



Commerce City Storm Drainage Design and Technical Criteria Manual: 2021 Update



Overview

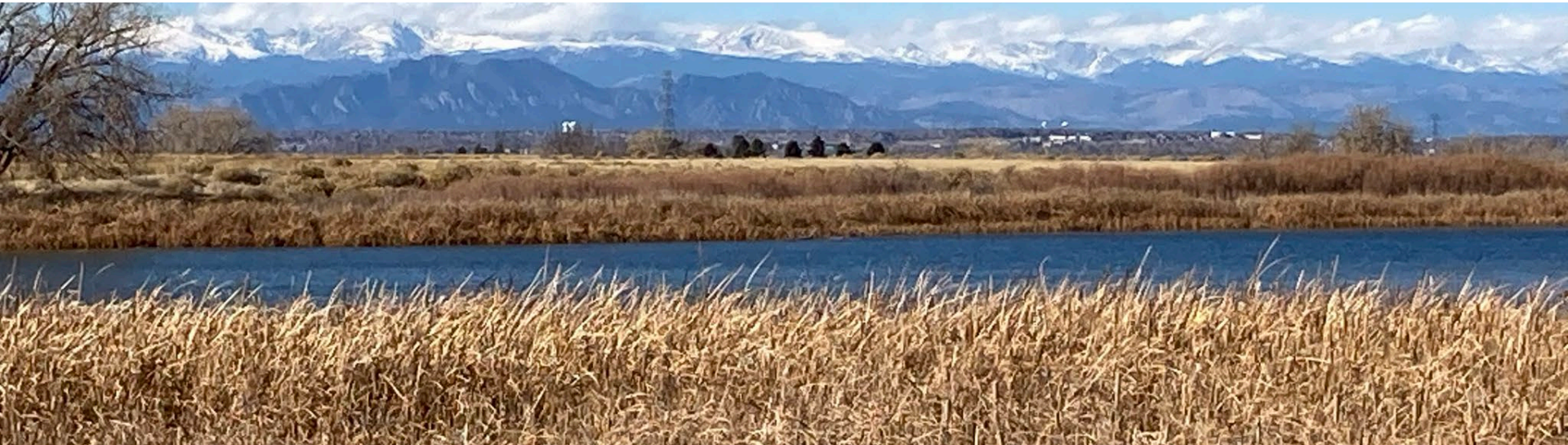
- Purpose and Need
- Outreach
- Highlights of Key Changes
 - Changes from previous Manual
 - Floodplain Rules & Regs (added chapter; references existing regs.)
 - Stormwater Detention and Water Quality Policy
 - Stormwater Quality & Construction Sites (added)
 - Variance Process
- Retention and Pumped Drainage Policy Criteria
- Questions

Purpose and Need

- To update the Commerce City Drainage Design and Technical Criteria Manual
 - The City's Drainage Manual has not been updated since 1989
 - Technical Criteria in our Manual are outdated
 - Update Manual to correspond with current Mile High Flood District (MHFD) storm drainage criteria
 - Update Manual to correspond with MS4 (Water Quality) requirements

Overall Purpose...Simply Stated

- Protect public, health, safety, welfare and the environment
- Provide clear & orderly design criteria and process for drainage facilities for development/redevelopment





Outreach



Outreach Process

- City Council Study Session – 12 October 2020
- Legal Review by City Attorney
- City Staff
 - Community Development
 - City Management
 - Public Works Staff & Third Party Reviewers
- Development Community
- Ditch Companies - FRICO
- Process
 - Basis of Changes
 - Consistency with MHFD
 - Consistency with MS4
 - Local Knowledge of problems – City Staff



Highlights of Key Changes



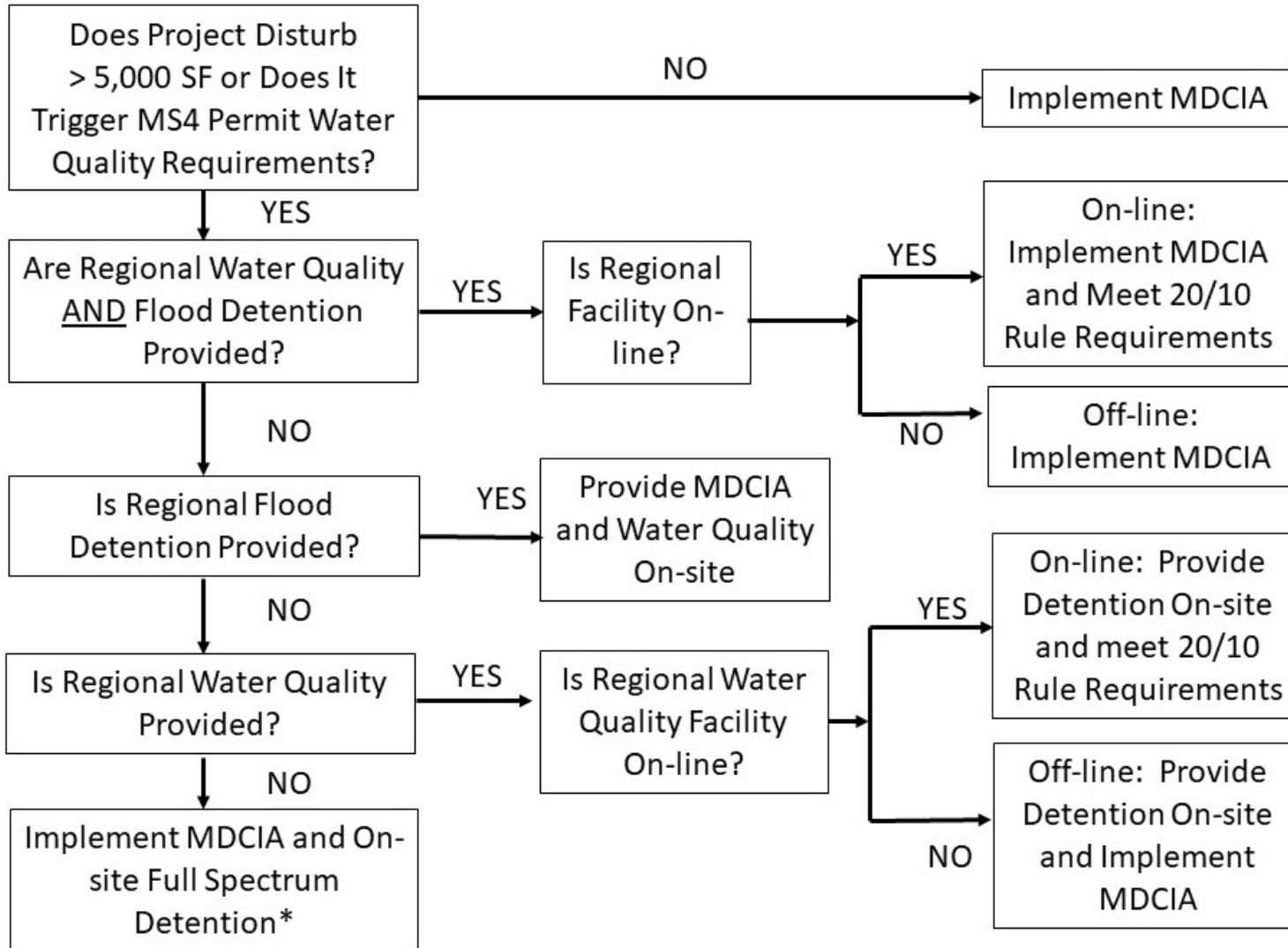
Changes From Previous Manual

- Improved readability and technical clarity
- Most underlying policies & principles stayed the same, with some exceptions highlighted today
- Improved consistency with currently applicable MHFD criteria
- Improved consistency with MS4 permit requirements
- Added chapters:
 - Floodplain Rules and Regulations
 - Stormwater Quality
 - Construction Site Stormwater Management

Floodplain Rules and Regulations

- New manual provides a Floodplain Rules and Regulations Chapter
- City participates in the National Flood Insurance Program (NFIP) and had already adopted regulations that meet or exceed the minimum requirements for participation in the NFIP
- The new Floodplain chapter provides an overview of the City's Floodplain Rules and Regulations

Stormwater Detention & Water Quality Policy



Stormwater Detention & Water Quality Policy

| Project Conditions | Runoff Reduction/ MDCIA ¹ | Permanent Stormwater Quality Control Measure Requirements |
|--|---|--|
| Total Disturbance ≥ 1 acre | Required | Must satisfy one of the MS4 permit design standards (for the area of disturbance). |
| Total Disturbance < 1 acre, and Total Disturbance Area ≥ 5,000 square feet | Required | Must satisfy one of the MS4 permit treatment standards for new impervious area. For sites that have small amounts of additional impervious area, runoff reduction through the use of grass buffers, swales, and other types of RPAs may be used to satisfy this requirement. |
| Total Disturbance < 5,000 square feet | Required | Not required |

¹Minimized Directly Connected Impervious Area (MDCIA) must be implemented in a manner that does not cause adverse impacts to structures or adjacent property.



Stormwater Quality & Construction Sites

- 1989 Manual: Did Not Have Stormwater Quality & Construction Site Stormwater Control Chapters
- 2021 Manual: Now up-to-date with CDPHE MS4 Permit and adds two chapters:
 - Stormwater Quality Chapter
 - Both traditional and LID/GI Stormwater Control Measures
 - Integration of stormwater quality and detention through full-spectrum detention
 - Recognizes importance of O&M
 - Construction Site Stormwater Management
 - Stormwater Management Plan requirements

Variance Process

- Applicability
- Criteria for Approval
 - Applicant is unable to comply AND not the applicant's fault
 - Address a unique condition
 - Least deviation from the standard
 - Does not increase cost to the city
 - Meets principles previously stated.
 - Does not cause property damage to others
 - No adverse environmental impacts
- New Application Process
 - Determination by the City Engineer
 - Applicant could file an appeal in the context of permit being sought through the land development code



Retention and Pumped Drainage Policy Criteria



2021 Retention Policy Criteria

- When Allowed for Stormwater Quality:
 - In areas where downstream outfall systems are inadequate or non-existent and where provision of outfall facilities cannot be reasonably accomplished, retention ponds may be used to meet stormwater quality requirements when:
 1. Designed in accordance with MHFD criteria and
 2. Adequate water rights have been obtained.
- Not Allowed for Detention:
 - Retention ponds are not allowed for stormwater detention and must drain within time limits specified by the CRS §37-92-602(8).

2021 Pumped Drainage Policy Criteria

- Pumped detention basins are not allowed to serve as permanent water quantity or quality control measures for any development within Commerce City
- Why?
 - Electromechanical systems can be unreliable, require frequent and costly maintenance, and may trigger requirements for water quality monitoring
- When allowed?
 - Temporary pumped detention basins are sometimes necessary during construction to hold water until a permanent, gravity outfall is available
 - Commerce City may approve such temporary pumped detention basin in a Development Agreement or other written agreement, as an interim solution, until a permanent outfall is built



Questions?

