

NO: R223

COUNCIL DATE: November 16, 2015

REGULAR COUNCIL

TO: **Mayor & Council** DATE: **November 4, 2015**
FROM: **General Manager, Engineering** FILE: **5220-02**
SUBJECT: **Subdivision & Development By-law - Engineering Design Criteria Update**

RECOMMENDATION

The Engineering Department recommends that Council receive this report as information.

INTENT

The intent of this report is to provide Council with an update on the revisions to the City's Engineering Design Criteria Manual and Standard Construction Documents, which form part of the *Subdivision & Development By-law, 1986, No. 8830*.

BACKGROUND

The *Subdivision & Development By-law, 1986, No. 8830* regulates the subdivision and development of land in the City of Surrey. The By-law includes the City's Engineering Design Criteria Manual and Standard Construction documents, which establish the minimum standards for the design and construction of municipal infrastructure in the City of Surrey, for both land development and Capital Works projects.

These standards ensure that every parcel is developed with an adequate standard or level of servicing including those provided by water supply, sanitary sewage disposal, drainage collection, electrical and telecommunications wiring, road, sidewalk, and street lighting systems.

DISCUSSION

The Design Criteria Manual and Standard Construction documents were last updated in 2004. Since the last edition, the City has experienced significant growth, increasing demands for alternative modes of transportation, more severe rainfall events leading to increased storm water runoff and increased interest in water conservation.

To address these changes, coupled with changes in technology, products, materials, and construction practices, Engineering staff have developed an updated Design Criteria Manual and Standard Construction documents. The Subdivision & Development By-law housekeeping amendments are scheduled to take effect on January 1, 2016 to reflect the proposed revisions such that the new standards can be implemented.

Consultation

Staff developed the revisions with internal and external users of these documents. Initially, revisions were developed by staff in all divisions of the Engineering Department, with support from the Planning & Development Department with respect to population densities and secondary suites, and support from Legal Services.

The revisions were then integrated with amendments made to the Master Municipal Construction Document (MMCD), a document which provides the fundamental construction standards for the City, and through its wide use, it strives for consistency across Metro Vancouver and municipalities in British Columbia.

The documents were also distributed to 20 engineering consultants, including members of the Development Advisory Committee, for review and feedback. Overall, the City received very positive and encouraging feedback from the industry and acknowledgements on the City's proactive approach to developing updated standards and consultation with the development industry.

The feedback received included implementation / phasing of updated rainfall design storms, comments on: pavement cut restoration and policy, extent of off-site servicing review, and recommendations on LED streetlight illuminance levels and products.

Highlighted Revisions

Criteria revisions developed by staff consist of measures to: improve levels of service to our residents and businesses, design infrastructure to service growth, provide safe and active modes of transportation, and promote sustainability and energy efficiency. The revisions also include housekeeping measures to provide clarity to the development industry, engineering consultants and contractors.

The more significant revisions developed by staff are highlighted in the following table:

Proposed Change	Issue	Resolution
General		
MMCD Edition	MMCD were updated in 2009. Previous edition no longer in circulation.	Adopt latest edition, 2009, and subsequent amendments.
Drainage		
Rainfall Design Storms	Design storms require updating to reflect rainfall data collected from 1998 – 2014.	Update design storms, resulting in 20-30% increase in rainfall intensities.
Stormwater Best Management Practices	Current criteria does not have standards for stormwater quality nor quantity reduction.	Provide criteria to designers for stormwater quality and topsoil requirements within boulevards.

Proposed Change	Issue	Resolution
Transportation		
Road cross-section standards	Accessibility and multi-modal forms of transportation.	Provide standards for wider sidewalks, bike lanes, and multi-use pathways as adopted in 2010.
Round-Abouts and Traffic Circles	Intersection control and safety.	Provide standard drawings to designers.
LED Streetlights	Increasing energy costs, light replacement outages and changes in technology.	Provide LED design standards and approved materials to improve energy efficiency, life-cycle costs and public safety.
Streetlight wire material	Copper wire theft has resulted in streetlight outages and higher maintenance costs.	Require aluminum alloy wire to increase system reliability and safety, and reduce costs and crime.
Recycled Asphalt Content	2004 Standards do not permit, while MMCD recommends 25%.	Permit 10% to ensure pavement longevity, while being sustainable.
Sanitary Sewer and Water		
Population Growth and Secondary Suites	Current criteria does not include allowance for secondary suites.	Incorporate secondary suite population, in new development areas to size sewers and watermains.
Watermain Looping	Water quality concerns in dead-end watermains.	Provide criteria to designers for looping watermain, except cul-de-sacs.

SUSTAINABILITY CONSIDERATIONS

The revisions to the Engineering Design Criteria Manual and Standard Construction documents will assist in achieving the objectives of the City's Sustainability Charter, more particularly the following action items:

- SC13: Create a Fully Accessible City;
- EC3: Sustainable Infrastructure Maintenance and Replacement;
- EN1: Energy Efficiency; and
- EN13: Enhancing the Public Realm

CONCLUSION

The proposed Design Criteria and Standard Construction Documents include improvements recommended by staff and external engineering consultants that meet the needs of the City relative to infrastructure maintenance and operations while optimizing the capital cost of construction to the land development industry and the City's taxpayers and ratepayers.

The City Clerk will bring forward the Design Criteria and Standard Construction Document revisions as housekeeping amendments to the Subdivision & Development By-law, for adoption such that the By-law amendments are effective for new development applications and Capital Projects as of January 1, 2016. The new criteria will not apply to in-stream applications or capital projects.

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