

RULE NO.: R161-19.22

ADOPTION DATE: December 18, 2019

NOTICE OF RULE ADOPTION

DEC 18 2019 PM12:20

By: Jorge L. Morales, P.E., CFM, Director
Watershed Protection Department

The Director of the Watershed Protection Department has adopted the following rule. Notice of the proposed rule was posted on October 8, 2019. Public comment on the proposed rule was solicited in the October 8, 2019 notice. This notice is issued under Chapter 1-2 of the City Code. The adoption of a rule may be appealed to the City Manager in accordance with Section 1-2-10 of the City Code as explained below.

A copy of the complete text of the adopted rule is available for public inspection and copying at the following locations. Copies may be purchased at the locations at a cost of ten cents per page:

Watershed Protection Department, located at 505 Barton Springs Road, Suite 1200, Austin, TX, 78704; and

Office of the City Clerk, City Hall, located at 301 West 2nd Street, Austin, Texas.

EFFECTIVE DATE OF ADOPTED RULE

A rule adopted by this notice is effective on December 18, 2019.

TEXT OF ADOPTED RULE

R161-19.22: Revises the Drainage Criteria Manual as follows:

- Section 1.2.2, *General* – Rewrites DCM section 1.2.2.G to provide stormwater quantity mitigation (detention) alternative for small sites.
- Section 1.2.3, *Street Drainage* – Revises DCM section 1.2.3.C to require storm water discharges to be conveyed via storm drain.
- Section 1.2.4, *Drainage System* – Revises DCM section 1.2.4.G to prescribe specific drainage easement widths based on depth and size of infrastructure for storm drain systems to allow for long term operation and maintenance.
- Section 5.2, *Design Guidelines* – Revises DCM section 5.2.H to require access to storm drain inlets when the inlet is used as a junction box.
- Section 5.3, *Design Parameters*
 - New DCM section 5.3.5: Requires use of fittings or manholes to connect to existing storm drain systems versus breaking into an existing pipe.
 - New DCM section 5.3.6: Requires the condition of the existing storm drain system at the point of connection be evaluated to determine if replacement is needed.
- Section 5.6, *Manholes*
 - Revises DCM section 5.6.1: Clarify the use of horizontal bends in storm drain systems to ensure long term sustainability.
 - New DCM section 5.6.2: Requires the installation of a manhole or cleanout at the transition between private and public storm drain systems to allow for better access for operation and maintenance.
- Section 5.7, *Depth of Cover* – Revises DCM section 5.7 to establish a minimum depth of cover for storm drain systems.
 - New DCM section 5.7.1: Establishes clearance requirements between storm drain systems and other subsurface utilities.

COMMENTS AND CHANGES FROM PROPOSED RULE

Please see attached for public comment and staff response. No changes were made to the proposed rule as a result of public comments received.

AUTHORITY FOR ADOPTION OF RULE

The authority and procedure for the adoption of a rule to assist in the implementation, administration, or enforcement of a provision of the City Code is established in Chapter 1-2 of the City Code. The authority to regulate design and construction of drainage facilities and improvements is established in Section 25-7-151 of the City Code.

APPEAL OF ADOPTED RULE TO CITY MANAGER

A person may appeal the adoption of a rule to the City Manager. **AN APPEAL MUST BE FILED WITH THE CITY CLERK NOT LATER THAN THE 30TH DAY AFTER THE DATE THIS NOTICE OF RULE ADOPTION IS POSTED. THE POSTING DATE IS NOTED ON THE FIRST PAGE OF THIS NOTICE.** If the 30th day is a Saturday, Sunday, or official city holiday, an appeal may be filed on the next day which is not a Saturday, Sunday, or official city holiday.

An adopted rule may be appealed by filing a written statement with the City Clerk. A person who appeals a rule must (1) provide the person's name, mailing address, and telephone number; (2) identify the rule being appealed; and (3) include a statement of specific reasons why the rule should be modified or withdrawn.

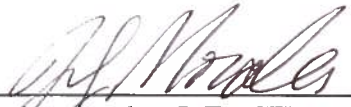
Notice that an appeal was filed and will be posted by the city clerk. A copy of the appeal will be provided to the City Council. An adopted rule will not be enforced pending the City Manager's decision. The City Manager may affirm, modify, or withdraw an adopted rule. If the City Manager does not act on an appeal on or before the 60th day after the date the notice of rule adoption is posted, the rule is withdrawn. Notice of the City Manager's decision on an appeal will be posted by the city clerk and provided to the City Council.

On or before the 16th day after the city clerk posts notice of the City Manager's decision, the City Manager may reconsider the decision on an appeal. Not later than the 31st day after giving written notice of an intent to reconsider, the City manager shall make a decision.

CERTIFICATION BY CITY ATTORNEY


By signing this Notice of Rule Adoption (R161-19.22), the City Attorney certifies that the City Attorney has reviewed the rule and finds that adoption of the rule is a valid exercise of the Director's administrative authority.

REVIEWED AND APPROVED



Jorge L. Morales, P.E., CFM, Director
Watershed Protection Department

Date: 12/10/19



Anne Morgan
City Attorney

Date: 12/13/19

Comment by ACEA:

“ACEA protests the inclusion of Section 5.7.1 regarding clearance between storm and other subsurface utilities in the WPD Q4 FY 2019 Rules as posted.

This section was discussed during a meeting with Watershed Protection Department (WPD) and Austin Water (AW) on August 22, 2019 and was also addressed in our comments submitted on July 12, 2019.

Austin Water also disagrees that the clearances required are sustainable without pushing water and wastewater piping so deep that they are unnecessarily costly to maintain. AW and WPD have reached a temporary compromise regarding dispensation from following the clearance requirements as allowed by each utility, but this will cause an unpredictable case-by-case application of what should be a clear-cut minimum vertical clearance.

The overarching goal should be to make all subsurface piped utilities as shallow as safely possible. AW and WPD both routinely complain about deep lines. The proposed excessive clearances only make lines deeper.

Furthermore, we take issue with the Affordability Impact Statement (AIS) claim that increasing vertical clearance between pipes is cost neutral. Depending on soil conditions, the average cost per foot of extra depth is \$2-\$4 per linear foot for typical 8-inch water and wastewater lines. Section 5.7.1 was not even considered in the AIS determination, downplaying the negative impact to affordability.

ACEA requests that the above section of the revised rules be removed from this posting and tabled until another rule revision after AW, WPD, franchise utilities, and other external stakeholders can agree on reasonable minimum clearances. ACEA would like to assist with the negotiation between the departments.”

Staff Response:

Inclusion of the proposed DCM Section 5.7.1 separation language is necessary to have a code/criteria citation since none exists for stormdrain infrastructure currently. The two main reasons that WPD wants higher vertical clearance requirements than what Austin Water proposes (12” above and 18” below) for large and deep pipes are as follows:

1. Future maintenance of storm drain pipes. Storm drain pipes are generally larger than water and waste water lines requiring larger equipment, which needs larger clearance, and;
2. The 2018 update of Atlas 14 resulted in an increase in rainfall depths over most of the Austin metropolitan area. Thus, the replacement storm drain infrastructure will be larger than existing pipes. WPD needs the proposed clearance space available for future storm drain pipe replacement.

Additionally, current AULCC guidance requests 2-ft vertical in all instances (WPD & AW), the proposed DCM language allows more flexibility and generally requires less vertical clearance.

AW originally proposed changes to the UCM to address utility separation requirements in the current rule posting quarter (Q4 FY 2019), the same quarter for which WPD proposed these vertical separation requirements in the DCM. After discussion with WPD and stakeholders, AW pulled the proposed utility separation requirements from Q4 and intend to proceed with those requirements in Q2 FY 2020.

AW and WPD reached agreement on the vertical separation language by adding language in DCM Section 5.7.1.K. WPD received explicit agreement from AW to post this section after the inclusion of the language in K. Items J & K allow less vertical without a waiver. WPD has offered to further revise 5.7.1 in Q2 FY 2020.

WPD staff does not prepare the AIS and does not agree that the statement itself downplays the proposed DCM revisions regarding affordability as it impacts NHCD operations.

DCM 1.2.2.G

G. Development activity is not subject to D. or E. above if the following conditions are satisfied:

1. The activity is located in the Waller Creek, Shoal Creek (downstream from the West 38th St. bridge), Boggy Creek, East Bouldin Creek, West Bouldin Creek, Blunn Creek, Johnson Creek, Harper's Branch or Lady Bird Lake watersheds; and
2. The activity involves an existing legal lot that is limited to single-family (SF-1, 2, or 3) land use by zoning, restrictive covenant or plat note; and
3. The proposed impervious cover does not exceed 45%; and
4. A site plan is not required; and
5. The existing lot size is equal to or less than one (1.00) acre; and
6. The existing lot does not receive significant off-site drainage.
7. An engineer submits a signed, sealed and dated letter, addressed to the Director of the Planning and Development Review Services Department, stating the following without qualification: "I certify that I have personally conducted a topographic review and field investigation of the existing and proposed flow patterns for stormwater runoff from the subject development to the main stem of (name of creek). At build-out conditions allowable by zoning, restrictive covenant, or plat note, the stormwater flows from the subject development will not cause any additional adverse flooding impacts for storms of magnitude up through the 100-year event."
8. Calculations supporting the certification statement in Part 7 must be submitted if requested.

G. Detention Alternatives. The City recognizes the need for small projects to have an alternative means of meeting storm water quantity mitigation (detention) requirements. Section 8.2.0 of the Drainage Criteria Manual defines the Regional Stormwater Management Program and describes the requirements for participation in the program. The City will allow small land developments that meet the following requirements to automatically participate in the RSMP. This participation shall take the form of off-site improvements or payment-in-lieu of detention at the discretion of the Director of the Watershed Protection Department. Activity that meets all of the following requirements is not subject to D. or E. above.

1. Commercial, multi-family or mixed-use developments with a site development area (limits of construction for redevelopment) of 0.5 acres or less or a single-family residential subdivision of 1 acre or less that does not require a preliminary plan application; and
2. The proposed impervious cover does not exceed the maximum allowed by the zoning, restrictive covenant, or plat note for the property; and
3. The activity does not propose impervious cover over and above current zoning maximums through application of the various infill options provided in Neighborhood plans; and
4. Any increase in runoff from the site shall be discharged to an existing storm drainage system, right-of-way, or dedicated drainage easement. If this cannot be achieved, a licensed engineer must submit the following:
 - i. A signed and sealed drainage plan; and
 - ii. A signed, sealed and dated letter, addressed to the Director of the Watershed Protection Department, stating without qualification: "I certify that I have personally conducted a topographic review and field investigation of the existing and proposed flow patterns for stormwater runoff from the subject development to the main stem of (name of creek). At build-out conditions allowable by zoning, restrictive covenant, or plat note, the stormwater flows from the subject

development will not cause any additional adverse impacts for storms of magnitude up through the 100-year event."

DCM 1.2.3.C

Except as allowed by this Section or otherwise approved by the Watershed Protection Department, all discharges shall be conveyed by a closed conduit to the nearest existing storm drain.

No outlet structures from stormwater management facilities, groundwater collection, parking detention, or other improvements discharging concentrated flows shall be designed to discharge concentrated flow directly onto arterial or collector streets.

For local streets, no concentrated discharge from sites with a development site acreage larger than 0.25 acres shall be permitted.

~~All concentrated discharges shall be conveyed by a closed conduit to the nearest existing storm drain.~~

If a development is located within 550 feet of an existing storm drain system, the developer shall provide all the necessary infrastructure designed in accordance with the criteria in this manual to connect appropriately to the storm drain system.

If the proposed connection is located more than 550 feet from an existing storm drain system, the developer shall work with the Watershed Protection Department to determine the best plan to achieve an appropriate connection or convey storm water to a downstream system after confirming capacity and condition of the receiving system.

DCM 1.2.4.G

G. An easement or right-of-way as required in this Drainage Criteria Manual must be of sufficient width to provide continuous access for the operation, maintenance, or repair of a drainage facility or conveyance of stormwater.

- (1) A minimum of 25 feet in width for an open drainage system; or
- (2) ~~A minimum of 15 feet in width~~ See information below for an enclosed drainage system.

<u>Minimum Easement Width (feet)</u>											
<u>Based on Depth of Invert of Pipe or Box Culvert (feet)</u>											
<u>Pipe Inside Diameter or Box Span (inches)</u>	<u>Depth of Invert of Pipe or Box Culvert (feet)</u>										
	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
<u>18</u>	<u>20</u>	<u>20</u>	<u>20</u>	<u>20</u>	<u>25</u>	<u>25</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>35</u>	<u>35</u>
<u>24</u>	<u>20</u>	<u>20</u>	<u>20</u>	<u>20</u>	<u>25</u>	<u>25</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>35</u>	<u>35</u>
<u>30</u>		<u>20</u>	<u>20</u>	<u>25</u>	<u>25</u>	<u>25</u>	<u>30</u>	<u>30</u>	<u>35</u>	<u>35</u>	<u>35</u>
<u>36</u>		<u>20</u>	<u>20</u>	<u>25</u>	<u>25</u>	<u>25</u>	<u>30</u>	<u>30</u>	<u>35</u>	<u>35</u>	<u>35</u>
<u>42</u>			<u>20</u>	<u>25</u>	<u>25</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>35</u>	<u>35</u>	<u>40</u>
<u>48</u>			<u>20</u>	<u>25</u>	<u>25</u>	<u>30</u>	<u>30</u>	<u>30</u>	<u>35</u>	<u>35</u>	<u>40</u>
<u>54</u>				<u>25</u>	<u>30</u>	<u>30</u>	<u>35</u>	<u>35</u>	<u>35</u>	<u>35</u>	<u>40</u>
<u>60</u>				<u>25</u>	<u>30</u>	<u>30</u>	<u>35</u>	<u>35</u>	<u>35</u>	<u>35</u>	<u>40</u>
<u>66</u>					<u>30</u>	<u>30</u>	<u>35</u>	<u>35</u>	<u>35</u>	<u>40</u>	<u>40</u>
<u>72</u>					<u>30</u>	<u>30</u>	<u>35</u>	<u>35</u>	<u>35</u>	<u>40</u>	<u>40</u>

Notes:

1. Minimum easement widths for depths or pipe sizes not shown in this table must be approved by the Director of the Watershed Protection Department.

2. If the enclosed drainage system is parallel to the right of way the easement width outside of the right of way may be reduced to the to one-half of the width listed in the Table if the drainage system is located in the right of way.

DCM 5.2.H

- H. No storm drain system shall discharge into or through an inlet box. Instead the inlet shall discharge to the trunk line through a lateral line. A single connection from a one-lot or two-lot commercial subdivision or an irrigation system may discharge to an existing inlet if it does not impede the function of the inlet, and if the receiving storm drain system has the capacity to convey the additional flows. The inlet shall then be considered a junction box and shall be designed or modified to have a removable lid(s) that provides colinear access to all the storm drain lines entering and exiting for maintenance purposes.

DCM

5.3.5 – Fittings

Pipes that are to become an integral part of the public storm drain system shall be constructed with pre-fabricated fittings. This includes but is not limited to manholes (or junction boxes), wyes and bends. All fittings shall have a smooth flowline and be equal to or greater in strength to the adjacent pipe. A manhole may be used in lieu of wyes and bends.

DCM

5.3.6 – Condition Criteria

The condition of the downstream conveyance system shall be considered at all proposed connections to existing storm drain systems. If the condition indicates repairs or improvements may be needed, then the design engineer shall work with the City to determine the appropriate way to connect to the existing system, which may include participation from the City. The minimum improvements shall be to the next structurally sound downstream location in the storm drain system.

DCM

5.6.0 - MANHOLES

Manholes provide a very important access point for maintenance purposes.

5.6.1 – Spacing

Due to equipment ~~restraints~~ constraints, every point within the storm drain must be a maximum of 250 feet from an access point for drains 30 inches in diameter or smaller. For storm drains greater than 30 inches in diameter, manholes shall be placed so that there is a maximum distance of 300 feet to an access point. ~~Inlets and s~~ Storm drain outfalls may be considered as access points for maintenance purposes. Access points must be accessible in accordance with the requirements of Section 1.2.4.E of this Manual and must provide a maintenance path within the storm drain that has no more than one horizontal bend, with that bend having a deflection of no more than forty-five (45) degrees in the direction of the maintenance path, and no vertical bend with a deflection of greater than five (5) degrees. Storm drain slope adjustments of less than five (5) degrees are not subject to this requirement. An inlet may be considered as an access point for maintenance purposes if that inlet is: (1) the upstream terminus of the storm drain system, (2) located less than 250-feet from a downstream manhole, and (3) the inlet has a manhole cover that is colinear with the connecting pipe.

Manholes shall also be located where two or more laterals intersect the main line within five (5) feet of each other (See Figure 5-12 in Appendix D of this manual for examples of possible manhole locations). Manholes shall also be placed at locations where changes in pipe size occur.

DCM

5.6.2 – Public – Private Connections

A public manhole shall be provided at the public connection transition point of a storm drain system from private to public to allow public access to the public storm drain pipe without entering private property. The manhole must be in public right of way or a drainage easement. A cleanout may be used instead if the City determines that a manhole cannot be installed due to existing utility conflicts.

DCM

5.7 - DEPTH OF COVER

The design of storm drains for areas that will or could receive vehicular traffic or that will be subject to other loading must be supported by structural engineering calculations or references to structural engineering standards. The minimum depth of cover shall be two and a half feet (2.5 ft) over the storm drain outer edge except at the connection to a storm drain inlet. Depth of cover is measured from the ground elevation to the top outer edge of the storm drain.

5.7.1 - Clearance

- A. Submitted plans shall include the following for existing and proposed storm drain systems:
 - 1. Horizontal alignment of the storm drain system in plan view; and
 - 2. Vertical alignment of the storm drain system in profile view.
- B. Plans and drawings shall:
 - 1. Label all storm drain lines "SD";
 - 2. Label all storm drain lines with size (diameter for circular pipes, span by rise for box culverts, etc.) and material; and
 - 3. Label clearance distances on the plan and profile when minimum clearances are not met.
 - 4. Show storm drain lines that are 24-inches and larger as double-lined to render actual internal dimension(s) of the storm drain.
- C. Penetration of storm drain infrastructure by other utilities or structures is not allowed.
- D. The following clearance requirements apply to all fixed infrastructure and utilities. Fixed infrastructure and utilities include, but are not limited to:
 - 1. Water and wastewater mains and service lines;
 - 2. Gas lines; and
 - 3. Dry utility services.
- E. Clearances shall be measured from the outside edge of the other utility or infrastructure to the outside edge of the storm drain, manhole, inlet, or other appurtenance.
- F. The minimum horizontal clearance shall be 60-inches (5-ft) for storm drain, inlet, or other appurtenance. The minimum horizontal clearance shall be 36-inches (3-ft) for storm drain manholes.
- G. For storm drains smaller than 42-inches with a depth of cover of 6-feet or less, the minimum vertical clearance will be 12-inches above the storm drain and 18-inches below the storm drain.
For storm drains 42-inches or larger or with a depth of cover greater than 6-feet, the minimum vertical clearance will be 18-inches above the storm drain and 24-inches below the storm drain.

This language is equivalent to the following table:

<u>Table 5.8 Minimum Vertical Clearance Table based on Storm Drain Size and Depth of Cover</u>	
	<u>Depth of Cover for Storm Drain</u>

<u>Diameter/ Height of Storm Drain</u>	<u>≤ 6 ft</u>	<u>> 6 ft</u>
<u>< 42-inch</u>	<u>12-inch (above)</u> <u>18-inch (below)</u>	<u>18-inch (above)</u> <u>24-inch (below)</u>
<u>≥ 42-inch</u>	<u>18-inch (above)</u> <u>24-inch (below)</u>	

Above: minimum vertical separation above storm drain outer edge of pipe/box

Below: minimum vertical separation below storm drain outer edge of pipe/box

H. Storm drain laterals and trunk lines shall:

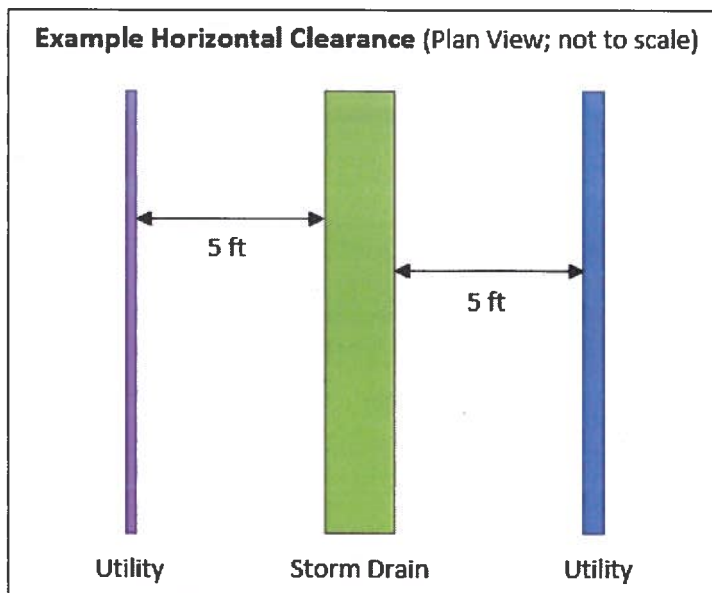
1. Not be built under structures or within 5 feet of building foundations; and
2. Be offset from public sidewalks by a minimum of 2-feet from the edge of pipe to the edge of public sidewalk but may cross under public sidewalks as necessary.

I. New street trees placed within the right-of-way shall have a horizontal clearance of 5 feet from the edge of the tree well to the outer edge of the storm drain, manhole, inlet, or other appurtenance.

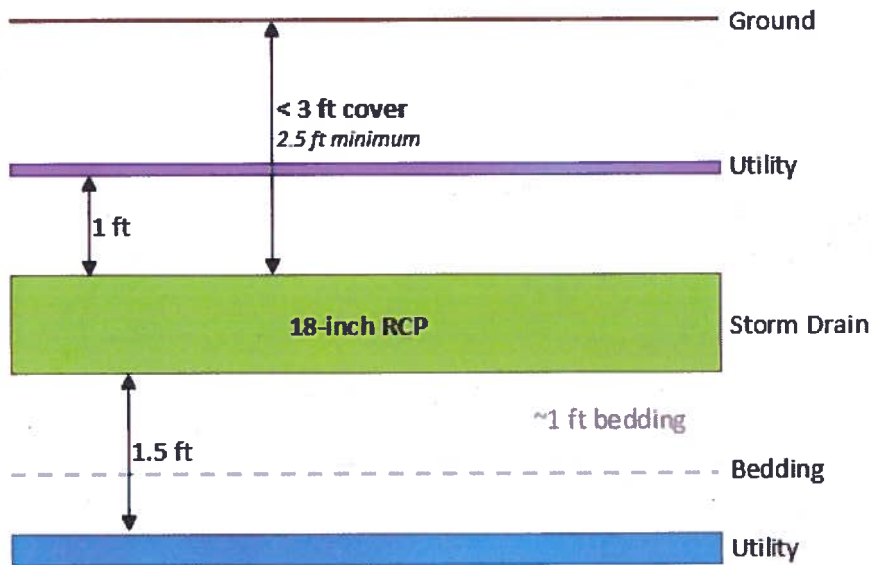
J. Consideration for less than the minimum clearances will be given on a case-by-case basis dependent upon:

1. Site constraints;
2. Size, depth, and material of proposed utility or street tree in conflict; and
3. Alternatives considered to meet minimum clearances.

K. When vertical clearance is less than values in Table 5.8, the crossing utility shall utilize steel encasement pipe, unless otherwise allowed by the Owner of the crossing utility.



Example 1 Vertical Clearance (Profile View; not to scale)



Example 2 Vertical Clearance (Profile View; not to scale)

