7/30/2019

Master List of Changes

Chapters 1 & 2

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| Use City's latest checklists and additional resources | Appendices | Make these resources available on the website. | not included in the manual |
| brass disks are only required when MFF elevations are required in a subdivision | DCM 4.6 | brass disks are only required when MFF elevations flood protection elevations are required | DCM 1.2.5 |
| | DCM 4.6 | Early grading shall not be allowed in the regulatory floodplain. | DCM 1.2.7 |
| Streetlights, traffic signals, street and sidewalk escrow is detailed. | DCM 3.1; UDC 6.4.7 and 6.4.8 | All escrow language has been removed from the DCM. Development and Payment requirements are included in the UDC already. | UDC 6.4.7 and 6.4.8 |
| flood study review fee is just for flood studies | DCM 3.1 | flood study review fee will also include detention analysis | DCM 1.5.7 |
| Drainage easement required for 25 year fully urbanized floodplain | DCM 4.6.F.5.a, 5.6.F.5.a, 6.6.F.5.a | Drainage easement required for 100 year fully urbanized floodplain | DCM 2.1.1 |
| Detention ponds are required to be within easements | UDC 6.2.3.B and D; DCM 4.3.A.2, 5.3.A.2 | Detention ponds and private BMPs are required to be within dedicated easements and have a Maintenance Agreement. | DCM 2.1.2 and 2.1.3 |
| Maintenance Agreement language was available from City | N/A | Maintenance Agreements must include specific maintenance activities and corrective action | DCM 2.1.3 |

Transportation

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| | 3.6 B.1. | Expanded the purpose of Traffic Impact Analysis (TIA). | 4.4.1 |
| Acceptance not required | 3.6 B.3.e | Added TIA Acceptance for release of permit. | 4.4.2.D |
| none | N/A | Added Subsection for Right-Of-Way (ROW) Abandonment. | 4.4.2.E |
| none | 3.6 B.3.g | Added “Required by City Traffic Engineer” to Special Circumstances. | 4.4.2.F |
| Submit no later than zoning case submittal; submitted 20 days prior to City Council action. | 3.6 B.4.b | Added TIA Submittal and Approval Language. | 4.4.3.A |
| Comprehensive plan not noted. | 3.6.B.4.c.3 | Expanded the traffic impacts to include the proposed comprehensive plan. | 4.4.3.B.4 |

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| Passby traffic percentage rates obtained from latest ITE Trip Generation Manual | 3.6.B.6 | Added City approval of passby rates | 4.4.3.B.7 |
| Existing & Proposed Traffic Volume - near term & long term analysis including 20 years | 3.6.B.9 | Revised terminology to reflect Build-out & Horizon year, including 5 years after build-out | 4.4.3.B.10-11 |
| Traffic Signals | 3.6.B.4.c.11<br>3.6.B.4.c.12 | Revised to incorporate existing sections under Mitigation Analysis subsection. Added Subsection for Roundabouts, through lanes/turn lanes/decel lanes, and signal timing modification. Required V/C ratio to be provided for proposed mitigation | 4.4.3.B.15 |
| Individual approach geometric layouts | Appendix H | Added minimum value table and detail for Intersection Geometric Design. | 4.5.3 |
| Minimum grade 0.5% unless PI>40, then 1.0% must be used. | 4.6 E.3<br>5.6 E.3<br>6.6 E.3 | Minimum grade has been changed to 1%. | 4.5.4 |
| K-Values<br>Roadway - Crest - Sag<br>Maj/Min Arterial - 120 - 90<br>Maj Collector - 80 - 70<br>Min Collector - 50 - 50<br>Local - 30 - 40 | 4.6 E.3<br>5.6 E.3<br>6.6 E.3 | K-Values have been reduced. Table 4-4 Minimum Vertical Curve Lengths have been added. | 4.5.4 |
| Maj/Min Arterial - 1000 Ft<br>Maj Collector - 800 Ft<br>Min Collector - 500 Ft<br>Local - As approved by Director | 4.6 E.4<br>5.6 E.4<br>6.6 E.4 | Reduced minor arterial and major/minor collector minimums, and added minimum for Local Table 4-6 Minimum Centerline Radius has been updated. | 4.5.5 |
| None | none | Added Section for Roundabout Design. | 4.6 |
| No concrete ribbon required on county-type section. | none (standard detail) | Paving Requirements have been updated for HMAC Rural Roadways. | 4.7 |
| 6-inch cement treated base or 4-inch additional pavement thickness | 4.6 E.5<br>5.6 E.5<br>6.6 E.5 | Paving Requirements have been updated for small areas, such as median openings or auxiliary lanes. | 4.7 |
| 8-inch lime & 8-inch cement subgrade treatment | 4.6 E.5<br>5.6.E.5 | Paving Requirements have been updated for Private Access Easements. | 4.7 |

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| None | n/a | Added subsection for General Requirements for driveway design | 4.9.1 |
| None | N/A | Design Standards have been updated for driveway design | 4.9.2 |
| Minimum radius of 2.5ft on local and minor collector. Maximum 9% (residential) and 6% (commercial / industrial) driveway approach slope | 4.6 E.<br>5.6 E.<br>6.5 C. | Min. 5ft driveway radius<br>Max. 6% (residential) and 3% (commercial/industrial) driveway approach slope | 4.9.2 |
| No mention of obstruction | 4.6 E.<br>5.6 E.<br>6.5 C. | Residential Driveways have been updated. | 4.9.3 |
| No mention of # of driveways allowed | 5.5 E. | Auxiliary Lanes have updated. | 4.9.4.B |
| Specified easement size | 5.5 E. | Signalized Driveways have been updated. | 4.9.4.C |
| 4-ft minimum width | 4.6.E.7<br>5.6.E.7<br>6.6.E.6 | 5-ft minimum width and Sidewalk Placement has been updated. | 4.10.2 |
| 5-ft wide and 4-ft off ROW line | 4.6.E.7<br>5.6.E.7<br>6.6.E.6 | TxDOT Sidewalk Requirements have been updated. | 4.10.5 |
| Table 2 | 6.5.D.4 | Table 4-10 Pavement Markings Requirements have been updated. | 4.11.3 |
| Mid-Block crossings only allowed at established school crossings controlled by school crossing guards | 6.5.D.6.g.2 | mid-block crossings allowed under specific circumstances/requirements | 4.11.4.D.3 |
| No mention. | N/A | Added subsection for Bike Lanes and Symbol Markers | 4.12.4.D.5 |
| Verification of all improvements shown on drawings, if available. | 6.5.E.2.a | The update removes the requirement. | 4.13.2.A |
| | 6.5 E. | Added requirement to locate existing and proposed right-of-way and/or easements. | 4.13.2.B.5 |
| existing right-of-way required to be shown but proposed right-of-way not mentioned | 6.5.E.2.b | relocated the requirement to locate the existing and provide the proposed right-of-way and/or easements. | 4.13.2.B.5 |
| 2-ft concrete aprons | 6.5.E.2.c | Added requirement of 10-inch concrete aprons to be constructed with pull boxes. | 4.13.2.B.7.i |

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| 1.5-in pvc for power service, 1.5 inch for fiber not defined as HDPE, 1-in pvc for detector lead-ins. | 6.5.E.2.d | The conduit section has been updated to include new sizes and types of materials. | 4.13.2.B.8 |
| None | 6.5.E.2.f | added signal phasing/signs/detection/wire termination/APS design requirements | 4.13.2.B.9-14 |
| None | 6.5.E.2.e | added section to provide for "locates" for existing city infrastructure | 4.13.3 |
| None | N/A | Added information about the fiber optic cable design requirements | 4.14.1 |
| None | N/A | Added information about the fiber optic cable locates requirements | 4.14.2 |
| None | 6.5.F | A description was added to the Street Light Design Section. | 4.15 |
| N/A | 4.5.B<br>5.5.B<br>6.5.F | combined information for specific Street types. | 4.15.2-3 |
| 38 feet wide or less streets shall have streetlights 4 feet from curb and block lengths shall be 500 feet long or greater for midblock streetlight installations | 6.5.F.1.a | removed the 38-feet wide reference and replaced it with local street or minor collector. block length reference is between 250 ft and 500 ft. from an adjacent streetlight. | 4.15.2 |
| separate pole type requirements for local/minor collector/major collector/arterial streets | 6.5.F | The sections for Pole Type were combined into one single section unifying all street types. | 4.15.1.G |
| High Pressure Sodium (HPS) | 6.5.F.2.a | The subsection was updated for Placement Criteria of LED Lights. | 4.15.3.A |
| the engineer shall provide the utility easement | 4.5.B<br>5.5.B<br>6.5.F.3.C | The description was expanded to include the owner's responsibility for any off-site easements or additional right-of-way. | 4.15.1.C |
| overhead service standards only - overhead fusing, maximum span length 150 ft. | 6.5.F.3.d | Updated the subsection for Service Standards to remove overhead fusing and max span length and add underground service standards. | 4.15.1.D |

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| Table 4 | 6.5.F.3.e | Updated the subsection for Conductors/Insulation by adding minimum gauge wire requirements. | 4.15.1.E |
| allows for decorative streetlights | 6.5.F.1.b | Updated the subsection for Special District Standards and pole type. Require the use of city standards for both standard and decorative poles unless located in private subdivision. | 4.15.1.F-G |
| None | N/A | provided requirements for signs | 4.12 |
| 24-ft wide with 30-ft inside radius and a 54-ft outside radius | 4.8.C.7<br>5.7.C.7 | Updated the Fire Lane Turning Radius. | 4.5.6.E |
| 60,000 pounds | 4.8.C.9<br>5.7.C.9 | Updated the minimum load on a bridge. | 4.5.6.G |

Stormwater

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| Goals and Objectives are scattered through the UDC | UDC 6.2 and 6.5 | Clearly state the Goals and Objectives of the Stormwater design requirements | 5.1.1 |
| Closed system shall connect to an existing system, channel or creek; | 4.6.F.4, 5.6.F.4, 6.6.F.4; UDC 6.5.1.A | Define "Adequate and Acceptable Outfall" | 5.1.2 |
| For drainage leaving a proposed development, Developer MAY BE required to mitigate adverse impact. Runoff leaving a new development must be carried to an existing concentrated flow point. | UDC 6.5.1.I | Add language consistent with Texas Water Code that new land disturbances shall not alter, concentrate, impede, or redirect the natural flow of water. | 5.1.2 |
| Stormwater Submittal requirements for planning and zoning, public improvements, construction | Various locations in the UDC and DCM, and meetings with PDS Staff | Consolidate and clarify stormwater submittal requirements and applicability of stormwater standards | 5.2 |
| No current written standards on types of stormwater models considered acceptable by the City. | N/A | Acceptable H&H modeling software | 5.2 |

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| Design Storm for Drainage inlets, pipes, bar ditches, driveway culverts, and gutter flow upstream of low points is 5 year storm | DCM 4.6.F.1.e, 5.6.F.1.e, 6.6.F.1.e | Design Storm for Drainage inlets, pipes, bar ditches, driveway culverts, and gutter flow upstream of low points is 25 year storm | 5.5.1 |
| Design storm for channels, and inlets and pipes at low points is 25 year storm with positive overflow for 100 year storm at low points. | DCM 4.6.F.1.e, 5.6.F.1.e, 6.6.F.1.e | Design storm for channels, and inlets and pipes in low points is 100 year storm | 5.5.1 |
| Concentrated runoff from a site to an adjacent property requires an easement or letter of permission. | DCM 4.6.F.11, 5.6.F.11, 6.6.F.11 | Drainage easement required for concentrated flow on an adjacent property | 5.4.3 |
| Rainfall intensity is to be determined using Hydro-35 and TP-40. | DCM 4.6.F.1.c, 5.6.F.1.c, 6.6.F.1.c | Rainfall intensity shall be based off of iSWM | 5.6.3 |
| Detention required if there is downstream flooding unless PE can prove excess flow will not change flood heights or stream velocities by more than 5%. | DCM 4.6.F.9, 5.6.F.9, 6.6.F.9 | Stormwater Storage facilities shall be designed and constructed when proposed discharge from a new land disturbance or redevelopment outfalls to an existing system with flooding or a system without capacity to contain design storm | 5.1.2; 5.9 |
| Gutter capacity is not currently considered during review | N/A | Driveway and flume discharges to the street shall not cause street gutters to exceed design limitations. | 5.5.2; 5.7.2 |
| | N/A | NRCS Methodology adopted for unit hydrograph method. Provide guidance on design storm rainfall, curve numbers impervious percentages and stream routing for hydrograph methods | 5.6.7 |
| Rational Method Criteria Update | DCM 4.6.F.1.a, 5.6.F.1.a, 6.6.F.1.a | Adopt standard engineering practice for the Rational Method and limit sub basin sizes to 20 acres. | 5.6.5 |
| The modified rational method is allowed for determination of peak runoff | DCM 4.6.F.1.a, 5.6.F.1.a, 6.6.F.1.a | Modified language to match iSWM and standard engineering practice. | 5.6.6 |

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| Runoff coefficient is based on old Zoning types not used anymore and off of geological surveys conducted by NRCS. | DCM 4.6.F.1.a, 5.6.F.1.a, 6.6.F.1.a | Runoff Coefficient table to match new land use designations. Removed stipulation that soil type be considered. | 5.6.5 |
| Gave guidance on calculating time of concentration. | DCM 4.6.F.1.d, 5.6.F.1.d, 6.6.F.1.d | Add guidance on typical times for estimating off-site times of concentration | 5.6.4 |
| Provided roughness coefficients | DCM 4.6.F.2, 5.6.F.2, 6.6.F.2 | provide range of roughness coefficients instead of a single number | 5.7.1 |
| Provided Maximum permissible velocities for creeks only. | DCM 4.6.F.2, 5.6.F.2, 6.6.F.2 | Increase maximum velocity though constructed/modified open channel to 15 fps instead of receiving stream limit, but any channel with velocities over 6fps requires hard armor. TRM required on all earthen channels (consistent with TxDOT). | 5.7.1 |
| Streets must contain 5 year storm. | DCM 4.6.F.3, 5.6.F.3, 6.6.F.3 | Streets must contain 25 year storm | 5.7.2 |
| No guidance given on clogging factor of safety | DCM 4.6.F.4.g, 5.6.F.4.g, 6.6.F.4.g | Drop inlets and inlets in low points without positive overflow must be designed with a 50% clogging factor. | 5.7.3 |
| HGL begins at the top of pipe of the connecting feature. No guidance on tailwater condition. | DCM 4.6.F.4.b, 5.6.F.4.b, 6.6.F.4.b | HGL begins at the top of pipe of the connecting feature or the coincidental flow condition (whichever is higher). Tailwater may need to be determined using coincidental flow when outfall is to a larger pipe or rivers system. Referred to iSWM Hydraulic Manual for coincidental flow table and guidance for determining headwater conditions. | 5.7.4 |
| Head Losses are to be determined using Fort Worth's Design Criteria. | DCM 4.6.F.4.c, 5.6.F.4.c, 6.6.F.4.c | References iSWM standards for calculating head losses | 5.7.4 |
| Outfalls should extend to the centerline of the stream | DCM 4.6.F.4.d, 5.6.F.4.d, 6.6.F.4.d | Outfalls shall conform with the existing stream bank and be placed at the flowline of the creek | 5.7.4 |

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| Gabion mattresses must be installed at all outlets to lower velocities and prevent erosion. | DCM 4.6.F.4.d, 5.6.F.4.d, 6.6.F.4.d | Refer to iSWM to design energy dissipation at outfalls. | 5.7.5 |
| | N/A | Supercritical flow criteria added to clarify when supercritical analysis is acceptable and include acceptable modeling criteria | 5.7.5 |
| Gabions and native stone mentioned for use in constructed/modified channels | DCM 4.6.F.4.B, 5.6.F.4.B, 6.6.F.4.B | Design standards added for stone riprap, gabions and grouted stone rip rap for use in all creeks and modified channels | 5.7.5 |
| Ditch cross section was provided in rural roadway cross section detail (3:1 slope, no maximum depth)and ditches were required to carry the 5 year storm (contain the 25 year in the ROW). | DCM 4.6.F.1.e, 5.6.F.1.e, 6.6.F.1.e, online details | Ditches shall have 4:1 slope and carry the 25 year storm. | 5.7.5 |
| Erosion clear zone varies from 50 feet from the toe of the stream to 3:1 slope from the toe plus 10 feet. Separate Creek Buffer Zone requires 25 feet from the existing top of bank. | UDC 6.5.2.A.1.c | Erosion Clear Zone will include horizontal and vertical area based upon the location of the 2-year water surface elevation. Minimum setback is 50-feet from the 2-year bank stations. | 5.7.5 |
| Flume Design Criteria | DCM 4.6.F.14a, 5.6.F.14a, 6.6.F14a | Flume and vegetated swale design criteria updated to include 1 foot of freeboard from top of curb to adjacent FFE, MFFE required to be shown on lots adjacent to flumes, minimum, defined minimum flume and vegetated swale slope | 5.7.5F |
| Recommend a minimum 1' FFE over the top of curb elevation at T-intersections, low points, or as required. | DCM 4.6.F.9.13 | Recommend a minimum 1' FFE over the top of curb elevation at T-intersections, low points, or as required. | 5.3 |
| Stormwater Storage Facilities are to be evaluated at the 5, 25 and 100 year storms | DCM 4.6.F.9, 5.6.F.9 | Stormwater Storage Facilities are to be evaluated at the **2**, 25 and 100 year storms | 5.9 |

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| Stormwater Storage Facilities require a maintenance agreement that does not include specific maintenance needs. | DCM 4.6.F.9, 5.6.F.9 | Stormwater Storage Facilities require an operation schedule to be submitted in the maintenance agreement. | 5.9 |
| Storage/Retention Pond Design Guidelines | DCM 4.6.F.9, 5.6.F.9 | Additional detention pond design criteria is provided to standardize submittals and clarify requirements: computation method restrictions are clarified, clarification that design tables are required on the plan sheet, 10' wide access easement is to be provided around the facility for maintenance, slopes shall not be more than 4:1 (this matches general guidance for slopes), clarification on when pilot channels must be provided, spillway and flow path must be designated in case a outlet clogging. | 5.9.1 |
| the number of BMPs is determined by the site acreage of disturbed area. | DCM 4.3.A.2, 5.3.A.2 | the number of BMPs is determined by the site acreage of impervious area. | 5.10.2 |
| A list of BMPs was provided. | DCM 4.3.A.2, 5.3.A.2 | Removed tree preservation, dedication of the floodplain, landscaping, cluster design and LID as BMPs. Added other BMP options including habitat restoration, rain gardens, etc. | 5.10.3 |
| Detention is an allowable BMP if it retains the first 1" of runoff and releases it slowly over 24-48 hours. | DCM 4.3.A.2, 5.3.A.2 | A forebay must be included in a detention pond in order for it to count as a stormwater BMP | 5.8.2 |
| Floodplain requirements are applicable to all creeks and channels. | DCM 4.6.F.7, 5.6.F.7, 6.6.F.7 | Floodplain requirements for flood studies are applicable to all reported flood prone areas, FEMA floodplain, and City identified flood hazards. | 5.8 |
| Update to Flood Study Matrix | DCM 4.6.F.7, 5.6.F.7, 6.6.F.7 | Requires existing conditions models to be submitted for all proposed construction whether in the mapped floodplain or not | 5.8.2 |

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| Applicants have option to dedicate 100-year fully developed drainage easement in the floodplain or provide compensatory storage is required when there is fill in the floodplain. | DCM 4.6.F.6, 5.6.F.6, 6.6.F.6 | Compensatory storage is required for fill in the floodplain. Clarifies how compensatory storage is measured. | 5.8.3 |
| BMPs shall be evaluated during the conceptual design and included in the public stormwater system if installed. | DCM 6.3.A | BMP section applies to both public and private improvements. | 5.1 |
| BMP maintenance responsibility shall be included either as a maintenance statement on the plat or by a maintenance agreement filed by separate instrument. | UDC 6.5.2.B.3 | Maintenance Agreements shall be filed at the County for every detention pond and BMP regardless of the maintenance statement on the plat. Agreements shall include estimate of maintenance costs and funding sources. SWMPs must be attached to the maintenance agreements. The post construction BMP installation verification and inspection shall be submitted to the City or included in the as-built letter. | 5.10.3 |
| SWPPP - Temporary Controls During Construction | DCM 4.B, 5.B,6.B | Definition updates to match City's website and TCEQ language | 5.11 |
| SWPPP - Temporary Controls During Construction | DCM 4.B, 5.B,6.B | Reference standard details and specifications that have been adopted | 5.11 |
| | N/A | Sedimentation ponds need to have excess materials removed prior to final inspection if pond is going to be used as a permanent detention pond | 5.11.3.F |

Water/Sewer

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| | 3.1 | Added: Adopted by council | 1.5. Development Fee Descriptions |

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| Current manual allows water main minimum allowable radius per outdated requirements. | 4.4.D.2 | Change: Mains should generally be constructed in a straight alignment. In conditions where the design engineer intends for the contractor to use pipe joint deflection in lieu of fittings, the drawings shall include and make specific reference to the manufacturer's deflection tolerances. In no case shall the designed deflection be greater than the manufacturer's maximum joint deflection. The design engineer shall provide a plan view on the drawings, including the manufacturer's minimum radius, the design radius, beginning and ending of curvature, and a detail of the proposed typical deflection. | 3.1.2. Water Main Sizing |
| Current manual says dead end systems shall be avoided where possible, but if necessary shall not exceed 2,000 feet. | 4.4.D.1 | Change: Water mains shall be constructed in a looped configuration. Water mains located within a cul-de-sac are not required to be looped under certain conditions. | 3.1.3. Water Main Placement |
| None | N/A | Added: Water mains with less than 2 feet of clearance below a 30-inch or smaller storm drain shall be: Ductile Iron pipe or installed with steel casing pipe. | 3.1.3. Water Main Placement |
| None | N/A | Added: Water mains installed below a 33-inch or greater storm drain pipe, box culvert or channel shall be installed within a steel casing pipe. | 3.1.3. Water Main Placement |
| Current manual states minimum size water service line shall be 1-inch. | | Changed: Acceptable domestic water service sizes shall be 1-inch, 2-inch, 4-inch or 6-inch. | 3.1.4. Water Services – Domestic, Irrigation, and Fire |
| None | N/A | Added: Service connections are generally prohibited on transmission mains. In lieu of connection to a transmission main, WU may require a parallel distribution main to be installed. Exceptions will require approval by WU. | 3.1.4. Water Services – Domestic, Irrigation, and Fire |

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| None | N/A | Added: Domestic and irrigation service connections are prohibited on private fire services and public fire hydrant leads. | 3.1.4. Water Services – Domestic, Irrigation, and Fire |
| Current manual states for all single family detached and duplex residences, excluding townhouses and apartments, fire hydrants shall be spaced to have an effective radius of 500 feet or a fire hose laying distance of 600 feet, whichever results in the closer fire hydrant spacing, or as required in the current Fire Code. | 4.4.D.4 | Change: For all one (1) and two (2) family residences, excluding townhouses and apartments, fire hydrants shall be installed when any exterior portion of the building protected is in excess of six hundred feet (600'), as measured by the laying distance for fire apparatus hose lines along public streets and rights-of-way, from the nearest water supply on a public street. | 3.1.7. Fire Hydrants |
| Current manual states fire hydrants for all other land uses shall be spaced to have an effective radius of 300 feet or a fire hose laying distance of 500 feet, whichever gives the closer fire hydrant spacing, or as required in the current Fire Code. | 4.4.D.4 | Change: For all other land uses, except one (1) and two (2) family residences, including townhouses and apartments, fire hydrants shall be installed when any exterior portion of the building protected is in excess of five hundred feet (500'), as measured by the laying distance for fire apparatus hose lines along public streets and rights-of-way, from the nearest water supply on a public street. | 3.1.7. Fire Hydrants |

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| Current manual states sanitary sewer main minimum allowable radius for PVC pipe shall be greater than Radius=300*Diameter. | 4.4.D.2 | Changed: Mains should generally be constructed in a straight alignment from manhole to manhole. In conditions where the design engineer intends for the contractor to use pipe joint deflection, the drawings shall include and make specific reference to the manufacturer's deflection tolerances. In no case shall the designed deflection be greater than 80% of the manufacturer's maximum joint deflection. The design engineer shall provide a plan view on the drawings, including the manufacturer's minimum radius, the design radius, beginning and ending of curvature and a detail of the proposed typical deflection. | 3.2.3. Sanitary Sewer Main Placement |
| Current manual states a minimum velocity of 2 ft/s shall be maintained. | 4.4.6.E.1 | Change: Mains shall be designed to produce a minimum velocity of 3.0 feet per second or greater when flowing half full based on Manning's equation using an "n" value of 0.013. Exceptions will require approval by WU. | 3.2.3. Sanitary Sewer Main Placement |
| Current manual states sanitary sewer mains shall be installed on a uniform grade between manholes. | 4.4.6.E.2 | Changed: Consecutive mains upstream and downstream of a manhole shall maintain a similar grade to avoid flow conditions that can create a hydraulic jump. Table 3-4 Sanitary Sewer Main Grade Change Restrictions lists specific grade change restrictions for specific sizes. | 3.2.3. Sanitary Sewer Main Placement |
| None | N/A | Added: Sanitary Sewer mains with less than 2 feet of clearance below a 30-inch or smaller storm drain shall be: Concrete Encased or installed with steel casing pipe. | 3.2.3. Sanitary Sewer Main Placement |

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| None | N/A | Added: Sanitary Sewer mains installed below a 33-inch or greater storm drain pipe, box culvert or channel shall be installed within a steel casing pipe. | 3.2.3. Sanitary Sewer Main Placement |
| Current manual states on sewer services 5" and larger in size, an approved manhole shall be installed at the City sewer main. | 4.4.6.E.2 | Change: A manhole is required at service connections 8 inches and larger. | 3.2.4. Sanitary Sewer Services |

Parks

| Current Requirement | Current Section | Proposed Changes | New Section |
|---|---|---|---|
| | 6.2 | Removed Hackberry and Green Ash. Added Chinquapin Oak and Bald Cypress. | 6.2 |
| | 6.3 | Rewrote section to include the COA Monarch Butterfly initiative. | 6.3 |
| | 6.5 | Added language regarding the landscape architect having a current and active license in the State of TX. | 6.5 |
| | 6.5 (A) | Change slope steepness from 3:1 to 4:1. | 6.5 (A) |
| | 6.5 (F) (7) | Added approval of City Forester is required. | 6.5 (F) (7) |
| | 6.5 (G) | Added section on Temporary Stabilization. | 6.5 (G) |
| | 6.6 | Add Live Oak. | 6.6 |
| | 6.6.2 | Add that all irrigation plans be sealed by a licensed Irrigator in the State of Texas. | 6.6.2 |