Meeting Date February 18, 2026

To: City Manager, Alana Lake

From: Ryan Leland, Public Works Director
Jamie Clark, City Engineer
Brian Holling, Development Services Engineer

Subject: Update of 2013 City of Helena Engineering Standards

Present Situation:

The Department of Public Works and the Transportation Systems Department have completed a stakeholder engagement process over the course of the past seven months resulting in the attached proposed set of engineering standards for consideration by the Helena City Commission.

A series of stakeholder meetings were held beginning in mid-July of 2025. The proposed standards were also published on the City's website for public review. Stakeholders from the development community, including developers, engineers and contractors, were invited to participate through stakeholder meeting attendance and online comment submittal. Proposed revisions to the 2013 standards were presented through a series of meetings that focused on specific topics. Comments were recorded and distributed to the stakeholders after each meeting along with encouragement to continue to submit comments through various means.

A total of 267 comments (which included some repetition) were received, resulting in 124 edits and revisions. Stakeholders were invited to attend a final series of meetings and discuss City responses to the comments.

The comments and responses are attached for the Commission's review.

Background Information: The City of Helena has adopted engineering standards that guide public infrastructure improvements (development and construction). These standards are applied whether the infrastructure is delivered through City of Helena Public Works Department, Transportation Systems Department, or through private development. The goal of having engineering standards is to:

- Prioritize public health and safety,
- Promote functional and durable infrastructure, and to
- Provide consistency for City operation and maintenance of infrastructure

Balancing the initial cost of construction with the City's operational and maintenance expenses was an essential consideration when preparing these recommended standards. When considering the cost of public infrastructure, the liability of ownership needs to be weighed along with the initial expense of installation. After the installation of any form of public infrastructure, the city becomes the owner and is then responsible for safe and reliable operation and maintenance of the infrastructure.

Proposal/Objective: Informational status update of the City of Helena Engineering Standards.

Advantage: None Notes

Disadvantage: None Notes

Quasi-Judicial Item: No

Notice of Public Hearing: No

Staff Recommendation/ Recommended Motion: Commission Information and Discussion

Comment Number	Date	Chpt.	Comment	Response	Edit Complete
1	July 17,2025	2	Include a fire service detail showing the valve location in the standard detail drawings.	Location is designer's choice and will be reviewed in the building permit.	
2	July 17,2025	2	A cathodic protection standard design would be reasonable and provide some efficiency.	Cathodic protection variables require case by case evaluation of each specific site and requires engineering.	
3	July 17,2025	General	Will the joint city county infrastructure study affect design requirements? Will it reduce the engineering requirements in areas that already have trunk main sizes determined?	No, this study is a general overview and will not affect specific standards.	
4	July 17,2025	2	Page 32 – Both Insert-a-tee and wye fittings are specified, which one is the preferred option for connecting to the sewer.	This is a typo and will be corrected. Will use Insert-A-Tee. Thank you	
5	July 17,2025	2	Page 28 – Typo, should be infiltration allowance not irrigation allowance.	Will correct. Thanks	
6	July 17,2025	2	The hydraulic model should be made available to all firms that want to use it.	This is already available for use.	
7	July 17,2025	2	Include individual headings to separate requirements for different pipe materials so that it is clearer that each one is being considered separately.	Will revise.	
8	July 17,2025	General	Provide a copy of the standard details in CAD form.	Available upon request.	
9	July 24, 2025	2	Include ASTM D1010 in tracer wire spec	Will agree to include.	
10	July 24, 2025	2	Exclude looping on tracer wire.	Will revise.	
11	July 30, 2025	5	5.2.2 Sidewalk Barricades – Clarify if this applies to individual lots with a building permit if there are no adjoining sidewalks verses phased subdivisions.	Sidewalks for individual lots must be transitioned down to adjacent lot's ground level to prevent a trip or fall hazard. Subdivision sidewalks that end at unimproved lots will need to be terminated per MUTCD requirements. An approved ADA crossing must be identified for all users at such terminations.	yes
12	July 30, 2025	5	Review if Table 5.3 is relevant	Table 5.3 will be deleted	yes
13	July 30, 2025	5	5.2.10 Pavement design section - consider rewording if 4" minimum is required if ESAL determines 3" is adequate.	The standard minimum pavement thickness for collector and arterial roads will remain at 4" and as such must be placed in two lifts per MPWSS section 02510-3.16: 2. The maximum lift thickness is 3" for surface courses and 6 inches for base courses.	yes
14	July 30, 2025	5	Consider standard pavement section alternatives based on soli/Geotech testing and analysis	The pavement sections called out are the minimum standard.	yes
15	July 30, 2025	5	Chip seal requirement is unnecessary – provide research to support this requirement.	Chip seals will be required. The City follows MDT's standard practice of chip sealing all newly paved surfaces, which is based on years of road construction, maintenance and research experience across Montana.	yes
16	July 30, 2025	Process	Unclear on what happens at the end of the 30 day comment period of draft standards.	Responses will be prepared and presented for review.	

17	July 30, 2025	5	Consider revising requirement of installing 3” pavement section in 2 lifts, common practice is 3” section is placed in a single lift.	Two lifts for 3” asphalt section has been removed. We note "Per MPWSS" (section 02510): 1. The minimum lift thickness shall be no less than three times the Nominal Maximum Aggregate Size (NMAS) for gradations above the Maximum Density Line, and no less than four times the NMAS for gradations below the Maximum Density Line. 2. The maximum lift thickness is 3" for surface courses and 6 inches for base courses.	yes
18	July 30, 2025	5	Consider allowance to apply 4” pavement section in a single lift, perhaps using performance criteria.	We note "Per MPWSS" (section 02510): 1. The minimum lift thickness shall be no less than three times the Nominal Maximum Aggregate Size (NMAS) for gradations above the Maximum Density Line, and no less than four times the NMAS for gradations below the Maximum Density Line. 2. The maximum lift thickness is 3" for surface courses and 6” for base courses.	yes
19	July 30, 2025	5	Provide option of standard pavement thickness of allow site specific design based on Geotech/soils data and analysis.	The pavement thickness called out are the minimum standard.	yes
20	July 30, 2025	5	Consider the difficulty of applying new standards to an already built environment, ie. road grades.	Built environment issues are considered on a case-by-case basis.	yes
22	July 30, 2025	5	Comment on past comments about complete streets- do the standards in 5.2.12 reflect the intent of the complete streets concept?	Per the current Engineering Standards "All newly and reconstructed roadways shall be designed to accommodate and coordinate all modes of transportation, both motorized and non-motorized, and people of all ages and abilities." The original Complete Streets resolution directed the City Manager "…to make a recommendation to the Commission of changes to City Code and engineering and design standards that are necessary to implement this policy into the design and construction of new streets as complete streets." Improvements in the built environment are more difficult and require additional discussion. In these existing locations, the overarching need is to comply with ADA requirements and to remove barriers/install ADA ramps where adjacent to existing/proposed sidewalk. (The key phrase in the Standards is, “Complete Street features may include…”)	yes
23	July 30,2025	5	Consider eliminating Traffic Impact Studies and rely on the results of the Long-Range Transportation Plan (LRTP)	Traffic Impact Studies (TIS) are required on a project-by-project basis for the City and public to understand the particular impacts of each project. A three tier system has been created to accommodate projects of different sizes. Minor adjustments to the original proposed TIS requirements have been made to reduce effects on smaller developments. All other Cities have similar requirements for a TIS to evaluate impacts of proposed developments.	yes
24	July 30, 2025	5	Consider the option of allowing roll curb to be used for all curbing.	Roll curb will only be allowed for driveway approaches. This approach is similar to other large cities in Montana.	yes

25	July 30, 2025	5	Eliminate the requirement for chip seal, it is just needed for traction after 7 years.	Chip seals are required. The City follows MDT's standard practice of chip sealing all newly paved surfaces, which is based on years of road construction, maintenance and research experience across Montana.	yes
26	July 30, 2025	5	Include Standard Plans for traffic control scenarios	Standards now reference typical traffic control plans from the most recent version of the MUTCD.	yes
27	July 30, 2025	2	Standard Detail 2-3 does not match the language in the standard to locate curb stops in the boulevard (not behind the sidewalk).	Will revise	
28	July 30, 2025	5	Turn around details- minimum widths that match roadway classifications are difficult to achieve.	Minimum width is to ensure emergency services can access properties based on national standards.	yes
29	July 30, 2025	5/2	Curb stop in right of way should have some flexibility in location to be able to avoid other features in the boulevard.	This standard drawing is provided for consistency in location, and some reasonable flexibility is allowed with consultation on a case-by-case basis, this is accounted for in the narrative standard.	
30	July 30, 2025	5	Consider allowing sidewalks to be offset from property boundary from 0.5' to 1' to prevent loss of property stakes/pins during construction. Consider 6' boulevard to mitigate.	The removal of the one-foot (1') buffer was done so that the total ROW width did not increase due to emergency access lane width requirements. The typical sections can be revised to include a buffer but would have to go through the Commission process as City Code section 7-4-2 would have to be revised.	
31	July 30, 2025	5	T- Intersections require crosswalks/ADA ramps on both sides, consider having only one leg marked with a crosswalk.	No change. This standard reflects the following federal and state code requirements: **PROWAG** **R104.3: Crosswalk**: That part of a *roadway* that is located at an intersection included within the connections of the lateral lines of the *pedestrian circulation paths* on opposite sides of the *highway* measured from the *curbs*, or in the absence of *curbs*, from the edges of the traversable *roadway*, and in the absence of a *pedestrian circulation path* on one side of the *roadway*, the part of a *roadway* included within the extension of the lateral lines of the *pedestrian circulation path* at right angles to the center line; or at any portion of a *roadway* at an intersection or elsewhere distinctly indicated as a *pedestrian* crossing by pavement marking lines on the surface. **R203.6.1.1**: "At an intersection corner, one curb ramp or blended transition shall be provided for each crosswalk" **MCA 61-8-102.f**: "Crosswalk means: (i) that part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs…" The City's overarching goal is to comply with PROWAG standards and not create accessibility barriers but install ADA curb ramps adjacent to proposed sidewalk corners. This standard is similar to Kallispell's. If the only method to prohibit crossing is the absence of curb ramps, this design only affects people with disabilities who require curb ramps to cross as a non-disabled individual can simply step over the curb.	yes
32	July 30, 2025	5	City and developers need to follow the same set of engineering standards.	Concur	

33	July 30, 2025	5	Allow alternatives for trench backfill. Flowable fill is ok in certain instances, should allow backfill and compaction on wider trenches. Eliminating settlement is the goal and there are multiple ways to achieve this. (with 3rd party compaction testing and/or longer warrantee period)	This standard is based on past experience. Standards are meant to be definitive; a deviation process exists for non-standard cases which are considered on a case-by-case basis.	yes
34	July 30, 2025	5	5.12 Traffic control devices should be reflective, not illuminated for nighttime visibility.	All traffic control devices must comply with MUTCD retro reflectivity requirements. We now reference the standard templates for temporary traffic control from the MUTCD. If the scenario does not fit one of the provided templates or something different is proposed, then a custom traffic control plan must be submitted for approval.	yes
35	July 30, 2025	5/2	The City Code requirement that the sidewalk be installed up against the property line. 1. This was discussed and I agree there are a few concerns with this: a. Property Pins get wiped out during sidewalk construction b. Property pins are difficult to set up against the sidewalk c. The City's proposed water service detail if followed would have the curb box within the sidewalk. i. Regardless of if the City changes back to the 1' offset for the sidewalk, the water service detail should match the City's intent for location of that service curb box.	The removal of the one foot (1') buffer was done so the total ROW width did not increase due to emergency access lane width requirements. The typical sections can be revised to include a buffer but would have to go through the Commission process as City Code section 7-4-2 would have to be revised.	
35	July 30, 2025	5	2. Section 5.2.2 a. Barricades: Wherever sidewalks terminate due to project phasing, subdivision boundaries, etc., barricades are required..... i. My concern is in the vagueness of the "etc." what about the sidewalks to nowhere that some lots are required to put in along the ROW for a project? We often have sidewalks the City requires the landowner or developer to install but there are no adjoining sidewalks. I would guess this section isn't intended for that situation, but it could be worded to clarify.	Clarified. Sidewalks for individual lots must be transitioned down to adjacent lot's ground level to prevent a trip or fall hazard. Subdivision sidewalks that end at unimproved lots will need to be terminated per MUTCD requirements. An approved ADA crossing must be identified for all users at such terminations.	yes
36	July 30, 2025	5	In section 5.2.7 (this one is just for clarification) You reference Helena City Code in the first sentence and then an ordinance in the second. This is a little confusing. Please clarify the wording.	Clarified with the following: "Roadway intersections shall comply with current sight distance triangle requirements as set forth under Helena City Code. The intent and purpose is to reduce potential traffic accidents by evaluating and maintaining adequate visibility at intersection corners."	yes
37	July 30, 2025	5	Similarly, section 5.2.9 in the Cross Slope section. The first sentence says that "it is desirable" for roadways to be level ..... And then in the second sentence it says "Any deviation to this	Clarified with the following: "Except at intersections, or where superelevation is required, roadways shall be level from top of curb to top of curb and have a 3% crown for all streets with a grade less than or equal to 6%."	yes

			requirement”..... Please consider rewording. Desirable does not imply required.	The sentence, “Any deviation to this requirement…” has been removed.	
38	July 30, 2025	5	Section 5.2.10 Pavement Thickness. Please reconsider the requirement for 2 lifts for 3” thick asphalt. Please consider a more performance-based specification. 1. This is another request to consider rewording. In the past paragraph it states that “all utilities shall be warrantied by the person or contractor requesting the street opening….” I believe the intent of this statement in this section should be that “all utility trenches shall be warrantied….”. Any required warranty for the actual utility should be covered elsewhere.	Two lifts for 3” asphalt section has been removed. We note "Per MPWSS" (section 02510): 1. The minimum lift thickness shall be no less than three times the Nominal Maximum Aggregate Size (NMAS) for gradations above the Maximum Density Line, and no less than four times the NMAS for gradations below the Maximum Density Line. 2. The maximum lift thickness is 3" for surface courses and 6 inches for base courses. This is the logical location to mention trench warrantees, immediately after the process and procedure for repairing street openings.	yes
39	July 30, 2025	5	Section 5.8: The requirement that all development which increase the peak hour trips per day are required to provide a TIS seems extreme. Please consider revising the requirement for the small Level 1 TIS’s. Traffic counts, and analysis for this small of an impact seems excessive. I am not saying to ignore, but please consider review of what is being asked for inclusion in each level of TIS and is it commensurate with the development.	Level 1 TIS has been changed to only require Introduction, Proposed Development, Existing Conditions and Recommendations/Conclusions.	yes
40	July 30, 2025	5	Standard Drawing 5-12. I do not have a big issue with referencing the IFC, however the dimensions don’t quite match Appendix D of the IFC. I think either the notes need to be revised or the dimensions. 1. Also, Note 1, please consider modifying to say the “currently adopted edition by MCA). Montana is always behind the current version and I think it would put everyone in a tough spot if the current edition and the currently adopted version were different. 2. Note 3- please consider clarifying per today’s discussion 3. There is a note in the IFC about a minimum width for fire access roads with a hydrant. That might be a good note to add. (D103.1)	Dimensions and notes 1 & 3 have been revised. Item #3 is depicted in the minimum clearance around fire hydrant detail which has been edited for clarity.	yes
41	August 1, 2025	1	The requirement of a Bill of Sale for all infrastructure provided to the City. No one really knows what this requirement is or what exactly the City is looking for here. Is it a lien release from the contractor? Is it an agreement between the City and the Owner. I would like the City to please provide clarification on what we need to provide with our final acceptance request submittal.	This will be better defined; a standard form has been developed.	yes

42	August 12, 2025	4	Table 4-2 on Page 44 – Rainfall intensity should be in/hr not inches.	Will be corrected.	yes
43	August 12, 2025	4	Table 4-1 on Page 43 – Please identify this table as being the values used for P in the approved runoff volume calculation.	Will be revised.	yes
44	August 12, 2025	4	Section 4.4.2 on Page 46 – Only require the HGL on plan sheets to be shown to limit confusion/cluster since it is the governing equation for determining surcharge within the pipe network.	Agree. Will revise to only HGL	yes
45	August 12, 2025	4	Section 4.4 – Seems onerous to have private systems meet the same requirements as public systems. Material standards should not apply to private sites.	Agree, will clarify. Duplicate comment below	
46	August 12, 2025	4	Section 4.5.4.2 on page 56 – consider adjusting minimum size requirements to 33" since Contech's most popular size is 33".	Agree, will revise.	yes
47	August 12, 2025	4	Standard Details 4-8,4-9, and 4-10 – Consider alternative design options, options presented may be costly and difficult to meet.	Standard Details are meant to provide a streamlined design option that meets city standards. Alternative designs that meet requirements defined in standards will also be accepted. Standards also reference the 2017 BMP manual which provide alternative design options. Section 4.5.1 also discusses that Standard Detail 4-8 can be **adapted** for use (not that every pond must follow the standard detail exactly).	
48	August 12, 2025	4	Clarify the term predevelopment, add a definition to glossary or define elsewhere.	Agree, will add.	yes
49	August 12, 2025	4	Section 4.5.4 on Page 55 – Consider allowing water quality ponds to be located underground as well since some sites don't have room for an above ground pond.	Water quality section includes provisions for using LID or other BMPs to meet treatment requirements when a pond is impractical.	yes
50	August 12, 2025	4	Section 4.5.6 on Page 57 – Consider allowing infiltration testing that meet the requirements of Circular DEQ- 8.	Agree, will allow. Related comment #166, 253	yes
51	August 12, 2025	4	Section 4.4.2 pages 46 and 47 – Consider using alternative design storm event (10 yr. vs. 25 yr.) for storm main design.	Both the 10 year and 25 year events are commonly used for storm main design. Most other municipalities that allow for the 10-year design have additional criteria that has to be met for larger storm events as well. Specifically spread criteria and flood mitigation. Since the 25-year design event has been in place since 2013 and the City has routine issues with flooding due to older mains not being sized for larger events we will maintain the requirement to design to the 25-year event with no-surcharging. See related comment #153	yes
52	August 12, 2025	4	Provide checklists to simplify submission of plans/design reports.	Already included. Related Comment #221	yes
53	August 12, 2025	4	Would like an option to HDPE in certain areas (excluding road crossings).	Will add note that HDPE is allowed excluding roadways and parking areas.	yes
54	August 12, 2025	4	Page 48 Bullet 2 – simplify this section by removing the last two sentences. Last two sentences contradict what is shown in detail 4-6.	Agree, will revise.	yes
55	August 12, 2025	4	Page 48 Bullet 3 – Prefer not to combine soil into rip rap or to cover rip rap with soil.	Agree, will revise.	yes

56	August 12, 2025	4	Section 4.5.4 Page 55 – Consider allowing underground retention as well.	Section will be revised. Underground retention may be allowable provided water quality treatment requirements are met	yes
57	August 12, 2025	4	Section 4.5.4 on Page 56 – will vaults be the only option allowed for underground storage or would chambers with an open bottom be allowed as well.	Underground storage section will be revised. Open bottom chambers would be allowable but may be required to have isolator row or similar. Must include pretreatment upstream meet configuration requirements.	yes
58	August 12, 2025	4	Section 4.5.7 Page 58 – Provide more information regarding what is considered to be LID and possibly where it may apply, maybe include a definition.	Will clarify LID language. Engineer can also rely on Montana Post Construction BMP Design Guidance Manual.	yes
59	August 12, 2025	4	Glossary defines retention while the standards refer to infiltration pond. Use same verbiage throughout for simplicity.	Agree, verbiage will be updated to be consistent.	yes
60	August 12, 2025	4	Is there a specific design requirement or standard that outlines what is meant by pretreatment of stormwater prior to reaching the pond.	Pretreatment facility design guidance can be found at Montana Circular DEQ-8; Montana Post-Construction Stormwater BMP Design Guidance Manual; and Urban Drainage and Flood Control District, Urban Storm Drainage Criteria Manual, Volume 3, Chapter 4	yes
61	August 12, 2025	4	Do words like shall or must have different meanings in regards to whether a deviation or alternative will be allowed. Consider using verbiage like recommended.	These engineering design standards are meant to be prescriptive. Deviations may be allowed. Will leave as is.	yes
62	August 12, 2025	4	Explain the reason for the 2:1 length to width ratio for pond designs. Consider allowing alternatives to be less restrictive.	The 2:1 minimum is consistent with industry standard and guidance found in the MT Post Construction Stormwater BMP Design Manual. This is to prevent short circuiting and ensure the stormwater has ample time to allow particles to settle before reaching the outlet structure. This design criteria ensures the pond meets the 80% TSS removal requirement.	yes
63	August 12, 2025	4	Side slopes at 4:1 consume a lot of area, consider revising back to 3:1.	Will revise to include both. 4:1 where practical, 3:1 as a maximum. Follows language in Std Detail 4-8.	yes
64	August 12, 2025	4	Section 4.5.7 on Page 58 – Consider allowing alternatives or improving upon requiring separate water quality ponds for dumpster areas.	Will revise language to include other treatment methods.	yes
65	August 12, 2025	4	Section 4.1.4 on Page 42 – Consider allowing water quality to be managed in regional ponds for commercial properties not just residential.	Will revise. allowable	yes
66	August 12, 2025	4	Section 4.7.3 on Page 63 – Review if the SWPPP is required to be reviewed prior to release of permits.	Yes, it is required. This is required by MCM 4 within the City's MS4 permit.	yes
67	August 12, 2025	4	Table 4-10 on page 60 – clarify seeding requirements/verbiage, need clarity on if a site is droughty or cool (North vs. South aspects).	Will standardize to one seed mix for City maintained areas.	yes
68	August 12, 2025	4	Clarify what can be included or what will be allowed within easements, it appears from the standards that no landscaping or other use of the area will be allowed.	Will update to add clarity, easement restrictions will only be limited to no permanent structures. Landscaping, driveways, fences and any other non-permanent structure will be allowed if it doesn't affect the overall function of the infrastructure in the easement.	yes
69	August 12, 2025	4	Section 4.5.12 on Page 60 – Add a statement that if a project has an approved SWPPP, then it will take precedence over this requirement	Will keep as written, prefer to have steep slopes stabilized with appropriate protections and methods.	yes

70	August 12, 2025	4	Section 4.5.6 on Page 57 –Reconsider if Table 4-9 is needed considering infiltration testing is required for all ponds. Consider removing this to allow for actual onsite value to be used. Explain if a safety factor is added to this as well	The in-field testing rate is used in conjunction with Table 4-9. The "actual or maximum infiltration rates, whichever is less…" In rare cases onsite value may be higher than values in Table 4-9. Table will remain. Safety factor is included to account for clogging of facility over time. Safety factors are applied to table values as well. This is clarified.	yes
71	August 12, 2025	4	Is there a setback for ponds from buildings, the standards appear to only list property lines	No, will rely on building setback requirements.	yes
72	August 12, 2025	4	LID Design Standards – Consider allowing proprietary systems.	These standards don't exclude them. Refer to documents incorporated by reference.	yes
73	August 12, 2025	4	Consider allowing designs to incorporate infiltration with detention.	These standards do not exclude combined facility design. Combined facilities must meet performance criteria for detention and retention facilities (outlet design, infiltration rate, adequate drawdown, pretreatment, etc.).	yes
74	August 12, 2025	4	Clarify first bullet on page 56 section 4.5.5.1 if this is intended to be different than water quality and if pretreatment is allowed in the forebay. Also clarify standards for 80% TSS removal. How to measure this is not well defined. Might be reference to HEC-22 or DEQ-8.	Yes, confirm that pretreatment is different than the water quality facility. Pretreatment would occur just upstream of the main facility. See Std Detail 4-8 for example configuration. A forebay is an allowable pretreatment method. BMPs designed in accordance with the DEQ-8 or Montana Post-Construction BMP Manual are presumed to meet the 80% TSS removal standard. Specific site monitoring may be required for proprietary systems or non-standard BMPs.	yes
75	August 12, 2025	4	Section 4.5.7 – Gravel one-third true area statement to be removed.	Agree. Will be revised.	yes
76	August 25, 2025	2	Section 2.5.4 – 4th paragraph, remove the word "horizontal" so that meters can also be installed vertically. This meets current practice with using ultrasonic meters.	Agree, will revise	yes
77	August 25, 2025	2	Section 2.5.4 – 4th paragraph. Remove 18 inch minimum requirement and reference to turbine and compound meters. This meets current practice with using ultrasonic meters.	Agree, will revise	yes
78	September 5, 2025	5	5.2.3 on Bicycle Facilities and Multi-use paths - This section encodes a flawed and outdated paradigm: Bike lanes are required upon reconstruction on all collector or higher classified street, as identified in the LRTP or other commission approved non-motorized plan. All other bike lanes identified in the LRTP will be implemented as funding and infrastructure allow or as demand is observed. For minor collector or lesser classified street, bike lanes will be discouraged unless identified by the LRTP. Instead of putting bike lanes on dangerous busy, dangerous streets, we should make accommodations for bikes on side streets, and separate the bicycle facilities from the busy streets. We build dangerous bike lanes that no one feels safe using, and then notice that there is no demand. We have a complete transportation network for cars but no safe transportation network for bikes. Filling in the gaps in the bike network should be the priority at this point, not an after thought that is only done if we are already doing a road project.	The non-motorized network will be considered through the LRTP update process, which may require future revisions to the City Standards.	

79	September 5, 2025	5	5.2.3 Bicycle Facilities and Multi-Use Paths Helena's goal should be to implement AAA bicycle infrastructure: “All Ages and Abilities” (AAA) standard is not a formal rating system, but a gold-standard design philosophy that’s quickly becoming the benchmark for inclusive, sustainable transportation infrastructure. AAA design asks a simple question: Would you feel safe letting a 12-year-old or a 70-year-old ride here? If the answer is no, the infrastructure isn’t doing its job. What Makes Infrastructure “AAA”? According to guides like those from NACTO, AASHTO, and the BC Active Transportation Design Guide, true AAA bike infrastructure must: *Be physically separated from fast or high-volume vehicle traffic *Support low stress travel with predictable paths and safe crossings *Accommodate different types of devices, including cargo bikes, adaptive cycles, and e-scooters *Offer continuous, connected networks, not fragmented or piecemeal paths *Include safe intersections that prioritize vulnerable road users *Have clear signage and be navigable by people of varying abilities and confidence levels A painted stripe beside a six-lane arterial road? That’s not AAA. A raised, curb-separated bikeway buffered from traffic with wide lanes and smooth pavement? That’s getting there. Designing for Reality, Not Idealized Riders Many current bike lanes assume a fit, confident cyclist riding a standard-width pedal bike. Modern micro-mobility includes: * Long-tail cargo bikes carrying kids, groceries, or freight * Trikes and adaptive cycles used by riders with disabilities * Recumbents and handcycles with different width and turning needs * Electric scooters and throttle-powered e-bikes * Parents with trailers, and seniors on step-through bikes AAA infrastructure must accommodate all of them — not just the fastest, thinnest, or most experienced. While no single “AAA rating” exists, several authoritative design frameworks guide cities toward this level of infrastructure: * NACTO Urban Bikeway Design Guide Prioritizes comfort, safety, and separation for riders of all skill levels — especially in urban environments. * AASHTO Guide for the Development of Bicycle Facilities (2024) The U.S. national standard, now updated with sections on protected intersections, high-comfort lanes, and inclusive infrastructure needs. * BC Active Transportation Design Guide (Canada) A leading resource in North America that explicitly integrates accessibility and cargo-bike-friendly design. * CROW Design Manual for Bicycle Traffic (Netherlands) The global gold standard. Though Dutch-focused, its influence shapes bike infrastructure thinking around the world. Each of these emphasizes design for real-world users, not idealized or elite riders. They consider widths for cargo bikes, turning radii for	This issue, along with many others, will be considered and updated through the LRTP update process (on-going).	

			trikes, resting zones, barrier-free access, and safe intersections as essential, not optional.		
80	September 5, 2025	5	Sections 5.2.12 & 5.3 -— Complete Streets and Right-of Way Standards Over-building streets causes problems, including higher speeds and higher maintenance costs. We should not just have minimum lane width but maximum lane widths as well. Really the goal should be to use the minimum amount of pavement. Two on-street parking lanes in modern developments is overkill. If people have garages and driveways, the parking lanes are rarely used. We are paying for miles of parking pavement in town where nobody ever parks.	On-street parking is part of the standard city road sections. It is one of the many Complete Streets elements and may be proposed to be removed during the subdivision design process.	
81	September 5, 2025	5	There are limits on how steep roads can be, but no limits on the amount of cut and fill. So the standards allow a developer to level a mountain to make a neighborhood. Excessive fill is concerning with our history of earthquakes. Landslides and earthquakes are an uninsurable risk that these standards should seek to mitigate.	This would be discussed on a case by case basis. Geotechnical analysis is required currently and must include slope stability assessment.	
82	September 11, 2025	5	Please incorporate the following revisions or additions that were discussed with the Non-Motorized Travel Advisory Council (NMTAC). 1) Provide standard detail for curb bulb outs 2) Provide standard detail for angled parking 3) Provide standard detail for protected bike lanes 4) Provide standard detail for street center crosswalk signs 5) Reduce curb radius 6) Remove traffic impact studies 7) Provide requirements for tree coverage on vehicle travel lanes 8) Provide standard to minimize crosswalk lengths 9) Provide details for speed control features 10) Provide details for parklets 11) Redo the neighborhood traffic calming program	1) A standard bulb-out detail provided. 2) Since angled parking is a variance approved by the City Commission no standard will be created. Review of the proposed angle parking will be case by case. 3) Protected bike lanes are not a currently proposed standard. Maintaining protected bike lanes would require an increase to City Street assessments and would need Commission discussion. 4) City does regularly approve center crosswalk signs due to maintenance and operational effectiveness. 5) Radius has already be addressed per earlier comments. 6) Traffic impact studies are required for the staff and public to understand the impact of a proposed development. 7) Tree coverage would be addressed by the Parks Department Urban Forestry Division and is already in City Code. 8) When possible, roadway widths are addressed on a project by project basis. 9) Traffic calming measures are included in the appendices. 10) Parklet details are provided in the parklet program documents. 11) Revised traffic calming program can be addressed over the coming year or two for the next Engineering Standards update.	yes
83	September 19, 2025	4	In this line of the manual "Include a pretreatment forebay or other pretreatment facility immediately upgradient of the retention pond to preserve infiltration performance and prevent sediment build-up in the main cell of the pond", engineers will interpret this and think they have to use a forebay retention pond as upstream treatment. Can you include language that adds hydrodynamic separators (HDS) is an allowed pretreatment practice too? HDS units are used in urban areas with space footprint constraints, as sometimes piping into underground structures are the only option. HDS sizing guidance is in the MT BMP Manual when it meets the 80% TSS	Noted. Will revise language to be more inclusive of various pretreatment methods.	yes

			regulations. Cities like Bozeman and Kalispell/Whitefish clarify that HDS units have to have performance testing with Washington Ecology GULD to make sure the device is operating as designed.		
84	Oct. 31 2025	4	Section 4.1. Update Design Process schematic as necessary, based on all applicable stakeholder comments and CoH responses.	Figure 4-1 will be revised or removed entirely.	
85	Oct. 31 2025	All	All sections. Consider deleting the word “shall”. Replace with wording that is more definitive.	See related comments. Shall and must are understood to be definitive and indicate a requirement	yes
86	Oct. 31 2025	4	Section 4.1.2. Please describe what a private storm drainage system is and please provide examples if possible. Reference is made to SW Ordinance section 6-6-18.	Definitions will be clarified.	yes
87	Oct. 31 2025	4	Section 4.1.2. Detention. Please specify if a detention pond or detention facility can have an infiltration component (for the volume beneath the lowest outlet).	Will add section discussing combined facilities.	yes
88	Oct. 31 2025	4	Section 4.1.4. 10th bullet. Consideration should be given to instances where adjacent lots are owned by the same individual/company. There are likely situations where it’s best and/or advantageous to treat/store/outfall at the low point of the most down-gradient property. A literal interpretation by this definition could force an owner to treat the lots individually when that is not conducive to the overall development plan. From a development perspective, it’s very advantageous for an Owner to be able to cross a shared boundary line with a structure(s).	Private system definition will remain as stated. If an owner wishes to locate stormwater facilities across shared lot lines, they must follow the approved lot aggregation process or boundary line adjustment process with the Community Development Department. This approach ensures clear maintenance responsibility and avoids future complications if one lot is sold in the future.	
89	Oct. 31 2025	4	Section 4.1.4. 11th and 12th bullet. “All components” includes down spout drains, roof leaders, structures, underground pipe, etc. Providing such easements is going to look very odd on the physical final plat, COS, or on an easement exhibit. Can the City please give additional consideration to alternative means to accomplish the City’s concern with maintenance of private storm drain systems? Perhaps a resolution could be brought before City Commissioners for consideration. There has got to be a better way to address this concern because I don’t believe this is typical across Montana, nor is it industry standard.	“All components” is not meant to include roof downspouts or roof leaders. These are typically not considered part of the “drainage system” and intent is to have easements over in-ground drainage elements. The specific easement requirements are listed in 4.6, and do not reference roof components. Easements will include pipe, ponds/underground storage, conveyance ditches, and structures. This is consistent with current 2013 standards and has not been changed significantly.	yes
90	Oct. 31 2025	4	Section 4.2. 4th bullet. Please clarify annexation. Could possibly read “or for any parcels that will be annexed into the City as part of the proposed project or will be…”	Will clarify language	yes
91	Oct. 31 2025	4	Section 4.3.3.3. 4th paragraph. What is the pond rate?	Will clarify wording in this section. Pond rate is meant to refer to project peak flow rate used to design pond. It is saying to include offsite areas that will drain to this pond in the future as part of your flow/volume calculations. Take those future areas into consideration when sizing facility.	yes

92	Oct. 31 2025	4	4.4.2/3/4/5/6 Do these sections apply to public, private, or both? If both, does the City really want to assume the liability that comes with regulating all private stormwater infrastructure? Our clients understand meeting general onsite requirements, especially with how private infrastructure discharges to public R/W and infrastructure. But fully regulating private infrastructure seems risky. In reading these subsections, it seems like the intent is for Public facilities only. Please clarify.	These sections are intended to refer to public systems/facilities.	
93	Oct. 31 2025	4	Section 4.5. Low Impact Development (LID). This section is far too open-ended. Owners, Architects, and Engineers need this section to be far more definable and predictable. As written, multiple reviewers could easily interpret differently and as a result, this section could easily be applied differently to different projects.	Will clarify language. Standards are not meant to be prescriptive and allow for design freedom. LID is not required, and this section is meant to provide design freedom to engineers based on project needs.	yes
94	Oct. 31 2025	4	Section 4.5.1. Is it possible to utilize a CoH Regional Pond for runoff reduction or excess runoff? The 2018 Master Plan Update indicates that there are regional facilities that are performing very well and sizing was obviously based off some areas being developed.	It would depend on whether the regional pond was sized with the proposed development in mind. As mentioned in the Master Plan, some basins have regional ponds that are functioning well, while other basins do not have any regional facilities yet. The Master Plan identified CIP projects to improve system performance, but these projects are still in design. The Master Plan also indicates much of the existing conveyance network is undersized. We cannot approve uncontrolled runoff being sent to a regional pond without confirming downstream conveyance capacity. Use of regional pond for peak flow reduction requires a downstream capacity analysis (see section 4.3.3.3), and confirmation from City that the regional facility has available capacity. Onsite water quality treatment will still be required.	
95	Oct. 31 2025	4	CoH Regional Ponds and storm water fund. Has the CoH considered a storm water fund that an owner could pay into if excess runoff volume could be stored at an existing regional facility? The fund would likely build quickly and could be used to fund projects that improve regional facilities that are in need of attention, based on the latest Master Plan Update.	The City has not considered this to this point. This is a good idea that will be documented and considered in the future.	
96	Oct. 31 2025	4	Section 4.5.4. States that Section 4.4 CONVEYANCE DESIGN applies to detention ponds. Is this the City's intent?	Intent was to have manhole and storm sewer sections of 4.0 apply to underground facilities. This statement will be removed, and language will be updated for more clarity on requirements.	yes
97	Oct. 31 2025	4	Section 4.5.4.2. There are multiple references to UG detention ponds. Is this the City's intent?	UG detention referred to underground storage facilities. Language will be revised throughout to reference "facilities" instead of "ponds" only. This should clarify confusion on terminology.	yes
98	Oct. 31 2025	4	Section 4.5.4.2. 6th bullet. The UG detention system is a private system. Would the City consider letting the UG system manufacturer control the requirements of their private system? Most manufacturer's do not recommend large manholes because they don't want people to be tempted to physically crawl into an UG system. They all have strict procedures for cleaning and flushing their systems from the surface. Where would the situation	While situation may be rare, the 400ft spacing requirement is based on industry guidance (HEC-22 and AASHTO) to ensure underground systems can be cleaned and jetted from the surface. Presence of manholes does not imply physical entry to the system. Manhole lids are heavy and require specialized tools (lid pullers) to open, discouraging casual access. Language has been updated to clarify access manholes are for *cleaning* access.	yes

			arise in the CoH that a single chamber would exceed 400' in length? This requirement seems very out of place.		
99	Oct. 31 2025	4	Section 4.5.5.1. 1st bullet. Major clarification is needed here on the intent and why it's necessary. An additional definition(s) may also be necessary. For the other bullets, see comment #22 above. Please allow the professional engineer to design based on varying design and existing conditions. The 10' setback is very restrictive.	Pretreatment forebay is necessary to prevent sediment build up over time and maintain facility function. Additional information will be added to provide pretreatment facility design guidance. 10' setback is needed to support easement requirements (1:1 plane from bottom of facility). Current 2013 standards require a 20' setback from property lines, so there is a more lenient setback now.	yes
100	Oct. 31 2025	4	Section 4.5.7. Will the CoH please consider the use of underground facilities for water quality control? At grade ponds are simply not possible on all sites. Not all sites have the same land value and worth. Underground facilities and some water quality devices/structures can do a remarkable job with improving storm water quality. Please state water quality requirements. Engineers do not want to reference the Post-Construction BMP Design Guidance Manual. Please look at Figure 5.2-3 in the manual (Plan View of example Infiltration Basin). This is not practical for nearly all projects that would be reviewed by the CoH. If absolutely necessary, a reference to an urban drainage manual seems like it would be much more applicable and realistic.	Language will be revised to allow underground facilities. Water quality treatment section has also been revised. Water quality treatment requirements can be met with proprietary devices or LID techniques instead of a pond. Pretreatment would be required prior to sending WQ volume to UG facility. Water quality requirements are stated already – treatment facility must remove 80% TSS from the RRV. The MT Post-Construction BMP Design Guidance Manual was written in collaboration with all major cities in MT, with intent to be used as design guidance. Design guidance for 5.2 infiltration basins describes minimum design elements. Design is not required to look exactly like the example plan view figure but should still have minimum design elements listed in procedure (maintenance access, a pretreatment bay (or other pretreatment method), sized for 100% RRV. Etc).	yes
101	Oct. 31 2025	4	Section 4.5.7. 2nd paragraph. This is a repeat paragraph, please consider deleting.	Noted. Will delete from section 4.5 and keep in water quality section.	yes
102	Oct. 31 2025	4	Section 4.5.7.1. 1st bullet. Can roof area be removed from the RRV calculation? If not, can roof area be calculated at a lesser %? Potential contaminants on a roof are significantly different than potential contaminants on a drive surface.	RRV calculation includes percent of impervious area draining to facility. Roofs are still considered impervious. This is consistent with the MT Post Construction BMP manual.	yes
103	Oct. 31 2025	4	Section 4.5.7.1. 3rd bullet. This requires full infiltration within 48 hours. Why? Even the Post Construction BMP Design Guidance Manual typically recommends a preferred 48 hours minimum and 72 hours max. See Section 5.2.1 of that manual. Please consider revising.	This bullet point will be removed. Infiltration drawdown requirement will be moved to infiltration facility section. Drawdown of 72hrs or less is required.	yes
104	Oct. 31 2025	4	Section 4.5.8. Please do not reference another manual. Please consider stating minimum requirements. Outlet structure design does not need to be complicated. Reference is made to the very first paragraph of these proposed standards. The third sentence reads: "The Design Manual is intended to streamline design of new stormwater infrastructure for developers, designers, and engineers working into the City of Helena and therefore make it easier to meet the goals of the stormwater system."	Requirements will be stated more clearly. HEC-22 and USDCM are provided as guidance since they contain industry best practices for outlet structure design and are available if designers want detailed guidance. St details 4-9 and 4-10 provide a streamlined design baseline that meets city requirements.	yes
105	Oct. 31 2025	4	All on-site storm water facilities must be constructed and operational prior to construction of any impervious area. ***Storm water facilities for construction runoff control*** must be constructed and operational prior to construction of any	Agree will clarify.	yes

			impervious area. ***Storm water facilities for post-construction runoff treatment must only be brought online after the site is stabilized.*** Please clarify between construction runoff facilities and post-construction facilities. Post construction treatment systems should not be constructed or brought online until impervious and pervious areas are complete and the site is fully stabilized. Otherwise, construction debris will clog and overwhelm any post construction BMP. They are not meant to treat/store construction sediment and this is usually the #1 failure for post construction BMPs. We have seen this occur in other MT cities.		
106	Oct. 31 2025	4	Figure 4-1 Flow chart is overly complicated and can be streamlined to be more effective and direct. Suggest separating step 2 runoff volume control and Step 3 water quality treatment, with step 2 ending in either conveying the 100-yr storm (<5000sf impervious) or limiting the peak to predevelopment rates (>5000 sf impervious). For water quality treatment, suggest referencing and using as much of the Mile High Flood District Volume 3 Chapter 4 Figure 4-1 as is feasible for Helena. This is a model example of how to select different water quality treatment options: infiltration first, filtration second, sedimentation as a last resort.	Agree flowchart is complicated. Will be reworked or removed entirely. Related Comment	
107	Oct. 31 2025	4	Figure 4-1 suggest removing specific BMPs from the flow chart for water quality treatment As written, it is not clear why detention ponds are allowed for WQ when coming from step 2, but are not listed when coming from step 3	See related comment above. Flowchart will be revised or removed.	yes
108	Oct. 31 2025	4	Figure 4-1 suggest removing "can combine runoff control and water quality treatment" there is no "yes/no" decision here, and additionally this may be apporpriate when infiltrating, but when infiltration is infeasible, it is not a best practice to combine rate control and water quality.	See related comment above. Flowchart will be revised or removed.	yes
109	Oct. 31 2025	4	Figure 4-1 strongly recommend a decision pathway for when infiltration/LID is not possible and runoff must be treated to 80% TSS removal there is no guidance in the flow chart for when soils and site do not facilitate infiltration.	See related comment above. Flowchart will be revised or removed.	yes
110	Oct. 31 2025	4	Table 4-2 Column heading shuld read "Rainfall Depth (in/hr)", missing the hr part in units	Heading will be corrected. Rainfall Intensity (not depth).	yes

111	Oct. 31 2025	4	"Low Impact Development (LID) techniques may be used in lieu of water quality control. Runoff volumes must be quantified when using LID techniques. LID design guidance is available using the Montana Post-Construction Stormwater BMP Design Guidance Manual (MTDEQ, 2017) or the Urban Storm Drainage Criteria Manual (UDFCD, 2010)." "Runoff reduction techniques may be used in lieu of water quality control. Runoff reduction techniques include receiving pervious areas (RPA), grass buffers and swales. Runoff volumes must be quantified when using runoff reduction.. Runoff reduction and RPA design guidance is available using the Montana Post-Construction Stormwater BMP Design Guidance Manual (MTDEQ, 2017) or Chapter 4, Volume 3 of the Urban Storm Drainage Criteria Manual (MHFD, 2024)." LID can be a confusing term as it is a technique and not an actual physical BMP, suggest changing to "runoff reduction" as that is the primary unit operation used for LID BMPs and water quality. Additionally, the MT BMP Guidance manual does not provide guidance for LID (only a brief section on LID planning), but does however proivde guidance for runoff reduction. Also suggest referencing the latest 2024 Volume 3 Chapter 4 Urban Drainage Manual guidance (changed their name to Mile High Flood District - MHFD). The water quality part of the manual was updated in 2024 and has a lot of helpful guidance and latest best practices for runoff reduction	This paragraph will be revised and will discuss BMPs in more detail.	yes
112	Oct. 31 2025	4	All portions of above-ground stormwater ponds must be vegetated. All portions of above-ground stormwater infiltration basins must be vegetated. Strongly suggest a distinction between ponds (detention) and infiltration basins throughout the document. Suggest speaking specifically to either detention basins or infiltration basins. "Pond" implies there is standing water and most vegetation does not survive being submerged (unless a specific wetland species). This language would make sense for infiltration basins though where water drains down.	“pond” language will be revised throughout to a more inclusive “facility.” Even if a facility does not hold water long, they can still be called a pond. This is an understood term for above ground depression in the topography for storage of stormwater. Majority of City’s ponds do not hold standing water for very long, and seeding is required for slope stabilization and erosion protection.	yes
113	Oct. 31 2025	4	suggest limiting drainage basin sizes for "ponds" and detention basins. Small sites and small ponds have really small orifice controls that clog constantly. See MHFD manual Volume 3 Ch4 Table EDB-3 (page 137 of pdf). MHFD does not recommend EDBs (ponds) for sites smaller than 2 acres, and recommends evaluating other treatment options even for sites 2-20 acres.	Infeasible to not allow ponds on small sites. Majority of sites are <1AC and are often infiltration or combined facilities. Maintenance of private WQ ponds is the owner’s responsibility so if orifices clog, it is the owner’s responsibility to ensure pond functions and does not negatively impact MS4.	yes
114	Oct. 31 2025	4	Regional Ponds Regional Basins per comment above suggest changing all references from ponds to basins. Basin can mean either detention or infiltration.	Language throughout will be revised from “pond” to “facility” throughout where applicable to be more inclusive.	yes

115	Oct. 31 2025	4	"Only private underground detention storage is allowed. Underground retention storage is not allowed." "Only private underground detention and retention storage is allowed. Underground retention storage is not allowed." What is the technical basis for not allowing underground retention? Strongly suggest underground infiltration is allowed, this is a very useful tool in engineers toolbox to achieve the primary MS4 permit goal of runoff reduction - many sites simply do not have the space for above ground infiltration basins. Suggest above ground infiltration basins are prioritized first, but if its not feasible, that UG infiltration is considered before moving to other less effective treatment options.	Agree, section will be revised to allow underground infiltration.	yes
116	Oct. 31 2025	4	" Prior to discharge to underground detention storage, stormwater must pass through an above-ground water quality treatment pond. " "Prior to discharge to underground detention or retention storage, stormwater must pass through an above-ground water quality treatment device. " Strongly suggest allowing water quality treatment other than above ground ponds. Ponds are the least effective treatment and are difficult to maintain (require dredging). Other devices such as HDS systems are easier and less costly to maintain.	Agree, language will be revised to include more water quality treatment methods.	yes
117	Oct. 31 2025	4	"The requirements under Section 4.4 CONVEYANCE DESIGN for storm sewers and manholes shall apply to underground detention ponds. " Please clarify and be more specific as to which parts apply to UG detention/retention. If material selection from conveyance applies here, please state what materials are allowed. Recommend adding CMP with polymer and aluminized coatings under the correct environmental conditions as an allowable material for underground storage. For underground stroage systems, CMP with polymer coatings offers a service life of over 100 years, while CMP with Aluminized coatings provides about 75 years of service under suitable pH and resistivity conditions. Polymer coatings also have a wider range of allowable environmental conditions, including certain corrosive soils. While restricting the use of galvanized coatings or conveyance applications is appropriate, a complete prohibition of	Related to Comment #96. Intent was to have manhole and storm sewer sections of 4.0 apply to underground facilities. This statement will be removed, and language will be updated for more clarity on requirements. Intent is not to limit what proprietary facility manufacturers can install.	yes

			all CMP coatings would significantly limit available options for underground storage design. CMP systems provide easier maintenance accessibility and reliable performance across a wide range of site conditions and applications in MT.		
118	Oct. 31 2025	4	"Sites larger than one acre must drain to a maximum of one facility per acre such that any facility has a minimum tributary area of one acre unless it is not physically practical. Physical practicality must be demonstrated by showing that the natural topography prevents drainage to the specified number of facilities, that drainage to downgradient infrastructure would not be possible with the specified number of facilities, or that the needed conveyance or runoff control infrastructure to achieve the specified number of facilities would increase flood risk or degrade water quality. " Suggest deleting. There is no flood control or water quality benefit by limiting detention systems to a max area of 1 acre. This increases construction costs for developers requiring multiple excavations vs a single larger excavation.	Agree that wording is confusing and will be revised. Intent was to encourage fewer larger facilities and limit a large site from having numerous small facilities rather than one large facility.	yes
119	Oct. 31 2025	4	add bullet: Underground detention or retention basins must have a minimum 30" diameter access opening to facilitate maintenance and physical entry into the system Physical access into underground systems is critical for maintenance	Contradicts earlier comment about not wanting large manholes for access. There is already a statement regarding access manholes for underground systems. Will leave as is.	yes
120	Oct. 31 2025	4	4.5.5 Infiltration Ponds 4.4.5 Infiltration Basins suggest chaging "ponds" to "basins" throughout. Ponds inplies there is standing, permanent pool of water. Infiltration basins drain down and are "dry"	See related comment. Language will be revised throughout to “facility.” Additionally, an infiltration pond is a large surface depression and is understood to be a “pond” even if no standing water is present.	yes
121	Oct. 31 2025	4	Include a pretreatment forebay or other pretreatment facility immediately upgradient of theretention pond to preserve infiltration performance and prevent sediment build-up in the main cell of the pond. Hydrodynamic separator (HDS) pretreatment is required immediately upgradient of theretention pond to preserve infiltration performance and prevent sediment build-up in the main cell of the pond. Strongly suggest HDS systems, at a minimum, are required to preserve and prtoect native soil infiltration rates. Forebays scour and washout sediment which then clogs pore spaces in infiltration. HDS systems have been tested and verified to not scour and resuspend captured sediment. Please inquire for references and ASCE/EWRI conference presentations on this topic. Filters are technically a best practice for pretreatment to infiltration (its the finer particles that clog porosity), and many jurisdictions and DOTs require this, so HDS is really a minimum for protection and step in the right direction.	We will not specify what type of pretreatment method must be used. This is the designer’s choice and a forebay meets the requirements of pretreatment. Forebays are often concrete bottom or compacted material which would prevent scour. Exact purpose of forebay is to retain and settle sediments before runoff enters infiltration cell. HDS systems are not prohibited and can be specified to fulfill pretreatment requirements.	yes
122	Oct. 31 2025	4	Include a pretreatment forebay… If keeping forebays for retention pretreatment, suggest adding language regarding forebay design:	Forebay language will be kept. References for applicable design guidance have been added (including UDCM Vol 3 Ch 4).	yes

			"See Mile High Flood District Volume 3 Chapter 4 Urban Drainage Criteria Manual for required forebay design." Forebay design is notoriously lacking, the MHFD manual update has the best available guidance		
123	Oct. 31 2025	4	Strongly suggest requiring more than one infiltration test per basin, and specifying # of tests required by basin size. Research from John Gulliver at Univ of MN demonstrates sometimes several tests are required to even get within an order of magnitude of the actual native soil infiltration rate. The safety factor does not account for this. This is a common mistake and a major failure point for infiltration systems. Please inquire for references and additional suggestion.	Thank you for the suggestion and research reference. While we agree that multiple infiltration tests can improve accuracy, at this time we will keep the language the same. Many of the major MT cities and DEQ do not require more than one test. Helena generally has well-draining soils and an arid climate, so the risk of infiltration facilities failing is lower than regions with more rainfall or sensitive water bodies. We have noted the comment and will revisit in the future if needed.	yes
124	Oct. 31 2025	4	4.5.7 Water Quality Control Ponds 4.5.7 Water Quality Control Ponds Suggest removing "ponds" as this is very specific and seems to imply detention basins can be used (where infiltration basins are the first step). Confusing for the reader and water quality control can be met by devices other than ponds, per the permit and MT Post Construction manual	See related comment. Language will be revised throughout to “facility.”	yes
125	Oct. 31 2025	4	"All site development or redevelopment creating or altering more than 5,000 square feet of impervious area must direct stormwater runoff to an on-site water quality control pond" "All site development or redevelopment creating or altering more than 5,000 square feet of impervious area must direct stormwater runoff to an on-site infiltration basin." Suggest changing references to "water quality control pond" to "infiltration basin" throughout this section. "Pond" is confusing and infiltration basins are usually not called ponds, see above comments	See related comment. Language will be revised throughout to “facility.”	yes
126	Oct. 31 2025	4	"Low Impact Development (LID) techniques may be used in lieu of water quality control. Runoff Volumes must be quantified when using LID techniques. LID design guidance is available using the Montana Post-Construction Stormwater BMP Design Guidance Manual (MTDEQ, 2017) or the Urban Storm Drainage Criteria Manual (UDFCD, 2010)." "Runoff reduction techniques may be used in lieu of water quality control. Runoff reduction techniques include receiving pervious areas (RPA), grass buffers and swales. Runoff volumes must be quantified when using runoff reduction.. Runoff reduction and RPA design guidance is available using the Montana Post-Construction Stormwater BMP Design Guidance Manual (MTDEQ, 2017) or	Duplicate paragraph referring to LID will be removed. LID paragraph in 4.5.7 will be revised. LID must be mentioned per MS4 permit requirements, but additional discussion about BMPs will be added.	yes

			Chapter 4, Volume 3 of the Urban Storm Drainage Criteria Manual (MHFD, 2024)." Same as comment # 7:LID can be a confusing term as it is a technique and not an actual physical BMP, suggest changing to "runoff reduction" as that is the primary unit operation used for LID BMPs and water quality. Additionally, the MT BMP Guidance manual does not provide guidance for LID (only a brief section on LID planning), but does however proivde guidance for runoff reduction. Also suggest referencing the latest 2024 Volume 3 Chapter 4 Urban Drainage Manual guidance (changed their name to Mile High Flood District - MHFD). The water quality part of the manual was updated in 2024 and has a lot of helpful guidance and latest best practices for runoff reduction		
127	Oct. 31 2025	4	" An additional 10% must be included with the RRV for sediment storage." Add: If HDS pretreatment is used where sediment is stored in an external sump, the 10% additional sediment storage in basins can be excluded. This 10% additional storage provision is usually included due to forebays being ineffective and scouring and releasing sediment into basins. If HDS systems are used, this concern is eliminated. Also provides incentive for designers to use better performing pretreatment.	10% is included to account for sediment storage and facility clogging over time. Not related to forebays being ineffective. Language will remain. HDS structures can still be used for pretreatment. Will add clarification that if system has pretreatment or is included in combined facility that has pretreatment upstream, the 10% additional sediment storage does not apply.	yes
128	Oct. 31 2025	4	" If infiltration within 48 hours is not possible based on geotechnical percolation tests, then the RRV may be released over 48 hours if the RRV is treated onsite using post-construction stormwater management control(s) expected to remove 80% of the total suspended solids (TSS)." Add: if manufactured treatment devices (MTDs) are proposed for 80% TSS removal, they must have a General Use Level Designation for Pretreatment from the Washington State TAPE program (Ecology, 2025). Suggest including some level of performance verification for MTDs. Other jurisdictions in Montana (Kalispell and Bozeman) have a similar TAPE pretreatment spec that allows HDS systems. There are a few options here for performance verification, but there should be some 3-rd party evaluated performance "bar", otherwise manufacturers submit a variety of unverified testing. Unverified testing creates a lot of confusion for plan check reviewers, engineers, contractors, and manufacturers and wastes time and resources. Website link: https://ecology.wa.gov/regulations-permits/guidance-technical-	Infiltration drawdown time will be updated and moved to relevant section. The city does not plan to adopt WA State's TAPE program for proprietary devices at this time. While the program provides a vetted list of BMPs, many are specific to WA's regulatory framework and modeling tools (WWHM) which are not applicable in MT. Requiring GULD would be overly restrictive as it could limit available options and increase costs without clear regulatory basis from the MS4 permit. Additionally, GULD pretreatment devices are listed to achieve approximately 50% TSS removal, so Helena would need to require "basic" treatment to meet the 80% TSS standard, adding further complexity. While Kalispell references TAPE, other MT cities (including Bozeman) do not. Proprietary devices/MTDs will be accepted if demonstrate the ability to meet the stated performance goals.	yes

			assistance/stormwater-permittee-guidance-resources/emerging-stormwater-treatment-technologies		
129	Oct. 31 2025	4	Make sure the correct Urban Drainage Chapter 3 Volume 4 reference is included here. Great guidance for outlet structures in the 2024 update.	References will be updated to include 2024 update.	yes
130	Dec. 15, 2025	general	Please remove all references to “Minimum” as this creates confusion for design engineer and is very open ended.	Disagree. The term minimum is commonly used in requirements, standards, and codes and it allows for providing additional information necessary to make informed decisions on infrastructure submittals.	
131	Dec. 15, 2025	general	Please add an appeal process to the City Manager for denied deviation requests. This will help the manager to guide staff when necessary, help them make sure the commission’s goals are being implemented and improve relationships with developers, engineers, architects, etc.	Disagree. The city manager relies on professional staff as subject matter experts to determine deviation status on standards that have been approved by the city commission as the adopted community standards.	
132	Dec. 15, 2025	1	Page 5: Please remove unique Helena CAD Standards. This requirement creates a significant impediment for new engineering firms to begin work in Helena. It is non-standard and also prevents local engineering branches from sharing work with other offices within or outside Montana.	Disagree. These are not unachievable standards, and it is common practice for agencies to adopt CAD standards for consistency, legibility and clarity in infrastructure plans.	
133	Dec. 15, 2025	1	Pages 7-8: Please remove from plan sheet requirements items that should be in design reports instead and create clutter in the plan and confusion for infrastructure installers. See details in Stakeholders’ edits.	Partially agree, will revise to limit plan sheet requirements to construction related activities.	yes
134	Dec. 15, 2025	2	Page 12: Please verify water use with master plan.	Verified that this value is consistent with the Water Master Plan (within 15 gpd)	
135	Dec. 15, 2025	2	Page 14: Please make fire flows determined by fire code as other Montana cities. We should not need flows greater than established fire code as it should have adequate safety buffers.	The fire flow requirement is for the condition of large homes at the upper end of water lines that may need to include an interior fire suppression system. This provides an acceptable fire flow for public safety. The homeowner may opt to include a fire suppression system (sprinklers) in order to deviate from this.	
136	Dec. 15, 2025	2	Page 19: Please allow Mueller fire hydrants not just Kennedy. Both have been standard for 2-3 decades. At least 2 suppliers are necessary for price competition and availability.	Mueller hydrants have known maintenance issues that make them undesirable for use. An alternative model will be allowed, East Jordan 5CD250 WaterMaster.	yes
137	Dec. 15, 2025	2	Page 20: Please allow poly water service lines. They are cheaper and better than copper. Poly is the modern defacto standard.	Poly (HDPE) water line is cheaper than copper, but that is not the only consideration in selecting copper as the standard. HDPE is not proven to be superior by any other measure to copper water service lines. Copper has a proven track record of over a century of use. It has known environmental considerations and had no documented adverse health effects unlike other materials that had been used as cheaper substitutes, such as lead pipes and polybutylene water lines. Both lead a polybutylene were seen as cheaper alternatives, but their flaws were discovered only after having been put in service. With the possibility that the city will take over maintenance of the service lines in the right of way, we need to limit potential issues. The service lines from the curb box to the building will have the option of HDPE as the service line material.	

138	Dec. 15, 2025	2	Page 22 Section 2.5.4 curb boxes: Please delete the sentence marked out in stake holders' edits. This is a very non-standard and impractical curb box installation procedure which is unnecessary, expensive, and very time-consuming.	Sentence deleted.	yes
139	Dec. 15, 2025	3	Page 26 Design Report Section 3.2: Please reference DEQ Circular 2 for report requirements as per other major Montana cities. Please add "Reports prepared by a Licensed PE will not be unreasonably disapproved". Also please remove all references to the word "minimum" on page 26.	Disagree. See comment response to comment 130. Any reports that are returned for resubmittal are due to quality issues and failure to meet standard requirements.	
140	Dec. 15, 2025	3	Page 26 Section 3.2: Please delete item #7 as it is covered by the DEQ2 on page 19 #32 "Design Capacity and Design Flow".	Disagree, this needs to be addressed regardless.	
141	Dec. 15, 2025	3	Page 27: Please delete reference to DEQ4 as it applies to Subsurface Treatment Systems not Helena's treatment system. This uses higher estimated volumes due to inherent system limitations.	Disagree, this method allows the engineer of record to use a streamlined analysis using estimated loads by development types.	
142	Dec. 15, 2025	3	Page 27 Table 3-1: Please change Average Day Wastewater Loads for Commercial Use to 790 GPD and Industrial Use to 570 GPD as per Bozeman's standards based upon actual data. Values currently in the table are excessive and arbitrary, leading to costly oversizing of infrastructure and unnecessarily increasing maintenance costs for taxpayers long-term.	Disagree. This is a reasonable standard that can be used if specific calculations and information are not specifically known at the time of submittal. In reviewing the City of Bozeman standards, the numbers offered in the comment are much lower than the numbers in the Bozeman standards, table 5.2.1.	
143	Dec. 15, 2025	3	Page 28: Please delete the second paragraph as requiring the developer to upsize at the City's discretion is arbitrary, unfair, and non-standard. Must have a sound basis or City must pay for upgrade.	We will maintain the option but will revise the sentence to "Based on provided and available information as well as any engineering analysis, the City may determine that the capacity of the sewer may need to be increased as a result of the proposed project."	
144	Dec. 15, 2025	3	Please allow for deviations approved by DEQ Review Committee per DEQ2 24 (page 18 of Circular DEQ2).	MTDEQ does not have jurisdiction of adopted city standards.	
145	Dec. 15, 2025	3	Page 28 Third to last sentence: Upsizing offsite main per 75% calculated full or per approved deviation by DEQ Review Committee.	Disagree. The city does not have development impact fees, so no other means of development improvement exists.	
146	Dec. 15, 2025	3	Page 29: Please delete the last sentence in the first paragraph of "Manholes" per Stakeholders' edits. This is non-standard, confusing, and unnecessary. Please defer to MPWSS.	This is not an unreasonable requirement. Any manhole selected and included in the plan set needs to be stamped regardless. The deeper the manhole, then the higher the lateral stresses due to soil loading. Having this examined and approved by the design engineer is a prudent course of action for public safety of public and staff.	
147	Dec. 15, 2025	3	Page 32: Please delete the 2 sentences lined out in the Stakeholders' edits. This is impractical as there is no tracer wire on mains and termination is undefined.	Agree, will remove requirement for tracer on service lines.	yes
148	Dec. 15, 2025	4	Page 37: Please rewrite the draft to accomplish stated intent in paragraph 1 (section 4.1.1) to streamline design as stated in paragraph 1.	Disagree. This is a fully vetted comprehensive revision to add clarity, and these are achievable standards.	
149	Dec. 15, 2025	4	Page 39: Please define terms added by Stakeholders' Group in the edited version of standards draft.	Will add definitions to some of the suggested terms. Many suggested words are industry common knowledge and engineers using the standards would be expected to understand these terms.	

150	Dec. 15, 2025	4	Page 41 Section 4.1.4: Regarding 5,000 SF standard, please refer to comment 85 and Exhibit 85.	Unclear where exhibit 85 is located. The 5,000 sq ft impervious area threshold is established in Helena City Code. While other cities use different thresholds, those values reflect their local policy choices and regulatory context. We cannot revise Helena's adopted threshold simply because it differs from another jurisdiction. Any change would need to occur through a formal code amendment, or future standards update process with broader policy consideration and stakeholder input. At this time, the 5,000 sq ft threshold remains in effect	
151	Dec. 15, 2025	4	Page 39: Please edit the "Pre-development Flow Rate" per the Stakeholders' comments. Please clarify and correct the timeframe.	Will clarify definition that intent is existing conditions at the time of given development or redevelopment. Related comment #216	
152	Dec. 15, 2025	4	Page 40: Please delete the line marked out in the Stakeholders' edits concerning technical references. The design engineer would have to read 13 books and make a judgement of what is the most "stringent" of each standard. As read by the Stakeholders this statement is vague, onerous, and comes across as blatantly anti-development.	Will remove sentence and revise language to be clearer. Intent is not to require a designer to read all 13 references fully. These references are understood to contain industry practice and were used in developing these standards. Related Comment #217	
153	Dec. 15, 2025	4	Page 43 Section 4.3.1 and Section 4.3.2: Please use 10-year storm not 25-year. This would be consistent with all other major cities in Montana and major standards. Using a higher standard leads to larger, more expensive piping. In the short run this discourages development and in the long run it increases maintenance costs for the taxpayers of Helena. Extreme standards also defy the stated goals of the City Commission. This needs to be based upon the most recent 10 years not a table that is outdated in 1 year.	Will revise back to current 2013 standard – which has 10-yr for onsite, and 25yr for stormwater mains. Other large cities in Montana also follow a two-tier approach, considering major and minor pipes: Missoula & Bozeman – major (100) and minor (10) sometimes have to do full 100yr; Great Falls – major and minor (5yr). Major (100yr) cannot exceed street spread when surcharging; Kalispell – 10yr drains, 100yr conveyance. The 2022 flood resulting in 4ft of water in Front Street was a 25yr storm. 25yr will remain the storm event for storm mains. Language will be revised to allow 10yr for onsite systems (private conveyance). Related Comment #51	
154	Dec. 15, 2025	4	Page 45 Section 4.3.3.3: Please change paragraph 3 per Stakeholders' edits as this requirement is not always practical.	Will keep the same. Standards are meant to be definitive, and deviation process exists for non-standard cases. Related comment #227	
155	Dec. 15, 2025	4	Page 45 Section 4.4.1.2: Please eliminate the second bullet point as it is not standard or desirable practice in Montana. It is not at all standard to mix soil with rip rap.	Intent is to make a vegetated earthen channel as opposed to a hard lining. Riprap would form structure of channel and soil would provide cover and allow vegetation to grow. Related Comment #229	
156	Dec. 15, 2025	4	Page 46 Section 4.4.2: Please clarify for public storm pipes only and delete "energy grade lines" as they are not appropriate on plan sheets.	Related comment #44,231. Will keep HGL.	
157	Dec. 15, 2025	4	Page 46: Please make HEC-22 the storm sewer design standard as with other major cities in Montana. It is adequate and simplifies the process.	Don't understand this comment. HEC-22 is already referenced in this section and is used as the basis for this section.	
158	Dec. 15, 2025	4	Page 47: Please change "1% for <24-inch pipe" in the chart to "0.5%" to match minimum street slope.	Will revise. Related comment #237	

159	Dec. 15, 2025	4	Page 49: Please delete 15' maximum sewer pipe depth. This is arbitrary and non-standard.	The maximum depth is necessary to ensure long-term maintenance of the system is possible. Since the city requires a 1:1 easement from pipe to existing grade, maintenance of pipe could require a full road corridor disturbance. This poses safety hazards, increased repair costs, and disruption to citizens. The limit encourages appropriate site grading rather than relying on excessively deep pipes. The language will remain. Related comment #241	
160	Dec. 15, 2025	4	Page 54 Section 4.5.2: Please include retention ponds in the title and in the text.	Retention ponds are discussed in the infiltration facility section. Language will be revised to make distinction clearer. 4.5.2 will remain detention pond/facility only. There will be a separate section for infiltration facilities.	
161	Dec. 15, 2025	4	Page 54: Please replace section 4.5.2.2 with section 4.5.4.9 from the 2013 standards and just add "When practical, inlet and outlet should be arranged at opposite ends of the pond".	Related comment #62	
162	Dec. 15, 2025	4	Page 55: Please delete the second paragraph. The standard drawing is excessive and impractical. In the third paragraph, please delete "or outside".	The standards do not require detention ponds follow an exact copy of the standard drawing. Instead, the standard drawing is meant to serve as a reference that already meets requirements stated in standards. This standard drawing is taken from the 2017 MT BMP manual.	
163	Dec. 15, 2025	4	Page 55 Section 4.5.4: Please include "retention". Please delete the second sentence as it is excessive compared to DEQ8 standards and meets MS4 requirements. This is functionally anti-redevelopment.	Underground retention will be included in the infiltration facility section. Second sentence will be deleted.	
164	Dec. 15, 2025	4	Page 56 Second Bullet Point: Please change "36 inches" to "30 inches" as that is adequate and more standard.	Will be revised to allow for standard Stormtech height chambers. See related comment #46	
165	Dec. 15, 2025	4	Page 56 Section 4.5.5.1 Third Bullet Point: Please delete "and toe of any fill slope". We know of no purpose for this and will interfere with lot sizing and development. This negatively impacts the tax base long-term.	This bullet point is present for geotechnical stability. Infiltrating near the top of a cut slope can cause water to seep out of the hillside along natural drainage paths, which destabilizes the slope. Similarly, infiltrating near the toe of a fill slope increases pore water pressure, reducing effective stress and shear strength, which decreases overall slope stability. Language will remain	
166	Dec. 15, 2025	4	Page 57 Section 4.5.6 First Paragraph: Please use DEQ8 for infiltration testing as it is standard for local geotechnical testing.	Language will be revised to allow DEQ8 procedures. Related comment #50, 253	
167	Dec. 15, 2025	4	Page 57: Please eliminate the use of the table. Testing is necessary and not onerous.	In rare cases, measured rates may exceed maximum rates in this table. Will consider in future. Related comment #70	
168	Dec. 15, 2025	4	Page 57 Section 4.5.6: Please remove the last paragraph. Reducing infiltration rate by half is non-standard and unnecessary. No other of the 6 largest cities in Montana does this. Standard calculations are conservative enough. Sedimentation should be handled by maintenance as it may seal the surface regardless of infiltration rate. Reducing infiltration rate by half will force the design of larger ponds, reduce valuable developable and taxable land. This will harm Helena taxpayers. It will create increased maintenance cost	Reducing the rate by 2 is standard and follows DEQ-8 procedures. Many other larger MT cities also require a safety factor for infiltration rates: Missoula uses a SF of 3 without pretreatment and 2 with pretreatment, Butte uses 1.75, Bozeman references DEQ-8 (which uses 2), Kalispell uses 2. The safety factor is present to account for long-term sedimentation over time. While maintenance of the top layer of sediment can help preserve facility function over time, fine sediment will still winnow down into the soil over time as water infiltrates and still introduces long term clogging risks if maintenance is not performed in a timely matter. The city has had issues	

			long-term decreasing sustainability and further harming Helena taxpayers perpetually.	previously with facilities not being maintained frequently enough. Language will remain.	
169	Dec. 15, 2025	4	Page 58: Please delete paragraph 3 creating a separate control pond for dumpster areas. These are averaged into normal calculations. No other of the 6 largest cities nor major standards have this. It also will take more taxable land out and increase maintenance costs harming taxpayers in the short- and long-term.	Agree, will revise. Pretreatment may still be required prior to infiltration depending on stormwater management design.	
170	Dec. 15, 2025	4	Page 59: Please delete section 4.5.8. Standard drawings are far too complicated and totally non-standard in Montana. Again, it is unfair to developers and taxpayers short- and long-term. This reference manual is one that should be deleted.	The multistage outlet structure details present in 4-9 and 4-10 are intended for use in larger complex ponds. Will clarify language in this section noting those standard details are for complex ponds and will note that simple riser and orifice designs are still allowable.	
171	Dec. 15, 2025	4	Page 59 Section 4.5.11: Please change 3’ to 4’ as well as place “and” between height and impounding. Please use NRCS 378 compaction specs for simplicity and standardization. 3’ is too restrictive for small ponds.	NRCS 378 is more appropriate for low risk agricultural dams, not regulated MS4 stormwater ponds. NRCS 378 reads "the failure of the dam will not result in loss of life, damage to homes, commercial or industrial buildings, main highways, or railroads, or interruption of the use or service of public utilities." Stormwater ponds have potential to cause damage to people and property in the event of embankment failure, therefore NRCS 378 is not appropriate in this application. ASTM D1557 will remain the standard.	
172	Dec. 15, 2025	4	Page 59 Section 4.5.12: Please add “or approved equal” after seed mixes.	Ok will revise.	
173	Dec. 15, 2025	4	Page 60 Paragraph after Seeding Table: Please change to MDT standard of 3:1 slope.	MDT's 3:1 threshold is for highway construction and is not applicable to this section. This language is intended for long swales or ditches that meet the slope and length criteria. Stormwater ponds typically do not have slopes exceeding 50 feet in length, so this requirement won’t often apply to interior pond side slopes. However, where long slopes occur such as extended embankments, or long swales, erosion control matting is prudent protect slope while vegetation establishes. The current language applies to long mild slopes. Language will remain.	
174	Dec. 15, 2025	4	Section 4.6: Please delete the first bullet point as it is non-standard and impractical for downtown, etc.	Unclear why impractical. City needs easements on private systems to access infrastructure if system affects the MS4. Language will remain	
175	Dec. 15, 2025	4	Page 61 Table: Please delete “or equal to” under the second item. Under section 4.6.1, please insert “greater than” between sewer and 36 inches.	The phase “or equal to” is necessary to include all pipe sizes. 36in pipe is meant to be the cutoff for requiring easement width plus width of sewer.	
176	Dec. 15, 2025	4	Page 63: Please delete the following references: a. Reference #1: Non-standard in Montana. No other large city uses this. Colorado based and not appropriate in Montana. b. Reference #2: Replace with standard detail. Unnecessary and inappropriate. Meant for large federal projects.	References are included to provide technical justification for requirements in the standards; they are not intended as a reading list for designers. External sources only apply when they are explicitly cited within a specific section of the standards. Reference#1 – Chow is the foundational reference for open-channel hydraulics and contains the theory present in all underlying stormwater design methods.	

			c. Reference #5: Colorado based document. Non-standard in Montana. No one else uses it. Unnecessary as practical standards cover the issues. d. Reference #8: Not urban. Use HEC22 as it is appropriate and standard throughout Montana. e. Reference #9: HEC22 covers the issues.	Reference #2 – HEC-14 provides relevant information for culverts, energy dissipation and open channel hydraulics. HEC-22 does not include the same topics. HEC references inform industry standard practice and are widely referenced. Reference #5 – this manual is referenced by many municipalities in the rocky mountains, including those in MT. This reference includes information regarding LID, outlet structures, and pretreatment. and was referenced when developing standards. Reference #8 – DEQ8 is a standard document in MT and has been requested in these comments to be referenced (for infiltration testing etc.) DEQ-8 contains relevant water quality treatment information and was referenced when developing standards. Reference #9 – Comment #X requested MDT values for intensity (check) and was referenced when developing standards. Reference #10 & #11 – NOAA Atlas information was requested in Comment #X and was referenced when developing standards.	
177	Dec. 15, 2025	5	Page 66 Section 5.1.2: Please delete the definitions as these are defined elsewhere in City regulations and it adds confusion.	Disagree. Definitions are provided for clarity and ease of use.	
178	Dec. 15, 2025	5	Page 68: Please delete the Local Office/Commercial Street section as this is not a functional classification. No other Montana cities have it.	Section and Standard Drawing Deleted. (These were added to offer flexibility.)	yes
179	Dec. 15, 2025	5	Page 68 Section 5.2: Please delete the Transportation Design Standards section as this is also non-standard and confusing. Other cities do not include similar language.	Disagree. Access control is needed to ensure safety and functionality of City Streets.	yes
180	Dec. 15, 2025	5	Page 69: Please delete the first sentence and refer to PROWAG for standardization and clarity.	This sentence is for quick cross slope reference. PROWAG is the standard.	yes
181	Dec. 15, 2025	5	Page 69 Paragraph 6: Please delete “as approved by Transportation Systems Department”. This is unnecessary and open-ended. ADA/PROWAG are adequate and standard.	Revised language to clarify. All pedestrian curb ramps shall be ADA/PROWAG compliant, and include cast-iron detectable warning surfaces or other as approved by the Transportation Systems Department.	yes
182	Dec. 15, 2025	5	Page 70 Section 5.2.4: Please delete the second, third, and fourth paragraphs. They are AASHTO not NACTO and are too broad and non-standard.	Disagree. Paragraphs two, three and four are to ensure safety and functionality of the roadway. These are similar to Kalispell’s and Missoula’s standards where the approaches are restricted to 25% and 30% respectively.	yes
183	Dec. 15, 2025	5	Page 70 Section 5.2.5: Please delete Turning Radius, Turning Movements, and Curb Return Radius or provide standard intersection detail. Stakeholders and engineers believe these are impractical and non-functional.	Disagree. However, the second sentence of the “Turning Movement” paragraph was deleted and the first revised to the following: “All roadways shall be designed to accommodate the largest emergency response vehicle without encroaching into oncoming traffic.”	yes
184	Dec. 15, 2025	5	Page 71 Table 5-1: Please reduce radiuses to NACTO (city) standards from AASHTO (highway) standards.	Due to operational and maintenance needs these will remain. The AASHTO “Green Book” provides design guidelines for both “highways and streets” based on functional class, design speed, pedestrian and bicycle accommodation, etc. They include urban corner radii, curb ramps and crosswalk length considerations. The City has considered both AASHTO and NACTO design	yes

				guidance along with operational needs of emergency services and road maintenance vehicles for these standards.	
1855	Dec. 15, 2025	5	Page 75 Section 5.2.8: Please allow for private landscaping and reduce minimum median width from 4’ to 2’. Please delete the median curb yellow paint as it is non-standard and increases maintenance costs for taxpayers long-term. Overhead illumination should be on arterials only.	Revised to read 4' for arterials and 2' for collectors and below. Painted median curb revised to : "All median curbs or curb extensions shall be painted per MUTCD.”	yes
186	Dec. 15, 2025	5	Page 76 Section 5.2.10: Please change to 3” minimum in one lift.	Two lifts for 3” asphalt section has been removed. We note "Per MPWSS" (section 02510): 1. The minimum lift thickness shall be no less than three times the Nominal Maximum Aggregate Size (NMAS) for gradations above the Maximum Density Line, and no less than four times the NMAS for gradations below the Maximum Density Line. 2. The maximum lift thickness is 3" for surface courses and 6 inches for base courses. This is the logical location immediately after the process and procedure for repairing street openings.	yes
187	Dec. 15, 2025	5	Page 76 Utility Trenches: Please allow compacted and tested native fill and/or structural fill. Please defer to MPWSS Section 02221.	The standard for flowable fill in collector or higher streets is based on past experience. Excavations in Local streets may be backfilled per MPWSS. Standards are meant to be prescriptive; a deviation process exists for non-standard cases which are considered on a case-by-case basis. MPWSS states “as approved” which would still include testing of native soils.	yes
188	Dec. 15, 2025	5	Page 76 Section 5.2.10: Please delete reference to chip seal. Chip sealing new streets is very non-standard and wasteful. No other major city in Montana chip seals new or re-paved local streets. Only one requires chip seal on collector streets. Chip sealing or crack sealing should commence in about 8 years as cracks begin to form. Chip sealing new streets adds to new home lot costs and therefore housing costs when done by a developer. It adds to wasteful spending by taxpayers when done on public city projects.	Disagree. Chip seals will be required. The City follows MDT’s standard practice of chip sealing all newly paved surfaces, which is based on years of road construction, maintenance and research experience across Montana.	yes
189	Dec. 15, 2025	5	Page 79: Again, please delete reference to chip seal.	Chip seals will be required. The City follows MDT’s standard practice of chip sealing all newly paved surfaces, which is based on years of road construction, maintenance and research experience across Montana.	yes
190	Dec. 15, 2025	5	Page 80: Please edit per Stakeholders’ markups of draft.	Disagree. Proposed edits do not have the best interest of public safety in mind.	
191	Dec. 15, 2025	5	Page 81: Please delete Local Office/Commercial column.	Deleted	yes
192	Dec. 15, 2025	5	Page 84: Please delete section 5.8 as this is addressed with other City processes.	Disagree. Traffic Impact Studies are needed to identify and address impacts of new developments.	

193	Dec. 15, 2025	5	Page 87 Section 5.10.3: Please delete “inlaid” and consider or “epoxy”.	Revised to read "All pavement markings for crosswalks, stop bars, words, symbols, and intersection striping shall be pre-formed thermoplastic (refer to MPWSS) or approved thermoplastic alternative."	yes
194	Dec. 15, 2025	5	Page 88 Section 5.12: Please provide standard details/drawings.	Standards will reference typical traffic control plans from the most recent version of the MUTCD.	yes
195	Dec. 15, 2025	5	Page 88: Please edit the next to last paragraph to “suitable reflectivity or illumination”.	All traffic control devices must comply with MUTCD retro reflectivity requirements.	yes
196	Dec. 15, 2025	4	Appendix A Drainage Plan Requirement Checklist Pages 1 & 2: Please make edits marked by Stakeholders’ Group (straight forward – this would require extensive rewriting to comment).	Will revise plan checklist	
197	Dec. 15, 2025	5	Appendix A Complete Streets Pages 3 & 4 of 11. Please delete all of B.	Update to Appendix A made. Appendix B has been updated per previous responses.	yes
198	Dec. 15, 2025	5	Appendix B Multi-Modal Traffic Impact Study Requirements: Please delete all of this as it is addressed with other City processes. It is no longer needed with overall modelling done (Congruency Traffic Model).	Traffic Impact Studies (TIS) are needed to identify and address impacts of new developments. When Concurrency project is complete and new policies in place, it may require a future edit to the TIS requirements in the City Standards.	yes
199	Dec. 15, 2025	2	Standard Drawing 2-4: Please edit per Stakeholders’ markings. This is cleaner than a standard format comment would be.	The intent of this standard is to define clearances for ease of maintenance access and the ability to work on the fixtures in the vault, not to define the sizing of the fittings.	
200	Dec. 15, 2025	2	Standard Drawing 2-6: Please refer to manufacturer sizing to accommodate transport as this is currently very large with non-standard sizing. Manufacturer will design to current standards.	The intent of this standard is to define clearances for ease of maintenance access and the ability to work on the fixtures in the vault.	
201	Dec. 15, 2025	3	Standard Drawing 3-4: Please defer to MPWSS and this is currently unnecessary.	Disagree, this standard includes gaskets and invert channels.	
202	Dec. 15, 2025	4	Standard Drawing 4-8: Please delete as this is non-standard, overly complicated, and unnecessary in Helena’s climate.	Related Comment #47	
203	Dec. 15, 2025	4	Standard Drawing 4-9: Please delete this in its entirety. It is overly complicated, onerous, and wasteful. It needs a standard design that is appropriate and consistent with other major Montana cities.	Related Comment #47	
204	Dec. 15, 2025	4	Standard Drawing 4-10: Please delete and provide a drawing appropriate for Helena and consistent with the majority of major Montana cities.	Related Comment #47	
205	Dec. 15, 2025	5	Standard Drawing 5-1: Please edit per stakeholders’ markings as preferred local street dimensions. This will be safer and less expensive for taxpayers to maintain long-term.	Local commercial section deleted no other edits made.	yes
206	Dec. 15, 2025	5	Standard Drawing 5-4: Please delete the 2 lines marked out in the Stakeholders’ edits. They are unnecessary, restrictive and not practical for Urban design.	Disagree. Standard to remain.	yes
207	Dec. 15, 2025	5	Standard Drawing 5-7 Curb Types: Please delete this page and continue to use the current local standard. These are all non-standard and add cost without benefit.	Curb types updated, standard curb & gutter and drive over curb now reference MPWSS details.	yes

208	Dec. 15, 2025	5	Standard Drawing 5-9 Boulevard Sidewalk ADA Curb Ramp: Please delete this as it is very non-standard and expensive with problems such as snowplow damage. We are told MDT tried these and replaced many as plows hit and damaged them. No other cities recommend this type of ramp. Another thing that would increase housing cost and taxpayer maintenance costs.	There is an option noted in the standard drawing for flares instead of pedestrian curb. In addition, there are tapered corners to mitigate the potential snowplow concern.	yes
209	Dec. 15, 2025	5	Standard Detail 5-11 Valley Gutter and Fillet: Please delete this page and replace it with MDT detailed drawing 609-00 or Bozman drawing 02529-1. The draft drawing has extreme and non-standard amounts of rebar. This is very costly and unnecessary.	Disagree. This standard is based on past experience. The rebar is included for longevity of the valley gutter and is similar to Great Falls, Kalispell and Bozeman's valley gutter details.	yes
210	Dec. 15, 2025	5	Standard Drawing 5-12 Acceptable Turn Arounds: Please defer to IFC. Please delete notes 2 & 3 as they are extreme and in excess of IRC and other city standards in Montana. This is wasteful now and for future maintenance. It compromises useable land, tax base, and sustainability.	Disagree. Notes per IFC and clarification added to reference typical road sections. Turn arounds including cul-de-sacs have constant issues from vehicle/trailer storage to snow removal which can impact emergency services response.	yes
211	Dec. 15, 2025	5	Standard Drawing 5-13 Street Excavation (Opening) Typical Detail: Please replace this with MDT drawing 02221-1 as the standard. 7' minimum is not always necessary.	Standard Drawing updated to MPWSS 02221-1 (7' minimum considers an average 5' trench width with 1' overcut on both sides for permit fee calculation/estimation.)	yes
212	Dec. 15, 2025	4	Page 42 Section 4.2 Drainage Report: Please delete this section and replace it with 13.24.080 from the Great Falls Standards. Also, please change this in the Helena City Code. It is much more reasonable and facilitates development and redevelopment. The current standard is too unnecessarily restrictive. See Exhibit 83.	The 5,000 sq ft impervious area threshold is established in Helena City Code. While other cities use different thresholds, those values reflect their local policy choices and regulatory context. We cannot revise Helena's adopted threshold simply because it differs from another jurisdiction. Any change would need to occur through a formal code amendment or future standards update process with broader policy consideration and stakeholder input. At this time, the 5,000 sq ft threshold remains in effect. Related Comment #150	
213	Dec. 15, 2025	5	Page 72: Please delete Table 5-2 and adopt Great Falls Table 7 Road Design Standards with minor edit by Stakeholders. It is more simple, practical, and applicable. See Exhibit 84.	The referenced tables are not equivalent. They do not include all of the same standards. An investigation into the implications of this suggestion needs to be made. We will consider this during future revisions.	yes
			Previously Submitted comments		
214	Dec. 15, 2025	4	Figure 4-1: Allow use of SCS method less than 160 acres.	Figure 4-1 will be removed to reduce confusion. SCS is allowable for less than 160AC.	
215	Dec. 15, 2025	4	Section 4.1.2: Add additional definitions for key terms used throughout section: a.Detention facility, b.Excess runoff, 216c.Extended detention basin, d.Flow control, e.Infiltration faci217lity, f.Infiltration pond, g.Parking lot detention pond, h.Runo218ff control, i.Runoff rate, j.Runoff volume, k.Water quality control, l.W219et detention pond	Related Comment #149 Will add definitions to some of the suggested terms. Many suggested words are industry common knowledge and engineers using the standards would be expected to understand these terms.	
216	Dec. 15, 2025	4	Section 4.1.2: P220re-Devel. Flow Rate: Define at the time of development not hi221storic. As written, this is non standard and	Related Comment #151	

			in excess of all 6 other 222major cities in MT. Non-standard, adds significant to extreme cost223 with minimal value, vague or confusing, creates unnecessa224ry work for designing engineer.		
217	Dec. 15, 2025	4	Section 4.1.3 3rd bullet: Delete "..225.and then the most stringent criteria found in the technical referenc226es cited in these standards." 227	Related Comment #152	
218	Dec. 15, 2025	4	Section 4.1.4: Fo228r clarity, please reformat this section to detail a design approach a229nd sequence. Please clarify which subsections apply to PU230BLIC and which apply to PRIVATE.	Section is not meant to provide sequence, but provides overall design requirements. Section will be re-ordered so threshold area determination is first. Section 4.2 references the drainage report checklist, which presents information in order of standard design sequencing.	
219	Dec. 15, 2025	4	Section 4.1.4: First bullet: D231elete "... and discharge at the same location as the pre-developed (h232istoric) conditions." Non-standard.	Related Comment #151. Follows permit intent to maintain natural drainage discharge point.	
220	Dec. 15, 2025	4	Section 4.1.4: 6th bullet: Delete "must be located within the boundary of the subdivision they serve." Delete " for residential subdivisions." Delete "For all existing subdivisions with offsite regional ponds, water quality ponds must be installed onsite during development or redevelopment activities."	Ponds must be located within the boundary of the subdivision they serve. This is coming straight from the permit language which requires the water quality volume to be treated onsite in the same sub-watershed (subbasin). Similarly for existing subdivisions with offsite ponds, water quality volumes must be treated during redevelopment since there is no treatment provided by existing pond, and treatment is required by the permit.	
221	Dec. 15, 2025	4	Section 4.2: For ease of use and review, please provide a checklist that would be beneficial to both Reviewer and Consultant.	Checklist is already provided. Related Comment #52	
222	Dec. 15, 2025	4	Section 4.2: 2nd bullet: Change "alters" to "increases to"	Will clarify area threshold language along with redevelopment language in 4.1.4.	
223	Dec. 15, 2025	4	Section 4.2: 2nd bullet: The term "redevelopment": Consistency is needed between Engineering and Building Permit Reviews.	Building review permit checklists contain same reference to city code (6-6-15) as these standards.	
224	Dec. 15, 2025	4	Section 4.3.1: 3rd bullet: Change to 10-yr storm event, same as (6) other major MT cities.	Related Comment #153	
225	Dec. 15, 2025	4	Section 4.3.2: Also allow values from current NOAA and Montana Dept. of Transportation. In Tables 4-1, 4-2, and 4-4, change to 10-yr.	Tables reflect current NOAA values. Tables will be updated to include 10yr.	
226	Dec. 15, 2025	4	Section 4.3.3.3: Please define parameters of offsite extents. "All offsite drainage basins..." is far too vague.	Language does say “basins impacting the proposed site.” If an upstream basin does not direct flow across the proposed site, then it would not be considered. However, if the proposed site receives additional runoff from upstream basins, that should be considered during design, and ensure there is flow through capacity or ability to route around proposed site. Would be clear from basin delineations what offsite drainage basins might affect site.	
227	Dec. 15, 2025	4	Section 4.3.3.3: 3rd paragraph: Change to: "Offsite drainage areas should be routed around, to discharge below the site or regional stormwater pond, if practical."	Will keep the same. Standards are meant to be definitive, and deviation process exists for non-standard cases. Related comment #154	
228	Dec. 15, 2025	4	Section 4.3.3.3: 4th paragraph: Delete "whichever has more impervious area."	No, intent is to design to worst case scenario.	
229	Dec. 15, 2025	4	Section 4.4.1.2: 2nd bullet: Delete. Non-standard, adds significant to extreme cost with minimal value.	Related Comment #155 No, necessary for establishing vegetation.	

230	Dec. 15, 2025	4	Section 4.4.2: This section intended for PUBLIC or PRIVATE systems? Please clarify.	Language already specifies information to be included for "**public** storm sewer systems." Related comment #92	
231	Dec. 15, 2025	4	Section 4.4.2: 2nd paragraph: Delete "energy grade lines" Non-standard.	Related Comment #44, 156	
232	Dec. 15, 2025	4	Section 4.4.2: 2nd paragraph: Make HEC-22 design standard, similar to other major MT cities. Non-standard, adds significant to extreme cost with minimal value, vague or confusing.	Related Comment #157,233	
233	Dec. 15, 2025	4	Section 4.4.2: Consider replacing paragraphs 1 and 2 with: "Use the methods set forth in Chapter 9 of the HEC-22 Manual for the hydraulic design of storm drains (Urban Drainage Design Manual - fhwa.dot.gov), except as modified herein.	These two paragraphs explain what to calculate/show and HEC-22 explains how to calculate those values. Language will remain. Related comment #157,232	
234	Dec. 15, 2025	4	Section 4.4.2: 3rd paragraph: Provide standard detail for inlet/outlet protection.	HEC-14 figure 10.4 provides a standard reference detail and should be used as guidance. Simplified design is acceptable for small standard pipes, but protection should be designed for site specific conditions and designer should use engineering judgement to determine whether full HEC-14 calculations are needed. Language will be clarified.	
235	Dec. 15, 2025	4	Table 4-4: 3rd row: Delete "non surcharged flow"	No, entire point is to design a storm network that will not surcharge during design event.	
236	Dec. 15, 2025	4	Table 4-4: 5th row: Delete "25-yr" and "for RCP 10 fps for PVC).	Will add 10yr values back into tables.	
237	Dec. 15, 2025	4	Table 4-4: 9th row: Change 1% to 0.5%. To match min. street slope.	Ok will update. Related comment #158	
238	Dec. 15, 2025	4	Section 4.4.2.1: 4th bullet: Clarify if these materials are not allowed for PUBLIC, PRIVATE, or both.	Will clarify materials are not allowed for both. Will update HDPE to be allowable outside of streets. Metal pipe is not allowed. Related comment #53	
239	Dec. 15, 2025	4	Section 4.4.2.1: 5th bullet: Delete 2nd and 3rd sentences.	Related comment #54. Will be deleted.	
240	Dec. 15, 2025	4	Section 4.4.2.1: 6th bullet: Delete. Non-standard, adds significant to extreme cost with minimal value.	Will remove soil mixture language, but will still require inlet/outlet protection with rip rap. Related comment #55	
241	Dec. 15, 2025	4	Section 4.4.2.2: 2nd bullet: Delete: "Storm sewer pipe shall not be buried greater than 15 ft deep."	Related Comment #159	
242	Dec. 15, 2025	4	Section 4.4.2.3: 3rd bullet: Delete. (Again, this goes back to the PUBLIC vs PRIVATE discussion. It seems the intent is for PUBLIC.)	No, language will remain. Landscape boulevards/medians require tree plantings, which could interfere with storm pipe. 3ft depth is there for a reason. Ok to bury deeper than 3ft.	
243	Dec. 15, 2025	4	Section 4.4.3: 3rd bullet. At the end of the sentence, Add: "... wherever practical."	Will keep the same. Standards are meant to be definitive, and deviation process exists for non-standard cases.	
244	Dec. 15, 2025	4	Section 4.5.1: Keep first sentence only, delete remaining. We look forward to another discussion with City Staff regarding the 2018 Master Plan Update findings and how the City views Regional Ponds.	No, all sentences will remain as they are necessary to accomplish intent of MS4 permit.	

245	Dec. 15, 2025	4	Section 4.5.2: Include Retention Ponds.	Related Comment #160	
246	Dec. 15, 2025	4	Section 4.5.2.1: After "infiltration pond" add "or retention pond".	Infiltration is understood to be included in retention and is found in definitions. Language will be revised to use consistent terminology throughout.	
247	Dec. 15, 2025	4	Section 4.5.2.2: First bullet: include section 4.5.4.9 from current standards. 3rd bullet: After "greater", Add "if practical". 5th bullet: Change side slope from 4:1 to 3:1. 6th bullet: After "pond", Add "if practical". 8th bullet: Stnd Dwg 4-10 is not practical in the City of Helena. 9th bullet: Delete "outside".	Related comment #161	
248	Dec. 15, 2025	4	Section 4.5.4: Delete 2nd and 3rd sentences. Private UG detention storage meets both MTDEQ Circular 8 and MS4 rqts.	Related comment #163	
249	Dec. 15, 2025	4	Section 4.5.4.2: 2nd bullet: Change "36" to "30".	Related comment #46, 164	
250	Dec. 15, 2025	4	Section 4.5.5: Clarify title. Same as Retention Ponds? Clarify in Definitions section, if needed, as well.	Will be clarified in body of text and definitions.	
251	Dec. 15, 2025	4	Section 4.5.5.1: 3rd bullet: Delete "and the toe of and fill slope". Purpose of this is unclear.	Related comment #165	
252	Dec. 15, 2025	4	Section 4.5.5.1: See same comments from 4.5.2.2.	See comment #161, 247	
253	Dec. 15, 2025	4	Section 4.5.6: Delete "and limited by the max rates determined by the USDA soil texture as shown in Table 9." Use DEQ Circular 8 which is far more applicable and much more familiar for geotech engineers and geotech material testing	Related Comment #166	
254	Dec. 15, 2025	4	Section 4.5.6: Delete remainder of section that follows first paragraph, including Table 4-9.	Related Comment #167	
255	Dec. 15, 2025	4	Section 4.5.7: 2nd paragraph: LID techniques requires a standard detail(s) and design parameters to ensure consistent design and reviews.	LID is not a single BMP or technique with a single standard detail. LID is meant to be designed following industry methods. No standard detail will be provided.	
256	Dec. 15, 2025	4	Section 4.5.7: 4th paragraph: Delete 4th paragraph. Non-standard, adds significant to extreme cost with minimal value	Related Comment #169	
257	Dec. 15, 2025	4	Section 4.5.7.2: 5th bullet: Change slope to 3:1.	Language will be revised to max 3:1	
258	Dec. 15, 2025	4	Section 4.5.8: Please delete this section and consider providing a standard detail. Non-standard, adds significant to extreme cost with minimal value.	Standard detail is already provided and referenced in text. Related Comment #170	
259	Dec. 15, 2025	4	Section 4.5.11: Change 3 feet to 4 feet. Change "or" to "and". Rather than specify ASTM D1557, use NRCS 378 specs for simplicity.	Related Comment #171	
260	Dec. 15, 2025	4	Section 4.5.12: 2nd paragraph: At end, add "or approved equal". 3rd paragraph: Change to "All slopes steeper than a 3:1 shall be covered with a biodegradable erosion control mat."	Related Comment #172.	
261	Dec. 15, 2025	4	Section 4.6: 1st bullet: Delete "private storm drainage systems". This simply is not practical.	Related Comment #174	

262	Dec. 15, 2025	4	Table 4-11: 2nd row: Delete "or equal to".	Related Comment #175	
263	Dec. 15, 2025	4	Section 4.6.1: 2nd sentence to read: "Minimum easement width for storm sewers greater than 36 inches wide shall be the width of the storm sewer plus 20 feet."	Related Comment #175 The phase “or equal to” is necessary to include all pipe sizes. 36in pipe is meant to be the cutoff for requiring easement width plus width of sewer.	
264	Dec. 15, 2025	4	Section 4.7.3: 2nd paragraph. Delete last sentence. CoH to provide standard SWPPP erosion control details and related info for the Building Permit process.	SWPPP preparers are expected to be certified in MT and thus be capable of selecting site specific BMPs for a given project. MT DEQ provides a BMP field guide, which is also available on City website. City code and building permit submittal guidelines state same requirements that any plan that disturbs more than 1AC is required to submit a SWPPP along with permit submittal documents.	
265	Dec. 15, 2025	4	Section 4.8: Delete 1,2,5,8,9,10,11. Please limit references. Non-standard, adds significant to extreme cost with minimal value, vague or confusing, creates unnecessary work for designing engineer.	Related Comment #176 References are included to provide technical justification for requirements in the standards; they are not intended as a reading list for designers. External sources only apply when they are explicitly cited within a specific section of the standards. Reference#1 – Chow is the foundational reference for open-channel hydraulics and contains the theory present in all underlying stormwater design methods. Reference #2 – HEC-14 provides relevant information for culverts, energy dissipation and open channel hydraulics. HEC-22 does not include the same topics. HEC references inform industry standard practice and are widely referenced. Reference #5 – this manual is referenced by many municipalities in the rocky mountains, including those in MT. This reference includes information regarding LID, outlet structures, and pretreatment. and was referenced when developing standards. Reference #8 – DEQ8 is a standard document in MT and has been requested in these comments to be referenced (for infiltration testing etc.) DEQ-8 contains relevant water quality treatment information and was referenced when developing standards. Reference #9 – Comment #X requested MDT values for intensity (check) and was referenced when developing standards. Reference #10 & #11 – NOAA Atlas information was requested in Comment #X and was referenced when developing standards.	
266	Dec. 15, 2025	5	Standard Drawing Curb Types 5-7: The new curb detail with a more vertical face is quite challenging to pour by hand. To make this style of curb and gutter look nice requires a face form. The face form holds the vertical portion of the curb in place until the concrete has set sufficiently at which point it is removed and the curb is finished. Pouring this style of curb greatly reduces production. In doing some cost comparison we feel that the new style of curb will add 35% to the cost of the curb on average. This would vary based on the job and would likely be more if a job had only ADA corners and less if the entire job was machine curb.	Revised curb detail to match MPWSS standard section.	yes

267	Dec. 15, 2025	5	Standard Drawing Blvd Sidewalk ADA Curb Ramp A 5-9: The ADA details are also costly. The cost per ADA corner will nearly double with the new detail. The curbs and stamped concrete will add 1-2 pours per corner and greatly reduce production. In addition to the cost, there have been issues with MDT using a nearly identical detail. The snow plows had so much trouble with the vertical curbs that MDT paid to redo most of the job the following year to get rid of the vertical curb in most locations. It will make it more difficult for those doing the sidewalk and road plowing. The potential for damage due to trucks running over the vertical curbs and plows hitting the vertical curbs will also be greatly increased.	There is an option noted in the standard drawing for flares instead of pedestrian curb. In addition, there are tapered corners to mitigate the potential snowplow concern.	yes