

BY-LAW NO. 12245

**A By-law to amend
Zoning and Development By-law No. 3575
regarding drainage issues**

THE COUNCIL OF THE CITY OF VANCOUVER, in public meeting, enacts as follows:

1. This By-law amends or adds to the indicated provisions of the Zoning and Development By-law.

2. In section 2, Council inserts the following definitions in correct alphabetical order:

““Groundwater” means water occurring below the surface of the ground within voids in a rock or soil matrix.

“Groundwater Management Plan” means a written plan that sets out a comprehensive approach to the planning, design, implementation and operation of on-site groundwater management techniques to meet the requirements imposed on the development.

“Groundwater Management System” means a system or technique for preventing the discharge of groundwater from a site into the City collection system.

“Hydrogeological Study” means a written review, certified by a Professional Engineer or Geoscientist, of the occurrence, distribution and effect of groundwater on a proposed development site and may include a Groundwater Management Plan.

“Impact Assessment” means a written report that sets out any potential or realized environmental impacts which may or will result from infiltration or extraction of groundwater on the development site.

“Rainwater” means rainfall and other natural precipitation.

“Rainwater drainage” means runoff resulting from rainwater or from melting snow or ice.

“Rainwater Management System” means a system for collecting, retaining, detaining, treating or conveying rainwater and rainwater drainage, including catch basins, sewers and pumps and the storm drainage facilities, structures or devices used for storage, management and treatment to buffer the effects of runoff or improve the quality of the rainwater and rainwater drainage, including natural ecosystem based facilities, structures, and devices.

“Rainwater Management Plan” means a hydrological and hydraulic study, certified by a Professional Engineer, that sets out a comprehensive approach to the planning, design, implementation and operation of a rainwater management system in a manner that balances and optimizes environmental impacts and drainage efficiency and sets out the size, location and configuration of the rainwater management system on the site as well as associated methodology, calculations, and plan drawings that demonstrate how the requirements imposed on the development will be met.

“Water table” means the level below which the ground is saturated with water at a pressure of 1 atmosphere or greater.”

3. Council inserts new sections 3.3.2A, 3.3.2B and 3.3.2C as follows:

3.3.2A In making a determination regarding the adequacy of drainage under section 3.3.2(d) of this By-law, the Director of Planning or the Development Permit Board may require any development permit applicant to submit a Hydrogeological Study and an impact assessment, and may consider drainage to be inadequate if the proposed development will result in:

- (a) any groundwater discharge from the site into the City collection system;
- (b) rainwater or stormwater discharge from the site into the City collection system that would increase the downstream flow; or
- (c) water infiltration that could reasonably be expected to compromise the underlying aquifer or geology.

3.3.2B In order to address the inadequacy of drainage the Director of Planning or Development Permit Board may impose conditions on development requiring the applicant to develop the proposed site in accordance with a:

- (a) rainwater management plan designed to achieve prescribed performance targets; and
- (b) groundwater management plan designed to prevent groundwater discharge into the City collection system and limit or reduce environmental impacts, including stricter targets if the development is below the water table.

3.3.2C In order to ensure compliance with a rainwater management plan or a groundwater management plan or both, the Director of Planning or Development Permit Board may refuse to issue the development permit unless the property owner has first entered into a rainwater and groundwater management agreement, to the satisfaction of the Director of Legal Services and the City Engineer, to:

- (a) construct a rainwater management system or groundwater management system, or both, on the site that is designed and certified by a Professional Engineer to:
 - i. prevent groundwater discharge from entering the City’s collection system;
 - ii. retain the first 24mm of rainwater in a 24 hour period from all areas, including rooftops, paved areas, and landscape;
 - iii. treat the first 24 mm of rainwater in a 24 hour period from all pervious and impervious surfaces to remove 80% Total Suspended Solids (TSS) by mass prior to discharge from the site;

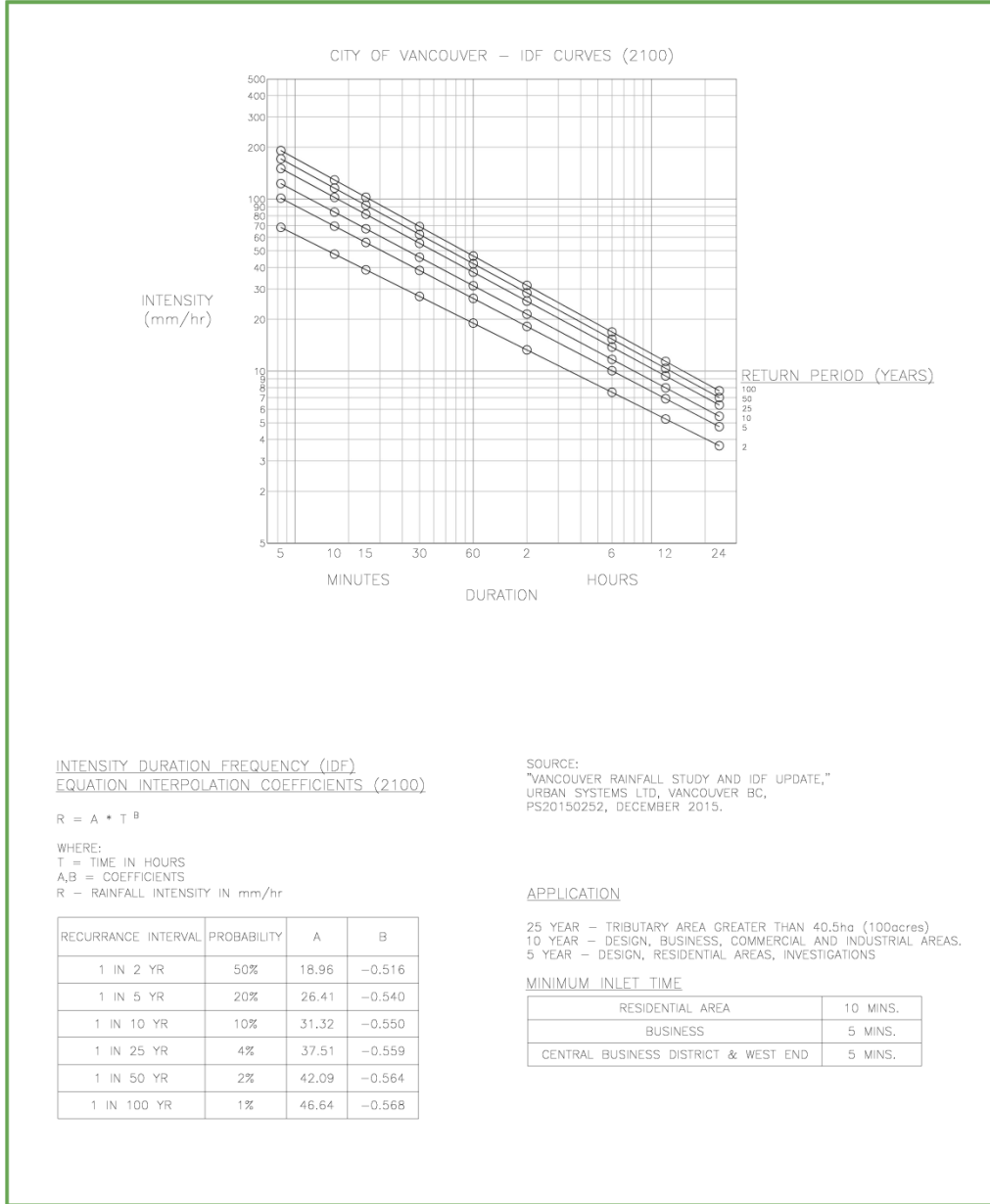
- iv. treat an additional 24mm of rainwater in a 24 hour period to remove 80% Total Suspended Solids (TSS) by mass prior to discharge from the site of all rainwater flowing from roads, driveways and parking lots; and
 - v. limit the peak flow rate discharged to the sewer under post-development conditions to a flow not greater than the peak pre-development flow rate for the return period specified in the City of Vancouver's Intensity-Duration-Frequency curves (IDF curves) set out in Schedule I of this By-law, using the City of Vancouver's 2014 IDF curve for pre-development design flow calculations, and the City's 2100 IDF curve for post-development design flow calculations.
- (b) maintain the rainwater management system or groundwater management system or both at the expense of the owner;
 - (c) grant a statutory right of way and equitable charge to the City; and
 - (d) release and indemnify the City from all liability related to the installation, operation and maintenance of the rainwater management system or groundwater management system or both."
4. Council inserts a new Schedule "I" to the By-law, by adopting the Schedule "I" attached to this By-law as Schedule "I".
5. A decision by a court that any part of this By-law is illegal, void, or unenforceable severs that part from this By-law, and is not to affect the balance of this By-law.
6. This By-law is to come into force and take effect on the date of its enactment.

ENACTED by Council this 18th day of September, 2018

Signed _____ "Gregor Robertson"
Mayor

Signed _____ "Katrina Leckovic"
City Clerk

Schedule I



ENGINEERING SERVICES - CITY OF VANCOUVER



SEWERS & DRAINAGE DESIGN BRANCH

DRAWN BY: SP

DESIGN:

REFERENCES:

SEWER – STANDARDS

RAINFALL INTENSITY EQUATION

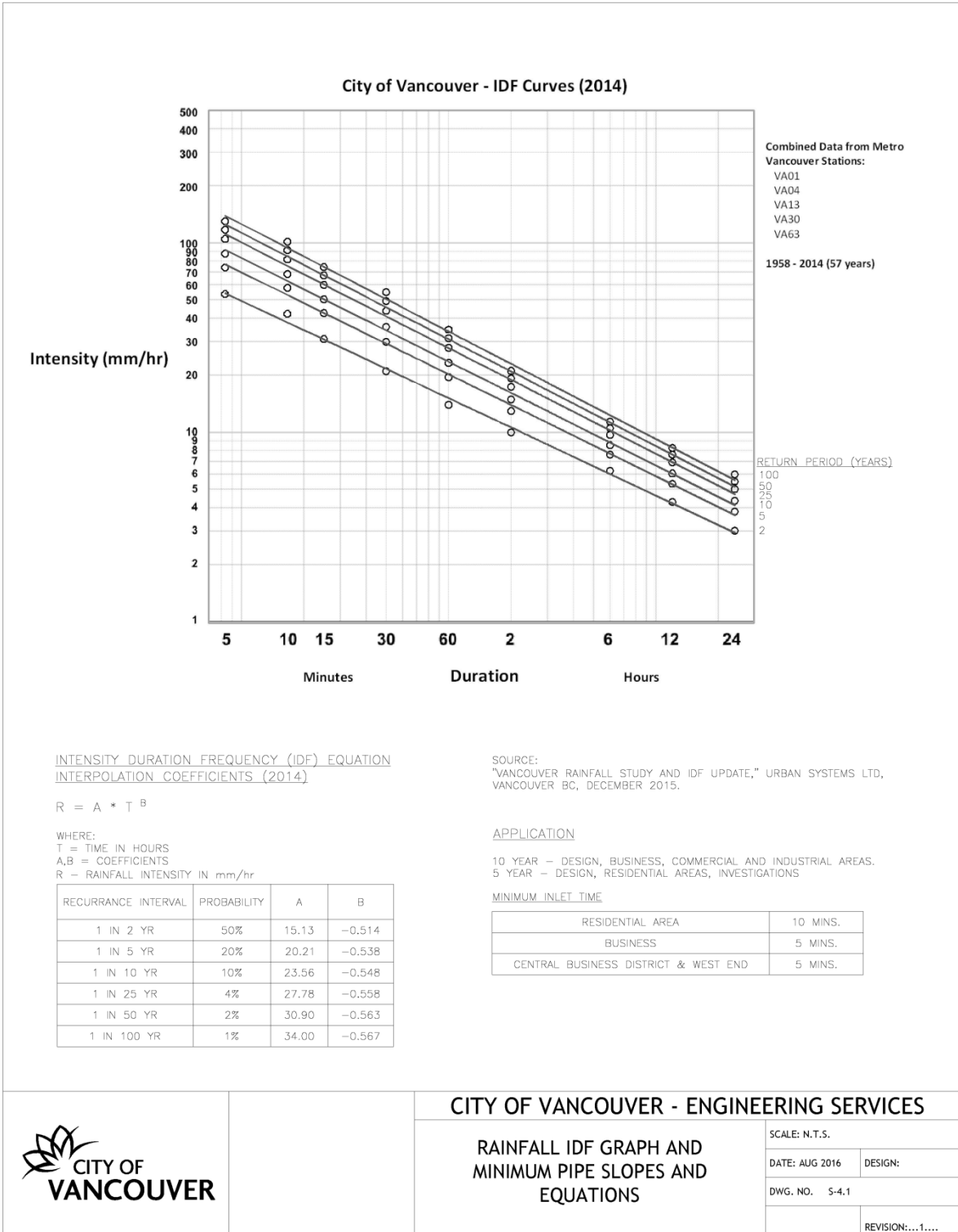
2100 IDF CURVE

SCALE: N.T.S.

STANDARD SECTION

REVISION:.....

Schedule I



PLOTTED: Tuesday, September 06, 2016 7:40:42 AM

THIS PRINT SUPERSEDES ALL PRINTS OF THIS DRAWING BEARING PREVIOUS REVISION NUMBERS

Y:\SEWER_DESIGN\PROCEDURES & FORMS\SEWER DESIGN MANUAL\STANDARD DRAWINGS - DESIGN MANUALS-3.1 & 5-4.1\5-3.1 & 5-4.1 REV 2.DWG