



MEMORANDUM

date: February 12, 2010
 to: Doug Allin, Director of Operation District of Peachland
 cc: Scott Shepherd
 from: Catherine Snow
 file #: 0655.0122-40
 subject: **REVIEW COMMENTS: DRAFT AREA STRUCTURE PLAN - LOWER PRINCETON**

Urban Systems Ltd. has been requested to review the Draft Area Structure Plan for the proposed area noted above. The ASP was prepared by a consortium of consultants, with the following engineering drawings and design report submitted by Protech Consultants Ltd.

Drawing Number	Drawing Name	Revision Number	Date
Fig 1	Lower Princeton, Peachland Site Location Plan		
Fig 2	Existing Zoning		
Fig 3	Plan Boundary		
Fig 4	Topography and Ortho		
Fig 5	Slope Analysis Hangingstones		
Fig 6	Land Use Plan		
Fig 7	Developable Areas		
Fig 9	Environmental Sensitive Areas		
Fig 10	Proposed Road Network		
Fig 11	Existing Water & Upgrades		
Fig 12	Existing Sanitary Sewer		
Fig 13	Storm Culvert Crossing - Hwy 97		
	Lower Princeton Area Structure Plan		Jan. 22, 2010

General

USL did not receive Figure 8 - Geotechnical Hazard Seepage Areas.

The current ASP submission projects a revised number of multi-family units at 746 units. The ASP covers approximately 24ha over 41 properties on a steep hillside. Given the large number of properties and challenging topography, a detailed and comprehensive approach is required by the applicant prior to approval of the ASP. The approach should tie together infrastructure issues, especially roads and drainage, sanitary sewer and water, both within the context of the ASP site area and the District as a whole.

Sanitary Servicing

The 746 units listed in the ASP equates to a population of 1,566 persons. Based on the District's 2003 Sanitary Sewer Servicing and Phasing Plan, the assumed population for the service areas covered within the ASP (areas K and L) was approximately 775 persons, as shown in the tables of the report. The figure in the report unfortunately was labelled as equivalent units, but we have confirmed that modeling was indeed based on 775 persons. Thus, the ASP suggests a population of $1566 - 775 = 791$ persons more than was outlined in the OCP. That said, however, the highway sanitary trunk appears to have the capacity to support the newly projected population within the proposed ASP.

The sanitary sewer collection DCC's collected will continue to go toward trunk capacity improvements and the future equalization tank planned for the Renfrew lift station, with sanitary treatment DCC's being collected to fund future expansion of the RDCO treatment plant.

The ASP should show detailed sanitary sewer alignments (in conjunction with proposed road rights-of-way) showing direction of flow. The entire site should be able to be serviced by gravity, and therefore sanitary lift stations should be discouraged. Site layout should include potential easements that will allow for servicing all of the properties by gravity to the highway sanitary trunk.

Water Servicing

Similar to the servicing population that was used in the sanitary master plan, the 2007 Water Master Plan modelled a population of 861 persons for the area representing the Lower Princeton neighbourhood, rather than the 1566 persons (746 units) as proposed by the ASP.

The proposed SDS lists the Maximum Day Demand as 2,400 liters/day/capita and a peak hour demand as 4,000 liters/day/capita. The current District of Peachland's Bylaw lists 3,500 liters/day/capita. The calculations provided in the ASP show a MDD of 2,000 liters/day/capita. Referring to page 56 of the ASP report, there is insufficient information for us to place the demands into the existing water model.

Review of existing water system

A fireflow analysis of the existing water model for the District reveals the following capacities:

Along Princess Avenue and Highway 97:	1,500-1,800 L/min
End of main on Somerset Avenue:	4,200 L/min
Along Princeton Avenue:	4,000 L/min
Along Lipsett Avenue:	4,000-14,000 L/min, depending on connection point.

PRV's will be required in both of the zones as the existing pressures vary between 110 and 150psi. Including the PRV's within the District's water system for the Lower Princeton area neighbourhood would be preferable to a series of privately owned PRV's. As these PRV's are not in the current DCC program, they will have to be funded by the Lower Princeton developers.

The Deep Creek clearwell (proposed reservoir at the future treatment plant) will need to be built prior to any multi-family development within the Area Structure Plan, in order to provide storage for MDD and Fire Flow. Although the clearwell is currently planned for 2011, the District may not have sufficient funding (which includes DCCs and senior government grants) to front-end the construction of the reservoir in 2011. Thus, the Lower Princeton ASP developers may need to front-end these costs or provide a significant portion thereof. A DCC credit would be provided if the developer front-ends this project.

Storm Water Management Servicing

A Stormwater Management Plan must be completed before the ASP is adopted to outline a comprehensive approach to storm water management given the large number of properties, and inconsistency of infiltration rates across the various properties of the Lower Princeton area. The detailed stormwater management plan must ensure that all properties have access to the discharge points (culverts) which cross the highway, and should be protected through an easement or restrictive covenant.

The design of the stormwater system should refer to the District's new Subdivision and Development Servicing (SDS) Bylaw, currently in Final Draft form. Given its proximity to Lake Okanagan and the steep hillside conditions, discharge to existing culverts may be preferable over ground infiltration as long as stormwater quality has been addressed.

Any infiltration that is to take place close to the highway will require approval by MoT to ensure that it will not affect the road structure.

A hydrogeological report is required for the study area.

Figure 8 is missing.

Road Network

The proposed road network drawing is difficult to read and the layout appears quite fractured. Given the topography, it may not be possible to have a proposed road fronting every existing property (i.e. it may require lot consolidation). Over the past few years there have been several memos produced detailing

intersection Improvements and upgrades along Princeton (USL Memo October 17, 2007 and March 30, 2006). It was noted that any proposed road alignments identified as part of the Lower Princeton Neighbourhood Plan, under preparation by private developers in the area, should coordinate with the concept design proposed in these memos.

Additional detail is required in order to comprehensively address the road network issues, including locations of rights-of-ways, road profiles, and proposed grades. The maximum grades on local roads is 12%. Road profiles would also be beneficial in understanding utility servicing and where additional right-of-ways are required for the gravity utilities.

Consideration should be given to lengths of the cul-de-sacs. The maximum length of a cul-de-sac is 150m or should include a secondary emergency access with a minimum width of 4m and a maximum grade of 15%.

There appears to be an extension from Princess Avenue; a prior design submission proposal included a large retaining wall, as part of a proposed dry-stack marina building, to support the road structure. As this development is no longer active, the Princess Avenue / Princeton Avenue intersection requires a re-design as part of this Area Structure Plan.

The ASP notes that it anticipates that 70% of the residents will be retired and 30% working. This type of assumption will be difficult to control given the number of landowners involved. We would suggest that a sensitivity analysis be completed to assess the trigger point. The Draft Report for the Ponderosa-Pincusion Ridge Traffic Impact Study has just been submitted to the District and may be a source of background information for future base traffic volumes. The draft report is currently under review by USL, and will be utilized as the basis for future commentary towards the Lower Princeton ASP.

Please contact the undersigned if you have questions or require any clarification of the above.

URBAN SYSTEMS LTD.

Reviewed by:

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