

**CITY OF BOULDER
TRANSPORTATION ADVISORY BOARD AGENDA ITEM**

MEETING DATE: November 9, 2020

Matters from Staff:

Staff briefing on Design and Construction Standards (DCS) Phase 2 process and timeline

STAFF:

Erika Vandenbrande, Director of Transportation and Mobility

Natalie Stiffler, Deputy Director of Transportation and Mobility

Gerrit Slatter, Principal Transportation Projects Engineer

Noreen Walsh, Public Works Project Manager

Attachment A – Design and Construction Standards (DCS) Project Phase 1 Update to TAB
03/11/2019

Attachment B – Design and Construction Standards (DCS) Project Phase 1 Update to TAB
04/08/2019

Attachment C – Design and Construction Standards (DCS) Project Phase 1 Update to TAB
09/09/2019

**CITY OF BOULDER
TRANSPORTATION ADVISORY BOARD
AGENDA ITEM**

MEETING DATE: March 11, 2019

AGENDA TITLE: Information Item - Design and Construction Standards (DCS) updates to align with best practices and existing policy

PRESENTERS:

Kathleen Bracke, Interim Director of Public Works for Transportation
Bill Cowern, Interim Director of Public Works for Transportation
Trish Jimenez, Deputy Director of Public Works for Development Services
Joanna Crean, Deputy Director of Public Works for Support Services
Edward Stafford, Development Review Manager, Public Works
Gerrit Slatter, Principal Transportation Projects Engineer
David Kemp, Senior Transportation Planner
David Thompson, Civil Engineer II – Transportation Review
Amanda Bevis, Project Coordinator, Public Works

EXECUTIVE SUMMARY

The [Design and Construction Standards](#) (DCS) is used to prescribe minimum standards to be used in the design and construction of public infrastructure located in public right-of-way and easements within the city of Boulder, as well as private transportation and utility improvements that connect or impact public infrastructure.

This memorandum provides background information and a summary of proposed updates to the DCS to update standards with current best practices. These standards are used to implement capital projects conducted by the city, therefore the Transportation Advisory Board's (TAB) primary role is to understand proposed changes as they apply to capital projects.

The scope of the DCS update is intended to address several years of community concerns regarding transportation related design and construction standards. The proposed changes included in this memo address clarifications, current best practices, and adopted master plan policy direction. Staff have identified other changes that are outside the scope of the current update that will be considered in a future update.

This memorandum is intended to be informational, so that staff can answer questions and receive feedback. TAB will review this item on April 8, 2019, as a public hearing to make a recommendation to the City Council on the proposed DCS changes.

BOARD AND COMMISSION FEEDBACK

The proposed changes will be presented to TAB for discussion on March 11, 2019 and again for formal recommendation on April 8, 2019.

PUBLIC FEEDBACK

A public hearing will occur at the April 8, 2019, TAB meeting.

BACKGROUND

The current DCS was adopted in 1998 and updated in 2000 to prescribe minimum standards to be used in the design and construction of public infrastructure located in public right-of-way and easements in the city of Boulder, as well as private transportation and utility improvements that connect or impact public infrastructure. The DCS is enacted through the BRC and changes are adopted by City Council with recommendations from appropriate boards, such as TAB, Water Resources Advisory Board, and Planning Board.

The scope of the current DCS update includes:

- Changes to implement current best engineering design, construction and maintenance processes, new and improved materials and technical details
- Alignment with other adopted policy documents, such as the Transportation Master Plan (TMP) and Boulder Valley Comprehensive Plan

Staff have heard feedback from community members and stakeholders, specifically, Community Cycles and has considered and incorporated their feedback in the proposed changes below. Staff appreciates Community Cycles' interest, input and coordination on this matter.

TAB's purview includes DCS chapters 2, 8, and transportation-related technical drawings in chapter 11. More information regarding the proposed changes to these chapters is summarized below, and a detailed version of proposed changes will be included in the April 8 TAB meeting packet.

ANALYSIS

The last update to the DCS was completed in 2000. Since then, practices, specifications and policies have changed. The following table denotes the modifications to the DCS that are proposed in this update. The table also identifies some modifications that need to occur at a future update in 2020, either because they're outside the scope of the current update or due to the amount of staff time required to appropriately address the respective sections.

| Being considered for inclusion in current update | Items that require additional work and will be considered in a 2020 update |
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| 2.04 (E)(1)(b) Access with Barrier Island – language added to require “raised crossing” | 2.03 (L)(1) Traffic Volume Scenarios – requires a complete review. |
| 2.04 (H) – Speed Change Lanes – added language to provide flexibility on whether Speed Change Lanes should be considered on collectors and arterials. | 2.03 (M) Transportation Service Standards (Level of Service Analysis). Standard is pending the outcome of TMP objectives. |
| 2.04 (J) – Access and Curb Cut Width – added language – roadways shall be designed using vehicle turning template and using 10mph design speed. | 2.04 (I) Access and Curb Cut Type (Table 2-2) specific to Radii needs and requires a complete review. |
| 2.07 (C) – Lane Width – added dimensions for buffered bike lanes, separated bike lanes and flexibility for bike lanes and parking lanes. | 2.07 (F) Sight Distance – requires change to B.R.C. will consider modifying language in section 9-9-7 to allow space for vehicles to queue past the bike/ped facility before entering roadway. |
| 2.07 (D)(5)(c) – Street Spacing for Signalized Intersections – added language: “shall be spaced at no more than half-mile intervals.” | 2.09 – Table 2-13 - Residential Street Design Standards. This table and associated values require a complete review. |
| 2.07 (D)(5)(e) – Design: Added language to reference the National Association of City Transportation Officials (NACTO) Urban Street Design Guide | |
| 2.07 (G) Medians – added language to extend and include space for pedestrian refuge crossing, when feasible. | |
| 2.09 (D) (2) Residential Street – remove reference to 500-1000 vehicles per day to define residential street. Added description for Shared Streets. | |
| 2.11 Bicycle Facilities and Multi-Use Path Design – added language to reflect reference | |

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| to NACTO guidelines and design descriptions of separated bike lanes, buffered bike lanes and on-street bike parking stalls (bike corrals). | |
| 2.12 (B) (4) Street Lighting Design – added language regarding updated energy efficient lighting standard and required set back distance for installation of poles. | |
| 2.13 Added section on Transit Facilities - reference to NACTO Transit Street Design Guide and added language regarding transit stop design practices. | |
| Ch. 11 – Curb Ramp revisions to meet ADA specifications. | |

The TMP is being currently updated. Any DCS changes that will be necessary after the TMP's acceptance will need to be made through a separate process, as the DCS reflects current, adopted policies and is not reflective of proposed or suggested policy changes.

Staff recommends adopting the aforementioned DCS changes that align with current practices and current policy (such as the 2014 Transportation Master Plan) and create clarity within specifications.

NEXT STEPS

Staff will consider TAB's feedback and present final proposed changes to the board during the April 8, 2019, meeting. TAB's recommendation will be shared with Planning Board and City Council at the following meetings:

- April 18, Planning Board
- May 7, City Council First Reading
- May 21, City Council Second Reading

Should the City Council adopt the proposed DCS changes on May 21, the changes will go into effect after the standard 30-day waiting period.

**CITY OF BOULDER
TRANSPORTATION ADVISORY BOARD
AGENDA ITEM**

MEETING DATE: April 8, 2019

AGENDA TITLE: Staff briefing and TAB feedback regarding the Public Works Design and Construction Standards Update Project

PRESENTERS:

Kathleen Bracke, Interim Co-Director of Public Works for Transportation
Bill Cowern, Interim Co-Director of Public Works for Transportation
Trish Jimenez, Deputy Director of Public Works for Development Services
Edward Stafford, Development Review Manager, Public Works
Gerrit Slatter, Principal Transportation Projects Engineer
David Kemp, Senior Transportation Planner
Amanda Bevis, Project Coordinator, Public Works

EXECUTIVE SUMMARY

The City of Boulder is currently engaged in a process to update the [Design and Construction Standards](#) (DCS). The DCS is used to prescribe minimum standards to be used in the design and construction of public infrastructure located in public right-of-way and easements within the city of Boulder, as well as private transportation and utility improvements that connect or impact public infrastructure.

This purpose of this memorandum is to provide additional background information and a summary of the proposed transportation related updates to the DCS per TAB's request at the March 11, 2019 meeting. The initial approach was to take a set of transportation-related proposed changes forward simultaneously with updates to the utilities and stormwater portions of the DCS. Staff have identified that additional work on the transportation sections is necessary to address TAB feedback, therefore these updates are being separated from the utility's updates. The final approach to the approval processes for the transportation proposed changes and will depend on TAB's feedback on April 8.

TAB's purview includes DCS chapters 2, 8, and transportation-related technical drawings in chapter 11. These standards are used to implement capital projects conducted by the city. TAB's role is to understand the proposed changes in context of their implementation of the Transportation Master Plan and capital projects.

The transportation related changes being proposed in this DCS update are in response to several years of community concerns regarding current transportation related design and construction

standards. The goal of this update is to develop transportation standards which align with industry best practices, increase travel safety, and implement approved Transportation Master Plan policies.

Staff have identified other transportation related changes that are outside the scope of the current update and these will be considered in a future DCS update. A description of the proposed changes is included in the chart below.

QUESTIONS FOR TAB

1. Does TAB have feedback and suggestions for refinements to the proposed transportation-related DCS changes?

BOARD AND COMMISSION FEEDBACK

TAB discussed the DCS proposed changes on March 11, 2019. Generally, feedback included questions and discussions regarding:

- The TAB sought clarification of the definition of public infrastructure as it relates to the DCS. Public infrastructure is utilities and transportation infrastructure, that is located in the public right-of-way and public easements in the city and generally is owned and/or operated by the city.
- TAB sought clarification on the role of the Colorado Department of Transportation (CDOT) and their regulations as it pertains to city standards: CDOT manages design and construction regulations that apply to state highways such as portions of Arapahoe Ave, Canyon Boulevard, and Foothills Parkway in the city of Boulder. Compliance with CDOT regulations are a requirement during construction and replacement of these roadways, and the city often works with CDOT staff when modifications are needed to accommodate the city's design interests.
- Some board members provided feedback that it would be helpful context to understand the rationale, examples, and best practices information for the proposed changes so that the board could advise appropriately. Staff seeks to provide that detail in the chart below.
- Some board members expressed interest in including vision, mission, and/or goal statements in the Design and Construction Standards. That is helpful feedback and will be considered as part of a future project, such as the development of a Boulder specific street design guide manual. The scope of this project is limited to clarifying language and best practices.
- There were several technical questions about potential changes to the DCS as it pertains to topics such as signalized intersections, street crossing and right turn bypass islands. Potential changes to these areas are not a part of the current DCS update and will be

considered in a future DCS update pertaining to other identified transportation related changes to the DCS.

BACKGROUND

The current DCS was adopted in 1998 with a major update in 2000 to prescribe minimum standards to be used in the design and construction of public infrastructure located in public right-of-way and easements in the city of Boulder, as well as private transportation and utility improvements that connect or impact public infrastructure.

The scope of the current DCS update as it pertains to transportation related changes includes:

- Changes to implement current best engineering design, construction and maintenance processes, new and improved materials and technical details
- Alignment with other adopted policy documents, such as the Transportation Master Plan (TMP) and Boulder Valley Comprehensive Plan

Staff have heard feedback from community members and stakeholders, specifically, Community Cycles and has considered and incorporated parts of their feedback in the proposed changes below. Staff appreciates Community Cycles' interest, input and coordination on this matter.

TAB's purview includes DCS chapters 2, 8, and transportation-related technical drawings in chapter 11. Changes to chapter 8 are still being evaluated, therefore haven't been summarized in the table below. A detailed summary of proposed changes in these chapters are explained below.

ANALYSIS

The following table denotes the modifications to the DCS that are proposed in this update and the related details to each change.

| Proposed technical modification for consideration in current update | Description of proposed modification |
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| 2.04 (E)(1)(b) Access with Barrier Island – language added to require “raised crossing” | The installation of a raised crossing in a location where a right turn bypass island is present improves safety by slowing vehicles down through the intersection and increasing bicycle and pedestrian visibility. |
| 2.04 (H) – Speed Change Lanes – added language to provide flexibility on whether Speed Change Lanes should be considered on collectors and arterials. | This provision allows more flexibility for staff to determine whether speed change lanes should be installed on collectors and arterials. The city |

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| | strives to create roadway conditions that are designed to discourage speeding. |
| 2.04 (J) – Access and Curb Cut Width – added language – roadways shall be designed using vehicle turning template and using 10mph design speed. | The sharper radius and narrower driveway design will result in slower speed for turning vehicles which should decrease the severity of injury for vulnerable users if a collision occurs. |
| 2.07 (C) – Lane Width – added dimensions for buffered bike lanes, separated bike lanes and flexibility for bike lanes and parking lanes. | The current DCS does not provide dimensions for contemporary bicycle facilities that are consistent with NACTO’s Urban Bike Design Guide. |
| 2.07 (D)(5)(c) – Street Spacing for Signalized Intersections – added language: “Shall be approved by the Director”.” | This clarifies that regardless of spacing any new or relocated traffic signals must be approved by the Director. It aligns the DCS language with current practice and BRC requirements. |
| 2.07 (D)(5)(e) – Design: Added language to reference the National Association of City Transportation Officials (NACTO) Urban Street Design Guide | These guidelines are considered a “best practice” in the field of transportation planning and design and will provide direction when design items are not included in the DCS or in circumstances where modifications to the standards are being considered. |
| 2.07 (G) Medians – added language to extend and include space for pedestrian refuge crossing when feasible. | Pedestrian refuge space is a desired component for crossing roadways both from a pedestrian safety and a pedestrian efficiency standpoint. |
| 2.09 (D) (2) Residential Street – remove reference to 500-1000 vehicles per day to define residential street. | The reference of 500-1000 vehicles a day is not needed when defining the characteristics of a residential street. Residential streets can have a wide range of traffic volume. |
| 2.11 Bicycle Facilities and Multi-Use Path Design – added language to reflect reference to NACTO guidelines and design descriptions of separated bike lanes, buffered bike lanes and on-street bike parking stalls (bike corrals). | The current DCS does not provide definitions for contemporary bicycle facilities that are consistent with NACTO’s Urban Bike Design Guide. |

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| 2.12 (B) (4) Street Lighting Design – added language regarding updated energy efficient lighting standard and required set back distance for installation of poles. | The updated language describes the city’s best practice for installing the type of energy efficient lighting and installation set back distance for safety purposes. |
| 2.13 Added section on Transit Facilities - reference to NACTO Transit Street Design Guide and added language regarding transit stop design practices. | The current DCS does not include information about the design and construction of transit facilities relative to NACTO guidelines, which is considered a “best practice.” |
| Ch. 11 – Curb Ramp revisions to meet ADA specifications. | These updated schematics which reflect specific ADA design requirements are not included in the current DCS. |

NEXT STEPS

Following TAB’s feedback during the April 8 meeting, staff will prepare and review final changes to the edits for TAB to consider for recommendation at the June board meeting.

The DCS is enacted through the Boulder Revised Code and changes are adopted by City Council with recommendations from appropriate boards, such as TAB, Water Resources Advisory Board, and Planning Board.

TAB’s feedback and recommendation will be shared with Planning Board to consider recommending and shared with City Council for potential approval. The current schedule for the Transportation-related DCS chapters is as :

- June TAB – Public Hearing
- TBD - Planning Board
- TBD - City Council First Reading
- TBD - City Council Second Reading

Should City Council adopt the proposed DCS changes, the changes will go into effect after the standard 30-day waiting period.