



PEACE RIVER
REGIONAL DISTRICT

SUBDIVISION AND DEVELOPMENT SERVICING

BYLAW NO. , 2021

SUBDIVISION AND DEVELOPMENT SERVICING BYLAW NO.

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PEACE RIVER REGIONAL DISTRICT
BY-LAW NO. xxxx, 2021

**A Bylaw to regulate the provision of Works and Services
in respect to development of land**

WHEREAS the Board of Directors of the Peace River Regional District wishes to regulate the provision of Works and Services in respect of the subdivision of land pursuant to *the Local Government Act*;

NOW THEREFORE the Board of the Peace River Regional District, in open meeting assembled, enacts as follows:

SECTION 1 GENERAL PROVISIONS

- 1.1 Subdivision and Development Servicing Bylaw No. 783, 1992** and all amendments thereto, is hereby repealed.
- 1.2 This bylaw may be cited as the Peace River Regional District “*Subdivision and Development Servicing Bylaw No. [REDACTED]*”.**

SECTION 2 DEFINITIONS

- 2.1 In this bylaw,**

“Agriculture” means the use of land, farm building, or structures as defined in the applicable PRRD Zoning Bylaw.

"Applicant" means the owner or agent of the owner applying for the approval of a subdivision, pursuant to the provision of the *Land Title Act*, or owner or agent of the owner applying for development other than subdivision.

"Approval, Final" means the Approving Officer's affixation of his signature to the subdivision plan pursuant to Section 88 of the *Land Title Act*.

"Approval, Preliminary Layout" means written notification of a review of information presented to the Approving Officer previous to submission of a subdivision plan for final approval.

"Approving Officer" means any person duly authorized by the Province of British Columbia to act as Approving Officer pursuant to the provisions of the *Land Title Act*.

"Board" means the Regional Board of the Peace River Regional District.

"Building Inspector" means the Building Inspector of the Peace River Regional District.

"Building Regulations" means the Building Bylaw No. 2131, 2014, as amended or replaced.

"Chief Administrative Officer" means the Chief Administrative Officer of the Peace River Regional District appointed as such by the Regional Board, or designate.

"Community Sewer System" means a common sanitary sewer or a system of sewerage or sewage disposal which serves two (2) or more parcels and is owned, operated and maintained by the Regional District.

"Community Water System" means a system of waterworks which serves two (2) or more parcels and which is owned, operated, and maintained by an Improvement District as defined in the *Water Sustainability Act* or the *Local Government Act*, or the Regional District, or which is regulated under the *Water Utility Act*.

"Development" means:

- 1) The subdivision of land; and
- 2) Construction of, addition to, or alteration of a building or other structure, except interior construction or alteration, including, without limitation:
 - a) new building construction;
 - b) building additions and alterations;
 - c) construction of, addition to or alteration of accessory buildings and structures and other structures which require a Building Permit.

"Drainage System" means a system of works designed and constructed to control the flow of storm water or ground water.

"Excess or Extended Service" means a service as defined under the *Local Government Act*.

"Farm Building" means a building or part thereof which does not contain a residential occupancy and which is associated with and located on land devoted to the practice of farming, and used essentially for the housing of equipment or livestock, or the production, storage or processing of agricultural and horticultural produce or feeds.

"Highway" includes a street, road, lane, bridge, viaduct, and any other way open to public use. A highway does not include private easements on private property.

"Medical Health Officer" means the Medical Health Officer appointed under the *Health Act*.

"MMCD" means the Platinum Edition of the Master Municipal Construction Document published by the Master Municipal Construction Documents Association.

MMCD Design Guidelines means the Municipal Infrastructure Design Guidelines (2014) prepared under the auspices of the Master Municipal Construction Document Association.

"Off-Site" means those Works and Services located on or in streets adjacent to or external to the subdivision or development.

"On-Site" means those Works and Services located on the parcel or lands being subdivided or developed.

"Owner" means the registered owner of an estate in fee simple in respect of real property, and includes:

- 1) the tenant for life under a registered life estate;
- 2) the registered holder of the last registered agreement for sale; and
- 3) as defined in the *Community Charter*.

"Owner's Engineer" means the Professional Engineer, or a duly authorized representative, engaged by the owner to design and prepare drawings and specifications for the construction of Works and Services in relation to a subdivision or a building permit.

"Parcel" means any lot, block or other area in which land is held or subdivided but does not include any portion of a highway.

"Parcel Line" means a legal boundary of a parcel as shown or described on the records of the Land Title Office.

"Potable Water" means water which is approved for drinking purposes in accordance with the *Drinking Water Protection Act*.

"Professional Engineer" means a person who is registered or duly licensed as such under the provisions of the *Engineers and Geoscientists Act* of British Columbia.

"Proven Source" means a source of potable water that is available and proven with respect to volume, delivery and continuity of supply from an on-site groundwater system, a surface water system, hauled water, any source requiring a water license from the Ministry of Environment or a source from a community water system.

"Regional District" means the Peace River Regional District.

"Sanitary Sewer System" means a system of pipes, manholes, treatment plants, pump stations, valves, discharges and appurtenances for the collection and disposal of sanitary sewage.

"Service Level" means the standard of municipal services required for development of subdivisions and other development not requiring subdivision under the provisions of this bylaw.

"Standard Drawings" means the standards specified in the Master Municipal Construction Documents (MMCD) and Standard Drawings, or the Standards in this bylaw.

"Statutory Right-of-Way" means an easement as defined under the *Land Title Act*.

"Street" means a highway except a lane, trail, or walkway.

"Subdivision" means the division of land into two(2) or more parcels by plan or apt descriptive words.

"Walkway" means a highway intended to carry pedestrian and non-motorized traffic.

"Water Supply System" means a domestic water system, other than a domestic water system that serves only one single-family residence, as defined in the Drinking Water Protection Act.

"Watercourse" means any natural or man-made depression with well-defined banks and a bed 0.6 metres or more below the surrounding land that serves to give direction to a current of water at least six months of the year or having a drainage area of two square kilometres or more upstream of the point of consideration.

"Works and Services" means the design and construction that is required by this Bylaw.

"Zone" means an area created by the Zoning Bylaw of the Peace River Regional District or as amended both before and after the effective date of this bylaw.

SECTION 3 INTERPRETATION

- 3.1** Unless otherwise defined herein, any word or expression in this Bylaw shall have the same meaning as any similar word or expression in the B.C. *Motor Vehicle Act*, the *Community Charter*, the *Local Government Act*, the *Peace River Regional District Zoning Bylaw*, or any regulation or Schedule to the enactment and in case of conflict the *Local Government Act* shall prevail.
- 3.2** Any enactment referred to herein is a reference to an enactment of the Province of British Columbia and regulations thereto, and any bylaw referred to herein is a reference to a bylaw of the Regional District.
- 3.3** Nothing in this Bylaw shall relieve the Applicant from the responsibility to comply with

every enactment applicable to their undertaking. Neither the granting of a permit nor the issuance or review of any plans, specifications or documents or any inspection made by any Regional District employee shall in any way relieve the Applicant from compliance with all enactments.

3.4 If any section, subsection, sentence, clause, phrase or portion of this Bylaw is for any reason deemed to be invalid by the decision of any court of competent jurisdiction, the invalid portion shall be severed and the decision that it is invalid shall not affect the validity of the remainder of this Bylaw.

3.5 Schedules “A” through “E” are attached to and form part of this Bylaw.

SECTION 4 APPLICATION

Compliance with Bylaw

4.1 No person shall subdivide or undertake development of land in the Peace River Regional District except in compliance with the provisions of this Bylaw.

Exceptions to Servicing Requirements

Where the Works and Services Already Exist

4.2 Without limiting the generality of Section 4.1, the Applicant will not be required to provide a particular Work or Service where that particular Work or Service already exists in accordance with the standards required in Schedules A, B and C to this Bylaw, or where the Works and Services are not available as per Section 6.3.3.iv and 6.3.4.iii.

Subdivisions for Specific Purpose

4.3 The Works and Services requirements of this Bylaw do not apply to a Subdivision which creates only:

- 1) Highway dedication;
- 2) Park land;
- 3) A parcel for the installation of public utilities and related structures and equipment;
and
- 4) A consolidation or a lot line adjustment, in which the number of buildable lots is not increased and the land use is single or duplex residential only.
- 5) **Lands to be used solely used for agriculture.**

Other Exceptions

- 4.4** The Offsite Works and Services requirements of this Bylaw do not apply where one or more of the following conditions is satisfied:
- 1) the building permit authorizes the construction and/or alteration of a single dwelling or residential accessory building;
 - 2) the building permit value of the building construction and/or alteration is less than \$350,000.00 as determined by the Regional District's Building Inspector or, where the property is subject to a Development Permit, the value of all of the building construction and/or alterations authorized by the Development Permit is less than \$350,000.00 as determined by the Regional District's Building Inspector;
 - 3) the construction and/or alteration results in no net additional floor area;
 - 4) the alterations result in a more sustainable building and are of the following nature:
 - a) upgraded accessibility for disabled persons;
 - b) environmental protection, conservation or preservation;
 - c) installation of safety upgrades such as fire sprinklers, fire alarms, emergency lighting, exits and other similar safety improvements;
 - d) upgrades to improve energy efficiency solar panels, insulation, heating sources etc.;
 - e) seismic upgrades; and
 - f) building envelope upgrades and repairs.
 - 5) in the case of residential subdivision, where the subdivision is creating no more than one additional residential lot and the maximum parent parcel size is 2000 square metres.

Works and Services Impractical to Build

- 4.5** If it is not practical to build all or part of the required Works and Services until a project of greater scope proceeds, and;

If the Work or Service is not immediately required for the Subdivision or the building;

- 1) the Owner may not be required to build the part so identified by the Regional District. Instead the Developer may provide the Regional District with security in the form of cash, certified cheque or irrevocable Letter of Credit, accepted by the Regional District, in an amount equal to the cost of designing, constructing and providing the Work or Service. The funds will be placed by the Regional District in a reserve fund until they are used to provide or complete the Work or Service.

Authorization to Enter on Lands Being Subdivided

- 4.6** Officers of the Peace River Regional District, or their designates, are authorized to enter, at all reasonable times, upon the lands for which application to subdivide has been made, in order to ascertain whether the provisions of this Bylaw are being met, subject to the *Community Charter*.

Application Fee

- 4.7** An applicant for subdivision approval shall submit with the application a fee charge for a peer review if applicable.

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SECTION 5 SUBDIVISION AND DEVELOPMENT REQUIREMENTS AND REGULATIONS

Land Dedication - Subdivision

Highway Allowances

- 5.1** The Applicant shall provide, without compensation, land for Highway provisions and widening as identified by the Approving Officer in accordance with the *Local Government Act*.

Parkland Dedication on Subdivision

- 5.2** The Applicant shall satisfy the requirements of the Regional District with respect to the provision of parkland in accordance with the requirements of the *Local Government Act* and the applicable Regional District *Official Community Plan*.
- 5.3** If it is determined that cash-in-lieu of parkland dedication is exercised, the amount to be paid shall be equivalent to 5.0% of the average market value of all the gross developable land proposed for Subdivision in accordance with provisions of the *Local Government Act*.

Exceptions to Parkland Dedication

- 5.4** Exceptions to parkland dedication shall be in accordance with the *Local Government Act*.

Expense of Services to be Borne by Owner

- 5.5** Unless otherwise provided in this Bylaw, all Works and Services required in this Bylaw shall be constructed and installed at the expense of the Owner or Applicant.

Security and Development Agreement Required

- 5.6** All Works and Services to be constructed and installed to serve any development or proposed subdivision of any lands where this bylaw applies shall be constructed and installed as prescribed in Schedules "A" to "E" hereto.
- 5.7** All Works and Services shall be designed and constructed at the expense of the Applicant prior to the approval of such subdivision by the Approving Officer.
- 5.8** A plan of subdivision may be given final approval by the Approving Officer prior to the completion of the construction and installation of the required Works and Services where the Applicant:

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- 1) deposits a bond or a letter of credit in the form as contained in Schedule D, with the Regional District in the amount of One Hundred and Twenty-Five Percent (125%) of the cost of installing and paying for all the Works and Services required as estimated by the Owner's Engineer: and,
 - 2) enters into an agreement with the Regional District to construct and install the required Works and Services, as contained in Schedule D, hereto for subdivisions pursuant to the *Land Title Act* of the Province of British Columbia.

5.9 Where the owner of land is required to construct and install Works and Services in accordance with the provisions of this Bylaw, the owner shall:

- 1) operate and maintain the works constructed and installed for the periods specified in Schedule D;
- 2) provide the Regional District with a non-refundable payment for the Inspection and Administration Fee, as specified in Schedule D;
- 3) provide the Regional District with a bond or a letter of credit in the amount of ten percent (10%) of the cost of installing and paying for all the Works and Services required as estimated by the Regional District. The bond or letter of credit shall be held as security against unsatisfactory operation of the Works and Services during the maintenance periods specified in Schedule D; and
- 4) construct and install all the Works and Services required by this Bylaw to the satisfaction of the Chief Administrative Officer.

5.10 The Regional District reserves the right to deny building permits if Works and Services are not completed to the satisfaction of the Regional District.

Excess or Extended Services

5.11 Pursuant to the *Local Government Act*, the Regional District may require that the Applicant provide excess or extended services to provide access to or service land other than the land being subdivided or developed.

5.12 If the Regional District requires the Applicant to provide the excess or extended services, the cost of providing those services must be paid for:

- 1) By the Regional District; or
- 2) If the Regional District considers its costs to provide all or part of these services to be excessive, by the Owner of the land being subdivided or developed.

Design and Field Review of Construction by a Professional Engineer

5.13 All engineering drawings required in this bylaw for Works and Services, shall be prepared by a Professional Engineer registered to practice in the Province of British Columbia.

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- 5.14** The Applicant shall engage a Professional Engineer to carry out all necessary field reviews and inspections during the construction of Works and Services required as a condition of subdivision or development approval.
- 5.15** The Professional Engineer shall submit a report in the format set out in Schedule D of this bylaw certifying that the Works and Services have been carried out in compliance with this bylaw and the plans, drawings and supporting documents submitted in support of the subdivision or development application which were accepted by the Regional District.
- 5.16** All applications for subdivision or development shall include a letter of commitment from the Applicant in the format set out in Schedule D of this bylaw, that a Professional Engineer has been engaged to carry out all necessary design works and undertake all field services for the subdivision or development.

SECTION 6 SERVICING

General

- 6.1** Except as herein provided, no person shall Subdivide or Develop land except in conformity with the relevant requirements of this Bylaw and, except as herein specifically provided.
- 6.2** Unless otherwise approved by a Development Permit, or a Development Variance Permit, issued by the Regional Board or a permitted delegate pursuant to the *Local Government Act*, servicing shall be as set out in this Bylaw and all construction and installation shall be carried out in conformity with requirements of Schedules “A” to “E” of this Bylaw.
- 6.3** The Owner of any lands which are proposed to be Subdivided or Developed shall provide each parcel of land within the proposed Subdivision or Development with the following, according to the established service level, as set out in Schedule A:
- 1) Roads
 - a) Road upgrade and construction requirements shall be completed in accordance with the requirements of the Provincial Ministry of Transportation and Infrastructure.
 - 2) Sidewalks and Boulevards
 - a) Sidewalks and Boulevards on all highways in and immediately adjacent to the lands in accordance with the requirements of the Ministry of Transportation and Infrastructure.

3) Water Distribution System

- a) A water distribution system shall be constructed pursuant to this Bylaw, and:
 - i) Shall be connected to an existing Regional District or municipal community Water Supply System where available and it is permissible to connect.
 - ii) Each parcel in the subdivision must be provided with a proven source of potable water.
 - iii) If a Subdivision or Development is proposed and is not connected to an existing community water system, the Developer shall connect the subject land, and obtain and demonstrate that all regulatory approvals necessary have been secured.
 - iv) Where connection to a community water system is not available adjacent to the site of the subdivision, the subdivision or development may be served by a private domestic service or water system.
 - v) In any Fire Protection Area, where a community water system is not available, a water supply for the purposes of fire protection shall be provided to the satisfaction of the Regional District.
 - vi) In any area outside of a Regional District Fire Protection Area, requirements for fire protection are not required.

4) Sewerage System

- a) A Community Sewer System including the standard service connection, constructed in accordance with the standards contained in Schedules A, B and C, and
 - i) The sewer system shall be connected by trunk sewer mains to an existing Community Sewer System.
 - ii) If a Subdivision or Development is proposed and is not connected to an existing Regional District or Municipal system, the Applicant shall connect the subject land or obtain and demonstrate that all regulatory approvals have been secured.
 - iii) In any zone, where a Community Sewage System connection is not available adjacent to the site of the subdivision or development, the subdivision or development may be served by an alternative system if each parcel in the development is provided with a means for collecting and disposing of sanitary sewage in accordance with all applicable legislation.

5) Storm Drainage Collection System

- a) A storm drainage collection system must be installed in accordance with the requirements of the Provincial Ministry of Transportation and Infrastructure.
- b) All on-site drainage works must be designed and constructed in accordance with the requirements of the Regional District.

6) Power, Communication, Gas and other Third-Party Utilities

- a) Power, communication, gas and other third-party utilities shall be constructed from the tie-in point to the termination of the last lot in accordance with the standards set by each utility provider. The location of shallow third party utilities shall be shown on the design drawings.

- 6.4** If, in the opinion of the Chief Administrative Officer, the installation of the Works and Services in accordance with this Bylaw in respect of the Subdivision or Development of a particular site would not be in accordance with sound engineering practice, because such Works and Services are best installed on an area-wide basis, the Owner may, in lieu of constructing and installing the Works and Services be permitted, upon Regional District approval, to make a cash payment to the Regional District, in the amount of **125% of the costs** estimated by the Developer's Engineer of the design, construction and installation value of the Works and Services required. The Regional District shall hold such payments in a reserve fund to be expended on the installation for such area-wide Works and Services at such time as may reasonably be determined by the Regional District.

Statutory Rights-of-Way

- 6.5** For the purpose of constructing and installing or maintaining Works and Services, statutory rights-of-way in the form of the Regional District's standard agreements and plans, shall be provided by the Owner, at the Owner's cost where Works and Services are not located in Highways. They shall be registered in the Land Title Office, and shall run with the land. It is the responsibility of the Applicant to negotiate and secure any Rights-of-Way or Easements necessary for the application, and to process the legal documentation and registration in the Land Title Office, and pay all direct or indirect costs including:

- 1) B.C. Land Surveyor costs;
- 2) Legal fees;
- 3) Registration costs and fees including Land Titles Office fees.

- 6.6** The Regional District may require the Applicant to provide a lawyer's or notary's undertaking satisfactory to the Regional District's solicitor to ensure registration of these documents is completed.

Latecomers

- 6.7** If the Regional District requires the owner of land that is to be subdivided or developed to provide excess or extended services, the costs of providing the excess or extended services may be subject to cost recovery through Latecomer charges pursuant to the *Local Government Act*.

SECTION 7 OFFENCE

Violation

7.1 Every person who violates one or more of the following:

- 1) causes or permits any act or thing to be done in contravention or violation of any of the provisions of this Bylaw;
- 2) neglects or omits to do anything required under this Bylaw;
- 3) carries out, causes or permits to be carried out any development in a manner prohibited by or contrary to any of the provisions of this Bylaw;
- 4) fails to comply with an order, direction or notice given under this Bylaw; or
- 5) prevents or obstructs or attempts to prevent or obstruct the authorized entry of an officer on property under Section 3.2;

shall be deemed to be guilty upon summary conviction of an offence under this Bylaw.

Penalty

7.2 Any person who violates any of the provisions of this Bylaw shall, on summary conviction, be liable to a penalty not less than \$5,000 plus the cost of prosecution for each offence.

Offence

7.3 Each day's continuance of an offence under Section 7 constitutes a new and distinct offence.

SECTION 8 ENACTMENT

Effective Date

8.1 This Bylaw shall take effect upon adoption by the Board of the Peace River Regional District.

READ A FIRST TIME THIS	_____ day of _____, 2021
READ A SECOND TIME THIS	_____ day of _____, 2021
Notification mailed on the	_____ day of _____, 2021
Notification published on the	_____ day of _____, 2021
Ministry of Transportation approval received this	_____ day of _____, 2021
READ A THIRD TIME THIS	_____ day of _____, 2021
ADOPTED THIS	_____ day of _____, 2021

Chair

(Corporate Seal has been
affixed to the original bylaw)

Corporate Officer

I hereby certify this to be a true and correct copy
of "PRRD Subdivision and Development Servicing
Bylaw No. XXX, 2021, as adopted by the Peace River
Regional District Board on _____, 20____.

Corporate Officer

SCHEDULE A
SUBDIVISION AND DEVELOPMENT SERVICING BYLAW NO.
2021
GENERAL INFORMATION AND REQUIREMENTS

SCHEDULE A

GENERAL INFORMATION AND REQUIREMENTS

SECTION 1 – GENERAL INFORMATION

SECTION 2 – GENERAL REQUIREMENTS

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SECTION 1 GENERAL INFORMATION

Introduction

- 1.1** Schedule A to the Subdivision and Development Servicing Bylaw identifies the General Information required by the Peace River Regional District from an Applicant when applying to subdivide or develop lands within the Regional District in accordance with where this Bylaw is applicable.

Scope and Use of Schedule A

- 1.2** Schedule A provides guidelines to the Applicant and the development industry in the design of engineering servicing facilities and systems to be incorporated in the utilities infrastructure of the Peace River Regional District.
- 1.3** The guidelines provide a minimum design criteria and standards for proposed works. The onus is on the Applicant to ensure that their designs meet accepted engineering principles and best practices and are adequate for the site conditions and their accepted uses.
- 1.4** The provisions of this Bylaw are to be applied in conjunction with the MMCD, which otherwise apply to all Works and Services constructed under the jurisdiction of the Peace River Regional District.
- 1.5** Where the provisions of this Bylaw are in conflict with the MMCD, the provisions of this Bylaw take precedence.
- 1.6** The provisions of this Bylaw are to be applied in conjunction with the MMCD Design Guidelines, which otherwise applies to all Works and Services constructed under the jurisdiction of the Peace River Regional District.

SECTION 2 GENERAL REQUIREMENTS

Introduction

- 2.1** The purpose of this section is to outline the minimum standards and requirements for applications to subdivide or develop lands in the Peace River Regional District.

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- 2.2** Incomplete or substandard design submissions will be returned to the applicant. Where a subsequent re-submission remains incomplete or sub-standard, the Regional District will request a meeting with the Applicant and their engineer to discuss the deficiencies and clarify requirements to address them.

Preliminary Submissions

- 2.3** The Applicant and their engineer must arrange for a pre-design meeting with the Chief Administrative Officer or designate to clarify submission requirements prior to making a detailed submission. The purpose of the preliminary meeting is to help clarify submission and technical requirements towards ensuring compliance with the latest Regional District standards, specifications and policies.
- 2.4** The Applicant will provide the Regional District with the following information at the preliminary meeting:
- 1) Proof that the owner is the owner of the lands proposed for subdivision or development, or the owner's duly authorized agent;
 - 2) A current State of Title Certificate (Title Search) AND copies of any notices on title;
 - 3) A statement in writing of the intended use of each parcel to be created;
 - 4) A preliminary plan (3 copies, 1:2000 scale) showing:
 - a) the location of the proposed development and the adjacent properties;
 - b) Proposed parcel arrangement;
 - c) Legal Description of Parcels and all property lines, easements, rights-of-way;
 - d) Adjacent residences and fixed improvements;
 - e) the location of Works and Services within the area, including storm and sanitary sewers, watermains, roads, other utilities, buildings/structures;
 - f) Watercourses;
 - g) Any proposed phasing;
 - h) Adjacent highways and the connections of proposed new highways thereto;
 - i) Adjacent sidewalks and pedestrian paths; and
 - j) a general outline/concept of the proposed subdivision or development.
 - 5) copies of any available reports pertinent to the proposed subdivision or development.

Detailed Submissions

- 2.5** Should the Applicant wish to proceed with the application for subdivision or development subsequent to making the Preliminary Submission, a Detailed Submission must be made.

2.6 All detailed submissions shall reflect and comply with the following:

- 1) All applicable requirements of this Bylaw.
- 2) All applicable requirements of the Regional District, including but not limited to:
 - a) The Official Community Plan;
 - b) The current Zoning Bylaw(s); and
 - c) The current Building Bylaw.
- 3) All applicable requirements of the Provincial Ministry of Transportation and Infrastructure, and other applicable authorities.
- 4) Be designated and dimensioned in Standard Metric units.

2.7 All engineering and technical submissions are subject to an independent peer review, at the Owner's expense.

Geotechnical and Hydrogeological Design Considerations

2.8 The Owner's Engineer shall incorporate Geotechnical and Hydrogeological input into their design such that an appropriate level of Geotechnical/Hydrotechnical Investigations, calculations and recommendations are performed to confirm that the Works and Services will perform as intended for the duration of the design life.

Environmental Considerations

2.9 The Applicant may be required to provide information and reports regarding any environmental issues or concerns related to the development.

Off-Site Utilities Impact Considerations

2.10 The Applicant may be required to provide an off-site utilities impact analysis for utilities that may include sewer, water, storm drainage or third part (shallow) utilities to determine the impact of utilities needed to service the proposed development on the existing utility network, and to identify any required upgrades to the utility network as a result of the development.

Survey Information

2.11 Survey information must be provided in accordance with the following requirements:

- 1) The Applicant must provide the Regional District with written permission from the registered owners of all required properties prior to entering private property to facilitate the survey and design work for the development;
- 2) All surveys shall be to elevation and coordinates derived from the Geodetic Datum, Geodetic Survey of Canada and NAD83;

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- 3) A topographic contour plan to 1.0 m intervals shall be provided. Elevations shall be relative to Geodetic Datum. The horizontal coordinates shall be referenced to the NAD83 UTM coordinate system. A minimum of two reference points with coordinates shall be shown on each design drawing. A minimum of one reference bench mark or GPS control point with elevation shall be shown on each design drawing;
 - 4) Originating benchmarks and integrated survey monuments shall be noted on all plans as well as those to be established during the work;
 - 5) Copies of legible field notes shall be made available to the Regional District upon request;
 - 6) Centre lines (or offset lines) or base lines are to be marked and referenced in the field and all chainages and coordinated layout points shall be keyed to the legal posting;
 - 7) All existing items such as manholes, catch basins, valves, fire hydrants, poles, existing dwellings, fences, trees, hedges, watercourses and setbacks, and unusual ground conditions shall be noted;
 - 8) Where applicable, roadway cross sections and other pertinent features are required. The section shall include centreline, edge of pavement or gutter line, edge of shoulder, ditch invert, top of ditch, property line, and an existing ground elevation inside property line; and
 - 9) Show topographical features such as, rock outcroppings, streams, etc.

Design Drawing Submission

2.12 All drawings submitted to the Regional District shall be prepared in accordance with the following requirements:

- 1) In metric units, on standard A1 sheets/scales and a full set of drawings must be provided in digital as well as paper;
- 2) All drawings shall be signed and sealed by a Professional Engineer registered in the Province of British Columbia;
- 3) The Applicant's Engineer's seal and signature shall confirm that the Works and Services as proposed are technically sound and comply with the applicable design criteria of this Bylaw, and Good Engineering Practice;
- 4) All drawings shall be based on digital coordinates that derive from the project survey information. Design submissions that originate purely from baseline offsets, either physical or otherwise, will not be accepted by the Regional District; and

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- 5) All engineered designs shall be based on digital coordinates that derive from the project survey information. A complete set of Engineering Design drawings shall include, in the following sequence:
- a) Cover Sheet
 - i) The Cover Sheet shall note the Applicant's Engineer's name, the Applicant's name, the Regional District project number, the legal description of the lands involved, a site plan at a 1:5,000 scale, and an index of plans, with revision numbers and general notes.
 - ii) The site plan shall note all proposed roads and the proposed subdivision layout. The cover sheet may be utilized to show the drainage catchment area.
 - b) Key Plan
 - i) The Key Plan shall be at a 1:500 scale and shall note all proposed services, including street lighting and shallow utilities. If more than one sheet is required, note the westerly or southerly portion first and identify as Key Plan "A" with additional plans noting "B" and "C", etc.
 - c) Storm Water Management Plan
 - i) The Storm Water Management Plan shall be submitted in accordance with the requirements of the Ministry of Transportation and Infrastructure and include the following:
 - (1) Catchment area
 - (2) Minor (10 year return) system
 - (3) Major (100 year return) system
 - (4) Creeks, Swales, open channels
 - (5) Impacts on adjacent and downstream lands and systems
 - (6) Details of detention or other forms of flow control.
 - d) Water
 - i) Plan and profile drawings shall show all grades, inverts, curves, radii, valves, hydrants, bends, and other features. All tie-in connections shall be fully detailed with dimensioned spool lengths, restraints, valves, fittings, thrust blocks and all other construction details. The scale shall be 1:500 for plans and 1:50 for profile. The full pipe shall be shown for the watermain on the profile. All cross-over points, and separation from, sewers shall be noted and the watermain shall be protected in accordance with Ministry of Health (Northern Health) requirements.
 - e) Storm Sewers
 - i) Plan and profile drawings shall show grades, inverts, manholes, catch basins, ditches and other features. The scale shall be 1:500 for Plan and 1:50 for profile. Symbols to denote the service connection elevation at the property line shall be shown on the plan/profile, as well as the minor and major system hydraulic grade lines. The full pipe including open channel sections shall be shown on the profile.
 - f) Sanitary Sewers

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- i) Plan and profile drawings shall show grades, inverts, manholes, and other features. The scale shall be 1:500 for Plan and 1:50 for profile. Symbols to denote the service connection elevation at the property line shall be shown on the profile/plan. The full pipe shall be shown on the profile.
 - g) Roads
 - i) Plan and profile drawings shall be in accordance with the requirements of the Ministry of Transportation and Infrastructure and must show alignments, grades, and all driveways at a scale of 1:500 for plans and 1:50 for profiles.
 - h) Road Cross Sections
 - i) Road cross-sections shall be in accordance with the requirements of the Ministry of Transportation and Infrastructure and at a scale of 1:100 horizontal and 1:50 vertical and shall note the existing ground elevation, the proposed elevations of the road centreline, the curb and gutter (or road edge) and property lines. Cross-sections are required at 20.0 m intervals. Additional sections may be required where excessive cuts or fills are involved.
 - i) Construction Details
 - i) Construction Details shall show details not covered or specifically identified in the Regional District Standards and Specifications or in MMCD documents. Where there is a Regional District Standard, refer to the associated Drawing Number. It is not necessary to include or provide drawings for work(s) for which there is an MMCD or a Regional District Standard Drawing.
 - j) Lot Grading Plan
 - i) Lot Grading Plans shall meet all requirements set out in the Standard Drawings. Lot Grading Plans shall be at 1:250 scale and shall generally illustrate post-development contour lines at a maximum of 1.0 m intervals, which shall match the pre-development contour lines at the development boundary, or as designed by the Applicant's Engineer and approved by the Regional District. The topographic information shall extend a minimum of 30.0 m outside of the development boundary. All existing lot corner elevations must be illustrated (not circled) and all proposed lot corner elevations must be illustrated (circled). The Plan must illustrate the proposed building envelop(s) with the Minimum Building Elevation(s) (MBE) noted. Proposed lot slopes and any retaining structures, significant grade breaks and surface drainage infrastructure must be illustrated.
 - k) Erosion and Sediment Control Plan
 - i) Erosion and Sediment Control Plan shall be shown at 1:500 scale and shall illustrate the extents of tree clearing, grubbing and stripping locations, onsite and offsite sediment and erosion control features such as silt fencing, sediment basins, construction vehicle wash facilities and maintenance stockpile storage locations. Drawings shall provide details and notes describing the installation and maintenance of all features and shall provide protection of sensitive areas, watercourses and all other environmental

features. Plan shall identify any Works and Services required in accordance with the requirements of other approval authorities

l) Landscape and Streetscape Design

- i) Landscape and Streetscape Design Plan shall be provided where boulevard plantings or street furniture are proposed. The drawings shall include a planting schedule and details of any proposed street furniture.

2.13 Notwithstanding the previously detailed requirements, the following additional information is to be noted in design submissions to the Peace River Regional District:

- 1) The size, grade, inverts, and type of material on profiles, based on the same chainage as indicated on the plan drawings;
- 2) The locations, off-sets, curvatures, size and identification of the mains noted on the Plans, including:
 - a) the clearance between mains at cross-over points;
 - b) all existing structures, including houses, sheds, fences, wells, septic tanks and fields, with a notation indicating their fate (i.e. to be removed, filled, etc.); and
 - c) in rural subdivisions, with an open ditch drainage system, the size of (future) driveway required culverts to conform to the design.

2.14 All design submissions shall be submitted together, as one complete package, with all supporting information from the Applicant's Engineer and other consultants, including a PDF copy and electronic AutoCAD Drawings.

- 1) The first complete detailed design submission shall consist of:
 - a) Two complete sets of drawings under seal of the Owner's Engineer;
 - b) Geotechnical and soils investigation report under seal of the Owner's Engineer;
 - c) Traffic Impact Study, if specifically required by the Approving Officer;
 - d) Off-Site Utilities Impact Analysis, if specifically required by the Regional District or the Approving Officer;
 - e) All applicable utility hydraulic calculations and structural calculations (water, sanitary, storm sewer, etc.); and
 - f) Any additional design briefs identified as necessary by the Regional District; and
 - g) Construction and installation cost estimate (under seal of the Applicant's Engineer).

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- 2) Subsequent design submissions requiring changes to the previous submission shall consist of:
 - a) Two complete sets of drawings;
 - b) A complete construction cost estimate;
 - c) all changes made to the first submission shall be highlighted, including any changes made by the Applicant's Engineer which are in addition to "Red Line" changes required by the Regional District; and
 - d) Items "Red Lined" by the Regional District must be addressed by the Applicant's Engineer. Failure to do so will result in the submission being returned to the Applicant.
 - 3) The final submission for acceptance shall consist of four complete sets of drawings (one of which will be returned to the Applicant's Engineer), a digital set of drawings and all supporting documents.

2.15 All design and record drawings must be submitted based on MMCD standards.

- 1) Digital drawing submissions shall follow the latest MMCD standard for AutoCAD symbols, layers & line types, with drawing creation using MMCD AutoCAD templates.

Construction Cost Estimate Calculations

2.16 The construction cost estimate shall be broken down in the format defined in MMCD.

2.17 Hydro, gas, cable and telephone cost estimates are required and the estimated costs are to be included in the security deposit required under the Subdivision Servicing Agreement. These items and costs will be reviewed and amended by the Regional District where necessary.

Service Connection Cards

2.18 The Applicant's Engineer will provide service connection cards for each development. Service Connection Cards are considered part of the Record submission and shall be provided in paper copy and electronically in PDF and AutoCAD (latest version) formats. Each Service Connection Card is to indicate clearly and accurately the following information:

- 1) The location, depth, size and material of construction of each Regional District utility connection;
- 2) The Regional District project number;
- 3) Legal plan number and/or lot number; and
- 4) Civic address (if established).

Record Submissions and Asset Management Schedule

2.19 The following procedures are required in the delivery of Record Submissions and Asset Management Schedules to the Regional District:

- 1) The Applicant's Engineer shall submit two complete sets of paper prints of the revised design drawings reflecting the as-constructed Works and Services, including hydro, telephone and cable records, and a complete set of Service Connection Cards for Regional District review.
- 2) One marked-up set of the Record paper prints will be returned to the Applicant's Engineer for revision. If there are minor changes, it may be requested that the prints with the revisions noted, be submitted for Regional District acceptance. If there are numerous amendments, the Applicant's Engineer will be required to resubmit two sets of revised paper prints for a second review.

2.20 The Applicant's Engineer will be required to submit the following:

- 1) A digital copy of the CAD files containing the final Record drawings.
- 2) A digital .pdf file containing final Record drawings signed and sealed by the Applicant's Professional Engineer.
- 3) Two sets of paper prints with the signature and seal by the Professional Engineer who supervised the required works.
- 4) Service Connection Cards for each development, including a paper copy and electronically in PDF and AutoCAD (latest version) formats

2.21 Receipt of all Record information, acceptable to the Regional District, is required prior to issuance of Substantial Performance for the project, including:

- 1) A Schedule for use in the Regional District's Asset Management Database including quantities and actual unit prices of all works/infrastructure constructed or altered as part of the development, to be owned by the Regional District. Works and Services shall be grouped by road segment between intersections. Where assets overlap at intersections, the asset is to be assigned to the primary road. The information is to be provided electronically in Excel and PDF format as prescribed by the Regional District;
- 2) A copy of the final Geotechnical Report signed and sealed by the Applicant's Engineer must be provided;
- 3) A copy of the final Traffic Impact Study signed and sealed by the Applicant's Engineer must be provided; and
- 4) A copy of the final Off-Site Utilities Impact Analysis signed and sealed by the Applicant's Engineer must be provided.

SCHEDULE B
SUBDIVISION AND DEVELOPMENT SERVICING
BYLAW NO. _____, 2021
DESIGN CRITERIA

SCHEDULE B

DESIGN CRITERIA

SECTION 1.0 – GENERAL DESIGN CONSIDERATIONS

SECTION 2.0 – WATER DISTRIBUTION

SECTION 3.0 – SANITARY SEWERS

SECTION 4.0 – STORMWATER MANAGEMENT

SECTION 5.0 – ROADS (NOT INCLUDED, REFER TO MOTI REQUIREMENTS)

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SECTION 1 GENERAL DESIGN CONSIDERATIONS

The purpose of the design criteria is to supplement and clarify items as described in the latest edition of the MMCD Design Guidelines, and the requirements of the Ministry of Transportation and Infrastructure. The Owner's Engineer must comply with all requirements included in reference documents unless otherwise noted herein or specifically pre-approved in writing otherwise by the Approving Officer.

1.1 Sustainability and Asset Management

- 1.1.1 The principles of sustainability and asset management shall be based on MMCD methodology as described in Sections 8, 9 and 10 of the current edition of the MMCD Design Guidelines. Should any conflicts arise between this Bylaw and the current edition of the MMCD Design Guidelines, the written content of this Bylaw shall govern.
- 1.1.2 Engineers retained by the Owner shall consult the Regional District to determine the appropriate balance of sustainability and asset management principles.

1.2 Independent Utilities

- 1.2.1 Independent utilities such as electrical power, communications and gas are not supplied by the Regional District and are not included in this design criteria.
- 1.2.2 Engineers retained by the Owner Applicant shall design infrastructure to avoid conflicts with independent utilities.

1.3 Utility Right-of-Way

- 1.3.1 Utility right-of-way requirements shall follow MMCD Design Guidelines.
- 1.3.2 Minimum utility Right-of-Way width is 6.0 m.

1.4 Utility Separation

- 1.4.1 Utility separation shall follow MMCD Design Guidelines and BC provincial regulations.

1.5 Trenchless Technologies

- 1.5.1 The use of trenchless technology shall follow MMCD Design Guidelines.

SECTION 2 WATER DISTRIBUTION

The purpose of this section is to supplement and clarify existing design guidelines as described in MMCD Design Guidelines. The Owner's Engineer must comply with all requirements included in reference documents and described herein.

2.1 General

- 2.1.1 The water system design is to be completed using a calibrated water model acceptable supply to the Regional District unless the system's design, as determined by the Regional District, does not warrant that approach.
- 2.1.2 Approval from Ministry of Health (Northern Health) is required prior to construction, installation, alteration or extension of a community water system.

2.2 Metering

- 2.2.1 Water meters are required for any connections to a Community Water System in accordance with the requirements specified for that system (Regional District systems or adjacent Municipal Systems).
- 2.2.2 Strata lots, including bare-land strata lots, shall provide the meter at the property line, or as directed by the Chief Administrative Officer. All meter chambers shall be protected against freezing.
- 2.2.3 All meters, where required, shall be supplied and installed by the Owner under the direct supervision of Regional District staff.
- 2.2.4 Where developments require water meters to be installed outside of buildings, the outside meter chambers, vaults or enclosures shall include the same requirements as listed in MMCD Design Guidelines under valve chambers with the following additional requirements:
 - 1) watertight structures;
 - 2) drainage and ventilation;
 - 3) protection against freezing;
 - 4) adequate access and interior space for maintenance and equipment removal with minimum headroom of 2.0 m;
 - 5) full open access to avoid confined space restrictions;
 - 6) permanent ladder to WorkSafeBC regulations;
 - 7) piping primed and painted with a rust-inhibiting paint;

- 8) meter bypass;
- 9) remote radio reading capability; and
- 10) additional requirements as identified by the Chief Administrative Officer.

2.3 Per Capita Demand

- 2.3.1 Design populations used in calculating water demand shall be computed in accordance with the Peace River Regional District's population projections or with the planned development in the area to be served, whichever is larger.
- 2.3.2 The design criteria noted in Table 2.3.1 must be used. Where the flow characteristics of the development area are substantially different, the criteria may be modified with written approval from the Chief Administrative Officer.

Table 2.3.1 – Per Capita Demand	
Average daily demand, domestic flow	600 litres/capita/day
Maximum daily demand, domestic flow	2x average day demand
Peak hour demand, domestic flow	3x average day demand

2.4 Non-Residential Demand

- 2.4.1 Non-residential demand shall be as indicated by MMCD Design Guidelines.

2.5 Fire Flows

- 2.5.1 Fire flow demands are as defined in MMCD Design Guidelines.

Where a difference arises between MMCD Design Guidelines minimum requirements and the **National Fire Protection Association (NFPA) requirements**, the more stringent requirements shall take precedence.

2.6 Design Flows

- 2.6.1 Design for water supply systems shall be based on MMCD Design Guidelines.

2.7 Water Pressure

Water pressures shall be based on MMCD Design Guidelines.

2.8 Hydraulic Design

- 2.8.1 Hydraulic design shall follow MMCD Design Guidelines.

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- 2.8.2 Where the existing water supply system network is inadequate to provide minimum flow and pressure to a property, installation of supplementary mains may be required and may necessitate the provision of rights-of-way in favour of the Regional District.
- 2.8.3 Minimum watermain size shall be the more stringent of requirements stated in MMCD Design Guidelines or as demonstrated by a comprehensive hydraulic network analysis.
- 2.9 Minimum Pipe Diameter**
- 2.9.1 Minimum pipe diameters are to be as specified by MMCD Design Guidelines.
- 2.10 Dead Ends**
- 2.10.1 Where dead ends are unavoidable, and approved by the Regional District, sizes for blow-offs and blow-downs are to be as indicated by MMCD Design Guidelines with additional provisions for erosion control and protection of receiving environments.
- 2.10.2 In no instance shall a permanent dead end exceed 200 m in length.
- 2.11 Minimum Depth of Cover**
- 2.11.1 Minimum depth of cover shall be 2.75 meters, in addition to meeting all other requirements specified in MMCD, unless otherwise specified in a signed and sealed Geotechnical Report.
- 2.12 Grade**
- 2.12.1 Criteria for pipe grades shall be as specified by MMCD Design Guideline requirements.
- 2.13 Corrosion Protection**
- 2.13.1 Corrosion protection and assessment of corrosive soils shall be as indicated in MMCD Design Guidelines.

2.14 Valves

2.14.1 In addition to the location of valves specified by MMCD Design Guidelines, valves are required as follows:

- 1) **4** valves at “X” intersection;
- 2) **3** valves at “T” intersection, including hydrant branch tees;
- 3) At both ends of a utility Right-of-Way, water course boundary line, Provincial Highway or rail Right-of-Way;
- 4) It must be possible to isolate a section of water main by operating no more than 4 valves; and
- 5) Additional valving may be required due to phasing of subdivision development, as determined by the Chief Administrative Officer.

2.14.2 Resilient seat gate valves are required on mains smaller than 450 mm diameter.

2.15 Hydrants

2.15.1 The Owner’s Engineer must consider the existing and intended use in the area, and ensure that adequate spacing is provided in accordance with MMCD Design Guideline requirements.

2.15.2 Hydrants shall be located as specified by MMCD Design Guidelines in addition to being not more than 90 m apart in commercial, industrial and institutional areas.

2.15.3 The location of the hydrants shall be a minimum 1.5 m clear of existing or proposed utilities and features such as street lights, power poles, open channels, transformers or driveways.

2.15.4 Hydrant access provisions may be required and placed strategically and shall be reviewed and approved by the Chief Administrative Officer. Where the road cross-section provides ditched drainage, a culvert crossing shall be provided to permit unobstructed access up to the fire hydrant. Culverts shall be installed per MMCD Design Guideline standard drawings.

2.15.5 For cul-de-sac roads, hydrants shall be located at the last lot before the cul-de-sac bulb.

2.15.6 Where engineering studies have determined that the use of a dry Hydrant(s) is the most feasible for fire protection, they shall conform with the specific requirements of the Peace River Regional District.

2.15.7 The design of Dry Hydrant installations shall generally be in conformity with NFPA 1142.

2.16 Blow-Offs and Blow-Downs

2.16.1 Blow-offs and blow-downs are to be provided as specified by MMCD Design Guidelines.

2.17 Test Points

2.17.1 Test Points shall be installed on all watermain as specified by MMCD Design Guidelines at strategic locations approved by the Chief Administrative Officer.

2.17.2 Install test point assemblies as per manufacturers' recommendations.

2.18 Air Valves

2.18.1 Air valves must be installed under conditions as indicated by MMCD Design Guidelines.

2.19 Thrust Restraints

2.19.1 Thrust restraint shall be provided as specified by MMCD Design Guidelines.

2.19.2 If mechanical joint restraints are used, the design drawings shall indicate the number of joint restraints required to resist the thrust at the fittings.

2.19.3 Thrust block design calculations and soil bearing pressures must be shown on the design drawings.

2.19.4 Mechanical joint restraints shall be used on all water main joints designated by the Chief Administrative Officer as "lifeline service mains in case of disaster". The decision as to which mains are to be so designated is at the sole discretion of the Chief Administrative Officer.

2.20 Chambers

2.20.1 Chambers shall be designed in accordance with MMCD Design Guideline requirements.

2.21 Service Connections

2.21.1 Service connection size shall be as indicated by MMCD Design Guidelines.

2.21.2 All water connections for industrial, commercial and institutional land use shall have a double check valve installed on the private system.

2.21.3 Corporation stops must be staggered and not less than 2.0 m apart, along the main line.

2.21.4 Services and curb stops must have a minimum cover of 2.75 m.

2.21.5 Each unit of a duplex must be serviced individually. A carriage house shall be serviced from the main service connection or through the main residence.

2.21.6 All meters, where required, shall be supplied and installed by the Applicant under the direct supervision of Regional District staff.

2.21.7 Outside meter chambers, vaults, or enclosures shall include provisions as stipulated under PRV stations.

2.21.8 A corporation stop and a curb stop shall be installed for each connection 50 mm diameter in size or smaller.

2.22 Alignment and Corridors

2.22.1 Curved mains will not be permitted. Joint deflections shall be as per MMCD Design Guideline requirements.

2.22.2 Water main extensions shall extend to and terminate at the furthest property line of the last lot it services complete with blow-off as per standard drawing.

2.22.3 Tracer wire or metallic warning tape is required on all PVC watermains and shall be installed per the manufacturer's specification.

2.22.4 When the utility is required to cross private land(s), the Right-of-Way must be surfaced and graded accordingly to allow access for Regional District maintenance vehicles and equipment to repair or replace the utility line and be a minimum of 6.0m wide, or at the discretion of the Chief Administrative Officer. The Right-of-Way shall be registered on title.

Reservoirs

2.23 The pre-design and detailed design of a reservoir must incorporate all requirements specified by MMCD Design Guidelines and the following:

- 1) approval from Northern Health prior to construction;
- 2) a Programmable Logic Controller (PLC) control system connected to the Peace River Regional District SCADA system;
- 3) cleaned and disinfected to AWWA requirements prior to potable water use; and
- 4) manuals to be provided as per "Manuals" Section 2.26.

2.24 Pump Stations

2.24.1 The pre-design and detailed design of pump stations must incorporate all requirements specified by MMCD Design Guidelines and the following;

- 1) Manuals to be provided as per “Manuals” Section 2.26; and
- 2) A Programmable Logic Controller (PLC) control system connected to the Peace River Regional District SCADA system.

2.25 Pressure Reducing Valve (PRV) Stations

2.25.1 The predesign and detailed design of a PRV station must incorporate all requirements specified by MMCD Design Guidelines and the following:

- 1) Stations shall be above ground unless otherwise approved by the Chief Administrative Officer;
- 2) Manuals to be provided as per “Manuals” Section 2.26; and
- 3) A Programmable Logic Controller (PLC) control system connected to the Regional District SCADA system.

2.26 Manuals

2.26.1 The Owner must supply three (3) copies of operating and maintenance manuals to the Regional District in the following format:

- 1) Bind contents in a three-ring, hard covered, plastic jacketed binder with the facility name embossed onto the binder cover and spine;
- 2) Each section shall be separated from the preceding section with a plasticized cardboard divider with a tab denoting contents of the section; and
- 3) Digital copies of all reports are also required.

2.26.2 Contents of the manuals are to include:

- 1) Title sheet, labeled “Operation and Maintenance Instructions”, and containing project name and date;
- 2) Table of contents;
- 3) Reviewed shop drawings of all equipment;
- 4) Equipment list showing all model and serial numbers;
- 5) All equipment manufacturers’ manuals;
- 6) Record drawings of all mechanical, electrical, control and alarm installations, including in digital PDF and AutoCAD (latest version) formats;

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- 7) Full description of system operation including: design points, designed pump and system curves, ultimate capacity, area served and any design criteria relevant to the operation of the system;
 - 8) Full description of entire mechanical, electrical and alarm system operation;
 - 9) Names, addresses, email addresses and telephone numbers of all major sub-contractors and suppliers;
 - 10) Commissioning report showing pressures and flows for all possible operating conditions; and
 - 11) All SCADA programming shall be provided to the Regional District in digital format.

2.27 Facility Access

- 2.27.1 All-weather vehicular access must be provided to all reservoirs, PRV's and pump stations. The minimum standard must be as required for an emergency access road with curbing and drainage provisions as may be required. The maximum facility access grade shall not exceed 12%.

2.28 Cross Connection Control

- 2.28.1 Cross Connection Control for all developments shall conform to the requirements of Northern Health and their most recent version of *"Public Health Engineering Guidelines"*.

SECTION 3 SANITARY SEWERS

The purpose of this section is to supplement and clarify existing design guidelines as described in MMCD Design Guidelines. The Owner's Engineer must comply with all requirements included in reference documents and described herein.

3.1 General

- 3.1.1 The sanitary sewer system is to be designed using a calibrated sanitary sewer model acceptable to the Chief Administrative Officer, unless the Chief Administrative Officer determines the system does not warrant that approach.
- 3.1.2 The downstream capacity of the sanitary sewer system must be confirmed. This may require modelling of the existing system. The Developer is responsible for all costs to confirm, design, and construct sufficient downstream capacity for the subject property without eliminating or restricting capacity for other properties.

The sanitary sewer system on any parcel shall be constructed and connected to the Community Sewer System in accordance with the requirements of this bylaw and the Regional District's

requirements outlined in Schedule B for specific sewer service areas.

3.2 Per Capital Flow

3.2.1 Per capita flows shall be as specified in MMCD Design Guidelines except for the following:

1) Residential Average Dry Weather Flow Rate = 350 L/d/c.

3.3 Non-Residential Flows

3.3.1 Non-residential flow shall be as specified in MMCD Design Guidelines.

3.4 Peaking Factor

3.4.1 The peaking factor shall be established based on MMCD Design Guidelines methodology.

3.5 Infiltration

3.5.1 Infiltration allowance shall be established based on MMCD Design Guidelines methodology.

3.6 Design Flow

3.6.1 The sanitary sewer system must be designed based on MMCD Design Guidelines methodology.

3.7 Pipe Flow Formulas

3.7.1 Design for gravity sewers and forcemains shall be calculated using MMCD Design Guidelines methodology.

3.8 Flow Velocities

3.8.1 The minimum velocity shall be as indicated by MMCD Design Guidelines.

3.9 Alignment

3.9.1 Alignment of sewers shall follow MMCD Design Guidelines methodology.

3.10 Minimum Pipe Diameter

3.10.1 The minimum permitted size of pipe shall be as indicated by MMCD Design Guidelines.

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3.11 Minimum Grade

3.11.1 The minimum grade of any sewer is governed by MMCD Design Guidelines requirements except:

- 1) The upstream or terminal section of a residential sewer servicing a design population of 25 or less shall have a minimum grade of 1.0%.

3.12 Curved Sewers

3.12.1 Curved sewers shall only be considered in exceptional situations, upon review and approval of the Chief Administrative Officer, to the maximum indicated in MMCD Design Guidelines, provided a functioning tracer wire is installed over the curved section between manholes.

3.13 Depth

3.13.1 The depth of sewers shall follow all MMCD Design Guidelines requirements except that:

- 1) Minimum cover without concrete encasement is 2.4m unless otherwise specified in a signed and sealed Geotechnical Report.

3.14 Manholes

3.14.1 Locations

- 1) Manholes are required as indicated by MMCD Design Guidelines.
- 2) Manholes are required for all service connections that are 150mm diameter or greater.
- 3) Sanitary manhole rim elevations in off-road areas must be designed to be a minimum of 150mm above the surrounding finished grade.
- 4) Manholes located outside road right-of-ways must be identified with a steel marker post painted red with offset dimension noted on the post.

3.14.2 Hydraulic Details

- 1) Hydraulic flow at manholes shall follow MMCD Design Guidelines requirements.

3.15 Odour Control

3.15.1 Odour controls shall follow MMCD Design Guidelines methodology.

3.16 Service Connections

- 3.16.1 Service connections shall meet all MMCD Design Guidelines requirements and shall include an inspection chamber with a concrete box and cast iron lid at the surface rated for vehicle loading.
- 3.16.2 Pump connections, if permitted, shall terminate at property line into a gravity sanitary sewer line service or to a manhole.
- 3.16.3 Minimum grade from property line to sanitary sewer main shall be as indicated in MMCD Design Guidelines except:
 - 1) 100 mm diameter pipe slope to be at a minimum of 2.0% grade.

3.17 Locations and Corridors

- 3.17.1 The location of sanitary sewers shall follow the requirements specified in MMCD Design Guidelines.
- 3.17.2 Rights-of-Way or Easements shall be surfaced and graded accordingly to allow access for Regional District maintenance vehicles to repair or replace the utility, and shall be registered on title.
- 3.17.3 Sewer main extensions shall extend past the furthest property line of the last serviced lot with sufficient distance to eliminate future impact on developed lots and/or temporary cul-de-sacs.

3.18 Pump Stations

- 3.18.1 The pre-design and detailed design of a pump station must incorporate all requirements specified by MMCD Design Guidelines and the following:
 - 1) A Programmable Logic Controller (PLC) control system connected to the Peace River Regional District SCADA system;
 - 2) Manuals to be supplied as per Section 2.26 in the water design criteria;
 - 3) Minimum storage between the high level alarm and the start of overflow to be established under the more critical of:
 - a) Minimum 1 hour in wet well at average wet weather flow; OR
 - b) Minimum 1 hour in wet well and influent pipes at peak wet weather flow.
 - 4) Station to allow for removal of pumps using hoist truck with 1.8 m boom.

3.19 Low Pressure Sewers

- 3.19.1 Low pressure sewers may be permitted by the Regional District under special circumstances.
- 3.19.2 Where permitted low pressure sewers must be designed in accordance with MMCD Design Guidelines requirements and the requirements in Schedule B.
- 3.19.3 The minimum cover for low pressure sewers is 2.75m.

3.20 Forcemain Design

- 3.20.1 Design of force mains shall follow the methodology stated in other sections as well as the following additional considerations:
 - 1) An automatic air relief valve must be placed at high points in the force main to prevent air locking;
 - 2) Force mains should enter the gravity sewer system at a point not more than 600 mm above the flow line of the receiving manhole, otherwise outside drop piping must be incorporated;
 - 3) With the exception of valves, the material selected for force mains must meet the standards specified for water mains and must be adapted to local conditions such as character of industrial wastes, soil characteristics, exceptionally heavy loadings, abrasion and similar issues/problems;
 - 4) Valves used on force mains shall be plug valves sufficient for long term use in a corrosive environment;
 - 5) All force mains must be designed to prevent damage from superimposed loads, or from water hammer or column separation phenomena; and
 - 6) For non-metallic force mains, a tracing wire shall be installed for the purpose of locating the force main.
- 3.20.2 The minimum cover for forcemains is 2.75m unless specified otherwise in a signed and sealed Geotechnical Report.

SECTION 4 STORMWATER MANAGEMENT

The purpose of this section is to supplement and clarify existing design guidelines as described in MMCD Design Guidelines. The Applicant must comply with all requirements included in reference documents and described herein.

4.1 General

- 4.1.1 The presence of an existing Regional District drainage facility or natural channel does not imply that such is a suitable or adequate point of discharge. The Owner's Engineer shall confirm that downstream capacity is adequate.
- 4.1.2 Where existing downstream facilities are inadequate to handle the increased flow from the proposed development, an alternate design is required. At no time, however, will direct discharge be permitted without adequately addressing stormwater quality and quantity.
- 4.1.3 The Applicant must be able to demonstrate that all existing or downstream drainage facilities are capable of handling the drainage from the development.
- 4.1.4 The storm drainage system shall be designed with sufficient capacity to collect and convey anticipated storm runoff from the total catchment area to be served when fully developed.
- 4.1.5 Suitable on-site or off-site stormwater detention or storage facilities may be required depending upon the impact of runoff on downstream areas. They shall be designed in accordance with this Bylaw and the most recent Federal and Provincial regulations.
- 4.1.6 Critical and long-term infrastructure shall be designed to carry a 20% increase in rainfall intensities for respective return period storms.
- 4.1.7 It is the Owner's Engineer's responsibility to ensure that they obtain true and accurate elevations for the Development of the site.

4.2 Stormwater Control Plan

- 4.2.1 All Developments require a Stormwater Control Plan as outlined in MMCD Design Guidelines, in addition to considering the following:
 - 1) Detention storage volumes;
 - 2) Groundwater infiltration;

-
- 3) Proposed lot grading; and
 - 4) Meet the requirements of the Regional District's OCP Watercourse Protection Development Permit Area and other applicable policies.

4.3 Minor and Major Systems

4.3.1 Each drainage system shall follow MMCD Design Guidelines methodology except:

- 1) For the Minor system the two (2) year frequency curve shall be used for low density and residential areas, and five (5) year frequency curve for other areas; and
- 2) The Major system shall be capable of conveying the post development runoff from the 100-year return storm over and above the capacity of the Minor system. Components of the Minor system may be enlarged to accommodate the major flow, but only in cases where an overland flow route or storage system is physically impossible, and only with the approval of the Chief Administrative Officer.

4.4 Runoff Analysis

4.4.1 Runoff analysis shall follow MMCD Design Guidelines methodology.

4.5 Site and Lot Grading

4.5.1 Site and lot grading shall follow MMCD Design Guidelines methodology and requirements.

4.6 Minimum Building Elevations (MBE)

4.6.1 MBE requirements shall follow MMCD Design Guidelines methodology.

4.7 Rational Method

4.7.1 Calculation of peak flow using the Rational Method shall follow MMCD Design Guidelines methodology.

4.7.2 The rainfall intensity for the Rational Method shall be determined using the rainfall IDF curve, included in the Standard Drawings as **DWG NO#.....**, and the associated equation available from the Municipal Engineer.

4.8 Hydrograph Method

4.8.1 Calculation of peak flow using the Hydrograph Method shall follow MMCD Design Guidelines methodology.

4.9 Minor System Design

4.9.1 The Minor system design shall follow MMCD Design Guidelines methodology with the following exceptions:

- 1) Level of Service
 - a) The 1:10 year storm shall be used to design the minor drainage system without surcharging,
- 2) The post development discharge must not exceed the pre-development conditions.

4.9.2 Minimum Pipe Diameter

- 1) Minimum pipe diameter shall be as noted in Table 4.9

Table 4.9– Minimum Pipe Diameter	
Description	Minimum Pipe Diameter (mm)
Storm Drainage Main	300
Catch Basin Leads/Double Catch Basin Leads	200/250

4.9.3 Curved Sewers

- 1) Curved storm sewers shall only be considered in exceptional situations to the maximum indicated in MMCD Design Guidelines provided a functioning tracer wire is installed over the curved section between manholes.

4.10 Major System Design

4.10.1 The Major system design shall follow MMCD Design Guidelines methodology.

4.11 Runoff Controls

4.11.1 All developments which are within the study boundary of a Regional District approved stormwater or Drainage Master Plan must conform to the objectives and recommendations of the approved plan.

4.11.2 If necessary, stormwater runoff is to be directed to a regional detention system (whether existing or proposed) in an effort to maximize the tributary area of the regional detention systems. Where an engineering investigation concludes that connection to a regional system is not practical in the long term, independent drainage systems with direct drainage discharge to open watercourses may be permitted and shall meet the requirements of Wet Detention Ponds.

4.11.3 Stormwater Source Controls are encouraged for use when appropriate and shall require a custom design and a specification document to be submitted for the approval of the Regional District.

4.11.4 Runoff controls are required to meet the objectives indicated in the relevant of MMCD Design Guidelines.

4.11.5 Location of the maintenance options for control facilities as well as types of storage for the purpose of controlling discharge rates are to be as defined in MMCD Design Guidelines.

4.11.6 The use of French Drains shall only be permitted where the topography and soil conditions are proven adequate, as determined by a qualified professional engineer. A soils report will be required to support the design.

4.11.7 Infiltration-based runoff controls shall not be used in the following conditions:

- 1) Areas where the post-development wet season groundwater table is less than 600 mm below the base of infiltration trenches; and
- 2) Areas where existing dwellings do not have foundation drains.

4.11.8 Wet Detention Ponds

- 1) Wet Detention Ponds shall meet MMCD Design Guidelines requirements and the following design guidelines:
 - a) A geotechnical report is required to assess any slope stability risks and impacts to downstream lands related to groundwater recharge;
 - b) Wet detention ponds, complete with a permanent low level pool, are the preferred method of stormwater detention, however, for small development parcels, where engineering studies have determined that wet detention ponds are not feasible or prone to algae growth, dry detention ponds, pipe-based, stormwater detention systems may be considered, but only if approved by the Regional District;
 - c) In general, wet detention pond designs should maximize habitat and structural complexity in order to fully utilize the benefits offered by the wet detention ponds, with adequate controls for beaver activity or other undesirable habitats resulting from simple wet detention pond designs. Aesthetics and multiple-use aspects should be emphasized throughout the design;
 - d) All vegetation within the low level pool, pond and surrounding buffer shall conform to the Regional District's detention pond landscaping criteria;
 - e) The surface area of the permanent low level pool should represent at least 1.0% of the total developed area;

-
- f) The wet detention pond and outlet structure shall be designed such that the post-development discharge rate of the pond outflow does not exceed runoff levels generated by a pre-development 2-year storm event. If development is located within the boundary of a Regional District approved stormwater or drainage plan, refer to the appropriate plan for approved discharge rates;
 - g) The primary spillway shall be designed to accommodate the post-development run-off generated by a 10-year storm event and an emergency spillway shall be designed to accommodate the post-development run-off generated by a 100-year storm event. The discharge path from the wet detention pond to the receiving environment shall be adequately protected from erosion;
 - h) The flow control structure shall be located within a lockable manhole positioned within the embankment for the purposes of maintenance, access, safety and aesthetics. The design of the outfall structure shall be determined based on the exit velocity of stormwater runoff from the wet detention pond;
 - i) Where identified by the Regional District's OCP or as required by the Regional District through the development approval process, pedestrian trails shall meet Regional District Standards and include a 6.0m wide Right-of-Way around the perimeter of the pond, with an all-weather surface; and
 - j) Safety is to be maintained by managing the contours of the wet detention pond to eliminate drop-offs and other hazards and by discouraging access to the permanent low level pool with appropriate vegetation on the safety bench in accordance with the detention pond landscaping criteria. The safety bench, located at the toe of the side-slopes leading to the permanent low level pool, is to be 2.0 m wide with a maximum slope of 3.0% and is required around the entire perimeter of the wet detention pond. Where safety benches cannot be accommodated, fencing may be considered, subject to the approval of the Regional District.

4.12 Erosion and Sediment Control (ESC)

4.12.1 An Erosion and Sediment Control Plan is required for all developments and shall follow MMCD Design Guidelines in addition to the following:

- 1) The owner's Engineer will be required to demonstrate how work will be undertaken and completed so as to prevent the release of silt, raw concrete and concrete leachate, and other deleterious substances into any ditch, storm drain, watercourse or ravine. Construction and excavation wastes, overburden soil or other deleterious substances must be disposed of or placed in such a

manner as to prevent their entry into any water course, ravine, storm drain system, or restrictive covenant area;

- 2) All sediment control devices must be situated to provide ready access for cleaning and maintenance; and
- 3) Proposed sediment control structures must be maintained throughout the course of construction and to the end of the maintenance period (final acceptance). Changes in the design of the structure will be required if the proposed structure is found to be inadequate.

4.13 Drainage Pump Stations

4.13.1 Drainage Pump Stations shall be designed as per requirements stipulated under Sanitary Pump Station Design, Section 3.18.

4.14 Hydrogeological Investigation

4.14.1 A hydrogeological investigation shall follow MMCD Design Guidelines methodology and is required for all hillside developments or when groundwater infiltration is proposed.

4.15 Natural Watercourses

4.15.1 All proposals for works affecting natural watercourses must be forwarded to and approved by the appropriate regulatory agencies as required by applicable legislation and regulations.

SCHEDULE D

SUBDIVISION AND DEVELOPMENT SERVICING BYLAW NO.

SERVICING AGREEMENT

GENERAL

The appended Servicing Agreement template is typical of the agreement that will be executed between the Regional District and the Developer for the work. The template will be amended from time to time as conditions warrant and will have specific amendments for each individual agreement prepared.

DRAFT

THIS AGREEMENT made this day of, 20xx

BETWEEN: Peace River Regional District, a Regional District incorporated under the Local Government Act of British Columbia, and having its offices at PO Box 810, 1981 Alaska Avenue, Dawson Creek BC V1G 4H8.

(hereinafter called the “Regional District”)

AND:

(hereinafter called the “Developer”)

WHEREAS:

- A. The Developer is the registered Owner of lands within the Peace River Regional District in the Province of British Columbia, more particularly known and described as follows:
PID:
(hereinafter called the “Lands”)
- B. The Developer desires to subdivide the Lands or develop the Land;
- C. The Developer has requested approval of the building permit or development prior to the construction and installation of the Works and Services in their entirety and is agreeable to entering into this Agreement pursuant to the Local Government Act and the Developer will deposit the Security Deposit specified by this Agreement; and
- D. the Developer has voluntarily agreed to construct and install the Works and Services which are necessary to serve the proposed Development.

NOW THEREFORE THIS AGREEMENT WITNESSES that in consideration of the promises, covenants and agreements hereinafter set forth, the parties hereto covenant, agree, represent and promise as follows:

APPENDICES:

1. The following Appendices are attached to and form part of this Agreement:
 - a) Appendix "A" – A list of the Works and Services and the Developer's Professional Engineer's estimate of their respective construction costs;
 - b) Appendix "B" – Construction drawings to be used for the construction of the Works and Services;
 - c) Appendix "C" - A copy of the subdivision plan of the Lands or of the Building Permit application;
 - d) Appendix "D" – List of Section 219 Covenants.

DEVELOPER TO DO WORK:

2. The Developer acknowledges, covenants and agrees with the Regional District:
 - a) to construct, install and provide all the Works and Services listed and shown on Appendices A and B hereto, as approved by the Regional District, in accordance with the standards contained in the Regional District's Subdivision and Development Servicing Bylaw No. [REDACTED] (hereinafter called the "Bylaw").
 - b) that the Developer shall from time to time and at all times so long as it exercises any rights of ownership in the Lands upon the request of the Regional District, and to the satisfaction of the Regional District make, do and execute or cause or procure to be made, done and executed, all such further acts, deeds, rights-of-ways, covenants, easements and assurances in favour of the Regional District as are required for the more effectual carrying out of this Agreement.
 - c) that Appendices A and B identify and illustrate both 'On-Site Works and Services' and/or 'Off-Site Works and Services'.
 - d) that the Developer relies exclusively on its own Professional Engineer, who shall be registered with the Engineers and Geoscientists of British Columbia (the "Professional Engineer"), contractors and staff, and that the Regional District does not, by its approvals, inspections or acceptance of the Works and Services warrant or represent that the Works and Services are without fault or defect, and that all approvals and inspection of the Works and Services given or made by the Regional District are for the sole benefit of the

Regional District and shall in no way relieve or excuse the Developer from constructing and installing the Works and Services in strict compliance with the provisions of this Agreement and the Subdivision Development Servicing Bylaw No. ____.

TRANSFER OF INTEREST IN WORKS AND SERVICES:

3. The Developer covenants and agrees with the Regional District to assign, transfer and convey to the Regional District all of its rights, title and interest in the Works and Services on any and all of the Lands, upon or in which the Works and Services are situated, upon the completion of the Works and Services, (as witnessed by the issuance of a Certificate of Substantial Completion).

PERMISSION TO DO WORK:

4. The Regional District covenants and agrees to permit the Developer to construct the Works and Services, on the terms and conditions herein, and in the manner required by and at the places specified in the Plans and Specifications in Appendix B; provided that nothing in this Agreement shall be construed as to make available the use of or access to the Works and Services for any purpose, and without limiting the foregoing, for the purpose of serving the Lands or any other real property whatsoever either Owned or controlled by the Developer or its associates or otherwise, but rather the Regional District reserves the right in its sole and absolute discretion to make available, operate, alter, use, extend, diminish, discontinue, tear up, sell, rent or otherwise dispose of the Works and Services as its Board from time to time deems fit.

CHANGES TO THE LAW:

5. The Developer covenants and agrees to comply with any changes in subdivision requirements or standards enacted by Bylaw prior to the actual commencement upon the lands of the Works and Services Contemplated by this Agreement.

START OF WORK:

6. The Developer covenants and agrees not to commence work until the Regional District provides the Developer with written permission to proceed with construction in the form provided in Schedule E of this Bylaw.

COMPLETION TO DO WORK:

7. The Developer shall complete the construction of the Works and Services, specified in Appendices "A" and "B" to the satisfaction of the Regional District, within **one (1) year** from the date of this Agreement.

DEVELOPER TO GRANT RIGHTS OF WAY:

8. The Developer shall grant to the Regional District all necessary road dedications, statutory rights-of-way and easements over the said Lands (in conformity with the Regional District's standard form documents) to accommodate the said Works and Services and, where the said Works and Services are located upon or under privately owned lands other than the Lands, to obtain at the Developer's expense, all necessary road dedications, statutory rights-of-way and easements over such lands, in favour of the Regional District where applicable, to accommodate the Works and Services, and to register the dedications, right of ways and easements in the Land Title Office.

DESIGN:

9. a) The Developer covenants and agrees that all Works and Services required herein shall be designed by a Professional Engineer, retained by the Developer. Plans and Specifications for the Works and Services shall be prepared by or under the direct supervision of the Professional Engineer and all plans shall bear his professional seal and signature.
- b) The Developer covenants and agrees to ensure that the Developer's Professional Engineer maintains professional liability and errors and omissions insurance to a minimum value of two million dollars (\$2,000,000) per occurrence, which insurance shall provide coverage in respect of any claims arising out of the Professional Engineer's services in connection with this Agreement regardless of when the claim is made. The professional liability insurance shall be provided for a duration of two years beyond the date of substantial completion of the Works and Services. Written proof of coverage will be provided to the Regional District upon request of the Chief Administrative Officer.

INSPECTION:

10. a) The Developer covenants and agrees to retain the Professional Engineer during the construction period for the purpose of on-site inspection to ensure compliance with the approved design and to provide certification of the construction documentation and Record Drawings of the Works and Services.
- b) Further, the Developer's Professional Engineer and/or their appointed site inspector(s) shall visit the Place of the Work at intervals appropriate to the progress of construction to remain familiar with the progress and quality of the Works and Services and to determine if the Works and Services are proceeding in general conformance with the plans and specifications. The level of on-site inspection to be provided by the Developer's Professional Engineer shall be a minimum of 60% of the time the Developer's Contractors

are carrying out on-site or off-site Works and Services.

- c) The Regional District, the Developer's Professional Engineer, their authorized representatives and /or their appointed site inspector(s), shall, at all reasonable times during the performance of the Works and Services, have access to the Works and Services, including any parts of the Works and Services that are in progress at locations other than where the Works and Services are being installed.
- d) The Chief Administrative Officer and the Developer's Professional Engineer and their representatives have the authority to reject Works and Services that, in their opinion, do not conform to the requirements of the Contract Documents (drawings and specifications).

ENGINEERING DRAWINGS:

11. The Developer covenants and agrees that the intent of this Agreement is that the Developer shall construct fully completed Works and Services, and grant all necessary dedications, rights of way and easements as shown in the following plans and specifications prepared by the Developer's Professional Engineer:

Under Drawing Numbers:

<u>Drawing Number</u>	<u>Drawing Name</u>	<u>Revision #</u>
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And as received for the purposes of this Agreement by the District on the xx day of, 20xx:

DESIGN CHANGES:

12. a) The Approving Officer, or Chief Administrative Officer may alter the plans because of conditions on site so that the Works and Services function and operate in a manner satisfactory to the Approving Officer or Chief Administrative Officer. Should the Works and Services, as provided herein, prove to be in any way defective or should they not operate to the satisfaction of the Approving Officer, or Chief Administrative Officer, then the Developer shall, at his own expense modify and reconstruct the Works and Services so that the works shall be fully operative and function to the satisfaction of the Approving Officer or Chief Administrative Officer.
- b) The Developer covenants and agrees that the Developer's Professional Engineer shall

obtain the prior written approval of the Chief Administrative Officer for any changes to the design and specifications of the Works and Services set out in the Construction Drawings.

- c) All changes to the design drawings shall be submitted to the Chief Administrative Officer for review and approval in advance of completing revised Works and Services in the field. Drawings shall be revised and denoted with revision numbers and 'clouded' areas surrounding specific changes or revisions.
- d) In carrying out the Works and Services, the Developer covenants and agrees not to damage any of the Regional District's works, services or property, or remove, alter, or destroy any survey pins, posts or monuments, and in default shall replace, repair and restore any damage of whatsoever nature to the satisfaction of the Chief Administrative Officer.

SUBSTANTIAL PERFORMANCE:

- 13. A Certificate of Substantial Performance shall be provided by the Chief Administrative Officer on the completion of the construction listing all of the deficiencies. This certificate of Substantial Performance shall not be construed as acceptance of the Works and Services. Substantial Performance is defined by the Master Municipal Construction Documents (MMCD).

CONSTRUCTION DOCUMENTATION AND RECORD DRAWING SUBMISSIONS:

- 14. The Developer covenants and agrees to submit to the Regional District final Record Drawings, service connection cards and construction documentation, test results and digital asset management information, as accepted by the Chief Administrative Officer and as identified in **Schedule A, Section 1.6** of the Bylaw, prior to issuing a Certificate of Substantial Performance.

MAINTENANCE PERIOD AND RESPONSIBILITY:

- 15. The Developer covenants and agrees to maintain every part of the Works and Services in good order and in complete repair for a period of one (1) year from the date shown on the Certificate of Substantial Performance (the "Maintenance Period").

Should the Developer fail to maintain the Works and Services, then the Chief Administrative Officer at their option, after giving the Developer seven (7) days written notice (emergencies excepted), may do so, and the whole costs, charges and expenses so incurred by the Regional District will be payable by the Developer, as provided for herein. The decision of the Chief Administrative Officer will be final with respect to the necessity for repairs, or the adequacy of any work done.

Once any Works and Services covered by this Agreement are connected to the Regional District's infrastructure, only Regional District crews or Contractors under the direct supervision of the Regional District may undertake work on such Regional District infrastructure. As such, Regional District crews or contractors retained by the Regional District may correct any defects, imperfections, settlements and/or re-chlorination and flushing which is deemed by the Regional District to be necessary during the one (1) year period from the date shown on the Certificate of Substantial Performance and the whole of such costs, charges and expenses so incurred by the Regional District in undertaking such work including but not limited to contractor costs will be payable by the Developer as provided for herein.

CERTIFICATES OF SUBSTANTIAL PERFORMANCE AND FINAL ACCEPTANCE:

16. a) The Chief Administrative Officer shall provide a Certificate of Substantial Performance to the Developer upon the Substantial Performance of the Works and Services. Substantial Performance shall only be approved when proper inspection of the Works and Services can be carried out, and when all work, as certified to the satisfaction of the Regional District by the Developer's Professional Engineer upon the submission of a Certificate of Inspection is capable of completion or correction at a cost of not more than:
 - i. 3% of the first \$500,000 of the Total Construction Cost;
 - ii. 2% of the next \$500,000 of the Total Construction Cost;
 - iii. 1% of the balance of the Total Construction Cost.
- b) The date of the Certificate of Substantial Performance is the date of commencement of the Maintenance Period under Section 14 of this Agreement.
- c) Within the Maintenance Period the Chief Administrative Officer may provide a Certificate of Total Performance to the Developer provided that all of the Works and Services and outstanding deficiencies identified in Sections 12 and 15.a (above) are completed to the satisfaction of the Regional District upon the submission of a Certificate of Inspection by the Developer's Professional Engineer.
- d) The Chief Administrative Officer shall issue a Certificate of Final Acceptance upon the expiry of the Maintenance Period provided that all outstanding deficiencies identified by the Chief Administrative Officer with respect to the Off-Site Works and Services and On-Site Works and Services have been remedied and Record Drawings, service record cards, construction documentation and test results have been provided.
- e) On issuance of the Certificate of Final Acceptance and upon the expiration of the Maintenance Period, the Developer may apply to the Regional District for discharge of this

covenant, at their cost, by submitting the appropriate Form. The Regional District will execute the discharge and return the Form to the Developer for deposit with the Registrar.

DEVELOPER INDEMNIFIES REGIONAL DISTRICT:

17. The Developer covenants and agrees to save harmless and effectually indemnify the Regional District, its elected officials, officers and employees, contractors, agents, successors and assigns from and against:

- a) All actions and proceedings, costs, damages, expenses, claims and demands whatsoever and by whomsoever brought by reason of the construction, installation, maintenance or repair of the Works and Services provided by the Developer;
- b) All expenses and costs which may be incurred by reason of the construction, installation, maintenance or repair of the Works and Services resulting in damage to any property owned in whole or in part by the Regional District for which the Regional District by duty or custom is obliged, directly or indirectly, in any way or to any degrees, to construct, install, maintain or repair;
- c) All expenses and costs which may be incurred by reason of liens for non- payment of labor or materials, Workers Compensation, Unemployment Insurance Federal or Provincial tax, check-off or encroachments owing to mistakes in survey;
- d) All expense and costs which may be incurred by the Regional District as a result of faulty workmanship and defective material in any of the Works and Services installed by the Developer.
- e) The above clauses shall not be construed as to extinguish any rights which the Regional District would have were it not for the inclusion of Clause 16 in this Agreement.

INSURANCE BY DEVELOPER:

18. The Developer will at its sole expense throughout the term of this Agreement until the Regional District has accepted the Works and Services under Clause 15(c) carry Comprehensive Liability Insurance acceptable to the Regional District in the amount of at least Five Million Dollars (5,000,000.00) with insurance companies licensed to carry on business in the Province of British Columbia in partial discharge of its obligation under Clause 16 (a), (b), (c) and (d).

INSURANCE COVERAGE:

19. The Developer covenants and agrees to provide the following insurance coverage, and to provide the Regional District with a copy of the insurance policy prior to the commencement of any construction of the Works and Services:

- a) To protect the Developer and the Regional District against all claims arising out of:
 - i. Death or injury to persons; and
 - ii. Damage to or loss of, any property of third persons, including without limiting the foregoing; the following classes of property; Real property, chattels, land, works, buildings, structures, wires, boilers, and pressure vessels, conduits, pipes, mains, shafts, sewers, tunnels, and apparatus in connection therewith, even when the damage or loss of use is caused by vibration , moving, shoring, underpinning, raising, rebuilding or demolition of any building, structure or support, or by excavation, tunneling or other work below the surface of the ground or water; and
 - iii. Damage to or loss of all buildings, structures, stores, equipment and materials included in or required to the carrying out of the Works and Services.
- b) Every policy of insurance required will:
 - i. Name “The Peace River Regional District” and it’s Contracted Employees as an additional insured; and
 - ii. State that the policy applies to each insured in the same manner and to the same extent as if a separate policy had been issued to each insured; and
 - iii. State that the policy cannot be cancelled, lapsed or materially changed without at least thirty (30) days written notice to the Regional District, delivered to the Chief Administrative Officer.

SECURITY DEPOSIT:

20. As security for the due completion of the construction and installation of the Works and Services and the performance of all the covenants and promises contained in this Agreement, the Developer shall concurrently with the execution of this Agreement deposit 120% of the estimated cost of the Works and Services, in the amount of \$ **xxx.xx** as determined by the cost estimate of the Professional Engineer and as attached as Appendix A, in the form of cash or an irrevocable and automatically renewing Letter of Credit acceptable to the Regional District (herein called the “Security Deposit”).

FORFEIT OF SECURITY:

21. In the event that the Developer fails to construct and install the Works and Services prescribed herein within the time specified in Clause 7, the Security Deposit will be forfeited to the Regional District.

Should the Regional District agree to an extension of the time required to complete the Works and Services, the Regional District reserves the right to have the value of the Works and Services re-estimated, and the Security Deposit adjusted.

The Developer shall be deemed to be in default of this Agreement if the Developer files a voluntary

petition of bankruptcy, or is adjudicated bankrupt or insolvent, or files any petition or answer seeking any reorganization, arrangement, liquidation, dissolution or similar under any enactment respecting bankruptcy, insolvency or other relief for debtors.

USE OF SECURITY DEPOSIT AND MAINTENANCE HOLDBACK:

22. If the Developer is in default of any of its obligations in respect to the construction and installation or maintenance of the Works and Services or any portion thereof, the Regional District may draw down on the Security Deposit or the Maintenance Holdback, as the case may be, to secure completion or maintenance of all or a portion of the Works and Services in compliance with the terms of this Agreement and any payment obligations of the Developer in respect of the Works and Services that remain unpaid including the discharge of any builders' liens, and such monies shall be applied to remedy the default and complete all or any portion of the Works and Services and to satisfy the Developers warranties in respect of same in place and stead of the Developer and ensure compliance with the terms of this Agreement. In addition, the Regional District may cash, retain and use the Security Deposit to remedy any emergency condition which, in the sole opinion of the Chief Administrative Officer, is associated with, arises from or is a result of the Works and Services and requires expedient action. Despite the foregoing, the Regional District may cash, retain or use the Security Deposit or the Maintenance Holdback, as the case may be, to pay, settle or compromise any claim against the Regional District for which the Developer indemnified the Regional District pursuant to Clause 16. If the proceeds from the Security Deposit or the Maintenance Holdback, as the case may be, are not sufficient to pay all costs and expenses incurred by the Regional District in completing or maintaining all or a portion of the Works and Services including the Regional District's normal overhead charges and satisfying the warranties thereof, correcting other default by the Developer, or satisfying any amounts owing to the Regional District pursuant to Clause 16, the Developer shall forthwith pay to the Regional District the difference upon receipt from the Regional District of invoices for the same together with all interest thereon at the commercial prime rate of interest plus two percent from the date of receipt by the Developer of the invoices for the same and continuing until payment in full. The amount required to be paid by the Developer is a debt owing to the Regional District and may be collected in the same manner as property taxes in arrears.

RELEASE OF SECURITY DEPOSIT, MAINTENANCE HOLDBACK:

23. If the Chief Administrative Officer is of the opinion that the Works and Services or any portion thereof have been adequately completed and the Developer's covenants performed in compliance with this Agreement, and if there is no litigation pending by any third party against the Regional District as a result of, or arising from, the construction and installation of the Works and Services, the Chief Administrative Officer shall be authorized to return all, or any portion of the Security Deposit to the Developer at such times and in such amounts as he may

deem proper but in no case shall be more frequently than once per month, provided that he will retain an amount equal to 10% of any released funds for a total of 10% of the total Security Deposit at the completion of the construction and installation of the Works and Services to secure the performance of the maintenance required by the Developer for the Maintenance Period (hereinafter called the "Maintenance Holdback").

RELEASE OF MAINTENANCE HOLDBACK:

24. Upon expiration of the Maintenance Period outlined in Clause 14 and provided that the Chief Administrative Officer is satisfied that the Developer has complied with the covenants contained in this agreement and if there is no litigation pending by any third party against the Regional District as a result of, or arising from, the construction of the Works and Services, the Chief Administrative Officer will be authorized to return the Maintenance Holdback to the Developer and thereafter the Developer's responsibility for the Works and Services shall cease.

INSPECTION AND ADMINISTRATION FEE:

25. The Developer covenants and agrees to pay to the Regional District an Inspection and Administration non-refundable fee in the amount of \$ **xxx.xx** to cover Regional District administration, inspection and processing costs. This fee is payable prior to the execution of this Agreement by the Regional District and shall be calculated using a summation of the following, relative to the Security Deposit amount and in no case shall be less than **\$2,500.00**:

\$	% fee
1 to 100,000	5.50%
100,001 to 250,000	5.00%
250,001 to 500,000	4.50%
500,001 to 1,000,000	4.00%
Over 1,000,000	3.75%

NO OTHER REPRESENTATIONS:

26. It is understood and agreed that the Regional District has made no representations, covenants, warranties, guarantees, promises or agreements (verbal or otherwise) with the Developer other than those in this agreement.

NO WAIVER:

27. The Developer covenants and agrees that nothing contained or implied herein shall prejudice

or affect the rights and powers of the Regional District in the exercise of its functions under any public and private statutes, bylaws, orders and regulations, all of which may be fully and effectively exercised in relation to the said Lands as if the Agreement had not been executed and delivered by the Developer.

SOLE COST:

28. Every obligation of the Developer under this Agreement shall be performed by the Developer at its sole cost.

TIME OF ESSENCE:

29. Time shall be of the essence of this Agreement.

SEVERABILITY:

30. If any section or portion of this Agreement is declared or held invalid for any reason, such invalidation shall not affect the validity of the remainder of that section or of this Agreement and this Agreement shall continue to be in force and effect and be construed as if it had been executed without the invalid portion.

SUCCESSION:

31. This Agreement shall ensure to the benefit of and be binding upon the parties hereto, their successors and assigns.

FORCE MAJEURE:

32. All obligations of the parties shall be suspended so long as the performance of such obligations is prevented or hindered in whole or in part, by reason of labour dispute, fire, act of God, unusual delay by common carriers, earthquake, act of the elements, riot or civil commotion.

REGIONAL DISTRICT'S OPINION:

33. Any opinion which the Regional District is entitled by virtue of this Agreement to form may be formed on behalf of the Chief Administrative Officer, in which event the opinion of the Chief Administrative Officer shall be deemed to be the opinion of the Regional District for the purposes of this Agreement.

REFERENCE TO THE LANDS:

34. Any reference to the Lands shall be deemed to be a reference to each and every parcel comprising the Lands and any reference to the Developer shall be deemed to be a reference to the Developer or Developers of each of the parcels comprising the Lands, all unless the context or the parties otherwise require.

NOTICE:

35. Any notice or other communication required or contemplated to be given or made by any provision of this Agreement shall be given or made in writing and mailed by prepaid registered mail in any Canada Post Office in the Province of British Columbia (and if so shall be deemed to be delivered on the fourth business day following such mailing, except that in the event of interruption of mail service notice shall be deemed delivered only when actually received by the party to whom it is addressed), so long as the notice is addressed as follows:

To the Developer at:

To the District at:

Peace River Regional District
PO Box 810, 1981 Alaska Avenue
Dawson Creek BC V1G 4H8
Attn: Chief Administrative Officer

or to such other address of which a party hereto from time to time notifies in writing the other party hereto.

As evidence of their agreement to be bound by the above terms, the parties each have executed and delivered this Agreement under seal by executing **Part 1 of the Land Title Act Form C** to which this Agreement is attached and which forms part of this Agreement.

WHENEVER the words “will” and “shall” are used in this Agreement it will be construed as imperative (mandatory).

WHENEVER the singular or the masculine is used in the Agreement it will be construed as meaning the plural or feminine or body corporate or politic where the context or the parties hereto so require.

THIS CONTRACT shall ensure to the benefit of and be binding upon the parties hereto, their respective successors and assigns.

IN WITNESS WHEREOF the parties hereto have executed this contract the day and year first above written.

Please refer to Form C for signatories.

Signatory page if the servicing agreement with FORM C, D, E, is NOT being registered on title:

SIGNED, SEALED AND DELIVERED

DATE (MMM/DD/YYYY)

DEVELOPER / PROPERTY OWNER

LAWYER OR NOTARY

SIGNED, SEALED AND DELIVERED

The Corporate Seal of the Peace River Regional District was hereunto affixed In the presence of:

CHIEF ADMINISTRATIVE OFFICER

DATE (MMM/DD/YYYY)

Appendix “A” – Cost Estimate

DRAFT

Appendix “B” – Site Servicing Design Drawings

Drawing Number

Drawing Name

Revision #

DRAFT

Appendix “C” – Subdivision Plan

DRAFT

Appendix “D” – Section 219 Covenants to be registered on title

DRAFT



SCHEDULE E

SUBDIVISION AND DEVELOPMENT SERVICING BYLAW NO.  STANDARD

FORMS

Schedule E-1 Permission to Construct

Schedule E-2 Certificate of Inspection

Schedule E-3 Certificate of Substantial

Completion Schedule E-4 Certificate of Total

Performance Schedule E-5 Final Acceptance

Certificate

Schedule E-6 List of Inspections

PEACE RIVER REGIONAL DISTRICT

SCHEDULE E-1 – PERMISSION TO CONSTRUCT

File No. _____

Authorization to proceed with construction is hereby granted to:

Name of Applicant _____

Address _____

For the works described generally as:

Authorized Start Date _____ Completion Date _____

Authorized Hours of Work: From _____ hrs. to _____ hrs. Monday to Saturday

inclusive. Check the following: (all must be completed)

- _____ Approved plans covering the works are attached.
- _____ Certificates of insurance are attached.
- _____ Administration fee has been paid.
- _____ Security deposit has been paid.
- _____ A Servicing Agreement has been completed – No. _____

Consultant: _____

Contact: _____ Phone No. _____ bus.

Special Conditions:

Regional District Official's Approval

DRAFT

PEACE RIVER REGIONAL DISTRICT

SCHEDULE E-2 – CERTIFICATE OF INSPECTION

I hereby certify that all engineering and construction services, required under the Subdivision and Development Servicing Bylaw of the Peace River Regional District for the subdivision of:

Legal Description: _____

Project No. _____

which services were designed by:

Name of Firm: _____

Address: _____

and approved for construction on drawing numbers:

drawing number	date	drawing number	date
----------------	------	----------------	------

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Have been installed and inspected by or under the direction of:

I further certify that the "Record" drawings hereby submitted represent the works and services

Peace River Regional District
Subdivision and Development Servicing Bylaw No.
Schedule E-2
as installed for the aforementioned subdivision.



ENGINEER'S SEAL

Professional Engineer
(signature and name of the Professional Engineer
responsible for design)

DRAFT

PEACE RIVER REGIONAL DISTRICT

SCHEDULE E-3 – CERTIFICATE OF SUBSTANTIAL PERFORMANCE

Applicant: _____

Contractor: _____

Project No: _____

Servicing Agreement No: _____

Date: _____

This certificate is issued pursuant to Clause 12 and Clause 14 of Schedule D to the Subdivision and Development Servicing Bylaw.

The Maintenance Period for the Works will begin on _____

The Maintenance Period for the Works will end on _____

The attached is a List of Deficiencies related to the Works.

The Total Performance Certificate will be issued when all deficiencies have been cleared, the Maintenance Period expired, and the Regional District Official has been satisfied all conditions of the Servicing Agreement have been fulfilled.

This Certificate has been made to the best of the Regional District Official's knowledge, information and belief. It does not constitute acceptance of any Work not in accordance with the requirement of the Subdivision and Development Servicing Bylaw, and not listed as a deficiency herein, whether or not such defect(s) could have been observed or discovered during construction.

Regional District Official's Approval

cc: Contractor

DRAFT

PEACE RIVER REGIONAL DISTRICT

SCHEDULE E-4 – CERTIFICATE OF TOTAL PERFORMANCE

Date: _____

Owner: _____

Consulting Engineer: _____

Dear Sirs:

Re: _____

This is to certify that to the best of our knowledge all works and services in connection with the above noted project were completed as of _____ in accordance with the approved engineering and record drawings including inspections, testing, and acceptance as per Subdivision and Development Servicing Bylaw.

This does not exempt the Owner from any further requirements or agreement responsibilities which may come to the knowledge of the Regional District during the one year Maintenance Period.

Based on the above Total Performance date, the Maintenance Period shall extend to _____ and the Maintenance Holdback in the amount of \$ _____ will be confirmed for release on this date, in compliance with issuance of a Final Acceptance Certificate.

Professional Engineer

ENGINEER'S SEAL

Regional District Official's Approval

DRAFT

PEACE RIVER REGIONAL DISTRICT

SCHEDULE E-5 – FINAL ACCEPTANCE CERTIFICATE

Date: _____

Owner: _____

Professional Engineer: _____

Contractor: _____

Dear Sirs:

Re: _____

This is to certify that to the best of our knowledge all works and services in connection with the above noted project achieved Final Acceptance as of ____.

Based on the above date, it is recommended that the Regional District accept the works and services and release the Maintenance Holdback in the amount of \$ ____.

Professional Engineer

ENGINEER'S SEAL

DRAFT

PEACE RIVER REGIONAL DISTRICT

SCHEDULE E-6 – INSPECTION LIST SIGN-OFF

Inspection requirements to include:

- Regular and appropriate level of inspection;
- That Regional District staff be permitted to attend the site to independently view and inspect the quality and progression of the works;
- Take samples of all imported granular materials (pipe / zone / bedding, pit run gravels for replacement compacted back fill, sub-base and base course gravels) be sampled, tested and reported by the Engineer or Contractor (and paid for by the Applicant) for gradation limits in comparison to MMCD specifications and Regional District Operations and bylaw standards;
- All materials requiring compaction in the design or as specified in MMCD and Regional District standards shall be tested as arranged by the Engineer or the Contractor or a Geotechnical Engineer (and paid for by the Applicant) for compliance to compaction specifications found in the design requirements and/or MMDC specifications;
- Daily engineering inspection reports be compiled by the Professional Engineer and copies be made available to the Regional District on a weekly basis;
- All QA / QC material and compaction test results be collected and reviewed by the Professional Engineer for completeness and copies be made available to the Regional District on a weekly basis;
- The watermains are to be flushed, pressure tested and disinfected in accordance with AWWA and MMCD/Regional District standards and specifications before use – all written pressure test results and documentation of bacterial sampling/testing be provided to the Regional District;
- Conduct final inspections with the participation of Regional District Operations representative.

Project Number with Project Location: _____

Date of inspection: _____

Professional Engineer

ENGINEER'S SEAL

Regional District Official's Approval

DRAFT