STREET PROCESS MANUAL

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Project:	**Dallas Urban Design**	**Reviewed By:**	Team
Submittal:	**Final Document**	**Date:**	9/9/2019

Item #	Pg. #	Section #	Comment	Proposed Response	Action Taken
1	2	1.1	We strongly endorse the principle as stated here, "a street is a place," and should be treated as an ecosystem.	C	No change necessary.
2	8	1.5.1	Review and revise first sentence of section.	A	Will improve wording of the sentence. "The landowners whose property adjoins a street will be affected by both the final design of the street and its construction. Adjacent landowners are important stakeholders to be considered during the street design process."
3	37	5.2	Revise "shall be" to "are" in first section of section.	A	Will change sentence to read: "It is the responsibility of the Designer to ensure that all agency requirements are satisfied before approval of the final design is provided."
4	38	5.4	Project cost estimates should reflect the real costs for implementing the intent of these manuals. The language here should reflect that as a baseline consideration for any future project.	C	Will add the following to this section "Project budgets shall be developed to reflect the intent and requirements of this manual. In addition to the roadway elements, the budget shall include appropriate urban design elements fitting the context of the street project in its neighborhood or proposed development. The budget figure shall include soft costs such as professional services and real estate for needed right-of-way or easements.."

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1	1	General	It's great to see "complete streets" made legitimate under the new design code. I'm not a traffic engineer, so I would love to hear an explanation of the relationship between CS and the adopted Manual. Perhaps a public meeting?	C	Thank you. The Complete Streets document is a policy level document adopted by City Council and became the basis for how the Street Design Manual has evolved.
2	1	General	Maximum Speeds. Why is the longstanding and auto-centric 30 MPH for local not challenged? If we could keep most residential urban traffic to 20 miles per hour or less, we could eliminate the vast majority of deaths from car crashes in our cities and towns. We wouldn't eliminate mistakes—people, both inside and outside vehicles, are going to make them—but those mistakes would rarely be deadly.	C	The 30 MPH value is State law for speeds on local streets. (TEX. TRANSP. CODE § 545.352: Local streets = 30 MPH, Alley = 15 MPH) Local jurisdictions may lower State-mandated speed limits by performing an engineering and traffic investigation; certain conditions require holding a public hearing. Other specific guidelines must also be followed.
3	1	General	Why should parking be unrestricted on residential streets?.....could it be restricted to, say auto parks set a block away?	C	This is a property rights issue and parking is not usually restricted on local streets. However, it could be restricted which may require specific technical analyses, consideration of stakeholders, public hearings, and possibly approvals through City Plan Commission and/or City Council. If part of a larger development controlled by a Planned Development regulation, parking could be contained and limitied to specific on-site locations.
4	1	General	Overall, we support the Manuals and urge swift City Council approval. We have suggested specific changes below…	A	Thank you to the GDPC for their support.
5	2	1.1	Note the Standards may refer to *either* Minimums or Maximums.	C	Yes, it can vary depending upon the criterium being applied. Criteria are specifically called out and applied later in the manual.
6	2	1.1	Although the first adjective used in this paragraph is "safe", we would like to see more than aspirations here. "Vision Zero" and similar initiatives set a new baseline for "acceptable mortality rates." Surely such goals are shared by the City; but, they need to be reflected in the approved designs. Applicants for any projects -- public or private, everyone involved -- must be encouraged to embrace these goals with an understanding of the intent of these treatments in reducing fatalities.	C	At this time, there is no intent to include Vision Zero goals and requirements are beyond the scope of these updated manuals. Establishing such goals first require City Council approval.
7	4	1.4	Does Dallas County Public Works have a manual?	C	We do not know of one. Dallas County usually uses TXDOT criteria.

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8	6	1.4 cont.	Should some mention be made of 'micro-mobility' accommodation (inclusive of bikes and e-scooters, etc.? Perhaps a placeholder for future guidance related to these? Also in Section 3.2.6?	C	The City is in the process of developing a micro-mobililty policy for e-scooters and bikes, but that policy has not yet been adopted by City Council or any other governing body.
9	10	2.1	Under functional classifications, "posted" speed limits are reflective of state law, however, "design speeds" should be set lower, wherever possible, to a point consistent with full/appropriate accommodation of all types of vehicles and road users, motorized or otherwise.	C	In Table 2.1 on page 12, posted speeds are noted. Table was correlated to Target (design) Speed covered in 4.2.2 (page 54) by addition of a line for Target Speed that aligns with Table 4.2 (page 57).
10	12	2.2	In Table 2.1 of "Typical" classifications, can these be more specific re. inclusion of "Bicycle Routes" in the Designated Thoroughfares column by saying they should be "Accommodated as planned - consistent with current BIKEWAY design standards" (RATHER THAN SIMPLY SAYING "NOT RECOMMENDED")	B	Agree with suggested approach; can modify to provide for bike routes on arterial streets as some bike routes (especially near the CBD) are on designated arterials (such as Houston, Jefferson, Zang).
11	12	2.2	In the definitions section below the table, consider describing bicycles and other Mircomobility options related to Function; System Continuity; Traffic Volumes and Spacing - so that these modes are embodied within the overall considerations.	C	No change is planned to be made in these categories to specifically address bicycles and micromobility devices at this time. City staff is in process of developing a policy on micro-mobility devices. Later, it may be appropriate to include such provisions in this manual.
12	12	2.2 (Table 2.1)	With so little time to read and absorb, I must limit my response to this central one: this plan is still car-centric. Speeds listed, even for local streets (30 MPH) are car and truck speeds way too high to be safe for sharing with pedestrians and bikes. 20 MPH or less is plenty of speed in a neighborhood. (The stopping distance at 20 is three car lengths, while it doubles to six at 30 MPH.)	C	Speed on streets is regulated by State law,, State Highways outside urban districts - 70 MPH day, 65 MPH night; Other highways outside urban districts - 60 MPH day, 55 MPH night. Local jurisdictions may lower State-mandated speed limits by performing an engineering and traffic investigation; certain conditions require holding a public hearing. Other specific guidelines must also be followed.
13	13	2.2.1	Where bicycles are shown on arterials within the Bike Plan, they should be properly accommodated per current adopted standards (protected lanes wherever possible).	C	Assume that this relates to Bike Routes portion of Table 2.1. Accommodation language provided. NACTO provides a menu of possible options.
14	13	2.2.1	Can it be acknowledged here how "Posted Speeds" may be (and that it's okay to be...) effected by "Design Speed," where the intent is to achieve a 'Complete Streets' configuration?	C	A line has been added for Target Speed values with reference to that section of the manual.

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15	13	2.2.1	Mention of Bicycle Routes as "identified in the 2011 Dallas Bike Plan" seems restrictive and fails to acknowledge future updates or subsequent variations. Consider stating as "…in the *currently-adopted* Bike Plan or as approved by the Director"?	C	The "2011 Dallas Bike Plan" is the title of that document, so the date reference has been retained. The very first paragraph of Section 1.4 expects these standards to be amended and updated from time to time, and the latest versions to be used.
16	13	2.2.1	Sidewalks - …are required for… (consider adding: "…or for continuity of a given, purposeful pedestrian route." (i.e. to schools, transit, shopping or workplaces)	C	This additional text will be added to enhance the intent and need consistent with the objectives of the manual.
17	13	2.2.5 paragraph 2	Reference to "Traffic control devices may be installed to protect or facilitate traffic on a collector street" must in every instance refer to traffic types, as in "motor vehicles" (bicycles are also vehicles); and that these types of controls "...should be designed to facilitate passage-through by traffic other-than motor vehicles." (A better definition of exceptions?)	C	Appropriately, the paragraph has been expanded to include the protection or facilitation of pedestrians.
18	14	2.2.7	I disagree with this provision in the manual: "Through traffic should be discouraged on local residential streets. New residential subdivisions should be laid out with irregular street patterns and cul-de-sacs to minimize the opportunity for through traffic. Existing residential streets may be modified through the application of traffic control measures or traffic diverters." Again, its all about cars, and is inconsistent with new-urbanist thinking. There is abundant evidence that irregular streets and cul-de-sacs actually suppress neighborhood social life. For those on bikes local streets currently provide more secure bike use for longer distance trips.	C	This difference in approach is how the City plans to move forward at this time, and is really focused on single-family detached homes. Designers can propose something different if desired for a specific project.
19	14	2.2.7 paragraph 2	This paragraph encourages irregular street patterns and cul-de-sacs, which are an anathema to current urban planning theory. Care must be taken throughout these manuals to encourage small blocks and permeability - if only for pedestrians, bicycles and other micro-mobility modes. Mobility infrastructure must accommodate these in every reconfiguration that is undertaken.	C	There are many options which a designer can devise depending upon the development or redevelopment program being implemented.

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20	14	2.2.8 Alleys	…incorporate green-infrastructure to the extent possible in every alley.	C	For alleys in dedicated ROW, "green alleys" are not desired by the City due to additional long term cost to maintain the "green infrastructure".
21	14	2.2.9	Street Volumes and Capacities statement leans toward traditional thinking - refers only tangentially to inclusion of other uses or modes.	C	Reference has been added to Section 4.2.3 which places greater emphasis on the context in which the street is located.
22	15	2.3.1	Evidence seems lacking here that other travel way configurations might call for different limitations or dimensions to better accommodate other modes.	C	Standard and minimum configurations are indicated for the purposes of establishing a design "starting point". If something different is desired and warranted to fit a specific project, that configuration can be propoosed, discussed with the City, and determined if workable or not.
23	15	2.3.1	Per item 3, ensure that "existing sections" don't result in limiting reconfiguration of other modes? (as opposed to saying "…will not be widened.")	C	Existing roads sometimes limit some modes. This is not always bad. No change to the text is desired at this time.
24	16	2.3 (Tables 2.3 & 2.4, Figures 2.2 & 2.3)	Road and lane width: why does a lane need to be 12 feet? Empirically, we know that when lanes are wide, the speeds get higher. I can see wide lanes and "forgiving design" on a high-speed road. City streets, on the other hand, should be places for people. We know how to design streets that will slow down traffic automatically, without the need for heavy-handed enforcement. Look also into chicanes and other design features that calm traffic.	C	Lane width relates to traffic volumes, distribution among vehicle types, frequency of use, and vehicle sizes which will use the roadway lanes. Standard and minimum widths are provided which are consistent with industry accepted values.
25	17	2.3.2	For Figures 2.2 & 2.3, are median widths sufficient to meet ADA requirements at LTs?	C	At typical intersections, crosswalks need to be located in front of a narrow median nose to meet ADA & TAS requirements. Otherwise, a minimum median width of 6 feet such as for mid-block crosswalks if only half of the street is crossed. This is addressed in Section 4.4.5.4.
26	20	2.4.2	Here (and perhaps elsewhere in the Bike Plan or Thoroughfare Plan) we urge provision for off-street shared-use pathways in addition to on-street accommodations.	B	Additional ROW is needed to provide for additional off street shared (bike & ped) pathways. NACTO has examples of how this can be done in their Urban Street and Urban Bikeway design guides. A bullet item will be added under Additional features: Where feasible to accommodate specific transportation modes, provision of an offstreet pathway for bicycles and micro-mobility devices should be considered.

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27	21	2.4.3 (page 21) 2.4.7 (page 25)	The associated images could better reflect 'pedestrian scale lighting' and "trees and landscaping' (think Bagby St. in Houston?) Graphics should avoid depicting motor vehicles parked within bike lanes. (p. 25)	B	Only a few short portions of Bagby St appear to be representative of the comment; pedestrian scale lighting and trees can be added to the graphic. The 2.4.5 graphic will be fixed to remove the car parked in the bike lane.
28	34	3.2.1.7	Figure 3.2 doesn't appear to match TxDOT manual.	C	Yes, it does appear to match.
29	37	3.2.4	RR requirements seem to be left to the rail line owners' discretion. Can the City be more proactive in requiring all rail line owners to include or provide accommodation for sidewalk and trail crossings at current roadway intersections? Agencies seem to have a long history of	B	There is only a certain amount that the City can require of railroad owners and operators. Collaboration with RR owners / operators is required. Reference will be made to Section 4.4.4.5 (page 98) of the manual. Street designers are required to provide for the safety and accommodation of bicyclists and pedestrians are indicated. These
30	37	3.2.4.3	Figure 3.4 references 40' for driveway spacing but text states 50'.	B	Will revise so that the figure and text agree. Coordinate also with Sect. 4.4.4.5. Modified to be 100 feet to agree with Dallas City Code.
31	38	3.2.6	On-Street Bike lanes, protected. The manual provides for bike facilities within a street, including facilities "where bicyclists share the travel way with vehicles, which are most appropriate for low-volume, low-speed streets as well as dedicated facilities such as a bike lane, which MAY have a barrier or buffer between bicyclists and vehicle traffic and in some situations, a side path behind the curb may be determined as the most appropriate bikeway for a corridor". Painted stripes are far too little to make streets safe for bike or e-scooter riders. Protected bike lanes should be the default, with curbs or parked vehicle lanes as a buffer.	C	Painted lanes is one of many solutions which a designer may select from based upon many elements of a possible street configuration and concept. Further design guidance is provided by NACTO and other referenced design guideline sources.
32	98	4.4.4.5	In order to match the Code, there needs to be a modification: "Intersections, alley access, and commercial driveways shall be at least 100 feet from railroad right-of-way a rail crossing gate. A center median shall be provided in the approach to a rail crossing. Exceptions: commercial and residential driveways that are limited to "right-in and right-out" only movements are allowed within the 100 feet but no closer than 20 feet from the railroad right-of-way rail crossing gate."	B	To match City Code, the design manual (this section and Section 3.2.4.3 on page 37) will be modified and correlated to not allow any new driveways or intersections within 100 feet from a RR ROW, except where grandfathered and provides legal driveway access to a specific property.

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33	150	5	Compaction Moisture and % Compaction -2 to +4, 98%, PI ≤ 25 0 to +5, 98 to 102%, 25 < PI ≤ 45 +2 to +6, 95 to 100%, 45 < PI For cement-treated clays: must cure as normally required, then allow to air dry for one week, trim samples (3) for swell testing at 4 psi overburden. Swell test should be run for at least 96 hours.	C	Comment appears unclear and lacks a specific reference so that it can be better assessed against the manual.
34	150	5.1	The load bearing capacity of the subgrade can be determined by performing a soils engineering investigation of the site for a proposed pavement.	C	Agree. That's what the text says.
35	150	5.1	A reasonable estimate can be made of the traffic including the number of equivalent 18-Kip single axle wheel loads (ESALs) anticipated during the expected life of the pavement.	C	Agree. That's what the text says.
36	150	5.2.1	Based on an established roadway geometry that's has previously been reviewed	A	Agreed, "that's" shall be replaced with "that has"
37	150	5.2.1	Writes the following after item #4: Trees Sulfates Wet seasons/conditions represent biggest challenge. That's when most damage occurs. Granular fill poses significant risk to pavement life.	C	Comment appears unclear and lacks direction. The data provided does not appear to be related specifically to the topic "Design Approach Strategy". Not reccomended as 5th on the list.
38	151	5.2.2	Writes "Why??" next to item #2	B	Will add to this numbered item ", where needed for roadway structures such as bridges or if less than 10 feet below proposed profile grade of the raodway and the rock may effect subgrade design."
39	151	5.2.2	Puts a red box around the word Minimum on item #5	B	This should be "Maximum" not minimum.
40	151	5.2.2	Writes Nominal next to item #8	A	Agreed, term "nominal" shall be added.
41	151	5.2.2	Adds "or Nx Coring, as appropriate." at the end of item #10	B	Will add text as suggested.
42	151	5.2.2	Puts a red box around #15 and states "The use of granular fill beneath pavements has provided ready access for water to expansive soils, permitting localized problems to become global.	C	City disagrees with comment; flex base is allowed, and especially useful for pavement repairs, alley work, and other applications.

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43	151	5.2.2	On item #16, states that flexible base is NOT an accetible alternative subgrade material, as he explains in his comment on item #15	C	City disagrees with comment; flex base is allowed, and especially useful for pavement repairs, alley work, and other applications.
44	151	5.2.2	Item #17 - Barriers must consider presence of utilities and large vegetation.	B	Agreed, will add the following sentence. "Barriers may be considered in the presence of utilities and large vegetation."
45	151	5.2.2	Where soil conditions are variable and the conditions can reasonably be delineated, provide distinct design alternatives for pavement and subgrade for the range of Plastic Indices of soils: 0 to 15, 15 to 25, 25 to 45, greater than 45	A	Agreed, will revise.
46	151	5.2.2	Adds a new #25 between #24 and #25: "25. Provide recommendations for reducing the impact of large trees on long-term roadway performance." and changes original #25 to be #26	A	Agreed, will include new bullet reccomentation. "25. Provide recommendations for reducing the impact of large trees on long-term roadway performance."
47	151	5.2.2 Item #13	Soluble sulfate test needs to be conducted ~~for soil when there is doubt about its existence to prevent~~ formation of ettringite which causes heaving of pavement to the extent possible	B	Agreed, will revise to the following "Soluble sulfate test needs to be conducted to prevent formation of ettringite which causes heaving of pavement"
48	152	5.2.3.3	The North America Free Trade Agreement (NAFTA) permits Mexican and Canadian commercial vehicles to travel all Texas roads. Canadian limits on maximum vehicle loads are equal to or less than U.S. Department of transportation and Texas rules. However, load limits for commercial vehicles in Mexico are significantly greater than U.S. and Texas standards with fully loaded Mexican tractor-trailers permitted a total weight of 135,000 pounds compared to 80,000 pounds in the U.S. and Texas. If truck traffic from Mexico is likely or expected, the impact of the higher truck load limit must be considered in the pavement design.	C	No reference will be made to NAFTA, and no specific assessment of traffic is required for vehicles which may be allowed in the US via NAFTA. The City does not expect its local streets and thoroughfares to experience an unusual or abnormal impact due to NAFTA regulations. NAFTA permitted traffic is much more likely to be resident on State roads and highways.
49	153	5.2.3.3	Item #3: "...and duration of service needs to be known to establish volume of bus traffic. Bus loading conditions ~~need to~~ must be assessed ~~whether lightly loaded, heavily loaded, or somewhere in between.~~	A	Agreed, will revise are requested. "Bus loading conditions shall be assessed."
50	153	5.2.3.3	5. Unless more specific data is available, the remaining portion of the vehicular light traffic is distributed as follows:	C	No changes required.

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51	153	5.2.3.3	6. Calculations are should be based on the total traffic volume and percentage of heavy truck / bus traffic using the procedure given in AASHTO Guide for Design of Pavement Structures.	C	No changes required.
52	153	5.2.3.4	CBR Parameter should be 3 and not 5	C	Value based on common design criteria parameters. The range for CH soils is 3 to 10. City desires to retain the value = 5.
53	153	5.2.3.4	PI greater than 15 should be 150 pci and not 200	C	City retains the 200 pci value that originated from the previous version of the "Paving Design Manual".
54	154	5.2.3.4	Crosses out items 1,2, and 4 in table 5.3 stating "too brittle"	C	City will retain this table.
55	154	5.2.3.4	Soil PI equal or less than 25 but greater than 15 the pci should be 250 not 350	C	City retains the 350 pci value.
56	154	5.2.3.5	Items #1, 2, and 3 are crossed out with the statement "Terrible Idea! Super highway for water! No!"	C	City retains the text as written.
57	154	5.2.3.5	Item #2 under additive substitutions he states "NO MUST BE TESTED! Only if PI ≤ 25."	B	Change to text made to clarify and require testing of site soils for determination of cement content needed.
58	154	5.2.3.6	Cement stabilization shall be used for all subgrade soil conditions (lean clay or granular soils)	A	Agreed, will comply.
59	155	5.2.3.10	Points to Heavy Truck/Bus Traffic section of table A and states "Looks low for 2% (67.4 million / 5 ~ 13.7 million ESALs"	C	These are values which the City desires to carry forward. No change made.
60	155	5.2.3.6	Points to the sub-paragraph that starts The "Heavy Duty Design" case…and says "I really dislike this - should be limited to PI ≤ 25.	C	Value based on common design criteria parameters and originated from the previous version of the "Paving Design Manual". No change made.
61	155	5.2.3.9	...by means of Atterberg Limits, optimum moisture content, penetrometer compressive strength readings estimates, and unit dry weight.	C	No change required.
62	155	5.2.3.9	Points to second paragraph and states "expand"	C	Comment is unclear and lacks direction. No change made.
63	156	5.2.3.10	Points to table headings on table 5.4 and adds "and ≤ 25" under P.I. Greater than 15	C	No change per City directive. Value based on common design criteria parameters. Originated from the previous version of the "Paving Design Manual".
64	156	5.2.3.10	Points to line between table headings P.I. Greater than 15 and Base Pavement and states "PI > 25 - LTS only"	C	No change per City directive. Value based on common design criteria parameters. Originated from the previous version of the "Paving Design Manual".
65	156	5.2.3.10	Concrete pavement thickness for Heavy Duty Design must be thicker for the EASL count provided	C	Column lable modified to be "Minimum Concrete Pavement Thickness"; these values have been defacto standards, but now must be validated by a geotechnical report.

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66	157	5.2.3.10	Points to notes 1.b and c and states "Here too"	B	Formatting will be corrected; there should be a space between bullet C and the statement applies to all three items (a, b, and c).
67	157	5.2.3.10	Lime Stabilized Subgrade - LTS needed to limit subgrade pumping.	C	No change required.
68	157	5.2.3.10	Points to last paragraph in note #3 and states "No, must be tested including swell test"	B	Changed to indicate that the rate shall be established by testing of site soils.
69	159	5.2.4	...The subgrade treatment for sidewalks against the curb shall be ~~(1)~~ six inch thick lime treated soil ~~or (2) six inch thick select backfill,~~ if the subgrade P.I. is greater than 15.	C	No change required.
70	161	5.3.3	Points to 3rd paragraph and states "Say something else"	C	No change required.
71	161	5.3.3	These types of soils are highly expansive and ~~soften excessively when exposed to water~~ experience significant shrinking and swelling with changes in soil moisture.	A	Agree, will revise as noted.
72	161	5.3.3	Second column, 4th subparagraph "Vertical flexible moisture barriers - limit utilities require utility backfill completion details to limit water migration."	C	City does not want to add a hard requirement for vertical flexible moisture barriers or to limit utility work with new details to limit water migration.
73	161	5.3.3	Puts a red box around "such as french drains" and states NO!	C	Item is correct
74	161	5.3.3	Drainage catchment facility provision items are out of sequence	C	No particular sequence is required.
75	161	5.3.3	Materials subject to being easily torn should be avoided	A	Agree, will add sentence after second bullet
76	161	5.3.3	Disagrees that crushed rock be used; suggests rounded	A	Will revise to "rounded rock".
77	161	5.3.3	Gives a "?" at the end of the last subparagraph of the page	C	Comment appears unclear and lacks direction.
78	162	5.3.3	Install clay "collars" at each end to limit seepage through trench. Also, eliminate gravel "rock" backfill	C	City will not add a requirement for clay collars to limit seepage; this is contrary to current pipe embedment details.
79	162	5.3.4	...Moisture content tests, ~~hand penetrometer tests~~ and swell tests shall be performed to ~~determine~~ estimate the differential soil PVR along the proposed alignment. If the expected differential PVR exceeds two (2) inches, the designer shall propose...	C	No change required. Sentence is currently fine as is.
80	164	5.4.1	Needs to explain expansive soils too	C	No change required.

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81	165	5.4.2.2	Puts a red box around the 3rd paragraph and states "The first time trees are mentioned! Applies to "Normal Paving" as well. Tree root barrier design should be included."	C	This data is covered in Section 4.5.4 Lanscape and 4.5.5 Landscape Elements

DRAINAGE DESIGN MANUAL

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1	0	General	General comment, multiple pages - references to be found on website are difficult to find quickly, recommend providing hyperlink	C	Hyperlinks were not recommended due to broken links being common when items move. Not providing hyperlinks is a better way to keep the manual from being out of date.
2	0	General	General Comment: The Commonwealth of Virginia, the National Engineering Handbook, Hydraulic Institute Standards and several other design sources are referenced throughout the manual without showing where each source applies or providing references to any of them for the information or design parameters quoted throughout the manual. Please provide a list of all design guidelines used and reference where each is used. Please specifically reference the NCTCOG Public Works Construction Standards, the iSWM Technical Manual, and the City of Dallas City Code (DCC 19-118).	D	Recommend that these design resources be kept on a list online - recommended list attached. NCTCOG Public Works Standards are to be used when needed, but not used in manual. Several of these are additional references, not necessarily where the info was pulled from. We were asked specifically to not mention iSWM but several items are pulled from it. We can include it and other items in design resource list. DCC 19-118 is referenced in Section 9.2.6.1 for construction general permits.
3	i, iii, iv	Table of Contents	Recommend change order of topics from broad to focused (section 10 and section 9 to section 2 and section 3, respectively)	C	Order of sections based on TOC provided by City. Sections 2-6 will likely be the most frequently used sections of the manual, so it is helpful to have them at beginning.
4	3	1.3	Could not locate list of approved software and design resources on webiste, recommend providing hyperlink	D	These items are not on the website yet, but it has been discussed that the City will need to provide these lists on the website. Recommended software lists have been previously provided to the City and will be provided to those who would like to review.
5	4	1.4	Recommend specifically stating that City capital projects must follow same process as private developments	A	We will add.
6	8	2.1	"All System will be designed to accommodate the 1% annual chance storm even or flood of record." What about situations in which we cannot design to 100-year storm event?	B	Will add that all "new" systems must comply.
7	8	2.1	Detention/retention for 4 storms will create odd outlet structures, recommend min/max approach of 1% and 50%	C	This regulation helps meet CRS requirements.
8	8	2.1	Is the intent for driveway culverts and low water crossings to be increased to 100-year capacity ulitmately?	C	Yes

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9	8	2.1	Recommend adjusting language for freeboard to top of bank, will lead to 100% conveyance and no valley storage if FEMA models do not specifically and consistently use SCS, recommend using effective hydrology method of FEMA.	B	Will revise to read "top of bank or top of conveyance section covered by easement or regulated floodplain in spreading creek or river." See comment response 14. Will add "If modifying an existing regulatory model performed using a different methodology, continued use of that methodology may be allowed as approved by the Director."
10	8	2.1	Recommend using higher C coefficients or frequency factor for larger events to account for saturated soils.	C	Previously discussed with City and not desired
11	9	2.2.1.1	Have land use values been calibrated to City conditions by a recent analysis? If ADU is allowed in SFR zones, C should be higher than textbook values.	C	There has not been a recent calibration. City does not wish to change C values at this time.
12	9	2.2.1.1	Does PWQ vary so much that a range is needed? Recommend using 1 value for simplicity.	C	It is not a requirement to assess a water quality volume. Staff elected to provide a range to allow for owner's preference.
13	9	2.2.1.2	Recommend an analysis to determine either zones or a single value for intensity, for simplicity.	C	City decided to simply use NOAA specific values for each project.
14	11	2.2.2.1	SCS methods have very well known limitations. Perhaps perform a study to begin using Green-Ampt Losses and Clark UH.	C	City wished to use SCS and other methods (Snyder and NUDALLAS) only in special cases with Director approval (i.e. when existing models used these methods.) This was requested to keep consistency throughout models in the City.
15	11	2.2.2.1	2.2.2.1 – please include link to city website for approved hydrologic and hydraulic routing	D	These items are not on the website yet, but it has been discussed that the City will need to provide these lists on the website. Recommended software lists have been previously provided to the City and were provided to those who wished to review.
16		2.2.2.1	Allow SCS TR-20 numerical method for small urban drainage areas - More accurate than SCS unit hydrograph (graphical method)	A	Will include TR-20 in pre-approved software list to be kept on City website.

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17		2.2.2.1	Include HydroCAD in list of approved hydrologic and hydraulic models - HydroCAD utilizes SCS TR-20 and Rational runoff methods - HydroCAD also includes dynamic routing methods, including Muskingum-Cunge method - HydroCAD is an efficient and user friendly hydrologic/hydraulic model for detention/retention BMPs and water quality BMPs such as rain gardens and bioretention	A	Will include HydroCAD in pre-approved software list to be kept on City website.
18	12	2.2.2.1	models	C	City staff preferred Type III over nested frequency approach. Revision to this approach would require a greater discussion of how to use NOAA Atlas 14. Can re-evaluate once NOAA Atlas 14 is used more frequently.
19	12	2.2.2.1	Please provide equation or table of values shown on ARF chart. What is the source of this data?	C	Equation is empirical and complicated. No table provided. Source: Asquith - Areal-reduction factors for the precipitation of the 1-day design storm in Texas: U.S. Geological Survey Water Resources Investigation Report 99-4267
20	13	2.2.2.1	To simplify for developers and reviewers, recommend matching zoning to cover descriptions.	C	Curve number analysis is usually more in depth and several different values can be used in a composite curve number within one particular zone.
21	13	2.2.2.1	Is this table requiring use of impervious area in addition to increased CN, or is that just a reference to show how the CN was computed? Recommend removing if not intended to be used in models.	C	Just a reference to show how it was computed. Could be helpful to designers when determining which category to use. Table Note #2 explains the percent impervious column.
22	14	2.2.2.1	There has been discussion in the literature that the 0.2S assumption is flawed for the determination of initial abstraction.	C	HMS defaults to using 0.2S when the SCS CN method is used, and there is widespread use within the industry. Therefore, we recommend maintaining this method.
23	14	2.2.2.1	Recommend only allowing adjustments to CN up to a certain storm event i.e. <10-yr	B	Will revise to match approach for altered C values for sustainable drainage measures - use for 50% storm event only
24	15	2.2.2.1	Recommend using the Travel Time computed by the HEC-RAS model within each routing reach instead of this equation.	B	Will add a note that alternatively, travel time can be pulled directly from HEC-RAS

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25	14	2.2.2.2	Recommend explicitly disallowing other methods, or change to a Preferred, Allowable, Not Accepted structure.	C	No other methods are listed as available for use. Snyder and NUDALLAS can only be used when existing models use it, not allowed in other situations.
26	15	2.2.2.2	Recommend specifically disallowing use of this method for long conduits. It is technically incorrect to do so.	C	Not sure which method the comment is referring to. Presentation of the material implies application in open channels.
27	15	2.2.2.2	Care should be taken in this method to confirm that the capacity of the reach is not exceeded, rendering the result invalid. Recommend adding a note.	C	Design manual assumes engineering judgment will be used.
28	15	2.2.2.3	Recommend mentioning the reservoir element in HEC-HMS instead of Modified Puls, unless significantly influenced by tailwater conditions.	C	Design manual assumes engineering judgment will be used.
29	16	2.2.2.6	Recommend clarifying this section. Shape and peak of hydrograph can be influenced hydrologically and hydraulically. This section only speaks about hydraulic considerations. Recommend specifying standard 484 peaking factor for SCS, unless otherwise determined to be invalid.	C	Design manual assumes engineering judgment will be used.
30	16	2.3.1	Change the phrase "as it infiltrates" to "while allowing infiltration".	A	Will revise.
31	16	2.3.1	Inconsistent/unclear with standard for Q increases. Is it "no significant", 0, 0.0, or 0.00?	B	Will revise to "no" rather than "no significant"
32	16	2.3.1	Wording of determination of no increases in Q or V (end of para. 3) is awkward. Recommend stating clearly as what is not allowed. Maybe add a flow chart to help decipher conditionally applicable elements.	C	City wishes to leave as is.
33	16	2.3.1	Wording of above makes this tricky to interpret, but what if existing channel velocity is erosive? Scenario is not handled within these criteria. How would no increases be assessed without a downstream assessment?	C	Requirement is just to have no increase. With no downstream assessment, runoff from the site must not be increased.
34	17	2.3.1	Infill developments of just under 1 ac can increase the impervious area by 11.48%. This is the minimum percentage impervious increase. Recommend allowing impervious area up to future condition C value by right.	C	If we allow impervious up to future condition C value without detention, we are not mitigating increase in impervious area in several situtations and could have an aggregate negative impact.

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35	17	2.3.1	Is this a requirement for any project? What does the developer gain by doing one? State explicitly.	C	The downstream analysis ties back to requirements in Section 2.3.1 and which storms you have to show no increase
36	18	2.3.3.2	Choose a value, or a conditional selection of 2 values. The range thing is confusing.	C	It is not a requirement to assess a water quality volume, so a range is providing depending on the owner's preference. If too high of a bar is set, it will be deemed unachievable.
37	18	2.3.3.2	"Some measures are designed based on a flow capacity" – more guidance needed here for flow-based systems. - Rational method: suggest providing table of rainfall intensities which correspond to various design water quality precipitation (Pwq). Flow-through system can then be sized based on peak Rational method flow rate - SCS Curve number method: using graphical (TR-55) or numerical (TR-20) SCS methods, a peak flow rate can be determined based on the water quality precipitation (Pwq).	C	Manual points to NOAA 14 precipitation frequency server for all rainfall desing depths and intensities. Design water qualitty volume can be based on 1-1.5 inches of rainfall. Designing for improvement of water quality is encouraged by the City and considered a benefit, but not required. Bioswales are designed for flow-through. Manual provides a minimum hydraulic retention time and slope, which will allow for water quality benefits.
37	23	3.2.3	Crown Height - Please consider revising the Crown Height label in Figure 3.2 to show from gutter to top of crown.	A	Will revise
38	23	3.2.3	Wetted Perimeter - Please consider showing an equation for Wetted Perimeter of a parabolic crown street.	C	City wished to leave as is. The manual is intended to be guidance only, not step-by-step instructions.
39	24	3.3.1	Any Criteria for Drop/Area Inlet similar to NCTCOG Dwg# 702?	C	NCTCOG 702 is similar to 3.3.1.3 Y-Inlet.
40	29	3.3.3.1	0.5 Safety factor built into PA on top of Clogging Factor seems overly redundant. Also recommend removing "about" from "multiplier of about 0.5...".	B	Will remove the safety factor for the perimeter.
41	31	3.4.1	Unclear where ditches are allowed for street drainage. Street typical sections unclear.	C	City does not intend new streets to be built with ditches. Only maintenance will be required for unimproved streets.
42	31	3.4.1	Minimum velocity in ditches is clear, but is there a maximum velocity? What about depth?	C	We can refer to Section 5.3.3 on channel velocity. Need to size for 1% event - engineering judgment should be used to establish depth within clear zones.
43	31	3.4.1	Recommend referencing City's standard LID details. (251-D)	D	Sustainable drainage measure terminology set in conjunction with City staff. Details to be updated to match terminology in manual.

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44	31	3.4.1	The terminology of the draft manual is inconsistent with the LID may lead to confusion.	D	Sustainable drainage measure terminology set in conjunction with City staff. Details to be updated to match terminology in manual.
45	31	3.4.2.1	The LID details (251-D) call a bioswale (by this manual) an enhanced/vegetated swale. The LID details (251-D) call a bioretention swale (by this manual) a bioswale.	D	Sustainable drainage measure terminology set in conjunction with City staff. Details to be updated to match terminology in manual.
46	31	3.4.2.1	Why are bioswales included in the unimproved roadway drainage section? There is much more application than just that.	C	Desire by City to integrate in pieces into the manual.
47	32	3.4.2.2	A drain or overflow structure is necessarily located at the downstream end.	C	Raised overflows can be located where needed
48	32	3.4.2.2	Recommend referencing Section 6.8 as well	A	Will revise
49	33	3.5.1	Text size for drawing labels seems to be too large. Same comments applicable for other similar drawings (Pg 43, etc...).	C	Text size increased at City request
50	33	3.5.1	What is so special about this section that merits separation from other roadway drainage considerations?	C	Includes sustainable drainage measures
51	37	3.5.3	"Sand or organic media filters can be used in areas with higher pollutant loadings. However, sand filters should not be used for runoff with high sediment loadings." Clarity needed here - Suggest requiring sand filters/filtration for numerically defined areas with higher pollutant loadings. WA state dept of Ecology uses Average daily traffic (ADT) to determine areas of high pollutant loading. Please inquire for examples. - Please provide definition for "high sediment loadings"	C	Higher pollutants points to metals which are discussed in second paragraph of section. As water quality is not a requirement in City of Dallas, sand filters will not be required for specific areas.
52	37	3.5.3	Compost has known nutrient leaching problems in bioretention design. Strongly suggest defining a compost specification for sand filters if used for pollutant removal, in order to prevent pollutant leaching.	C	This information would need to be something included in a specification, not in the manual.

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53	37	3.5.3	Sizing concerns, ran calculations for the following example: - Pwq = 1", Drainage Area = 1 ac; Vwq = 3,630 cf - Df= 18", k=3.5 ft/day, hf=6, tf= 40hrs; Af = 207 sf - Routing analysis suggests when using above parameters that approximately 50% of the design water quality volume can be bypassed without treatment. Using minimum fil depth of 2ft, similar bypass of approx half of Vwq occurs. Please inquire for supporting modeling and further information. - STRONGLY suggest hydraulic routing REQUIRED for sand filters, rain gardens, and bioretention in order to ensure design Vwq is treated prior to bypass.	C	This equation is from the iSWM manual. Since water quality is not required by the City, modeling to demonstrate a specific numeric efficiency will not be required.
54	39	3.6	"Enclosed storm drain systems shall be reinforced concrete pipe (RCP) or reinforced concrete box (RCB) sections. Other types of pipes will need prior approval from the Director." Is director approval needed?	C	Yes, revised due to City request
55	39	3.6	Storm drain line spreadsheets and approved software need to be added to City of Dallas website.	B	Remove reference to spreadsheets.
56	40	3.6.2	Corrugated Metal pipe is not allowed back to back. Recommend clarifying the point or removing the redundancy.	A	WIll remove restriction in Item 4.
57	42	3.6.6	What are the sizing methodologies for tree box filters? - Same routing comment as above for sand filters: if hydraulic routing not performed, static condition design criteria can allow for significant bypass of Vwq.	C	As long as they allow for bypass of the storms, there is no requirement for sizing. Water quality improvements are an encouraged benefit, but not a requirement for the City of Dallas.
58	44	3.7.2	Typo in the first sentence: the 1%	A	Will revise

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59	63	3.8.3.5	Change first line from "0-14" to "<15"	A	Will revise
60	63	3.8.3.6	Recommend change to say "all dams are subject to TCEQ regulations, as applicable".	A	Will revise
61	69	4.6	Remove "achieve the following", change "Integration...deck" to "Be integrated into the structural deck"	A	Will revise
62	70	4.7	What purpose does this section serve if other criteria require 2 feet of freeboard over the 1% WSEL?	C	2 feet of freeboard is for bridges, not adjacent roadway
63	74	5	Suspect section header should be Open Channel Hydraulics	A	Will revise
64	84	6	Title Section 6 "Design Guidelines"	C	Guidelines is not in any other section titles
65	84	6.1	Reference is given to the four primary types of basins or ponds without any mention of underground detention (Section 6.4), stormwater ponds (Section 6.5) or constructed wetlands (Section 6.6). Recommend adding reference to those sections (6.4, 6.5 & 6.6) in the General part (Section 6.1).	A	Will revise
66	84	6.1	Bioretention basins are shown in Section 6.1 to "provide water quality benefits in addition to detention storage". Section 6.9 states that they "collect, retain and temporarily store surface water" without any reference to any water quality benefits. Recommend revising Section 6.9 to emphasize water quality benefits.	A	Will revise
67	84	6.1	Design guidance (Page 84) lists some design parameters but does not give a clear reference to all the design policies and standards where those parameters came from. There are several places throughout the manual that arbitrarily specify some design parameters by a fixed number instead of a range. Recommend listing the source of all adopted design guidelines and, whenever possible, specifying the acceptable range instead of a specific single value for the design parameter.	C	Single values are provided as design thresholds. City has adopted various methods from different manuals and tweaked as desired. Listing source materials for selected thresholds is not a common practice for city manuals.

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68	84	6.1	Include references to sections 6.4, 6.5, and 6.6 with page numbers (87-89 respectively) and number four primary types of basins or ponds 1-4	B	Will reference Sections - no need for page numbers or numbering ponds
69	84	6.1	add "see Pg. 94" after "provide water quality benefits"und Bioretention Basins	B	Section reference will be added.
70	84	6.1	Any criteria for Stormwater retention basins/pond/lake dredging? Please consider adding some narratives/ criteria on this.	C	Was discussed previously, but not desired by City
71	84	6.1	forebays (pretreatment) should be required for all retention basins and infiltration applications. Infiltrating capacity of underlying soils will diminish over time if no pretreatment is required.	C	Retention and infiltration will not be common in the Dallas area due to clay soils.
72	85	6.2.1	What is "Design Frequency"	A	Will revise to design storm event
73	85	6.2.1	Specify FEMA/USACOE standards	B	Sections 8.6 and 9.4 refer designers to FEMA and USACE coordination & regulations. The general approach has been to not include specific criteria from other organizations that may change. Will add reference to list of regulations in appendices in beginning of manual.
74	85	6.2.1	where in this manual are exceedance velocities described	C	Table 5.1 has maximum channel velocities.
75	85	6.2.1	what are the years associated with the % annual chance flood values	C	This information is shown in Table 2.1
76	85	6.2.1	The section states "If detention ponds are to be located in a navigable water or wetland of the U.S, a USACE 404 permit and any other applicable permits must be obtained". Can a detention pond be located in a navigable water? Also, recommend specifying any permits besides 404 that would be required if detention ponds are to be located in a wetland.	B	They could be located in wetland areas or on-line channels to navigable waters. This would be environmental permitting - should refer to Section 9. We recommend against providing a comprehensive list since regulations can change. Will add reference to Section 9 and replace "a navigable water or wetland" with "waters".

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77	85	6.2.1	The section states that the 1%, 2%, 10% and 50% annual chance storm events shall be used for design frequency. It further states that "an emergency spillway will be provided at the maximum 1% annual chance flood level to ensure that the un-detained 0.2% annual chance flood event does not overtop the embankment". The TPDES general permit references runoff from a 2-year, 24-hour storm. Please verify and specify any situations where the 1%, 2%, 10% and 50% annual chance storm events shall be used.	C	Facilities must be designed to accommodate all of the listed design events, including the 2-yr 24-hr event, but the emergency spillway should be designed so that the 0.2% does not overtop
78	85	6.2.1	Are there any requirements for temporary detention/sediment basins during construction?	C	Section 7.3 refers to temporary erosion control and SWPPPs
79	85	6.2.1	Recommend additional building setback distances for detention basins. 5 ft should require director approval, 10 ft should be standard.	C	City has directed to maintain listed setback requirements.
80	86	6.2.1	Specify if security fencing for prolonged flood storage at the requirement of the director.	D	Security fencing requirements are provided within this subsection. Request additional clarification of the comment.
81	86	6.2.1	Discharge Pipes located at basin flowline will likely be clogged over time. Didn't see how this was addressed.	C	Maintenance plans required
82	87	6.3	What does "within 48 hours from the end of a 24-hour design storm" mean?	C	Models must show that the facility will drain within 48 hours after the end of rainfall in a 24-hr design storm.
83	87	6.3	It is stated that retention ponds must be designed to fully infiltrate runoff within 48 hours from the end of a 24-hour design storm. Please verify & provide source.	C	If it is a true retention pond, which is not common, it must drain in 48 hours because there is no flow and could attract mosquitoes otherwise. Wet detention ponds are allowed.
84	87	6.4	Specify who determines all current water rights regulations	C	Addressed in Section 2.3.4
85	87	6.4	Why can openings not exceed 50 feet?	C	Need to be able to access underground detention at frequent intervals in order to provide ease of maintenance.
86	87	6.4	It is stated that, for underground detention facilities, spacing between access openings shall not exceed 50 ft. 50 ft might not be feasible or even warranted for sites with dense urban development. Please verify & provide source.	B	Need to be able to access underground detention at frequent intervals in order to provide ease of maintenance. We will provide an exception with Director approval.

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87	87	6.4	Reinforced concrete box culvert is a great solution for underground detention. You can maximize your volume and reduce your footprint because box culvert can be designed with 0' of fill. This also results in a reduction in excavation costs. I propose that the verbiage of minimum cover be changed to allow 0' of cover for box culvert and 2' of cover for round pipe systems. If there is any information that I can provide on this, please let me know.	C	City does not wish to revise.
88	87	6.4	underground detention - strongly suggest maintenance access diameter minimum opening (ie 30" minimum diameter, 30"x30" grate/hatch). - Clarity needed for rectangular layouts, 50 ft max distance in all directions between all access openings?	C	No additional clarification considered necessary. Special cases should be discussed with the Director in pre-project meetings.
88	88	6.5	Add "see Pg. 84" in first paragraph of section 6.5	B	Will refer to Section 6.1
89	88	6.5	Add "see Pg. 89 format" in second paragraph	C	Ponds are not required to be designed as wetlands
90	88	6.5	Define wet stormwater pond, wet extended detention pond, and micropood extended detention pond	C	They are defined in the first five paragraphs of this section
91	88	6.5	Add "see Pg. 93" after "ponds must be set back 5 feet from buildings and roadways and 10 feet from property lines"	C	Section 9.3 is in regards to rain gardens, not ponds
92	88	6.5	Reference is repeatedly made to soil types A and B. Recommend making reference to NRCS at the first such reference.	A	Will revise.
93	88	6.5	Are soil types from NCRS?	C	Yes
94	88	6.5	Design Considerations state that the design size of the pond should be 2–3% of the drainage area. Recommend providing a design size as a volume rather than a surface area.	B	This is really meant as a rule of thumb. We will remove the sentence.
95	89	6.5	What is design water quality volume?	C	Defined in Section 2.3.3

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96	89	6.5	what are the years associated with the % annual chance flood values	C	Shown in Table 2.1
97	89	6.5	The 1% and 0.2% annual chance storm events are cited for sizing of the embankment and spillways. Please verify and specify design guideline source.	C	This mirrors current City of Dallas guidelines and was discussed by staff.
98	89	6.5	The length-to-width ratio is specified to be a minimum of 2:1. Recommend specifying an acceptable range of this ratio.	C	It is listed as 1.5:1 minimum, so the allowable range would be anything at or above. The longer they are, the better the water quality benefits.
99	89	6.5	Add "are" to read: "A drain must be provided...rights are attained."	A	Will revise.
100	90	6.6	Are soil types from NCRS?	C	Yes
101	90	6.6	should Design considerations be 2-3% like for ponds on page 88 or 30%?	C	Wetlands will be more shallow. Also see response to comment #100
102	90	6.6	Why does a bypass system occur at the 1% if the design is for the 1%, 2%, and 10%	C	The wetland may or may not be designed to store more frequent events, such as the 2% and 10% events (since the primary purpose may not be detention). Regardless of what level of storm event the wetland may store, if it cannot store up to the 100-yr event, then a bypass must be provided.
103	90	6.6	why is the minimum freeboard not 2ft	C	The last sentence of this section indicates that if the wetland is being used for detention, then it must meet all requirements of Section 6.2, which does require 2' of freeboard. However, if the wetland is not being used to provide detention storage, then it does not need the same freeboard, which is generally assigned to account for uncertainty in hydrologic and hydraulic analysis for design storms. Therefore, the lower freeboard of 1' seems appropriate.
104	91	6.6	add "see Pg. 94" in first paragraph of Sizing subsection	C	Wetlands are not necessarily the same as bioretention areas
105	91	6.7	is it downspout or down spout?	A	Will revise

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106	92	6.7	The output in Equation 6.2 should be a volume. Although the area is already factored in and entered in the equation, the output is given as a volume per unit area used. Please verify and identify if the 7.5 factor used is the cubic feet to gallon conversion (7.48 gal/CuFt) or something else.	A	Will revise to cubic foot
107	92	6.7	Recommend doing a unit conversion to make this inches instead.	A	Will revise by including a unit conversion in the equation
108	92	6.8	definition of "increased sediment, debris, and pollutants" is needed for pretreatment requirements for drainage areas smaller than 2 acres. - Suggest pretreatment be required for commercial, roadway, and industrial land use applications. - Strongly suggest hydraulic modeling be required for rain gardens which partially infiltrate.	C	Decision left to designer to determine need for pretreatment. Underdrains are required for rain gardens where underlying soils do not meet infiltration criteria. Partial infiltration still requires underdrain.
109	93	6.8	how is 50"/hr infiltration rate of bioretention soil mix (BSM) verified? Should this be a minimum infiltration rate? - Contractors often do not realize BSM is engineered for water quality. Material sourcing, storage, and blending during installation can all significantly affect infiltration rates and is a common cause of BSM longevity problems, and ultimately, failure. - 50"/hr is extremely high for non-proprietary BSM blends and needs verification.	C	This value was derived from local study conducted by Dr. Fouad Jaber at Texas A&M Agrilife Extenstion for EPA Region 6 in the Plano area. High value at installation was determined based on the fact that it will slow down over time and not infiltrate as quickly. BSM specifications to include requirements for post-installation testing.
110	93	6.8	Add "see Pg. 88" after "10 feet of a building or ROW"	C	Rain gardens do not have same requirements as stormwater ponds as they are generally much shallower facilities
111	93	6.8	BSM infiltration rate is 50in/hr, but LID Details (251-D) call out 60 in/hr. Revise.	C	This value was derived from local study conducted by Dr. Fouad Jaber at Texas A&M Agrilife Extenstion for EPA Region 6. We have provided markups for LID details to be in conformance with manual.

DRAINAGE DESIGN MANUAL

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112	94	6.9	same comments as 6.8 Rain gardens above. Should there be a section here on Tree box filter sizing and design requirements?	C	See response #55
112	94	6.9	Section states that bioretention areas "collect, retain and temporarily store surface water" without any reference to any water quality benefits. Section 6.1 states that bioretention basins "provide water quality benefits in addition to detention storage". Recommend revising Section 6.9 to emphasize water quality benefits.	A	Will revise.
113	94	6.9	Section states that bioretention should not be used in areas with a slope greater than 6%. In other locations, similar facilities are limited to an 8% slope. Please verify & provide source.	C	iSWM uses 6% threshold. City does not wish to revise.
114	94	6.9	The length-to-width ratio is recommended to be at 2:1. Recommend specifying an acceptable range of the ratio.	C	We recommend leaving the ratio as a recommendation rather than specifying an absolute minimum in order to encourage the use of the sustainable drainage facilities on sites where the recommended ratio cannot be met.
115	94	6.9	Add "see water quality on pg.84"	C	We believe the current reference to Section 6.8 is the better reference.
116	94	6.9	why should bioretention no be used in areas with a slope greater than 6%	C	Sediment and pollutant removal will not occur if water moves through the system too quickly
117	94	6.9	what is the range for sizing? From page 91?	C	Should be sized like rain gardens - reference to Section 6.8 is currently provided as the last sentence in this Section.
118	94	6.9	Recommend referencing the LID Details (251-D).	B	Intent of City is to include LID details in 251-D.
119	95	6.1	what kind of testing? ASTM?	C	Paragraph 3 refers the reader to perform hydraulic conductivity tests in accordance with ASTM standards.
120	96	6.11.1	Specify if the design guidance is determined by COG and COE.	C	The pump design guidance included in this section is not from TCEQ or the USACE. Section 9 instructs the user to meet other regulatory requirements, including the USACE and TCEQ.

DRAINAGE DESIGN MANUAL

Disposition:

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Item #	Pg. #	Section #	Comment	Proposed Response	Action Taken
121	96	6.11.1	Section states that FHWA Hydraulic Engineering Circular No. 24 (HEC-24), TxDOT Hydraulic Manual, and Hydraulic Institute standards are to be referenced as a design guidance for pump station design. It further states that the design frequency for a pump station will be the 1% annual chance storm event. No reference is made to NCTCOG or City of Dallas standards. Please verify.	C	The guidelines that are provided in the Section are from the City of Dallas. We are not aware of any additional guidance needed or provided by NCTCOG.
122	100	7.1	The section states "As a result, sediment can be carried and deposited in a stream, which may have negative impacts on aquatic life". Recommend replace "which" with "and".	A	Will revise
123	100	7.1	Replace "when" in " When possible,… developed areas and creeks." with "Whenever"	A	Will revise
124	100-107	7	Please consider adding a summary/criteria table for various channel stablization methods (Gabion, flexmate, etc) and address the possible permit requirements, when 404 permit will possibly be necessary.	C	City does not wish to revise. Permit is dependent on the extent of the impact of the project as opposed to the type of material being used.
125	101	7.2	What does TPDES stand for?	C	Texas Pollutant Discharge Elimination System. Spelled out first time in manual and is included in acronyms in Appendix.
126	101	7.2	The section states "The current TPDES Construction General Permit (No. 150000) required maintaining a minimum 50 feet vegetated natural buffer, or equivalent measures for projects in and along channels". Please verify if "50 feet" is specifically used in the Permit. Also, please specify where acceptable "equivalent measures" can be defined.	B	Not specific to permit but provided in written responses from City staff. Can refer to other protection options. Refer to response #127.
127	101	7.2	Can geomorphic assessment be sealed by a P.G. also?	C	No, an engineer is required to seal.
128	101	7.2	50-foot minimum buffer is not specifically called out in CGP, please confirm validity of this.	B	Will remove paragraph. See response #127.
129	101	7.2	Construction requirements of CGP may not be applicable to post-construction. Please confirm.	B	Will replace paragraph with "For additional requirements for natural buffer during construction, refer to TPDES General Construction Permit 150000."

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Disposition:

A = Agree; will comply
B = Agree; will comply as noted
C = No action required or taken
D = Further discussion required

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Reviewed By: Team

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Item #	Pg. #	Section #	Comment	Proposed Response	Action Taken
130	102	7.3	should use NPDES instead if TPDES and 30 TAC instead of 40 CFR	A	Will revise
131	102	7.3	The section states that the owner is responsible for maintenance of erosion and sedimentation control measures….." Recommend revising to emphasize that not only the owner, but both the owner and operator are responsible.	A	Will revise
132	102	7.3	Recommend editing the first paragraph to highlight that the SWPPP must be prepared and implemented on the site before any construction activities including grading, and must be continuously updated.	A	Will revise
133	102	7.3	Recommend revise the second paragraph to show that the projects shall comply with the requirements for storm water management at construction sites and comply with all the requirements set forth in the Construction General Permit, TXR150000 (instead of MS4).	A	Will revise
134	102	7.3	The phrase "as well as...TAC Chapter 30." should be moved to be after the MS4 sentence.	A	Will revise
135	103	7.4.3	Could not find a reference to Figure 7.3 in the text. Recommend making reference to Figure 7.3 under Live Cribwalls and anywhere it is applicable.	A	Will revise