

Report to Council



Date: December 9, 2019
To: Council
From: City Manager
Subject: Subdivision, Development and Servicing Bylaw 7900 - Schedule 4 and 5 Update – Stormwater Management
Department: Infrastructure

Recommendation:

THAT Council receives, for information, the report from the Infrastructure Engineering Manager dated December 9, 2019, with respect to amending the Subdivision, Development and Servicing Bylaw 7900;

AND THAT Bylaw No. 11913, being Amendment No. 20 to Subdivision, Development and Servicing Bylaw No. 7900 be forwarded for reading consideration.

AND FURTHER THAT Council approve the revised Council Policy 265 - Engineering Drawing Submission Requirements shown as Attachment 1.

Purpose:

To amend the Subdivision, Development and Servicing Bylaw 7900 Design and Construction Standards so it aligns with industry best practice and ensure construction of high quality and long-lasting infrastructure. To update the Engineering Drawing Submission requirements.

Background:

Schedules 4 and 5 of Bylaw 7900 Subdivision, Development & Servicing Bylaw set the minimum standards and specifications for works and services in connection with developing and servicing lands within the City boundaries. Schedule 4 outlines the design standards and Schedule 5 outlines the construction standards for municipal infrastructure consisting of water distribution, sanitary sewer, drainage, roads, sidewalks, traffic signals, street lighting and landscaping.

The City periodically updates these standards and provides regular updates to assure that the infrastructure installed is high quality, long lasting and supports service delivery. These standards are also reviewed against industry best practice and practices in other communities to ensure the City is obtaining and delivering best value. Staff's goal is to maintain Bylaw 7900 as a living document.

To this end, a working committee was formed with representation from various internal groups, including Infrastructure Engineering, Infrastructure Delivery, Development Engineering, Community Planning and Civic Operations. The working group meets regularly to review sections of the Bylaw, engage with internal and external stakeholders (such as the Urban Development Institute) and recommend changes to bring forward to Council. The changes identified below form part of the major components as part of this revision.

Rationale for Stormwater Management Updates

Since the last major update to the Drainage standards, the City has experienced unusual events, including high groundwater levels, landslides, lake flooding, pond overtopping, creek flooding and shore erosion.

This Stormwater Management standard update addresses some of the increased risks associated with managing uncertain rainfall patterns, snow depths, high groundwater and lake levels impacted from a changing climate. The City is committed to work with design professionals and provide discretion where necessary to minimize impacts to new and existing minor systems (sewers, manholes, gutters). Particular attention has been focused on drainage impacts from Hillside Areas, where additional flows can be expected into the storm system to prevent downslope issues.

Where existing Area Servicing Plans or Subdivision plans are in progress, new elements will be designed to the latest standards. There will be an expectation in that constructed minor works will remain in place. The City will continue to rely on design professionals to advise where downstream drainage system under-capacity situations may occur. The City Engineer can then evaluate whether additional works are required.

Summary of changes to Schedule 4 of Bylaw 7900 – Design Standards include:

Chapter 0 - General

1. Minor grammatical changes.
2. Change to “Chapter 3 – Stormwater Management” in title.

Chapter 1 - Water

Section 1.5 – Fire Flows

This change to on-site Fire Flow requirements was required to address building fire flow requirements at the building permit approvals stage. Off-site infrastructure sizing will remain based on area zoning. On-site fire flow requirements at the Building Permit stage are now consistent with Section 3.2.5.7 of the BC Building Code. This modification is significant for those buildings with automated sprinkler systems constructed to NFPA 13 criteria. The calculated value must be confirmed to the City by an experienced professional. The Owner or Developer must report to the City that the calculated fire flow does not exceed the minimum requirements for that zoned area.

Chapter 3 – Stormwater Management

1. The old Chapter 4 – Drainage in previous version has been replaced and revised.

2. The new Chapter 3 is now called Stormwater Management. The section is formatted for consistency with the Master Municipal Construction Documents (MMCD – Platinum version) Design Guidelines.
3. Climate change is now incorporated into the standard. Stormwater quantities will include a rainfall intensity increase of 15% in the calculations. This will confirm the capacity of critical structures and assure that minimum standard sizing is adequate for such items as sewers, mainlines, structures or culverts.
4. Stormwater quality is connected to the health of Okanagan Lake, our main City water supply. Some of the important features include:
 - a. No permanent pumping of groundwater will be permitted into the City storm sewer system. Where permanent pumping cannot be avoided, water licensing and separate private works will require approval from both the City and the Province.
 - b. Water quality will be measured against Provincial Recreational Water Quality Guidelines.
5. Hillside area infrastructure requirements have been updated and focus on safely conveying stormwater. This includes:
 - a. Eliminating infiltration to ground (in most instances).
 - b. All roof leaders and site drainage must connect to the City storm system.
 - c. A new map has been added to identify areas of allowable infiltration to ground.
6. All stormwater design must clearly demonstrate a path that does not impact downstream properties.
7. Erosion and Sediment Control Guidelines have been enhanced to assure that responsibilities on construction sites is clearly defined.
8. Stormwater infrastructure details have been updated. This includes, but not limited to:
 - a. Minor Systems: manholes, catch basins, service connections, mainline sizing, roof leaders, curved sewers, modelling requirements, etc.
 - b. Detention Controls: parking lot storage, underground storage, detention ponds, outlet Controls, etc.

Summary of changes to Schedule 5 of Bylaw 7900 – Construction Standards include:

- SS-S50 - Catch Basin Lead Sizing – Revised chart adjustments for combination of leads.
- SS-S56 - IDF Curves – City of Kelowna at Kelowna International Airport (YLW) - Revised intensity duration curves from Environment Canada (generated from 2014 data).
- SS-S58 - Groundwater Recharge Suitability Map (new)

The working group continues to work closely to align other service areas like roads, traffic signals, landscaping, agricultural irrigation and wastewater with MMCD where practical. Updates on this work will be brought forward to Council at a later date.

Attachment 1 - Update to Council Policy 265 - Engineering Drawing Submission Requirements

The purpose of this policy update is to provide revised and new minimum standards and requirements that the City will accept in the submission of work(s) and services.

Internal Circulation:

City Clerk
 Community Engagement Manager
 Development Engineering Manager
 Infrastructure Delivery Department Manager

Infrastructure Operations Department Manager
Legislative Coordinator
Project Manager - Water Integration Project
Utility Planning Manager

Legal/Statutory Authority:

Community Charter Section 8.

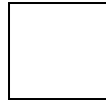
Considerations not applicable to this report:

Legal/Statutory Procedural Requirements
Existing Policy
Financial/Budgetary Considerations
Personnel Implication
Communications Comments
Alternate Recommendation

Submitted by:

Joel Shaw, P.Eng., Infrastructure Engineering Manager

Approved for inclusion:



A. Newcombe, Division Director, Infrastructure

Attachment 1 - Council Policy 265 - Engineering Drawing Submission Requirements

Attachment 2 – Bylaw 7900 – Schedule 4 and 5 Update Presentation

cc: City Clerk