

INTRODUCTION

(A) INTRODUCTION

The City of Boulder Design and Construction Standards (DCS) were developed to regulate the design and construction of public infrastructure, improvements and landscaping in the city's public rights-of-way and public easements. The DCS was originally adopted on July 2, 1998 to replace the Design Criteria and Standard Specifications adopted in July 1982. The November 16, 2000 update replaces the July 2, 1998 manual and addresses changes in engineering practices, construction technology, and city review processes. The update also attempts to clarify sections that have been identified as unclear or in error by users of the manual.

The DCS prescribe minimum standards to be used in the design and construction of public infrastructure located in public rights-of-way and public easements in the City of Boulder, and the design of private transportation and utility improvements, such as driveway cuts, utility services and onsite drainage systems, which are connected to or impact public infrastructure. The standards in the DCS are intended to provide for the public health, safety and welfare by ensuring the comprehensive design and construction of adequate and functional public improvements associated with developing, redeveloping and subdividing lands and providing necessary right-of-way, transportation and utility services. The DCS requirements reflect accepted and well-founded civil engineering practices, construction industry specifications and conformance with national safety standards and are consistent with current city ordinances, standards, policies and practices.

(B) DCS ADOPTION

The updated DCS was adopted at second reading by City Council on October 17, 2000, with the passage of City of Boulder Ordinance No. 7088.

Information regarding the adoption of Ordinance No. 7088 can be reviewed at the City of Boulder Central Records Office as part of the Planning Board agenda materials for September 7, 2000 and the City Council agenda materials for October 3, 2000 and October 17, 2000.

(C) CHANGES REFLECTED IN THE DCS

While the 1998 DCS was essentially a complete rewrite of the 1982 Design Criteria and Standards Specifications, the 2000 DCS incorporates changes into the existing format. Most of the proposed changes are minor corrections and clarifications.

An overview of changes is provided below.

Chapter 1 - General Requirements

Final Plan Submittals - Requirements for final construction and as-built drawings for public infrastructure have been revised to better match actual documentation needs. Staff has worked to minimize the number of

hard copy plans required and to better utilize electronic formats. The proposed revisions include changes to allow easier conversion of as-built information into the city's Geographic Information System.

Pavement Design - A reference to Colorado Department of Transportation Standards has been added to the requirements for pavement design.

Erosion Control - A note regarding erosion and sediment control has been added to those required on all plan sets. In many cases, unforeseen circumstances arise in the field which necessitate additional measures to protect downstream properties and waterways.

Minor Technical Changes - A number of minor changes and clarifications have been made to survey related definitions and requirements.

Chapter 2 - Transportation Design

"Traffic Assessment" - This new report includes basic trip generation information for proposed projects. Staff will use information provided in the assessment to determine whether a full "Traffic Study" is warranted.

Bicycle/Pedestrian Facilities - References to bicycle facilities have been added to the standards for traffic signal design. Required widths for multi-use paths, bike lanes, and associated rights-of-way have been updated. Bicycle parking requirements including rack design and spacing have been revised.

Access - The maximum width for residential driveways has been reduce from 30 feet to 20 feet where they intersect the public right-of-way. This change will provide aesthetic and storm water quality benefits. Spacing of accesses and measurements of access controls have also been updated and clarified.

Minor Changes - A number of revisions have been made to correct and clarify formulas, definitions, tables, and references.

Chapter 3 - Streetscape Design and Tree Protection

Street Tree Lists - The City Forester and the Planning Department have coordinated to develop street tree lists that are specific to different applications such as medians and tree grates. The standards previously had a single tree list for all scenarios.

Tree Grates - Standards for tree grate materials and installation have been revised to improve tree health and to make grates more pedestrian safe.

Chapter 4 - General Utilities Design

Utility Connection Plan - This new plan type has been added for use with development projects that are already adjacent to existing utility mains and only require service connections. The intent of this new plan is to more clearly define requirements for projects which do not need a detailed "Utility Plan."

Utility Plan - The "Master Utility Plan" has been renamed and reduced in scope. The Utility Plan serves as a preliminary submittal for most projects and may serve as a construction plan for some simple projects.

Utility Separations - Previous text regarding utility separation requirements has been replaced with a table. Separation requirements have been modified in some cases.

Chapter 5 - Water Design

Cross Connection Control/Backflow Prevention - These regulations, previously adopted as separate rules, have been updated and added to the DCS to make them more readily available to staff and the public.

Water System Modeling - Standards for water system modeling have been updated to reflect new software being used by the Utilities Division.

Accessory Buildings - Standards for providing water service to accessory structures have been changed to match existing B.R.C., 1981 requirements.

Valve Placement - Additional language has been added to prevent water valves from being located in bikepaths and sidewalks.

Easements - Easement dimension requirements around fire hydrants have been clarified.

Water Main Depth - The minimum depth for water mains has been revised to match requirements elsewhere in the document.

Chapter 6 - Wastewater Design

Accessory Buildings - Standards for providing sewer service to accessory structures have been revised to match B.R.C., 1981 requirements.

Manhole Locations - Additional language has been added to prevent sewer manholes from being located in bikepaths and sidewalks.

International Plumbing Code - References to the Uniform Plumbing Code have been updated to reflect the city's adoption of the International Plumbing Code in 1999.

Wastewater Monitoring - A minimum service line size of 6 inches has been specified for commercial and industrial facilities that are subject to wastewater monitoring. Smaller services generally are not adequate to accommodate monitoring equipment.

Chapter 7 - Stormwater Design

Stormwater Quality - Minimization of pollutant transport has been added to the intent section for this chapter. In addition, a new section on stormwater quality has been added. The Urban Drainage and Flood Control District's "Drainage Criteria Manual, Volume 3" continues to be used as the standard for design, but the new section provides additional information on the type and quantity of features that will be considered acceptable.

Stormwater Report and Plan - The 1998 DCS specified only one level of detail for stormwater reports and plans. Additional standards have been added for "Conceptual" and "Preliminary" level submittals to more closely match the level of detail required at various steps in the development review process.

Detention Ponding - Conflicting information regarding design storms for detention ponds has been corrected. A maximum depth of 12 inches for parking lot ponds, which was left out of the 1998 DCS, has been added. Detention ponding in parking lots continues to be discouraged. An exemption from detention requirements has been added for subdivisions which create two single family residential lots.

Hydrology - Much of the hydrology section has been rewritten to improve clarity and correct minor technical errors.

Chapter 8 - Transportation Standards

CDOT Standards - The Colorado Department of Transportation updated its design standards in 1999, and a number of minor changes have been made to the DCS to reflect this update.

Sidewalks/Multi-Use Paths - A new section has been added to address joint standards and detour requirements for sidewalks and multi-use paths.

Chapter 9 - Utilities Standards

Street Restoration Standards - Street restoration requirements have been revised to improve the quality and timeliness of street repairs and to extend pavement life. Supporting revisions to the B.R.C., 1981 have been made concurrently and are described in the attached ordinance.

Materials and Installation - A number of specifications have been updated to take advantage of advances in technology and improved installation techniques.

Chapter 10 - Streetscaping Standards

Tree Staking - Tree staking requirements have been revised to provide for more pedestrian safe installations.

Mulch - Rock has been eliminated as an acceptable mulch for planting beds. One-quarter inch minus washed sand (“squeegee”) has been added as an acceptable mulch material for street medians due to difficulties maintaining wood mulch in some areas.

Chapter 11 - Technical Drawings

Various changes to technical drawings have been made in order to support changes listed above and to address other minor issues.

(D) ORDINANCE NO. 7088 - ATTACHED