DISCUSSION PAPER

Arrowsmith Water Service
Englishman River Water Intake Study

Phase 1 – Conceptual Planning

Discussion Paper 3-1 – Population Forecasts

Prepared by:	Tony Koers
Issued:	October 8, 2009
***Previous Issue*:**	September 21, 2009

1 HISTORICAL DATA

The following average annual population growth rates have been derived from BC Stats records, based on census data, for the AWS member jurisdictions.

Historical Annual Population Growth Rates (%)						
	Parksville	Qualicum Beach	Area E Nanoose	Area G RDN French Cr.	Area G EPCOR	RDN excl. Nanaimo City
1996-2001	1.74	0.55	0.60	1.85	1.85	0.90
2001-2006	1.27	1.61	2.53	2.81	2.81	2.10
1996-2006	1.50	1.08	1.56	2.33	2.33	1.50
2009 Est. Population	11,500	8,905	4,803*	606*	4,129*	63,900**

* Population served by community water. ** Includes rural population, not serviced by community water

2 GROWTH PROJECTIONS

City of Parksville (COP) planning staff projects a long term growth rate of 1.3% per annum. No such projections have been received from the Town of Qualicum Beach (TQB) or the Regional District of Nanaimo (RDN).

Estimates have been prepared by staff in the various jurisdictions of the build-out populations within current boundaries, in accordance with maximum densities allowed within the current OCP land use categories, as follows:

COP	Range: 19,000 – 25,000	Staff Best Projection: 19,000
TQB	Range: 11,000 – 16,000	Staff Best Projection: 16,000 (anticipates changes to OCP)
RDN Nanoose		Staff Best Projection: 14,580 (11,969 on water systems)*
RDN French Creek		Staff Best Projection: 1,856 (1,780 on water systems)*
RDN EPCOR		Staff Best Projection: 8,763

*The build-out populations serviced by community water systems in the electoral areas E and G are based on the percentage of existing population serviced by community water systems, according to RDN records of service connections and population per household of 2.5 in Area E and 2.6 in Area G.

To reach the projected build-out populations by the design year 2050, the following growth rates would be required:

	Low Estimate	High Estimate	Best Estimate
COP	1.2%	1.9%	1.2%
TQB	0.6%	1.4%	1.4%
RDN Nanoose			2.3%
RDN French Creek			2.7%
RDN EPCOR			1.9%

It is noted that the range of growth rate estimates for the various jurisdictions compares well with the historical data over the past two census periods.

Thus, it is proposed that for the range of populations estimates for the design year 2050 the highest estimate should be based on the highest estimated build-out populations in all jurisdictions, and the lowest estimate should be based on the lowest estimated build-out populations for the municipalities, and an average growth rate of 1.5% for the RDN and EPCOR service areas, where build-out is not expected to be reached by 2050.

3 DESIGN POPULATION ESTIMATES

This results in the following range of population estimates (the populations used for the 2020 projection in the 2005 AWS Capital Plan are listed for comparison):

Jurisdiction	**High Estimate 2050**	**Low Estimate 2050**	**2020 Previous Projection**
COP	25,000	19,000	25,000
TQB	16,000	11,000	11,000
RDN Nanooose	11,969	8,843	11,028
RDN French Creek	1,780	1,116	1,535
RDN EPCOR	8,763	7,602	5,720
Total AWS 2050	**63,512**	**47,561**	**54,283**

For the intermediate projection year of 2015, the high and low range were determined using the growth rates necessary to achieve high and low build-out at 2050. This results in the following estimates:

Jurisdiction	High Estimate 2015	Low Estimate 2015	2020 Previous Projection
COP	12,875	12,427	25,000
TQB	9,680	9,230	11,000
RDN Nanooose	5,505	5,252	11,028
RDN French Creek	711	663	1,535
RDN EPCOR	4,609	4,515	5,720
Total AWS 2015	**33,380**	**32,087**	**54,283**

It should be noted that only permanent residential population estimates have been reported. There has been no attempt to estimate the equivalent populations for seasonal, commercial, industrial or institutional development. The rationale used here is that there is not a significant amount of variation in the mix of these categories between jurisdictions, and this mix is not expected to change substantially over the design period. It is felt that use of residential population estimates will provide a reliable and stable basis for water demand forecasting for this project.