines for TCDs on those facilities after an agency decides to install one of those facilities.
6A.01	NO	N/A	YES	Page 519, Lines 36-42. Oregon DOT and OTCDC recommend leaving this to engineering judgement. Queue length analysis assessments would add significant expense to project development for analysts to estimate queue lengths for lane closures for every stage during construction.
6C.03	YES	N/A	N/A	Page 534, Lines 16-18. 3) "Where pedestrians with visual disabilities normally use the closed sidewalk, a barrier that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk." This is a standard Oregon DOT practice, but now instead of having a qualifier, it is required at all times. The temporary standard for closing a sidewalk appears to more restrictive than the permanent standard.
6D.06	NO	YES	N/A	Oregon DOT and OTCDC recommend referencing section 6N.18 for flagging operation requirements during nighttime hours, flagger station lighting, etc.
6F.01	YES	N/A	N/A	Page 544, Lines 34-37. P9 of Section 6F.01 (existing Section 6F.02) General Characteristics of TTC Zone Signs, to integrate information about low-volume rural roads and to reduce the speed below which minimum sign sizes can be used from 35 mph to 30 mph.
6G.02	NO	YES	N/A	Figure 6G-1. Several signs have been removed from Figure 6G-1 that are still being referenced back to Figure in several sections. Affected sections referring to updated figure include 6F.02, 6G.04, 6G.05, 6G.06, 6G.08, 6G.09, 6G.10.

6H.01	NO	YES	N/A	Figure 6H-1. Several signs have been removed from Figure 6H-1 that are still being referenced back to Figure in several sections. Affected sections referring to updated figure include 6H.03 thru 6H.38.
6K.02	NO	YES	N/A	Section involves pedestrian channelizing device but there is no mention of bicycle channelizing device. Consider adding bicycle channelizing device section.
6M.02	YES	N/A	N/A	Page 586, Lines 14-17. 3) Standard: The need for longitudinal traffic barrier and other positive protection devices shall be based on an engineering study. At a minimum, positive protection devices shall be considered in work zone situations that place workers at increased risk from motorized traffic, and where positive protection devices offer the highest potential for increased safety for workers and road users. Guidance changed to Standard to reflect CFR 630.1108 Work Zone Safety Management Measures and Strategies (subpart K)
6P.01	NO	YES	N/A	Figure 6P-47. Figure indicates 14' lane width threshold for using "Bicycles May Use Full Lane" or "Bicycle Warning Sign"; however, notes for TA-47 under option uses 17' lane width threshold.
6P.01	NO	YES	N/A	Page 633, line 23. Figure 6P-22, Item 8 - recommend change "left-hand" to "right-hand" to be consistent with the intent and Figure.
6P.01	NO	YES	N/A	Page 639, lines 08-12. Figure 6P-28, Item 1 - Oregon DOT and OTCDC recommend replacing "A pedestrian channelizing device, Figure 6K-2" with "A device" to be consistent with the figure. Temporary barricades are acceptable devices for closure of sidewalks, are detectable with long canes, and elicit the desired behavior with the addition of a SIDEWALK CLOSED sign (although not required). This guidance should be updated to line up with MUTCD 6C.03, "A barrier that is detectable...shall be placed across the full width of the closed sidewalk". A Pedestrian Channelizing Device is one such device that can provide the detectable barrier, but there are others. Why is typical application not lining up with the guidance in Chapter 6?
6P.01	NO	YES	N/A	Page 639, lines 13-15. Figure 6P-28, Item 2 is inconsistent with ADA Standard as discussed in MUTCD 6C.02 (U.S. Department of Justice 2010 ADA Standards for Accessible10 Design, September 15, 2010 and Code of Federal Regulations. Title 28, Parts 35 and 36. Americans with Disabilities Act of 1990", which allows running slopes up to 1:8 for existing sites, buildings, and facilities. Oregon DOT and OTCDC recommend deleting item 2 and creating separate specification for ramps, if that is the intent.

6P.01	NO	YES	N/A	Page 639, lines 19-24. Figure 6P-28, Item 5 and 6 assumes that audible information devices are more effective than other devices, but this has not been proven true. Oregon DOT and OTCDC recommend moving this back to guidance or rewording to better align with subpart a. For example: "Provide approved devices for communicating pedestrian signage to persons with disabilities." 35.163(a) provides language that is more inclusive. MUTCD 6C.02 has the following language "Blocked routes, alternate crossings, and sign and signal information should be communicated to pedestrians with visual disabilities by providing devices such as audible information devices..." and then Typical Application 6P-28 changes the guidance to a standard. We recommend correcting the language included in 6P-28 to be guidance, consistent with MUTCD 6C.02.
6P.01	NO	YES	N/A	Page 640, Lines 1-2. Figure 6P-28, Item 14 is inconsistent with ADA Standard 403.5.1 as discussed in MUTCD 6C.02 (U.S. Department of Justice 2010 ADA Standards for Accessible10 Design, September 15, 2010 and Code of Federal Regulations. Title 28, Parts 35 and 36. Americans with Disabilities Act of 1990" and will result in more pedestrian detours in urban environments.
7B.02	NO	YES	N/A	Page 671, Lines 41-44 are a duplicate of page 671 lines 26-29. Oregon DOT and OTCDC recommend deleting lines 41-44 on page 671.
7B.02	NO	YES	N/A	Page 672, Lines 24-26. This standard may be misleading. Oregon DOT and OTCDC recommend changing to a guidance statement and clarifying: "If exceeding the speed limit is the only traffic violation that is subject to higher fines, a FINES HIGHER (R2-6P), FINES DOUBLE (R2-6aP), or $XX FINE (R2-6bP) plaque should, if used, be posted beneath the Speed Limit (R2-1) or School Speed Limit (S5-1) sign and not beneath the School Zone (S1-1) sign."
7B.06	NO	N/A	YES	Page 675, lines 30-31. This describes a confirmation light for a changeable message sign, but no similar guidance for a necessary confirmation light is provided for the back of the Speed Limit Sign Beacon in the section on lines 35-47.
7B.07	NO	YES	N/A	Figure 7B-4. Side road signing is optional per Section 7B.02, Page 671, Lines 26-29.
7B.07	NO	YES	N/A	Figure 7B-5. Oregon DOT and OTCDC recommend updating the note regarding use of School Advance Crossing Assembly sign to 7B.03 (instead of 7B.11) to reflect changes to text. Figure 7B-5 may also need to be revised to reflect that school sign in advance of school zone is required rather than optional (appears to be what is intended in proposed revised section 7B.06, Page 674, Lines 25-30).
7C.01	NO	YES	N/A	Page 677, Line 9. Oregon DOT and OTCDC recommend replacing 'Crosswalk lines' with 'Crosswalk markings' to match language in Section 3C.02.
8A.01 - 8E.10	YES	N/A	N/A	Part 8 in general: Oregon DOT and OTCDC like the inclusion of "diagnostic team" in this chapter. This helps road authorities understand the rail processes.

8A.12	NO	N/A	YES	Page 687, Line 30. Action E: "elimination of a circular intersection" to keep grade crossings clear of traffic. Roundabouts have been successfully used near grade crossing and this MUTCD language implies that roundabouts are not a good solution near a grade crossing (and hinders efforts to get acceptance of roundabouts in general). Oregon DOT and OTCDC recommend deleting this option to keep grade crossings clear.
8D.12	NO	N/A	YES	Page 721, Lines 33-37. Not sure the NO TURN ON RED sign that is required at the downstream intersection when a pre-signal is present makes much sense. Why restrict RTOR for vehicles at the intersection once they have passed the pre-signal? RTOR would help clear out the queue between the intersection and the pre-signal. There should not be any legal vehicle movements on the RED pre-signal indication (as it is a straight thru movement at that point). Oregon DOT and OTCDC recommend deleting this requirement.
8D.16	NO	N/A	YES	Page 727, Line 32. Figure 8D-3: The Portland Bureau of Transportation does not support removal of the triangle 'prepare to stop' indication option for transit signals that has been removed from the manual (formerly shown in Figure 8C-3 in 2009 edition). A three-lens signal (white vertical bar, white triangle, and white horizontal bar) is planned to be used on the Trimet Division Street Bus Rapid Transit project currently under construction in Portland and Gresham for exclusive BRT movements. Two-lens signals (horizontal bar, vertical bar) cannot be used for BRT because on the legacy Trimet system LRT vehicles operate in shared roadway with buses and the bus operators are trained not to use the two-lens signals.
8D.16	NO	N/A	YES	Page 727, Lines 12-13. Oregon DOT and the OTCDC do not support the new shall condition: "If special LRT signal indications such as those shown in Figure 8D-3 are used, the color of the signal indications shall be white." The legacy Trimet LRT system in the Portland metro area does not exclusively use white signal indications. The existing Oregon Supplement includes Trimet specific signal indications with colors other than white.
8D.16	NO	N/A	YES	Page 727, Lines 29-30. The text references a Figure 8D-4 but there is no Figure 8D-4 included in the draft manual - only a Figure 8D-3.
9A.01	NO	N/A	YES	Page 739, Lines 15-17. Oregon DOT and OTCDC recommend removing this paragraph because it adds legal ambiguity. This content is covered by local vehicle codes and may not be uniform across the country.
9A.01	NO	N/A	YES	Page 739, Lines 18-21. Oregon DOT and OTCDC recommend remove this paragraph. There is no research to support this.
9A.02	NO	YES	N/A	Figure 9A-1. The City of Portland for many years has deployed EXCEPT BICYCLE plaques beneath regulatory signs of variable widths. For instance, a standard RIGHT TURN ONLY sign is 30"x36". To install one sign rather than two, a 30"x48" sign blank is used, essentially making the EXCEPT BICYCLES portion of the sign 30"x12" rather than 24"x12". Recommend adding language to permit this.

9A.03	NO	N/A	YES	Page 741, Line 42. DOTs have used rumble strips on highways where bicycle traffic is expected. Why shouldn't raised pavement markings be used? Oregon DOT and OTCDC recommend changing to "Raised pavement markers may be used with bicycle lanes or shared-use paths."
9B.01	NO	YES	N/A	In locations where STOP or YIELD signs for bicycle facilities or shared use paths may be confused as intended for motorists on an adjacent roadway, Oregon uses the OBR1-1 and OBR1-2 signs to distinguish the regulatory message as applying only to bikes. The signs are available in the Oregon Supplement to the 2009 MUTCD. Oregon DOT and OTCDC recommend adding these signs to Figure 9B-1.
9B.02	NO	YES	N/A	Figure 9B-2 (Sheet 2 of 2). In this example, among turn restrictions - it eliminates the conflict between left turning vehicles and oncoming traffic. However, the Except Bicycles sign would allow bicycles to make that left turn against oncoming traffic (since left turn box is optional). Oregon DOT and OTCDC interpret that sign as restricting bicycles too since a two-stage turn box is provided. Consider revising the figure to restrict right turns rather than all turns.
9B.02	NO	N/A	YES	Page 743, Lines 43-45. The City of Portland has deployed regulatory signs with bicycle exceptions beneath STOP signs at many intersections. Such a restriction will require considerable funding to bring the City into compliance. The City of Portland now uses regulatory/EXCEPT BICYCLE signs that are consolidated onto a single sign blank. Given this, it seems like a reasonable person would not mistakenly associate the EXCEPT BICYCLE message with the STOP sign.
9B.03	NO	YES	N/A	Page 744, line 37: What is the definition of “physically-separated”? Are bicycle lanes separated from traffic lanes with traffic separators considered physically separated? In addition, there are circumstances (such as at a protected intersection) where it might be useful to indicate a separated bicycle lane on a lane use sign. Oregon DOT and OTCDC recommend changing this to guidance.
9B.03	NO	N/A	YES	Page 744, Lines 38-41. Oregon DOT and OTCDC recommend replacing "shall not" with "may." Using green on advance intersection lane control signs would keep the signs consistent with the markings road users see at the intersection.
9B.10	NO	YES	N/A	Figure 9B-3. This figure shows two ADA parking stalls without adjacent access aisles. Each ADA parking spot is required to have an access aisle adjacent to the parking spot. Recommend revising figure to show access aisle. Note that whether the access aisle is to the right or left of the back in parking stall is a question that has been up for debate. It can sometimes affect whether drivers park head-in or back-in. See 2010 ADA Standards, 502.2 (also in PROWAG R309.3)
9B.12	NO	N/A	YES	Page 747, Line 29. Figure 9B-4. Oregon DOT and OTCDC disagree with showing fluorescent yellow-green on W11-2. Since fluorescent yellow-green background color may be used for this sign and some states reserve the fluorescent yellow-green for schools, perhaps it should be shown as yellow since some may see the image and choose it as the default. This happens in Oregon and creates messages that are inconsistent to road users.

9B.15	NO	YES	N/A	Page 748, Lines 16-18. This section would prohibit the use of a Bicycle Passing Clearance sign in some specific locations that could benefit to the use of a sign (at a difficult pinch point, for example) in a state without a law regarding passing clearances. Consider guidance for this section instead of a standard. There are also jurisdictions with a passing clearance law/ordinance that does not define a specific distance. For example, Oregon's passing clearance statute depends on the height of the bicyclist and the bicycle they are riding. ORS 811.065: "...a safe distance means a distance that is sufficient to prevent contact with the person operating the bicycle if the person were to fall into the driver's lane of traffic." Oregon DOT and OTCDC recommend adding a provision to allow jurisdictions with this kind of law/ordinance to post a passing clearance sign.
9B.18	NO	YES	N/A	Page 749, Lines 08-16. This standard appears to require a 2-stage bicycle turn box in those situations. There are situations where an exclusive bicycle signal phase can facilitate turns instead of a 2-stage turn box. For example, where a separated path crosses diagonally through a signalized intersection, or where bicycle traffic is separated for all movements (i.e. a "protected intersection" layout). Oregon DOT and OTCDC recommend changing this to a guideline. https://www.google.com/maps/@45.4559173,-122.5928869,57m/data=!3m1!1e3!5m1!1e3 https://www.google.com/maps/@45.502437,-122.6722778,115m/data=!3m1!1e3!5m1!1e3 https://www.google.com/maps/@45.5065235,-122.6627549,94m/data=!3m1!1e3!5m1!1e3
9B.18	NO	N/A	YES	Page 749, Lines 19-21 & Figure 9B-6. Requires R9-23 sign (All Turns From Bike Lane). All turns would include both right and left turns. This standard has to do with left turns and does not address right turns. Figure 9B-6 includes a right turn lane and the R9-23 sign. Because it says "ALL TURNS", this sign forces bikes to turn right from the left of right turning vehicles. In order to restrict all turns from the bike lane, the right turn lane would need to be removed or a second bike lane would need to be added to the right of the right turn lane for right turning bikes. Oregon DOT and OTCDC recommend removing the standard that requires the R9-23 sign from the two stage left turn box, except when right turns are made from that same bike lane.

9B.19	NO	YES	N/A	Figure 9B-7 (Sheet 1 of 2). Figure has labels A, B and C. Signs are shown for A and B, but not C. Oregon DOT and OTCDC recommend labeling the right column as C. Recommend removing the right turn island from this figure (lower left corner of the intersection). A sign directs Bikes to a U-Turn, but the island prevents that movement (or is an obstacle to that movement). It also prevents bikes coming from the path from turning left. This is a poor example of bicycle circulation. Figure 9B-7 Sheet 2 similarly precludes left turns from bikes approaching from the trail.
9B.22	NO	YES	N/A	Figure 9B-1. Oregon DOT and OTCDC recommend adding a Thru/Left bike sign to the R10-40 series. This is a common configuration for left-side bike lanes on one-way streets.
9C.06	NO	N/A	YES	Figure 9C-1. Sign W16-21P in particular is not easily legible and not likely to be very effective due to difficulty for a driver to quickly interpret. Oregon DOT and OTCDC recommend a LOOK type sign instead.
9C.06	NO	YES	N/A	Page 753, Line 25. The City of Portland deploys a symbolic version of this sign, which may be easier for people to comprehend, especially those for whom English is not a first language. Recommend considering a symbol sign instead of only text. Examples: https://www.google.com/maps/@45.5226687,-122.6349467,3a,49.1y,14.06h,84.63t/data=!3m6!1e1!3m4!1sYZsAYrlDcKYzCtSQfH1k3w!2e0!7i16384!8i8192 https://www.google.com/maps/@45.6013072,-122.7628778,3a,41.3y,253.83h,89.3t/data=!3m6!1e1!3m4!1s-INtpU-Lpce9Bkewv5MRSA!2e0!7i16384!8i8192
9C.07	NO	YES	N/A	Page 753, Line 41. Oregon uses a symbolic version of this sign, which may be easier for people to comprehend, especially those for whom English is not a first language. Available in Oregon DOT's Sign Policy. Sign OBW1-9. https://www.oregon.gov/ODOT/Engineering/Documents_TrafficStandards/Sign-Policy-08-Bike-Ped.pdf
9D.01	NO	N/A	YES	Page 756, Line 21. Oregon DOT and OTCDC disagree with the guidance statement that travel times should not be used on Bicycle Destination signs. FHWA's list of proposed changes #611 says, "FHWA proposes this recommendation because travel times vary greatly by bicycle user speed and experience. Further, in terms of bike travel, the travel time does not provide any useful information that a distance would not already provide." On the contrary, Oregon's supplement to the 2009 MUTCD uses travel times on bicycle destination signs. This sign was developed in response to Oregon's very active bicycle community, who conveyed that travel time is more meaningful than mileage. While it is true that actual travel times vary between users, the average destination travel time is helpful to convey the viability of making a trip by bicycle where mileage does not convey this as clearly. Feedback from bicyclists has been very positive toward the travel times.

9D.02	NO	N/A	YES	Page 756, Line 42. For the same reasons stated in comment on Page 756, Line 21, Oregon DOT and OTCDC disagree with guidance that travel times could not be used on single destination Bike Route guide signs too.
9D.13	NO	YES	N/A	Figure 9D-7. The City of Portland deploys a symbolic version of this sign (D11-20), which may be easier for people to comprehend, especially those for whom English is not a first language. Example: https://www.google.com/maps/@45.5083742,-122.6787502,3a,37.5y,200.22h,87.27t/data=!3m6!1e1!3m4!1seapaUoeyrC8E40XHzb8L4Q!2e0!7i13312!8i6656
9D.13	NO	YES	N/A	Page 766, Lines 33-34. This standard requires the use of sign D11-20 that says bikes "may use turn box" without excluding the condition described in Section 9B.18 when a two stage turn is required and uses sign R9-23b. Oregon DOT and OTCDC recommend revising this standard: "Where a two-stage turn box is provided AND USING THE TURN BOX IS OPTIONAL, the..."
9E.01	NO	N/A	YES	Figure 9E-1. The Helmeted Bicyclist Symbol (option B in Figure 9C-3 in the 2009 MUTCD) is no longer an option in Figure 9E-1. Jurisdictions in Oregon uniformly use the Helmeted Bicyclist Symbol when marking a bicycle lane and there are no known problems with comprehension of the symbol. Removing this option will disrupt Oregon's uniform marking of bicycle lanes. Oregon DOT and OTCDC recommend adding the Helmeted Bicyclist Symbol back into Figure 9E-1 as an option.
9E.02	NO	N/A	YES	In urban environments, the restrictions in this section make designing bikeways unnecessarily difficult, especially when separation of bicycle movements from right turn movements is not feasible due to budgetary, geometric, or capacity constraints. Furthermore, the alternative solution of forcing bicycle traffic to mix with motor vehicle traffic at the point of transition does not meet the design objectives to establish attractive bicycle facilities that a broad spectrum of people will feel comfortable using. Oregon DOT and OTCDC recommend adding flexible language allowing engineering judgement to determine when keeping bikes curb-tight adjacent to an exclusive turn lane.
9E.02	NO	N/A	YES	Page 769, Lines 10-11. Bicycle lanes in Oregon are uniformly marked with solid wide lines up to intersections because drivers are not allowed to approach a turn on a bicycle lane, only make a turn (ORS 811.440 - "may operate a motor vehicle upon a bicycle lane when (a) making a turn"). Adding that bicycle lanes should be dotted when approaching an intersection will disrupt Oregon's uniform marking of bicycle lanes. Oregon may need a Supplement to align this recommendation with Oregon statute.

9E.03	NO	N/A	YES	Page 770, Lines 34-38. There are locations where the bicycle lane and crosswalk must be contiguous given the local constraints. Will prohibiting them from touching significantly improve road user understanding and safety? Oregon DOT and OTCDC recommend making this guidance instead of a standard. Example: https://www.google.com/maps/@45.4643632,-122.6684902,3a,90y,286.75h,64.76t/data=!3m7!1e1!3m5!1sYzk3TNed7yk93pifJpeApQ!2e0!6s%2F%2Fgeo2.ggpht.com%2Fcbk%3Fpanoid%3DYzk3TNed7yk93pifJpeApQ%26output%3Dthumbnail%26cb_client%3Dmaps_sv.tactile.gps%26thumb%3D2%26w%3D203%26h%3D100%26yaw%3D2.5621338%26pitch%3D0%26thumbfov%3D100!7i16384!8i8192
9E.06	NO	YES	N/A	Page 771, Lines 02-03. It is not clear whether the buffer space described in this guidance refers to the unmarked space between longitudinal lines or if it can include part of the longitudinal lines. For example, the distance between longitudinal lines in Oregon is measured based on the center of the line (Oregon Standard Drawing TM500: https://www.oregon.gov/ODOT/Engineering/202101/TM500.pdf). Bicycle lane lines are 8 inches in Oregon (per OR Supplement to the MUTCD). Applying this convention to the proposed guidance, the minimum buffer space would be 24 inches measured between the centers of the two longitudinal lines (16 inches of blank space).
9E.06	NO	N/A	YES	Page 771, Lines 31-32. This restriction will make design and maintenance of buffered bike lanes unnecessarily complicated and may result in a buffer that appears inconsistent through a corridor if driveways are closely spaced. Oregon DOT and OTCDC recommend adding an allowance to keep the buffer solid across minor driveways, consistent with edge line guidance on Page 350, Lines 10-11.
9E.06	NO	YES	N/A	Page 772, Lines 02-03. It is not clear whether the buffer space described in this guidance refers to the unmarked space between longitudinal lines or if it can include part of the longitudinal lines. For example, the distance between longitudinal lines in Oregon is measured based on the center of the line (Oregon Standard Drawing TM500: https://www.oregon.gov/ODOT/Engineering/202101/TM500.pdf). Bicycle lane lines are 8 inches in Oregon (per OR Supplement to the MUTCD). Applying this convention to the proposed guidance, the minimum buffer space would be 24 inches measured between the centers of the two longitudinal lines (16 inches of blank space).

9E.06	NO	YES	N/A	Page 772, lines 16-17. Oregon DOT and OTCDC recommend: 1) changing the minimum width to include chevrons/diagonal markings from 3 feet to 3.5 feet. 3 feet is narrow enough that buffers this wide should not be mistaken for a lane. According to the 2012 AASHTO Guide for the Development of Bicycle Facilities, a typical upright adult bicyclist need at least 4 feet of operating width. 2) making this minimum for including chevrons/diagonal markings consistent with the minimum for separated lanes. Bicycle lanes through a corridor often transition between buffered and separated to meet the needs of the local context. A consistent minimum width simplifies the design process without impacting safety or road user understanding. 3) changing from a standard to guidance. Making this a standard would put road authorities in a position where they might choose a non-buffered or non-separated bicycle lane because of the required cost to install and maintain such a facility. A recommendation would give road authorities added flexibility to add chevrons/diagonal markings where they are needed most. 4) adding an exception where channelizing devices such as tubular markers are placed at regular intervals in the buffer. These devices reinforce the area is a buffer space and not a travel lane.
9E.07	NO	N/A	YES	Page 773, Lines 28-30. Oregon DOT and OTCDC recommend changing the guidance to an option. In practice, this may lead to decisions that remove separated bike lanes where they could otherwise function well. For example, the buffered bike lane at the Google link below includes tubular markers in the buffer to mitigate right turning motor vehicles from cutting the corner. Because the proposed MUTCD language defines this as a separated bicycle lane, this configuration would go against proposed guidance unless there were a separate bike signal phase, even though this configuration is common where a bicycle lane is next to a through-right vehicle lane. An agency may instead decide to remove the tubular markers and buffer - removing features that make the bike lane more comfortable to use just to satisfy an MUTCD guideline without changing the actual operation of the intersection. In addition, we recommend that an engineering study determine the proper control for signalized intersections with separated bicycle facilities. For example, there is a difference between a narrow buffer with tubular marker with good sight lines vs. a parking-protected bike lane with obscured sight lines. https://www.google.com/maps/@44.9388069,-123.0376214,3a,49y,211.33h,81.13t/data=!3m6!1e1!3m4!1s3wnWD87pWgU3jzHLDb3IEw!2e0!7i16384!8i8192

9E.07	NO	YES	N/A	Page 773, lines 33-36. Oregon DOT and OTCDC recommend: 1) changing the minimum width to include chevrons/diagonal markings from 2 feet to 3.5 feet. 2 feet is narrow enough that buffers this wide should not be mistaken for a lane. According to the 2012 AASHTO Guide for the Development of Bicycle Facilities, a typical upright adult bicycle is wider than 2 feet and bicyclists need at least 4 feet of operating width. 2) making this minimum for including chevrons/diagonal markings consistent with the minimum for buffered bicycle lanes. Bicycle lanes through a corridor often transition between buffered and separated to meet the needs of the local context. A consistent minimum width simplifies the design process without affecting safety or road user understanding. 3) changing from a standard to guidance. Making this a standard would put road authorities in a position where they might choose a non-buffered or non-separated bicycle lane because of the required cost to install and maintain such a facility. A recommendation would give road authorities added flexibility to add chevrons/diagonal markings where they are needed most. 4) adding an exception where channelizing devices such as tubular markers are placed at regular intervals in the buffer. These devices reinforce the area is a buffer space and not a travel lane.
9E.07	NO	N/A	YES	Page 773, Lines 40. Oregon DOT and OTCDC recommend allowing or encouraging narrower longitudinal markings and spacing for crosswalk markings across bike facilities to reflect the proportional width of the facility and vehicle tires.
9E.08	NO	N/A	YES	Page 774, Lines 22-23. The City of Portland has installed counter-flow bike lanes between general-purpose travel lanes and parking lanes in low-speed, low-volume environments. This helps the city balance the need for minimum lateral clearances for emergency responders without sacrificing parking. This is a valuable tool to have as it allows us to operate some streets how we want them to operate without making the project politically unpalatable through parking removal. These facilities have been field tested without documented evidence of issues warranting a prohibition. For example, p.9 of the following report notes, "Cyclists reported enthusiastic agreement that the contra-flow bike lanes make cycling safer and easier on New Hampshire Avenue [in Washington, D.C.] ... Motorists did not indicate that the new bicycle facilities caused any problems in terms of added congestion, delay, or parking challenges." https://nacto.org/wp-content/uploads/2015/04/bicycle_facility_evaluation_ddot.pdf Oregon DOT and OTCDC recommend adding an option to use this configuration on low-speed, low-volume streets.

9E.15	NO	YES	N/A	Figure 9E-16. The proposed figure is rather large (11' long). This may not be appropriate for all situations like off-street paths; unclear if there is any research to support this. Perhaps the bicycle symbol height dimension (42 inches) is meant to be 24 inches to be consistent with the current marking in Figure 9C-7 in the 2009 MUTCD. As currently proposed (42 inches), the 6-inch lines meant to show where to position the bicycle wheels are further apart than the typical upright adult bicycle's wheelbase. Recommend retaining the current dimensions as shown in Figure 9C-7 in the 2009 MUTCD.
9E.15	NO	N/A	YES	Page 779, Line 23. Should mention that additional symbol markings "9C-16, 9C-16A or 9C-16B may be placed on the pavement indicating the optimum position for a bicyclist to actuate the signal," as recommended by the NCUTCD Bicycle Technical Committee. (https://ncutcd.org/wp-content/uploads/meetings/2019A/AttachNo17.18B-BIK-06.BikeDetectorMarking.Approved.pdf). Research by Boudart (2015) shows that the "9C-7B" marking more clearly indicates where cyclists should position themselves to be detected. (https://nelsonnygaard.com/publication/ite-improving-bicycle-detection-pavement-marking-symbols-to-increase-comprehension-at-traffic-signals/). A completed FHWA Experiment from Columbia, MO also shows overwhelming support for this symbol compared to the existing 9C-7 marking. (https://www.como.gov/publicworks/wp-content/uploads/sites/28/2017/12/Final-Report-FHWA-909-66E-Bicycle-Detection-Columbia-MO-RTE-09-20-2017.pdf)

TABLE 2. AGREE WITH ANOTHER COMMENTER. If you agree with another commenter, please indicate the commenter with whom you agree with and note any additional information FHWA may find helpful or any exceptions.

Docket Comment Number and/or Commenter Name	Agree with commenter's comments as written	Agree with commenter; with exception(s)	Additional information helpful to FHWA, or exceptions to commenter's comments