

Frequently Asked Questions

The following questions are a compilation from the four orientation sessions held on the rollout of the 2nd edition of the design criteria for sewers and watermains manual via Webex in December 2020.

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1. Will the slides be posted or emailed to us for reference?

The PowerPoint presentation will be sent to all participants after the Webex session. It will also be posted on the design criteria webpage along with the new manual.

2. When will it be available on City's website?

The 2nd edition of the manual will be posted the first week of January on ECS's Internet webpage at www.toronto.ca/services-payments/building-construction/infrastructure-city-construction/construction-standards-permits/standards-for-designing-and-constructing-city-infrastructure/?accordion=design-criteria-for-sewers-and-watermains .

3. Where can we obtain a recorded session of the presentation?

The following is a link to one of the recorded sessions:
<https://toronto.webex.com/toronto/ldr.php?RCID=c98b0b4d279d4d72b3d5ba460b2c738c> .

4. Once released, are the new criteria to be applied to new only? Can designs in progress (e.g. at 60% Jan. 2021) still use the old criteria?

For existing development applications which were submitted before January 1, 2021 the previous version (1st Edition, 2nd Revision June 2019) of the manual will apply. Any new development application received after January 1, 2021, the 2nd Edition of the manual will apply.

For capital improvement projects at the 60% or 90% design stage as an example, the previous version (1st Edition, 2nd Revision June 2019) of the manual will apply. For any design not started for capital improvement projects, the 2nd Edition of the manual will apply.

5. Can you elaborate on how this is being disseminated to parties outside of the City, e.g. consultants, developers, other utilities, transit authorities?

The manual will be published in January 2021 and can be found at www.toronto.ca/ecs-standards . Case managers and ECS staff can inform their consultants and business contacts in their normal course of business.

6. Did you mention the drawings will not be updated yet?

Any new ideas for standard drawings was not part of the scope of this project. Our yearly update of standard drawings still continued and these were posted in September 2020 at www.toronto.ca/ecs-standards .

7. Do you have any data on the frequency of download of City of Toronto specifications?

This can be done through Web Trends. Contact your division webmaster to determine which standard drawing or construction specification is viewed and downloaded the most.

8. Are abandoned pipes not to be filled-in if left in place or is this determination made site specific? Concern over failure and collapse of abandoned pipe.

According to TS 510, abandoned pipes are to be sealed/plugged/capped. Filling in or removal of the abandoned pipe will be site specific. This needs to be determined at the design stage.

- 9. Most sewer replacement projects are limited a couple of legs of sewers, it easy to calculate the flow within the replacement limit, however upstream flow is always difficult to obtain....is there any agreement from TW to provide upstream flows to designer?**

The process of obtaining upstream flow data is not part of the scope of this project. This need should be discussed with Toronto Water, Water Infrastructure Management unit.

- 10. How to make a sewer chamber waterproof considering that modulocs are being used for adjustment of the frame and cover?**

The contractor should follow the installation instructions for modulocs. If there is poor installation, then some infiltration will occur. The contractor should be installing butyl tape according to OPSD 704.010.

- 11. Horizontal separation between a sewer and waterman is 2.5. Where it is not practical to maintain separation, I understand that gravity sewer can be upgraded. But, where it is not practical to upgrade the sewer, is it acceptable to upgrade the waterman instead?**

Your consultant should refer to MECP Procedure F-6-1, however upgrading the waterman instead of the sewer is an option.

- 12. Question related to easements; loading of from proposed foundations - has this been included in the manual to inform easement widths for the Jan 2021 edition?**

Yes, the zone of influence of foundations to pipes in easements is included.

13. How has the 450 LPCD criteria for designing new sanitary sewers changed?

The analysis of the 450 LPCD shall be supported by a design brief which will compare the results to 240 LPCD. For more details, see Chapter 2, Sanitary Sewers for details.

14. We are finding a lot of blockage in drop pipes, can a new standard for that be looked at?

Yes, a new standard can be developed. Contact the BIS unit in 2021 so a working group can be formed to develop one.

15. In the previous version was a criteria about minimum size for industrial, commercial and institutional areas. Did you updated this criteria for the future developments?

Not sure if you are referring to service connection diameters. See Chapter 2, Sanitary Sewers for more details to your question.

16. Why was 3.7 used for 4 bedroom apartment, but single family dwelling is only 3.5?

The larger value is to account for additional one bedroom from a normal 3 bedroom single family home.

17. Please clarify what is new areas versus existing areas?

A new area would be a new subdivision and an existing areas would be an area which is already developed.

18. Is there any capacity assessment if ground water is discharged to storm sewer system?

If groundwater is discharged to the municipal storm sewer, it needs to comply with the Toronto Municipal Code: Chapter 681, Sewers and there needs to be a discharge permit in place with Toronto Water, EM&P Unit. With regards to the quantity of groundwater discharged, unlike discharging to the municipal

sanitary system which triggers a sanitary sewer capacity analysis, the groundwater needs to be factored into the SWM design of the development. Typically this is accomplished by subtracting the peak groundwater discharge rate from the allowable storm discharge rate for the development.

19. In the past we've allowed 100mm sewer services for receiving mains less than 250mm due to structural concerns. Are we now a hard cap at min 150mm services?

No, this has not changed from the 1st edition of the manual.

20. Ground water, can you advise if there is an updated process for foundation drains found during construction?

This was not brought up during the working group meetings. Foundation drains found during construction, most likely would still need to remain and connected.

21. Are there any limitations / preferences / guidelines in installing very deep drop structures, e.g. over 8m deep?

This was not brought up during the working group meetings. This question can be best answered through your design consultant.

22. Can you elaborate more on the use of cradles in sewers?

Cradling the PVC pipe in concrete bedding up to the spring line is not permitted. The entire pipe needs to be encased except at the pipe joint.

For detailed information of cradling of sewer pipes, see section Bedding Requirements—Flat Sewers in Chapter 2, Sanitary Sewers.

23. Please clarify the 610mm+ difference in invert elevation for use of a drop structure. T-1003.01 Type C shows a difference of 1.22m for a 200mm dia pipe up to a 2.67m for a 750mm pipe?

According to City standard T-1003.01, Type B drop structure needs minimum 610 mm drop and Type C drop structure needs a minimum 1220 mm drop. Both are acceptable for use, but Type C is preferred.

24. Is DR28 still recommended for a service connection?

Yes, in fact DR 28 for service connections 150 mm diameter is the only class of pipe available.

25. Other municipalities use side/curb inlet catch basins primarily (e.g, Mississauga, Halton), has there been discussion to switch primarily to side/curb inlet catch basins in Toronto?

There has been no discussion on switching to side/curb inlet catch basins in Toronto. The circular, flat grate with herring bone openings is still the standard catch basin grate to be used.

26. The whole City is now a basement flooding protection area so not sure why this is stated if in a protection area?

Specific to development applications, where new municipal minor system infrastructure – for example storm sewers – is proposed, the basement flooding performance service levels as listed in Table 19 will apply for the storm drainage system. If contributing drainage catchments from a new development has demonstrated to discharge peak flows in accordance with the WWFMG and less than pre-development conditions to the storm drainage system, the BFPP criteria is not applicable.

For detailed information on level of protection, see section Basement Flooding Protection Program in Chapter 3, Storm Sewers.

27. Are there design criteria specific to sewers when they are acting as storage elements vs. conveyance elements?

This topic was not brought to the working group, hence the manual does not cover criteria related to storm sewers acting as storage elements.

28. The goss traps - required - do they have specified minimum depth - or standard depth?

Yes, goss traps are mandatory. According to City standard T-705.010 the depth is 900 mm from the top of top of the precast catchbasin to the invert of the outgoing pipe.

29. I assume there are different allowed designs - including simple elbows? And factoring in catchbasin cleaning operations/vactor hose clearance?

Individual goss traps designs were not reviewed as part of the review and update of the manual.

30. The consultant on water loss has recommended not to use PVC leads since it does not help in locating leaks. Having a tracer wire for PVC lead for hydrants does not help because we are talking about leaks not pipe?

The deadline to receive final comments on the manual has past. Your suggestion needs to be reviewed by the working group. We can add to the BIS 2021 workplan for review.

31. I had a request to install a new hydrant on a 500mm waterman that have no hydrants in it. I think to prevent installing of new hydrants on a watermains larger than 300mm?

Your suggestion is project specific. Without knowing the distribution of hydrants and fire flow requirements in the area, it is difficult to make a blanket statement as suggested.

32. Existing buildings higher than 84 metres - Ex condition 2 fire lines separated by isolation valve. Proposed design is 2 new 300 mm watermains on each side of the street. Do we need to connect to each new main?

Without knowing all the site specific conditions, one connection can be to one waterman on the long side of the street and the other connection to the waterman on the short side of the street.

33. Does two connection meet the requirement of two sources of water supply because it still one waterman unless the valve between the two connections is closed?

Yes, in case of only one source of water, there should be an isolation valve between the two service connections. The valve will remain in the open position.

34. Are there encasement specs/requirements for sewers and watermains crossing under watercourses?

The following is from the 2nd Edition of the manual:

Where a watermain crosses under a creek, the minimum cover over the watermain below the creek bottom will be 2 metres. The ductile watermain will be concrete encased and the concrete encasement is to extend to the points where the pipe is beyond the high water level—100-year storm. Stabilization of the creek bottom may be required to ensure this amount of cover is maintained. For approved material products for horizontal directional drilling, see Chapter 6, Material Specifications.

Where a watermain is proposed to be suspended over a watercourse, the designer should first verify that the associated crossing structure spans the 100-year erosion limit of the watercourse prior to considering this design. To view the TRCA Crossing Guideline for Valley and Stream Corridors, September 2015, go to www.trca.on.ca/dotAsset/214493.pdf .

35. According to today's presentation, the revised manual allows for proposed WM cover to be reduced to 1.0m, is the wording related to the insulation for the WM crossing revised accordingly?

The manual allows a maximum reduction of 0.6 metre in depth (1.2 m to top of waterman) before other alternatives are considered. They are as follows:

Shallow waterman depths from 1.0 m to 1.3 m below surface, PVC pipe will need to be upgraded from DR18 to DR14. Whereas anything below 1.0m from the surface should be ductile iron pipe. Designer will need to calculate the required insulation for shallow bury pipes less than 1.0 m and increase thickness of insulation accordingly.

36. Watermain pipe material for installation under the rail tracks. Microtunneling installation, is PVC carrying pipe okay inside the casing? Is there a standard for a small watermain sizes, e.g. 200mm?

This would be best addressed with a standard drawing and/or specification. Contact the BIS unit in 2021 so a working group can be formed to develop one.

37. Are there special requirements, for example fittings, to connect DR14 and DR 18 PVC pipes of the same size?

Designer should contact pipe manufacturer or watermain appurtenances suppliers for off-the-self products.

38. Water valves required on watermains passing under the rail tracks? Do we need a V&B / V&C on each side of the tracks?

This would be a requirement from the railway authority. In terms of City requirements, so long as there are operational valves nearby to isolate the pipe in case of an emergency would be acceptable.

39. If we use ductile iron for rail and pedestrian tunnels, how about oil pipeline crossings?

This question is best answered by the National Energy Board. Contact them for their requirements.

40. For shallow watermains over or in the vicinity of underground TTC subway or pedestrian tunnels, can we use 100mm thick Belform insulation product, in lieu of concrete encasing the waterman?

This question can be best answered through your design consultant and TTC approvals branch.