



**To:** Mayor and Councillors  
**From:** Wayne Craig  
Director, Development

**Date:** May 10, 2017  
**File:** 08-4057-10/2017-Vol 01

Terry Crowe  
Manager, Policy Planning

**Re:** **Additional Information to the “Agriculturally Zoned Land: Summary of Public Consultation and Proposed Bylaws Limiting Residential Development in the Agriculture (AG1) Zone” Report**

### Purpose

This memorandum provides additional information on septic systems and maximum ALR house size regulations in Metro Vancouver municipalities in advance of City Council’s consideration of OCP Bylaw 9706 and Zoning Amendment Bylaws 9707, 9712, and 9717 at the May 15, 2017 Public Hearing. The purpose of the proposed Bylaws is summarized below:

OCP Amendment Bylaw 9706 – Provides general policies regarding site specific requests for:  
(1) larger homes; and  
(2) secondary dwellings for full-time farm labour on parcels greater than 8 ha.

Zoning Amendment Bylaw 9707 – Amends the Agriculture (AG1) Zone to establish a farm home plate proportionate to lot size, and to provide for enhanced farm access to the agricultural backlands area.

Zoning Amendment Bylaw 9712 – Amends the Agriculture (AG1) Zone to establish density provisions for houses to be consistent with urban areas, and to create a maximum limit for all residential buildings to be:  
(1) 500 m<sup>2</sup> for lots less than 0.2 ha;  
(2) 1000 m<sup>2</sup> for lots 0.2 ha and greater, and  
(3) to establish a maximum limit for detached accessory buildings to be 70 m<sup>2</sup>.

Zoning Amendment Bylaw 9717 – Introduces house size regulations in residential zones (RS1/F and RS1/G) in the ALR to be consistent with the proposed changes in the AG1 zone.

## Septic systems

As requested by Council, the following information on septic systems is provided. As the City generally does not allow sanitary sewer to extend into the ALR for residential uses, property owners are required to have their own sanitary system for residential uses. Key information to consider for onsite sewerage systems includes:

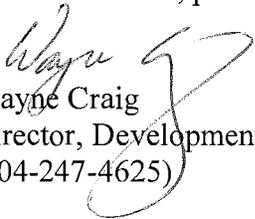
- 1) The installation and use of onsite sewerage systems is regulated under the BC Sewerage System Regulation. An Authorized Person (Registered Practitioner or Professional Engineer) designs, installs and maintains septic systems. Once installation is complete, a letter of verification is issued by the Authorized Person and the owner is provided with a maintenance plan. Vancouver Coastal Health (VCH) retains records of onsite sewerage systems from authorized persons. The City of Richmond requires a Record of Sewerage System from VCH as part of a building permit application.
- 2) Design considerations for onsite sewerage systems include the placement and size of these systems. Due to the high water table and soil drainage, sewerage systems in Richmond are predominantly designed as raised mound systems constructed above native grounds. The size of a septic system depends on the number of bedrooms and the total floor area of the house.
- 3) VCH staff have advised that cultivating crops on top of, or on the side slopes of a sewerage system mound is not an acceptable practice. Required setbacks for cultivating in the vicinity of a septic system mound would be the responsibility of the Authorized Person who designed the system.

Further information on onsite sewerage systems from Vancouver Coastal Health is provided in Attachment 1 and a brochure on onsite wastewater systems is provided in Attachment 2.

## Maximum ALR House Size Regulations in Metro Vancouver

An updated table of ALR house size regulations in Metro Vancouver provides a comparison of all Metro Vancouver jurisdictions that contain lands in the ALR (Attachment 3).

For clarification, please contact either of the undersigned.

  
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Director, Development  
(604-247-4625)

  
Terry Crowe  
Manager, Policy Planning  
(604-276-4139)

TC:acr

- Att 1: Onsite Sewerage System information from Vancouver Coastal Health
- Att 2: Onsite Wastewater Systems Brochure
- Att 3: Updated comparison table of ALR house size regulations in Metro Vancouver

cc. Joe Erceg, General Manager, Planning and Development  
Gavin Woo, Senior Manager, Building Approvals  
John Hopkins, Senior Planner  
Ada Chan Russell, Planner 1



## Health Protection Environmental Health

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Richmond, BC V6Y 3T6  
Tel: (604) 233-3147 Fax: (604) 233-3175

May 9, 2017

### Onsite Sewerage System Information

I have met with City of Richmond Staff for discussions regarding specifics related to onsite wastewater systems on Richmond properties within the Agricultural Land Reserve not serviced by sanitary sewer. I provide the following information in 6 key points back to City Staff as a follow-up to that meeting

- 1) Regulatory regime
- 2) Design installation and maintenance
- 3) Role of Health Authority
- 4) Role of City of Richmond
- 5) Richmond Sewerage System design considerations; and
- 6) Farmability on sewerage systems

#### 1) Regulatory regime

In British Columbia the installation and use of onsite wastewater systems is regulated under the British Columbia Sewerage System Regulation (SSR). The SSR references a provincial Standard Practices Manual (SPM) which specifies in detail the design, installation, and ongoing maintenance criteria for onsite wastewater systems.

#### 2) Design installation and maintenance

The design, installation and maintenance of onsite wastewater systems is the responsibility of Authorized Persons as defined in the SSR. Authorized Persons are either Registered Practitioners, or Professional Engineers competent in the area of hydrology. Any property owner who needs to construct a new onsite wastewater system, or alter or repair an existing one, must retain the services of an authorized person to design and oversee construction of the system. Final approval of the installed system is in the form of a letter of certification authored by the Authorized Person and filed with the Health Authority. Once installation is complete a property owner is provided with a maintenance plan which outlines the ongoing maintenance requirements of the system. The property owner is responsible for following the maintenance plan on an ongoing basis.

#### 3) Role of Health Authority

Before construction or repair of an onsite sewerage system, an authorized person must file with the local health authority (Vancouver Coastal Health), plans and specifications of the sewerage system, in the form of a Record of Sewerage System Filing. The Health Authority retains on file, all submitted records within their jurisdiction. As well, the Health Authority is responsible for the administration and enforcement of the SSR and the Public Health Act. This involves investigation and compliance action for the prevention or correction of health hazards caused by onsite wastewater systems.

#### 4) Role of City of Richmond

When a building permit application for any property not serviced by sanitary sewer is submitted to the City of Richmond's Building Approvals Department, a copy of the Record of Sewerage System filed with the Health Authority is also required. This record is provided to the City by the Health Authority as an administrative practice. The City will not approve a building permit if not in possession of a record of sewerage system pertaining to the property.

#### 5) Richmond Sewerage System Design Considerations

In Richmond, due to the seasonal high water table and general soil drainage characteristics onsite sewerage systems are predominantly designed as raised mound systems. The mounds are constructed above the native grounds surface utilizing specified granular fill to achieve the design grade elevation. The mounds may be side sloped to the native grounds surface, or the area surrounding the mound may be filled to achieve a uniform surface grade in keeping with the elevation of other improvements on the property. The drainage piping mechanics of the sewerage system are constructed within the raised mound. The sizing of the sewerage system components and mound for a residential structure are determined by the number of bedrooms and maximum floor area of the residence. The required mound area can be sizable for larger proposed homes, for example the required mound area for an 8 bedroom home could be 3600 square feet.

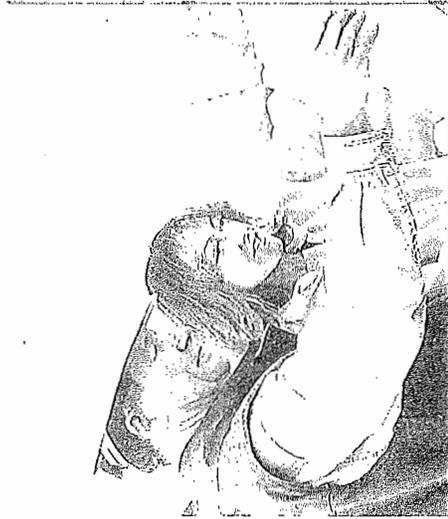
#### 6) Farmability on Sewerage Systems

Cultivating crops on top of, or on the side slopes of a sewerage system mound is not an acceptable practice. Depending on a systems design even cultivating crops within the vicinity of the toe (bottom) of the mound should be restricted. The provincial SPM states that during and after installation, it is a requirement protect the soils in the dispersal area and in the receiving area from damage to soil structure and consistence. There shall also be the provision of physical barriers that will protect the dispersal and receiving areas from vehicle traffic. As well the SPM states that vehicles or heavy animal traffic should not be permitted on the finished system. Heavy traffic can compact the soil. This limits oxygen transfer, increases the risk of frost damage, and risks direct physical damage to system components. As well there is the potential for uptake of contaminants contained in domestic sewage into the crops through their root systems. Required setbacks for cultivating in the vicinity of a sewerage system mound would be the responsibility of the authorized person who designed the system.

Dalton Cross  
Senior Environmental Health Officer  
Vancouver Coastal Health – Richmond

ENSURING A SUSTAINABLE FUTURE

## Onsite Wastewater Systems\* for Residences in BC



### Finding a Registered Practitioner or Professional

Registered Practitioners and Professionals are available to assist homeowners. With their knowledge of onsite systems and local conditions, they will be able to provide recommendations and cost estimates.

The Applied Science Technologists & Technicians of British Columbia (ASTTBC) provides a list of all Registered Practitioners who have the ROWP designation in one or more of the onsite wastewater categories.

Available online at... [owrp.asttbc.org/registrants.php](http://owrp.asttbc.org/registrants.php)

You may also use the Find a ROWP feature which enables an online search of the OWRP web site by Health Region and type of service you may require.

Available online at... [owrp.asttbc.org/marketing.php](http://owrp.asttbc.org/marketing.php)

A listing of Professional Engineers registered with the Association of Professional Engineers and Geoscientists of BC (APEGBC) as 'professionals' under the Regulation may be found on the APEGBC web site.

Available online at... [www.apegbc.ca/members/sewerageprolist.html](http://www.apegbc.ca/members/sewerageprolist.html)

Applied Science  
Technologists & Technicians  
of British Columbia



### Further information

Ministry of Health

BC OnSite Sewerage Association

[www.gov.bc.ca/health](http://www.gov.bc.ca/health)

[www.bcossa.com/documents.html](http://www.bcossa.com/documents.html)

### Important Information for...

- ▷ Homeowners
- ▷ Technologists & Technicians
- ▷ Building Designers
- ▷ Engineers
- ▷ Architects
- ▷ Builders & Developers
- ▷ Real Estate Agents
- ▷ Insurance & Mortgage Brokers
- ▷ Local Governments

\* formerly known as septic systems



**Why are onsite wastewater systems important to you?**

The majority of BC homes outside of Greater Vancouver use onsite systems to handle their sewage. These systems can be efficient, cost effective and can protect health and the environment. However, they must be properly planned, installed and, above all, properly maintained.

**Why do I need to know about onsite systems?**

If you are...

- ▶ the owner of a home with an onsite system... you are responsible for its maintenance.
- ▶ having problems with your system... you will need to have it repaired.
- ▶ renovating or adding on to your home... you may need to have the system upgraded.
- ▶ building a new house... you will need to have a new system planned and installed.
- ▶ buying a house or do not know the details of the existing system... you should have the system inspected.

**PH - 213**

This brochure will provide a starting point for you in each of these cases. To learn more about onsite wastewater systems, please visit... [owr.pasttbc.org/program.htm](http://owr.pasttbc.org/program.htm)

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of British Columbia



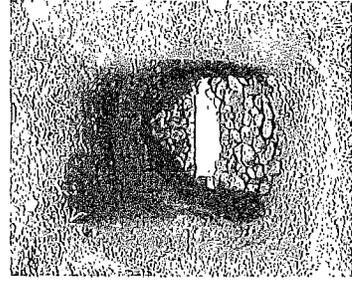
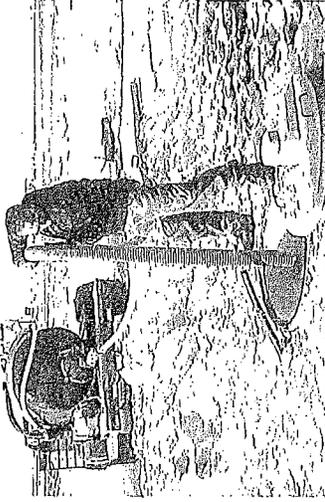
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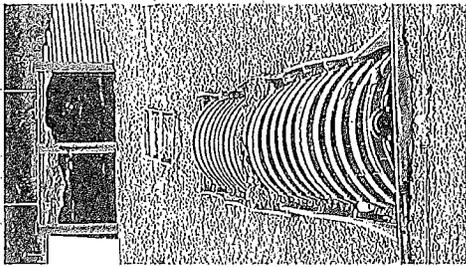
**Systems Inspection**

A Private Inspector or a Professional can accurately locate an existing system, check its condition, test its performance, compare its intended design against current and future usage, and make recommendations to improve a system.

A large portion of work Private Inspectors provide is for real estate transactions. Often these inspections are a condition of a sale by mortgage or insurance companies and by prospective buyers. An inspection can help homeowners become aware of issues with their system before selling their property and identify any necessary maintenance or repairs that may need to be completed before the property is listed for sale. This can simplify the disclosure to prospective buyers and alleviate concerns about what they are purchasing.

When homeowners are changing how their property or home is being used, municipal building departments may require that a Planner or a Professional provide a 'Letter of Assurance' that the intended use will not have a negative impact on the onsite system and that the system can handle the new use. A proposed bathroom addition, swimming pool, workshop or changes to the landscaping could all cause damage to a system, even potentially create a health hazard, if not checked out prior to such work. If a Private Inspector is not available in your area, it is recommended that a Planner or a Professional be used as an alternative.





### Maintenance of Onsite Systems

If well maintained, onsite systems will perform as intended and last for a long time. If not, they may malfunction, become expensive to correct and potentially create a risk to health. As with a car, proper maintenance leads to lower cost of ownership. A homeowner must engage a Maintenance Provider or a Professional to maintain sewerage systems constructed on and after May 31, 2005. Although systems constructed under the 'old' regulation are not subject to requiring Registered Practitioners or Professionals to perform maintenance, it is highly recommended.

### New Onsite Systems

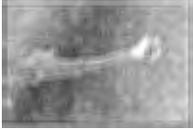
A homeowner retains a Planner or a Professional to determine what will be the best system for a particular property for the expected usage. When designing a system, Planners take into account soil assessment, lifestyle, usage and site impacts, as well as engineering and health considerations. The Planner then files a 'Record of Sewerage System' with the Health Authority. Once the system is planned and a filing has been made, the homeowner engages an Installer to install the system. This may or may not be the same practitioner.

After installation the Planner or a Professional reviews the installation and participates in commissioning the system. To commission a system is to essentially perform necessary adjustments, tests and inspections to ensure the system is operating properly. Once done, a 'Letter of Certification' is then filed with the Health Authority and provides the owner with a maintenance plan specific to that system.

When homeowners are purchasing a bare lot or a house that is known to need a new system, a Planner or a Professional may be retained to provide a site assessment prior to being engaged to provide a design.

### System Repair or Upgrade

Homeowners engage a Planner or a Professional to develop a design that addresses the repair or new use of an existing system. Often a system can be improved at less cost than a whole new system and given a new lease on life. Repairs or upgrades are also required to be filed with the Health Authority.



### The Sewerage System Regulation (SSR) & the Onsite Industry

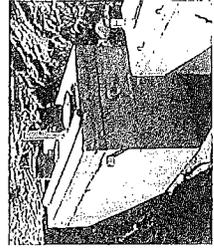
Enacted in 2005, the Sewerage System Regulation (SSR) applies to all smaller systems, including those for houses, small businesses and even small communal systems.

Compared to the previous Sewage Disposal Regulation, the SSR included a significant change in approach. The new approach is 'performance-based' and responsibility for the proper design and installation of onsite systems has been transferred for the most part from Health Authorities to 'Authorized Persons' as defined by the SSR.

Now, all work on new onsite wastewater systems, repairs to systems and any maintenance on systems constructed after the SSR came into effect in 2005, must be performed by an 'Authorized Person'. This can no longer be done by homeowners alone. And, once a system is installed, upgraded or repaired, it is the responsibility of the homeowner to ensure the system is maintained by an Authorized Person, is operated properly and performs as designed.

### Role of the Health Authorities

Health Authorities still play a role in onsite systems, holding the records of sewerage systems and enforcing the Regulation to protect public health.



### Improved Environment & Health Protection

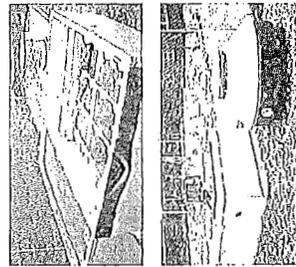
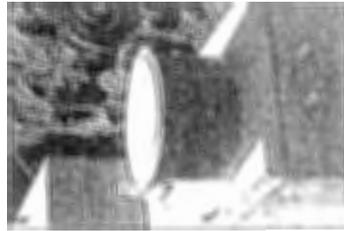
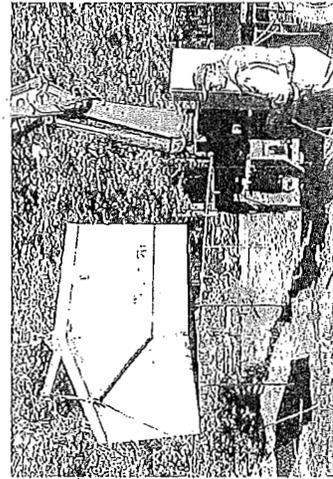
Over the last 20 years there has been an increasing realization that many onsite systems were designed to dispose of sewage, rather than to treat and disperse it. Although a system may have functioned without evidence of sewage coming to the ground surface, it was possible that effluent may have been contaminating the environment.

As development increases and more homes are built in rural subdivisions, environmental impacts and the potential for contamination of drinking water increases. With this comes a demand from the public for safe systems, as well as recognition by local governments that onsite systems are an integral part of a long-term waste management strategy. Modern systems are designed to treat the effluent fully and disperse it with little or no impact to the environment and have a long effective life.

### Improved Systems

Because systems must be designed to match site conditions and use, the new performance-based approach of the SSR encourages quality systems. To ensure the performance and longevity of these systems, proper maintenance and inspection is vital.

As the new approach encourages higher quality and as private contractors are taking much of the responsibility previously taken by government, some systems are now more expensive. In other cases, the increased flexibility under the SSR leads to reduced costs. A quality onsite system is now seen as a real estate asset. In addition, the training and registration of 'Authorized Persons' provides you with added quality assurance.



### Who is an Authorized Person?

The Sewerage System Regulation (SSR) provides for two types of 'Authorized Person' - a Registered Practitioner and a Professional. No others may plan, install or maintain systems in British Columbia. Doing so is illegal and considered an offense under the Regulation.

#### Registered Practitioner

A Registered Onsite Wastewater Practitioner (ROWP) typically plans, installs and maintains onsite systems. They are registered with the Applied Science Technologists & Technicians of British Columbia (ASTTBC). To be registered, individuals must complete the required education, a Professional Practice & Ethics exam, provide references and demonstrate experience. ROWPs adhere to a strict Code of Ethics and also must follow the Ministry of Health 'Sewerage System Standard Practice Manual' which sets out best practices for industry.

#### ASTTBC has four main classifications of ROWP...

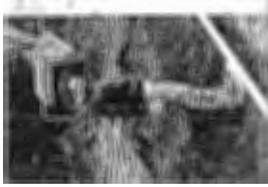
- ▶ Planner - performs site and soil assessment; works with owner to establish needs; designs system; reviews installation; and creates maintenance plan to ensure proper operation.
- ▶ Installer - installs system as designed.
- ▶ Maintenance Provider - services system according to maintenance plan.
- ▶ Private Inspector - inspects and assesses existing systems.

Except for Private Inspectors, registration is mandatory under the SSR. ROWPs can be registered in more than one category, eg. the same ROWP may plan and install a system.

#### Professional

A Professional may design, install and maintain all types of onsite systems. They are often involved when the site or use requires design services beyond the specific scope of a ROWP. Often Professionals will use the services of Registered Practitioners and supervise them in the installation and maintenance of systems. As a general rule of thumb, Professionals should use ROWPs to install and maintain systems.

Where registered to do so, ASTTBC ROWPs may also plan more advanced systems (such as 'Type 3') and are considered to be a Professional under the SSR where they have met specific education and experience requirements. Other practitioners recognized to take on Professional level work are Professional Engineers (PEng) registered with the Association of Professional Engineers and Geoscientists of BC (APEGBC).



**Comparison of House Size Regulations in Metro Vancouver's ALR**

May 10, 2017

<b>Jurisdiction</b>	<b>House Size Maximum</b>
Barnston Island	Max. floor area of 500 m <sup>2</sup> (5,382 ft <sup>2</sup> )
Bowen Island	Not specified
Burnaby	Lesser of 0.6 FAR or 590 m <sup>2</sup> (6,350 ft <sup>2</sup> ) including accessory residential buildings
Coquitlam	Not specified
Delta	On lots less than 8 ha (20 ac.), 330 m <sup>2</sup> (3,552 ft <sup>2</sup> )
	On lots 8 ha or greater, 465 m <sup>2</sup> (5,005 ft <sup>2</sup> )
Langley Township	Not specified
Langley	Not specified
Maple Ridge	<ul style="list-style-type: none"> <li>- Max. floor area of 650 m<sup>2</sup> (6,996.5 ft<sup>2</sup>)</li> <li>- An additional maximum floor area of 279 m<sup>2</sup> or 0.1 FAR whichever is lesser, for accessory residential buildings</li> </ul>
Pitt Meadows	On April 4, 2017, staff were directed to prepare bylaws to establish a maximum floor area of 1,673 m <sup>2</sup> (18,000 ft <sup>2</sup> ) with a maximum footprint size of 600 m <sup>2</sup> (6,458 ft <sup>2</sup> ) in the ALR. Allowable house sizes are also subject to other zoning criteria including site coverage and setback requirements.
Port Coquitlam	<ul style="list-style-type: none"> <li>- Max. floor area of 500 m<sup>2</sup> (5,382 ft<sup>2</sup>)</li> <li>- An additional maximum floor area of 90 m<sup>2</sup> for accessory residential buildings.</li> </ul>
Surrey	Not specified (regulate with farm home plate)
Tsawwassen First Nation	Not specified
Vancouver	<ul style="list-style-type: none"> <li>- Max. floor area of 280 m<sup>2</sup> (3,014 ft<sup>2</sup>). Conditional approval may be granted for a maximum floor area of the greater of 334 m<sup>2</sup> or 0.1 FAR, up to a maximum of 836 m<sup>2</sup>.</li> <li>- An additional maximum floor area of 48 m<sup>2</sup> for accessory residential buildings</li> </ul>