

Memorandum



CITY OF DALLAS

DATE April 18, 2019

TO Honorable Members of the Mobility Solutions, Infrastructure and Sustainability Committee

SUBJECT **Street and Drainage Design Manual Updates**

On Monday, April 22, 2019, the Mobility Solutions, Infrastructure and Sustainability Committee will be briefed on updates to the street and drainage design manuals. The briefing materials are attached for your review.

Please contact Robert Perez, Director of the Department of Public Works, at robert.perez@dallascityhall.com if you have any questions or concerns.

A handwritten signature in blue ink, appearing to read 'Majed Al-Ghafry'.

Majed Al-Ghafry, P.E.
Assistant City Manager

[Attachment]

c: Honorable Mayor and Members of the City Council
T.C. Broadnax, City Manager
Chris Caso, City Attorney (Interim)
Billieae Johnson, City Secretary
Preston Robinson, Administrative Judge
Kimberly Bizzor Tolbert, Chief of Staff to the City Manager
Jon Fortune, Assistant City Manager

Joey Zapata, Assistant City Manager
Nadia Chandler Hardy, Assistant City Manager and Chief Resilience Officer
Michael Mendoza, Chief of Economic Development and Neighborhood Services
M. Elizabeth Reich, Chief Financial Officer
Laila Aleqresh, Chief Innovation Officer
Directors and Assistant Directors

Street and Drainage Design Manual Updates

**Mobility Solutions, Infrastructure &
Sustainability Committee**

April 22, 2019

**Chris Turner-Noteware, P.E.
Assistant Director
Department of Public Works**



Presentation Overview

- Background/History
- Purpose
- Significant changes to Street Manuals and Ordinance changes
- Significant changes to Drainage Manual and Ordinance changes
- Next steps

Background/History

- 1993: Drainage Manual last updated
- 1998: Paving Manual last updated
- 2009: Council adopted Integrated Stormwater Management (ISWM) guidelines on a voluntary basis
- 2011: Complete Streets Initiative launched
- 2016: Council adopted Complete Streets Manual
- 2017: Presentation at MSIS on Street & Drainage Design Manuals
- 2018-2019: Addressing Comments / Identifying Dallas City Code modifications
- 2019: Public Information – presented to various Industry Stakeholders

Purpose

- Present and discuss the significant changes to the Street and Drainage Design Manuals and the resulting Ordinance changes and the action that will be proposed for City Council consideration in the coming months

Street Process Manual

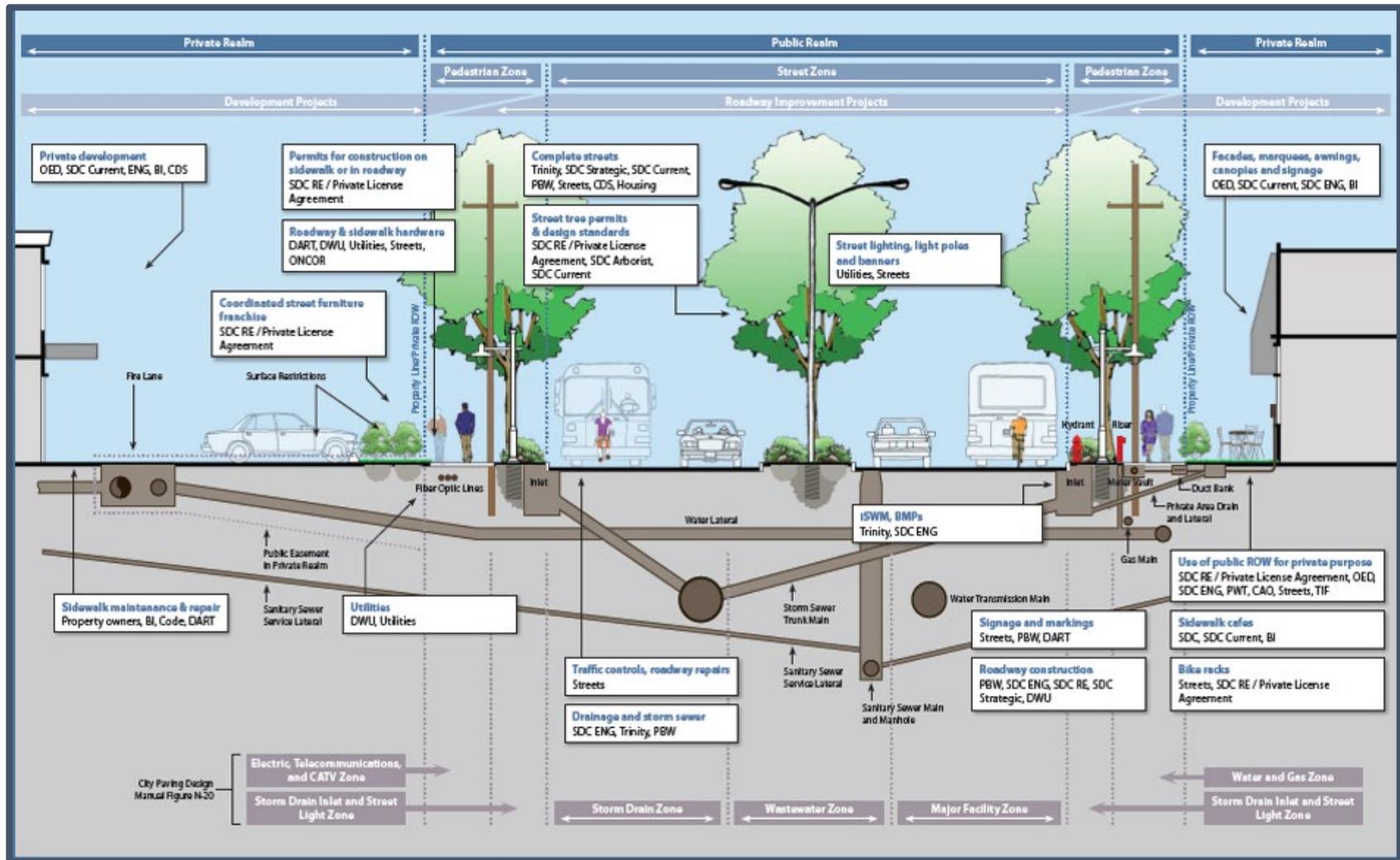
- New Street Process Manual
 - Roadmap to apply Street Design Manual, Drainage Design Manual and other City documents

CITY OF DALLAS

THOROUGHFARE PLAN



Street Process Manual, continued



Street Design Manual

- Replaces the 1998 Paving Design Manual
- Incorporates Envision design principles



**QUALITY
OF LIFE**
13 Credits



LEADERSHIP
10 Credits



**RESOURCE
ALLOCATION**
14 Credits



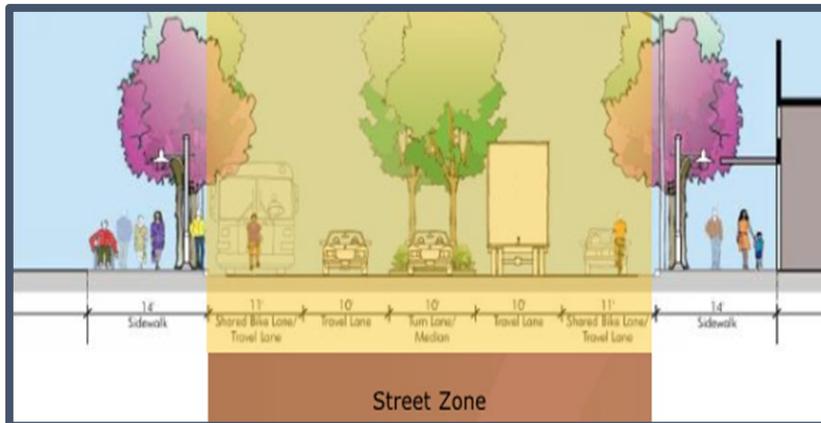
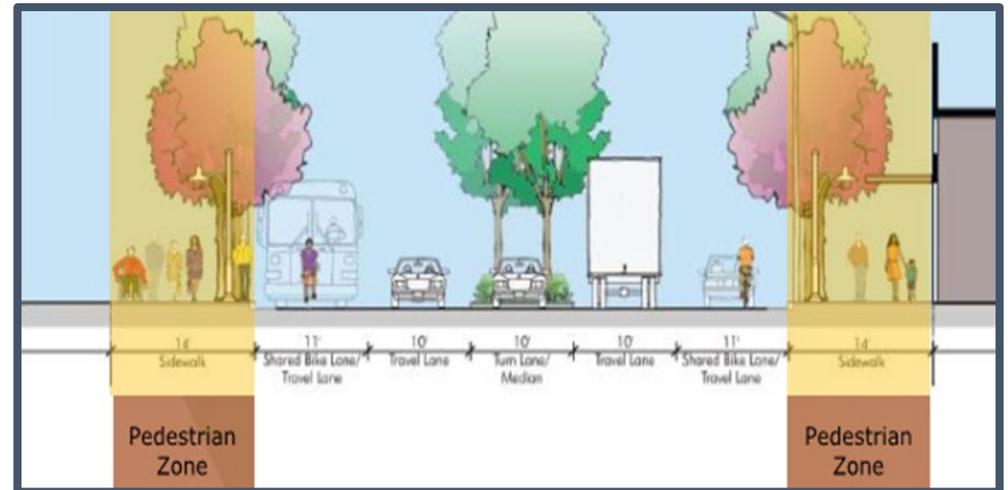
**NATURAL
WORLD**
15 Credits



**CLIMATE
AND RISK**
8 Credits

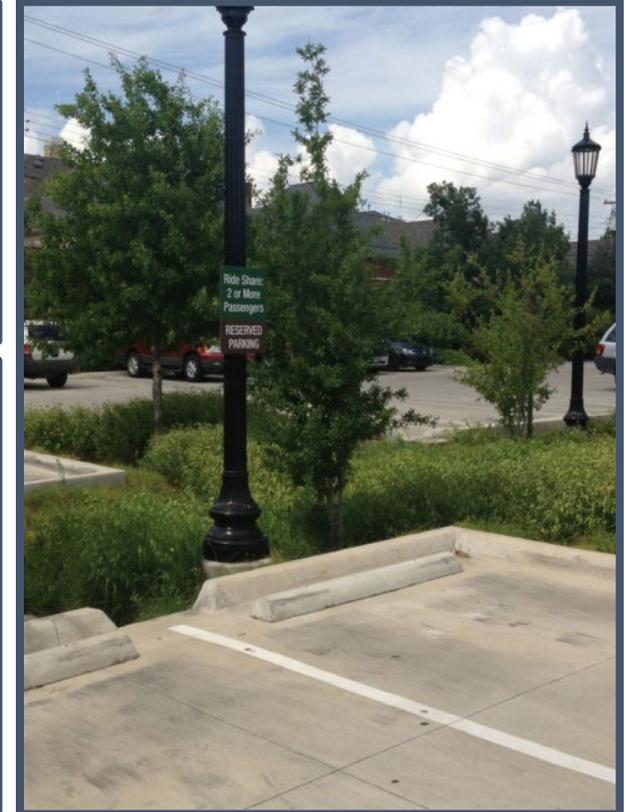
Street Design Manual, continued

- Streets are comprised of three zones:
 - Pedestrian
 - Street
 - Intersection



Street Design Manual, continued

- Green Street drainage elements
 - Landscaping
 - Pavement



Street Design Manual, Ordinance Changes

- Chapter 43
 - References to “City of Dallas Paving Design Manual”
 - Modify to “City of Dallas Street Design Manual”
 - Information conflicting with City of Dallas 2011 Addendum to North Central Texas Council of Government (NCTCOG) Construction Standards
 - Fine and Coarse Aggregates
 - Concrete strength and slump for sidewalks
 - Concrete strength for curb, gutter and driveway approaches
 - Delete Information and Reference Addendum
 - Minimum widths of sidewalks, driveway approaches and radius of turnouts on to streets
 - Modify Ordinance to match Street Design Manual

10

Street Design Manual, Ordinance Changes

- Chapter 51A
 - References to “City of Dallas Paving Design Manual”
 - Modify to “City of Dallas Street Design Manual”
 - References to 1985 Dallas Bike Plan
 - Modify to “2011 Dallas Bike Plan”
 - Dimensions for corner clips, pavement width, right-of-way width and other design standards
 - Delete Information and Reference Street Design Manual

Drainage Design Manual

Updates to the Drainage Design Manual reflect:

- Current engineering practices
- State and federal requirements
- Review of development system impacts
- Incorporate/standardize regional integrated stormwater design practices
- Incorporate more sustainable design into all sites/projects where practicable



12

Drainage Design Manual, continued

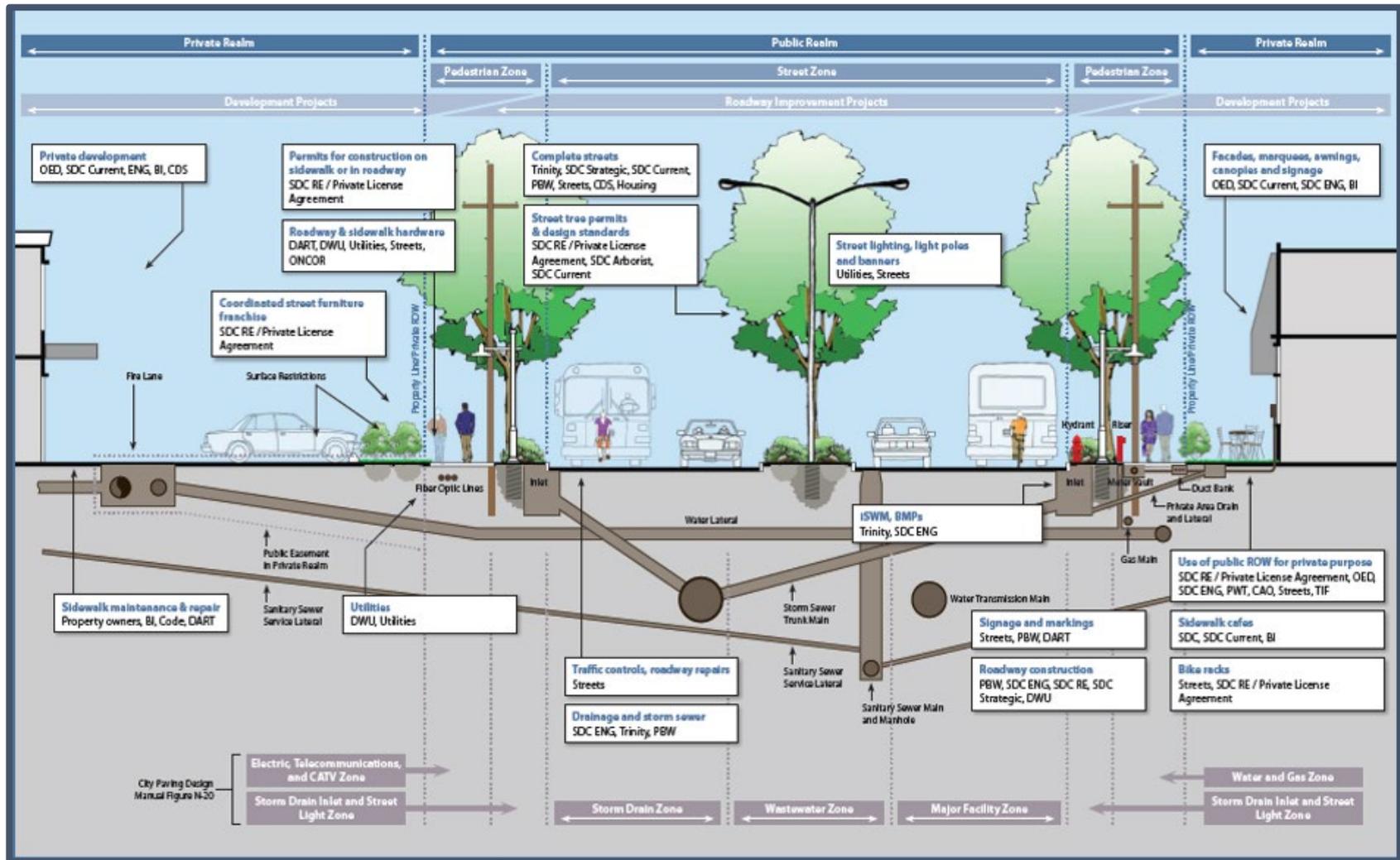
Retains existing requirements for:

- 100-year design with higher standards for developing in/near floodplains
- Evaluating development impacts to existing infrastructure
- Addressing development impacts through storage or upsizing existing infrastructure



13

Drainage Design Manual, continued



Drainage Design Manual, Ordinance Changes

- Chapter 51A
 - Modify references to XX-year flood (i.e. 100-year flood) or XX-year frequency storm to “Y% AEP Storm”
 - AEP = Annual Exceedance Probability
 - Modify reference to North American Vertical Datum to be more general
 - Modify area requirements for required detention to match Drainage Manual
 - Eliminate sections that provide design guidance in conflict with Drainage Manual

Next Steps

Task	April	May	June	July	August	September	October
Incorporate Comments	■	■					
Draft Ordinance Changes		■	■	■	■		
Post Manuals			■	■	■		
Finalize Manuals					■	■	
Council Adoption						■	
Community/Staff Training				■	■	■	
Implementation							★

Next Steps, continued

- Draft Ordinance Changes
- Complete Updates
- Present for Council Adoption – August 2019
- Community and Staff Training
- Implement Use of Manuals on all Projects (City and private) that start design process after October 1, 2019

Street and Drainage Design Manual Updates

**Mobility Solutions, Infrastructure &
Sustainability Committee**

April 22, 2019

**Chris Turner-Noteware, P.E.
Assistant Director
Department of Public Works**



Appendix A



Street Design Manual, Ordinance Changes

- Chapter 43
 - Section 43-46, Tables for Fine and Coarse Aggregates in conflict with City of Dallas 2011 Addendum to NCTCOG Construction Standards
 - Delete tables and reference the Addendum
 - Section 43-67, States minimum sidewalk width is four feet. Manual indicates minimum width in mixed use areas is six feet.
 - Add sentence to Code that “minimum sidewalk width is four feet unless City Design Standards require wider width”

Street Design Manual, Ordinance Changes

- Chapter 43

- Sections 43-68, 43-71 and 43-78, States minimum concrete strength and slump for sidewalks, curb and gutter and driveway approaches, respectively, that are in conflict with City of Dallas 2011 Addendum to NCTCOG Construction Standards
 - Delete specific numerical values and reference the Addendum
- Section 43-94, States minimum width of residential driveway approaches be not less than nine feet and five foot radius on turnouts on arterial streets
 - Change to minimum driveway width of 10 feet and minimum radius on turnouts of 10 feet

Street Design Manual, Ordinance Changes

- Chapter 43

- Section 43-95, States minimum width of commercial driveway approaches not less than twelve feet and maximum width of forty feet and five foot minimum radius on turnouts
 - Change to minimum driveway width of 15 feet and maximum width of 35 feet and minimum radius of turnouts of 10 feet
- Section 43-135(22), Calls out “City of Dallas Paving Design Manual”
 - Change to “City of Dallas Street Design Manual”

Street Design Manual, Ordinance Changes

- Chapter 51A
 - References throughout to “City of Dallas Paving Design Manual” to be modified to “City of Dallas Street Design Manual”
 - 51A-8.601(b), References 1985 Dallas Bike Plan
 - Change to “2011 Dallas Bike Plan”
 - 51A-8.602(d)(1), States “minimum corner clip is 10 feet”
 - Replace this section with text reflecting that the size of the corner clip shall be based on the City's current design standards

Street Design Manual, Ordinance Changes

- Chapter 51A
 - 51A-8.604(c) Provides table of Minor Street Standards defining pavement width, right-of-way width and other design standards
 - Delete table and reference “City of Dallas Street Design Manual”

Appendix B



Drainage Design Manual, Ordinance Changes

- Chapter 51A
 - References throughout to “100-year flood” will be changed to “1% AEP Storm”
 - AEP = Annual Exceedance Probability
 - 51A-5.101(a)(4) Defines DESIGN FLOOD as 100-year frequency flood discharge
 - Revise to read “DESIGN FLOOD means the 1% Annual Exceedance Probability (AEP) storm event. This design storm has a 1% chance of occurring in any given year.”
 - 51A-5.101(a)(17) Defines HUNDRED YEAR FREQUENCY FLOOD (100-year flood)
 - Will add a statement that this is equivalent to and now referred to as 1% AEP Storm

26

Drainage Design Manual, Ordinance Changes

- Chapter 51A
 - 51A-5.101(a)(35) Defines WATER SURFACE ELEVATION in relation to North American Vertical Datum (NAVD) of 1988
 - Revise to refer to most recently published North American Vertical Datum
 - 51A-8.611(c)(1) States that detention facilities must be designed for the 100-year frequency storm with outlet structures designed for 5-year and 100-year storms
 - Revise to reflect 1%, 2%, 10%, and 50% AEP storm events

Drainage Design Manual, Ordinance Changes

- Chapter 51A
 - 51A-8.611(c.1.B.ii) States detention is not required if zoning change results in less than a 20% increase in runoff, the area rezoned is less than 3 acres or an adequate outfall exists
 - Revise to be exempt from detention if less than one acre and adding less than 5,000 square feet of additional impervious surface or 10,000 square feet for roadway projects
 - 51A-8.611(c.8) States dual outlet control is not required in the design of the detention basin when the proposed outfall is onto an erosion protected surface no less than 100 feet from the outfall
 - Eliminate this section

Drainage Design Manual, Ordinance Changes

- Chapter 51A
 - 51A-8.611(c.9) States when development of property downstream results in construction of facilities designed to accommodate the 100-year storm and detention facilities are no longer necessary, the detention facilities may be abandoned and the land reclaimed for other purposes
 - Eliminate this section since it only addresses the 100-year storm (1% AEP Storm) and detention for smaller storms would still be required.