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February 24, 2011  
0959-01

Arlington Group  
#1030 - 470 Granville Street  
Vancouver, BC V6C 1V5

**Attn: Graham Farstad, MA, MCIP**  
**Principal**

Dear Sirs:

**RE: Impact of Proposed OCP on Existing Underground Infrastructure  
(Water, Sanitary Sewer and Storm Drainage)**

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As requested, we have reviewed the proposed Land Use Designations and Potential Residential Infill Lots maps for the Official Community Plan Update with regard to if the Town's existing municipal underground services (water, sanitary sewer, and storm drainage) can accommodate the projected growth and to provide an indication of where servicing upgrades, if any, should be anticipated. Our assessment is based on discussions with Town public works staff, our local understanding of Town's infrastructure, and the Town's most current infrastructure study reports:

- Town of Comox Cape Lazo Water and Sanitary Sewer System Study, March 2008, Koers & Associates Engineering Ltd.
- Town of Comox 2006 Sanitary Sewer Study, McElhanney Consulting Services Ltd.
- Town of Comox Water Study Update, February 2003, Koers & Associates Engineering Ltd.
- Town of Comox Storm Drainage Study Update, July 1999 and Drainage Study Update, October 2001, Koers & Associates Engineering Ltd.

Our findings for each municipal service are presented under the applicable heading.

## **1 WATER DISTRIBUTION SYSTEM**

Overall, the Town has a well developed water supply and distribution system and has been proactive in carrying out infrastructure upgrade projects to meet future population growth.

The 2003 water study update projected water demands for year 2010 and year 2020 for service populations of 16,904 and 23,036; respectively and identified the necessary infrastructure upgrades to maintain adequate service to the year 2020 population and deliver fire flow demands. The Town's population growth has been lower than projected with a 2010 population of 13,644 as published by StatsBC.

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The Town has, during the past few years, undertaken water conservation measures to reduce consumption, especially during the summer months when demands increase significantly and the infrastructure must be sized to meet the demand. As a result of the lower than projected population growth and the recent water conservation measures, annual and peak water demands should be less than projected. Additional upgrading works beyond what has been proposed in the 2003 water study are therefore not expected in response to the proposed OCP.

For future subdivisions, watermain extensions are to be looped and dead-end mains are only to be in cul-de-sacs if looping is not possible as per the Town's subdivision specifications. Areas of vacant lands proposed for development include Northwest Comox (Aspen\Hector\McDonald roads), Northeast Comox (off Pritchard Road between Highridge Drive and Knight Road) and East Comox (Butchers Road area).

Water modelling is presently required by the Town for proposed subdivisions and for the redevelopment of serviced lots to ensure adequate fire flows can be provided. This practise should continue. Generally, upgrading works required in response to the proposed development would be the developer's responsibility if the work is not included in the Town's DCC project list.

## 2 SANITARY SEWER COLLECTION SYSTEM

The majority of the Town is serviced by a gravity sewer collection system draining to the pump station on Jane Place. The 2006 Town of Comox Sanitary Sewer Study identified upgrading works to meet the increase in flows resulting from the development of vacant lands in Northwest Comox (Aspen\McDonald Road area), Northeast Comox (Pritchard Road corridor) and East Comox (King Road area). Most of the lands in northwest Comox have since been developed and upgrades to the sanitary sewer system carried out to accommodate the future development. Lands in Northeast Comox are not yet developed but the Knight Road sanitary sewer main has been constructed and is designed to service this area. Lands in East Comox (King Road area) still remain outside of the Town and thus are not provided municipal sewer service. The proposed OCP for Northeast and Northwest Comox in general is consistent with that of the previous OCP and thus no additional upgrades, beyond those identified in the 2006 should be required.

Undeveloped lands in the Butchers road area will contribute flows to the gravity sewer collection system draining to the pump station on Colby Road. This station has been sized to service the development of these lands consistent with the proposed OCP and thus no upgrades should be required, other than as per the station design of replacing the pumps with greater pumping capacity when deemed necessary.

Infilling and densification is proposed in Southeast Comox, between Stewart St Pritchard Rd, and between Cedar Ave and Comox Ave. Computer modelling results indicate upgrading of 280 m of gravity sewer main is required to accommodate this (80 m along Stewart St, between Alder Ave and Comox Ave, and 200 m along Comox Ave, west of Stewart St). It is understood these upgrades are included in the Town's sanitary sewer

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Development Cost Charge (DCC) list of projects. As a result, the OCP infilling and densification will not create additional costs the Town.

The proposed OCP densification and redevelopment along Comox Avenue and Anderton Road from Comox Avenue to Guthrie Road, is expected to be accommodated by the existing collection system with the implementation of the upgrading works proposed in the 2006 study, some of which have already been carried out.

Lands along Lazo Road between Brent Road and Knight Road are presently serviced by on-site sewage treatment and disposal systems. If significant densification were to occur in this area, it should be anticipated development of a municipal collection system would follow. The collection system would consist of gravity mains and municipal pump stations with associated forcemains and would be paid for by the developers. A conceptual plan for a municipal collection system is presented in the Town of Comox Cape Lazo Water and Sanitary Sewer Study, March 2008, by Koers & Associates Engineering Ltd.

### 3 STORM DRAINAGE SYSTEM

The majority of the Town is serviced by underground storm drains conveying stormwater runoff south into either Brooklyn Creek, Golf Course Creek, the creek in Port Augusta Park, or directly to the foreshore. Exceptions include:

- East Comox, consisting of Beckton Estates and the Butchers Road area, which drain to the south end of Lazo Marsh by underground storm drains and roadside ditches.
- Northeast Comox, being the corridor of land along Pritchard Road generally north of Highridge Drive and lands along Knight Road, which drain by overland flow and farmland ditches to the north end of Lazo Marsh and by roadside ditches to the Queen's Ditch.
- Northwest Comox, where a portion of the land slopes north and east, draining to Brooklyn Creek by way of roadside ditches outside of the Town.
- West Comox, where the recently developed lands at the west end of Noel Avenue in and around the water storage reservoir slope south and west which is serviced by the underground storm drain system which discharges to the roadside ditching along McDonald and Back roads which discharges to an unnamed watercourse which eventually discharges to Comox Harbour.

Overall, the Town has a well developed storm drainage system and has carried out a number of large and small infrastructure upgrade projects during the past 10 years. This includes the Anderton Road\Noel Avenue upgrade to accommodate the build-out of lands in Northwest Comox, the majority of which has occurred, and future redevelopment along Anderton Road. The upgrading work was based on the OCP land use in place at the time of the 1999 and 2001 studies. While the proposed OCP shows additional densification along Anderton Road, it is anticipated there should be adequate capacity to accommodate this.

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Proposed densification in Southeast Comox between Stewart Street and Pritchard Road, south of Cedar Avenue, may require localized upgrading of mains, which would be paid for by the development, if upgrading work is required

It is anticipated the proposed build-out of lands in East Comox, being the Butcher's Road area, can be accommodated by the storm drain system servicing the area.

It is anticipated the lands along Lazo Road between Brent Road and Knight Road, will be developed such that a municipal storm water collection system is not required, as is presently the case because of the highly permeable sandy soils. Development of lands along Kye Bay Road, between Knight Road and Simon Crescent, are expected to continue to be serviced by the roadside ditching in the area.

Development of Northeast Comox, specifically the undeveloped forested lands along Pritchard Road, north of Highridge Drive and lands along Knight Road, will require careful planning and design due to historical issues relating to the Queen's Ditch, Hilton Springs at the east end of Cambridge Road, and farming of the low lying lands. The need for additional drainage works would be development driven and as such most likely paid for by the developers.

In Northwest Comox, development of the approximately 5 ha forested parcel of land at the north end and on the east side of Aspen Road, will also require careful planning and design due to historical issues relating to Brooklyn Creek and farming. Approximately  $\frac{2}{3}$ <sup>rd</sup> of the land drains east out of the Town of Comox and into Brooklyn Creek by way of roadside ditching along Hector and Anderton roads. On-site stormwater management works will be necessary, which would be the responsibility of the developer.

We trust this is sufficient for your needs at this time. Please do not hesitate to contact us to discuss any matter in greater detail.

Yours truly,

KOERS & ASSOCIATES ENGINEERING LTD.



Chris Holmes, P.Eng.  
Project Manager