

Final Report on District Demographics and Changing School Capacities

Prepared for the Cowichan Valley School District
(SD79)

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Introduction

Yates, Thorn & Associates was requested in June 2017 to prepare a report on the future demographics of the region, with particular reference to projections of school enrolments and the impact of the newly agreed class size and composition regulations which came into effect with the 2017/2018 school year. The end-purpose of the study was to establish the degree to which current school infrastructure would be adequate to support future enrolments and follow from that, an assessment of where new infrastructure would likely be needed.

The agreed scope of work for this study included:

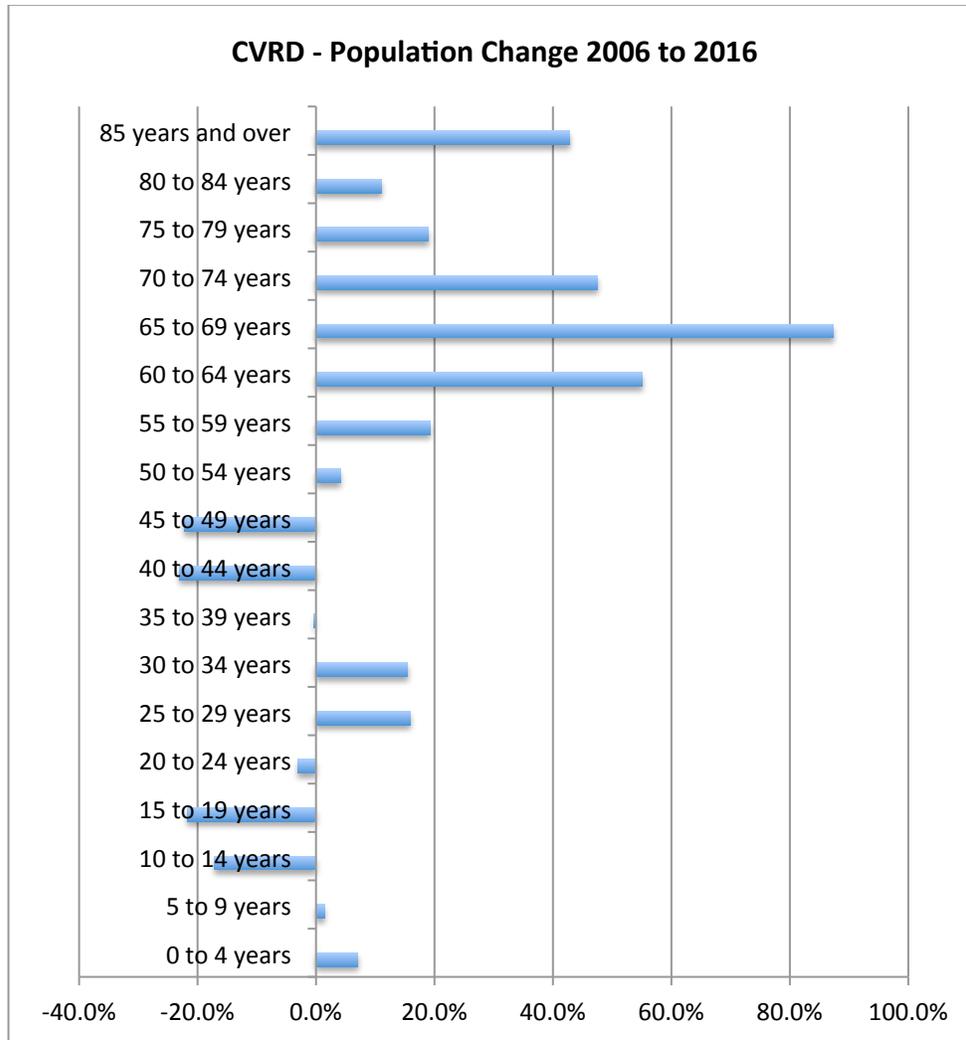
1. Meeting with SD79 senior staff to review assignment and all related issues, and reviewing materials and reports identified at that meeting.
2. Gathering electronically September 30th enrolment data from the previous six years, and entering this enrolment data into a projection model.
3. Projecting future enrolments, by school, zone and district, and reviewing results with SD79 senior staff.
4. Meeting with area planning officials to discuss future population and housing growth, and, if necessary, revising enrolment projections based on discussions.
5. Reviewing the MOU between SD79 and Ministry related to class size and accommodation of special needs students and including this data in capacity calculations at the school and zone levels.
6. Prepare draft report for review with SD79 senior staff.

Project findings were presented to SD79 Education and Business Committee (October 24, 2017), and the final report submitted on Nov 3, 2017.

Changing Demographics of Cowichan Valley

The Cowichan Valley has seen considerable demographic change over the past decade. The chart below shows the percentage change in each five year cohort between 2006 and 2016

Aging Population and Amenity Migration



There are two main elements that have resulted in these changes:

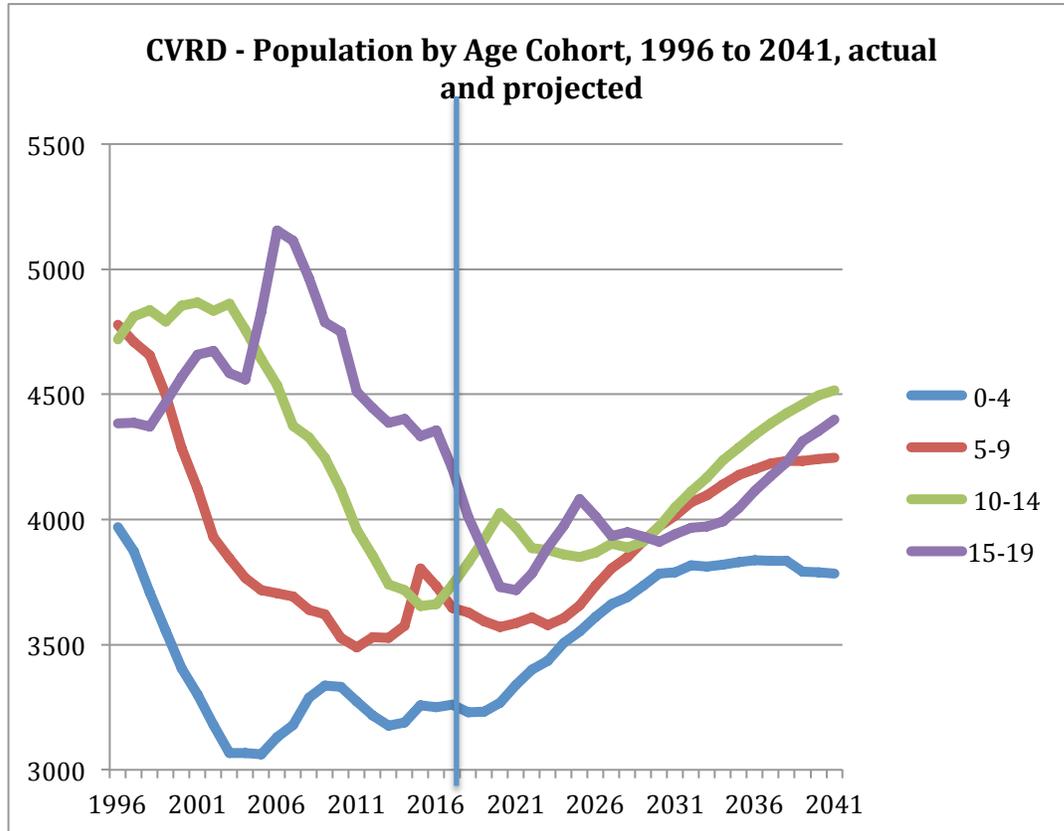
- Amenity migration by the baby boomer generation – the Cowichan Valley is very attractive to people moving in their retirement and pre-retirement years. They may come from Vancouver, cashing out on high house prices, or the rest of Canada attracted by mild winters and warm summers, or indeed from anywhere in the world. This results in housing which may be seen as ‘family housing’ is occupied by two adults with no children of school age. This primarily impacts the 55 to 75 age group.
- The continuing swings of the post-WW2 baby boom – which gave us the ‘baby boomers’, now aged 50 to 70 years, but also gave us the Echo Generation,

children of the boomers, and is starting to give us the echo of the Echo Generation. In between these years of higher births are periods of lower numbers of births.

Both these trends are imprinted on the population pyramid of the Cowichan Valley.

A Changing Youth Population

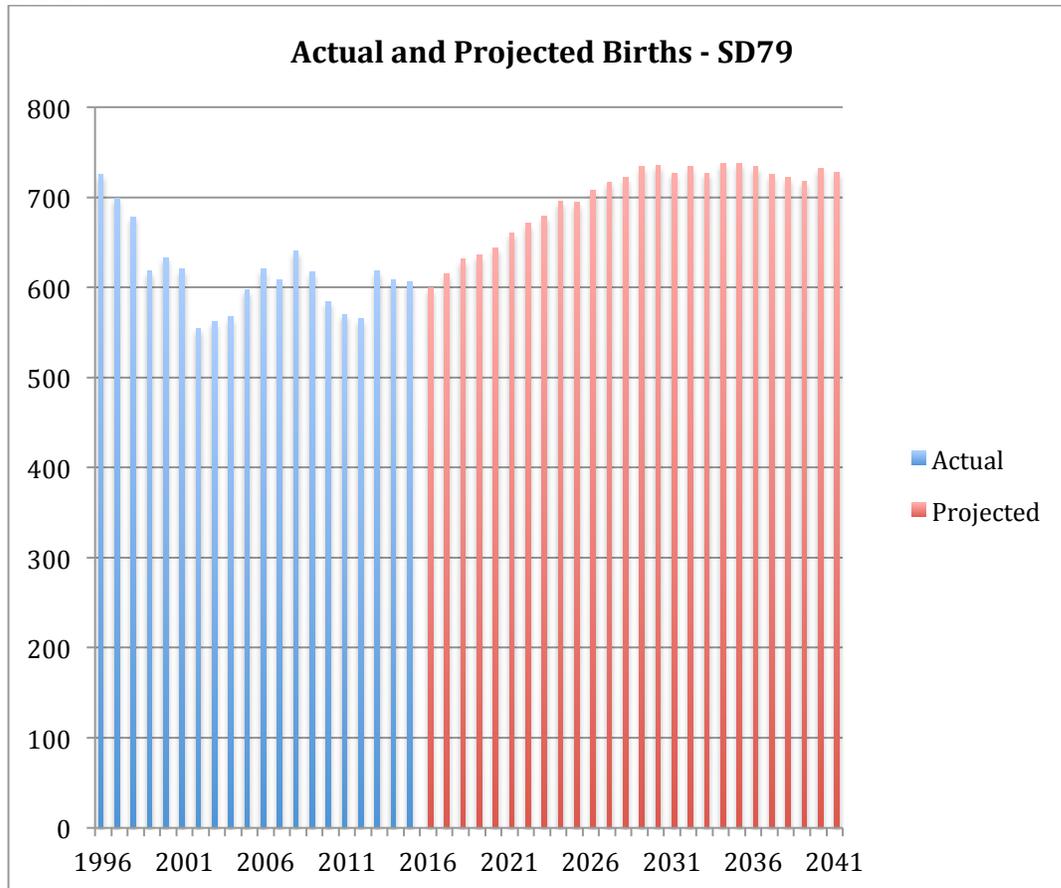
A closer look at the changes in the child and youth age cohorts over the past 20 years, together with the projections made by the PEOPLE program of BC Statistics (which is also the basis of projections done by the Ministry of Education) is presented below:



- The large Echo Generation is evident in the high numbers of 15 to 19 year olds which peaked in 2006 at just over 5,000. This kept secondary schools at capacity through to about that time, but enrolments have declined since then.
- This cohort has declined since then and is now just a little over 400 – a 20% decline in 10 years. All the younger age cohorts have followed this pattern five years earlier.
- In 2006, the youngest cohort, those aged 0 to 4 years, reached its lowest level of just over 3,000, down from 4,000 10 years earlier. As the 15 to 19 year olds hit their child bearing years, the decline in births ceased.
- But the number of births did not immediately and strongly pick up, but stuttered its way through the next decade around the 3,250 level.
- However it is projected to turn strongly upward from 2017 (based on the number of births in the last couple of years).

The chart also shows that the number of children grows with time. Let us take the 0 to 4 cohort in 2001 – it numbered 3,302. By 2006, this cohort, now aged 5 to 9 years, was 3,704, a gain of 500 children. By 2011 this cohort numbered 3,959 and by 2016, it numbered 4,357. Young families are always moving into the Cowichan Valley and our schools gain enrolments as children move from grade to grade.

The following chart shows the actual and projected number of births – again data from BC Statistics.



As noted above, there was an uneven pattern of births between 2000 and 2015, but it is being projected that the number of births will increase steadily from now until peaking around 2030, but continuing at a high but not increasing rate until 2040.

This will be the prevailing demographic impact on the school system over the next 25 years. It will be felt first in kindergarten enrolments starting around 2020, then in elementary schools, likely starting around 2025 and peaking around 2030 or 2035. And peaking in secondary schools by 2040

Enrolment Projections to 2019 (and beyond)

While these are all projected numbers, they allow the number of students in each grade and each school to be projected with a high degree of accuracy.

Projecting Kindergarten Enrolment

There is a quite consistent ratio between the number of children born to residents of SD79 and the number who arrive five years later as kindergarteners. This is shown in the table below:

Year	BIRTH DATA		KINDERGARTEN ENROLMENT 5 YEARS ON		RATIO OF BIRTHS TO ENROLMENT	ROLLING AVERAGE
	Actual	Projected	Year	K		
1996	725					
1997	699					
1998	678					
1999	618					
2000	633		2004	531	84%	
2001	620		2005	534	86%	
2002	554		2006	501	90%	
2003	562		2007	510	91%	88%
2004	567		2008	477	84%	88%
2005	597		2009	506	85%	88%
2006	620		2010	494	80%	85%
2007	608		2011	542	89%	84%
2008	640		2012	554	87%	85%
2009	617		2013	520	84%	85%
2010	584		2014	510	87%	87%
2011	570		2015	520	91%	87%
2012	565		2016	568	101%	91%
2013	618		2017	541	88%	92%
2014	608		2018	547	90%	
2015	606		2019	545	90%	
2016		599	2020	539	90%	
2017		615	2021	554	90%	
2018		631	2022	568	90%	
2019		636	2023	572	90%	
2020		644	2024	580	90%	
2021		660	2025	594	90%	
2022		671	2026	604	90%	
2023		679	2027	611	90%	
2024		695	2028	626	90%	
2025		694	2029	625	90%	

While the ratio of births to kindergarten enrolment does vary somewhat, it is generally found to be in the 85 to 90% range. The other 10 to 15% of births is due to leakage to the private and Catholic schools, and to students who start in grade 1 rather than kindergarten (which was probably higher when kindergarten was half-time).

It is likely that any uncertainty in the future of Catholic schools will affect elementary school enrolments.

For projection purposes, it has been assumed that 90% of the projected number of births will make up the kindergarten classes five years later. This will take the enrolment from currently around 550 to about 625 by 2029. It will likely peak about 650 by 2035.

The distribution of those projected kindergarten students between grades is shown in the following chart:

Zone	Total	Lake	North	Centre	South	Fr. Immersion	Total
2014	510	31	50	190	120	119	510
2015	520	22	59	202	127	110	520
2016	568	36	69	198	157	108	568
2017	536	35	78	205	128	90	536
2014	100.00%	6.08%	9.80%	37.25%	23.53%	23.33%	100%
2015	100.00%	4.23%	11.35%	38.85%	24.42%	21.15%	100%
2016	100.00%	6.34%	12.15%	34.86%	27.64%	19.01%	100%
2017	100.00%	6.53%	14.55%	38.25%	23.88%	16.79%	100%
		6.50%	14.00%	37.50%	23.75%	18.25%	100.00%
2018	547	36	77	205	130	100	547
2019	545	35	76	205	130	100	545
2020	539	35	75	202	128	98	539
2021	554	36	77	208	131	101	554
2022	568	37	80	213	135	104	568
2023	572	37	80	215	136	104	572
2024	580	38	81	217	138	106	580
2025	594	39	83	223	141	108	594
2026	604	39	85	226	143	110	604
2027	611	40	86	229	145	112	611
2028	626	41	88	235	149	114	626
2029	625	41	87	234	148	114	625

Over the past few years, the distribution of kindergarten students has been changing across the district, with the schools in the north zone seeing larger kindergarten enrolments and the percentage of students enrolling in French Immersion kindergarten declining. In the lake, centre and south zones, enrolment is relatively static.

If the distribution of students is held steady (figures in yellow), and applied to the total of projected kindergarten students (in blue), the number of kindergarten students for future years will be calculated.

There must be few caveats to this projection:

2017 has been a very different year from past years due to the changes in class size and composition. Changes up or down may be aberrations or they may reflect the new reality. For instance, French Immersion kindergartens were capped at 90 students which is school capacity. If this is maintained in future years, then FI will be a declining proportion of the total, as opposed to a growth to 114 by 2029; these 24 students would need to be accommodated at their home schools.

Projecting In-School Enrolments using Retention Ratios

As noted above, the Cowichan Valley gains children as their cohort ages. In our projection model, this in-migration of children is reflected in the retention ratios between grades, where:

- If over 1.00, more children in next grade up
- If less than 1.00, fewer children in next grade up

The following table shows retention ratios by grade by zone:

Zones	K	1	2	3	4	5	6	7	8	9	10	11	12
Lake		1.02	0.98	1.06	1.01	1.07	1.00	0.98	1.02	1.04	0.83	0.90	0.92
North		1.08	1.06	1.02	1.04	1.01	1.04	1.02	1.23	0.98	0.95	0.95	1.03
Centre		1.03	1.02	1.04	1.00	1.05	0.99	1.02	0.99	0.96	1.04	0.97	1.01
South		1.05	1.06	1.06	1.08	1.03	1.07	1.03	1.17	1.00	1.01	0.98	0.96
French Immersion		1.06	0.95	0.97	0.96	0.95	0.94	0.97	0.73	0.86	0.95	0.90	0.91

- Retention ratios are above 1.00 in all elementary grades except French Immersion.
- French Immersion takes a few extra students in grade 1, but then sees a few students move to regular programming every year.
- Chemainus Secondary and Kelsey Sec. Gain significant students in grade 8 (from Catholic schools, and perhaps reflecting innovative programming).
- There is attrition from all grades at secondary level.

Again this raises some questions as it assumes the status quo will continue. For instance:

- Will a new Cowichan Secondary attract students rather than losing them in grade 7/8?
- Will this reduce Kelsey's attraction?

Projecting Total and Zone Enrolments to 2029

By projecting kindergarten enrolments and using retention ratios to track and project student moves through the grades, a total enrolment projection is developed.

On the following page, the chart shows the projection for SD79, with actual numbers posted below:

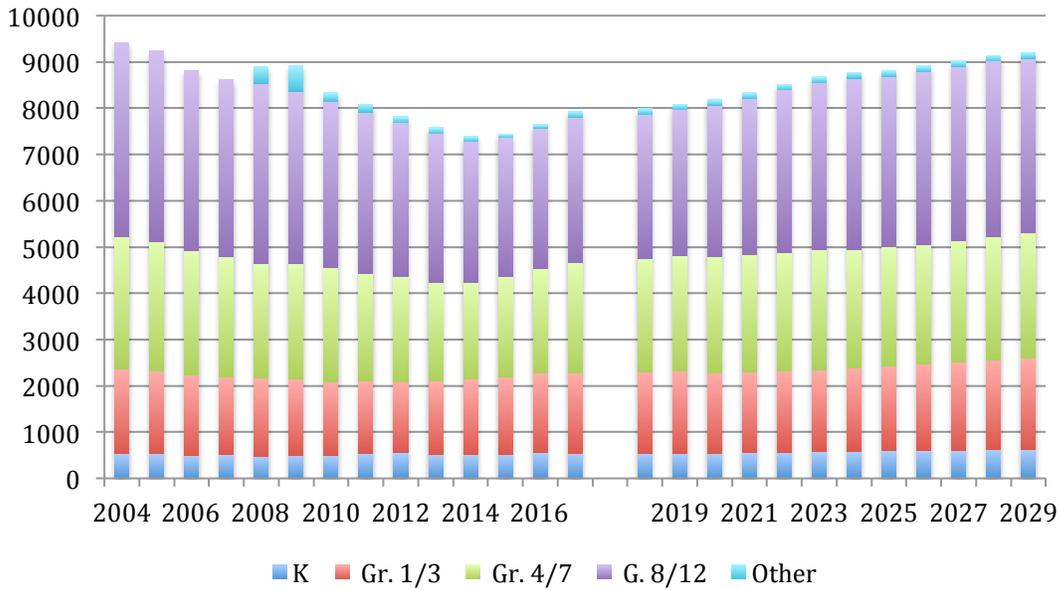
Following 10 years of continuous decline in total enrolment, the bottom was reached in 2014 and the past four Septembers have seen continuous growth.

This growth has been in intermediate grades in particular, and these students move into the secondary grades in the next few years.

Growth in the primary grades and kindergarten is projected to be slow but steady over the whole period to 2029.

By that date, total enrolment has grown from about 8,000 students in 2017 to just over 9,000 students.

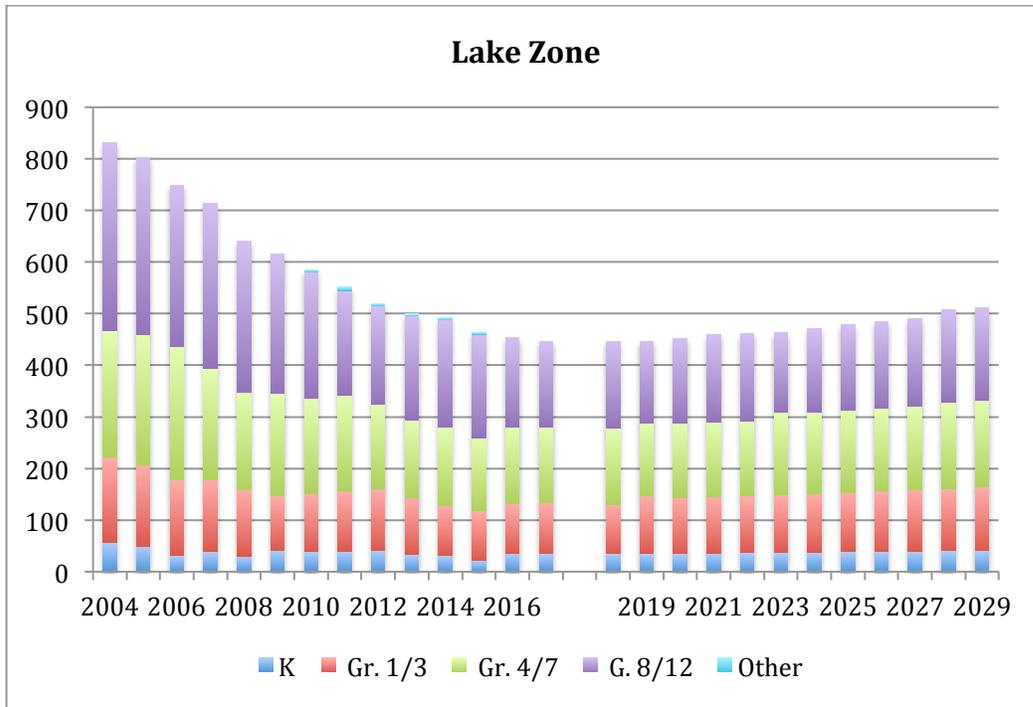
Total SD79



Total SD79

	K	Gr. 1/3	Gr. 4/7	G. 8/12	Other	Total
2004	531	1829	2862	4183	0	9405
2005	534	1784	2806	4111	0	9235
2006	501	1731	2691	3896	0	8819
2007	510	1686	2597	3833	0	8626
2008	477	1686	2470	3910	359	8902
2009	506	1636	2494	3726	555	8917
2010	494	1598	2468	3590	179	8329
2011	542	1557	2329	3491	170	8089
2012	554	1541	2279	3313	128	7815
2013	520	1592	2122	3218	126	7578
2014	510	1630	2102	3043	106	7391
2015	520	1673	2165	3004	84	7446
2016	568	1705	2271	3026	72	7642
2017	541	1733	2384	3144	124	7926
2018	547	1756	2457	3103	124	7986
2019	545	1775	2487	3158	124	8089
2020	539	1751	2505	3266	124	8185
2021	554	1749	2533	3370	124	8329
2022	568	1755	2565	3508	124	8520
2023	572	1779	2584	3617	124	8675
2024	580	1815	2550	3706	124	8774
2025	594	1843	2564	3686	124	8811
2026	604	1871	2587	3727	124	8913
2027	611	1904	2619	3765	124	9023
2028	626	1938	2667	3787	124	9142
2029	625	1972	2714	3761	124	9195

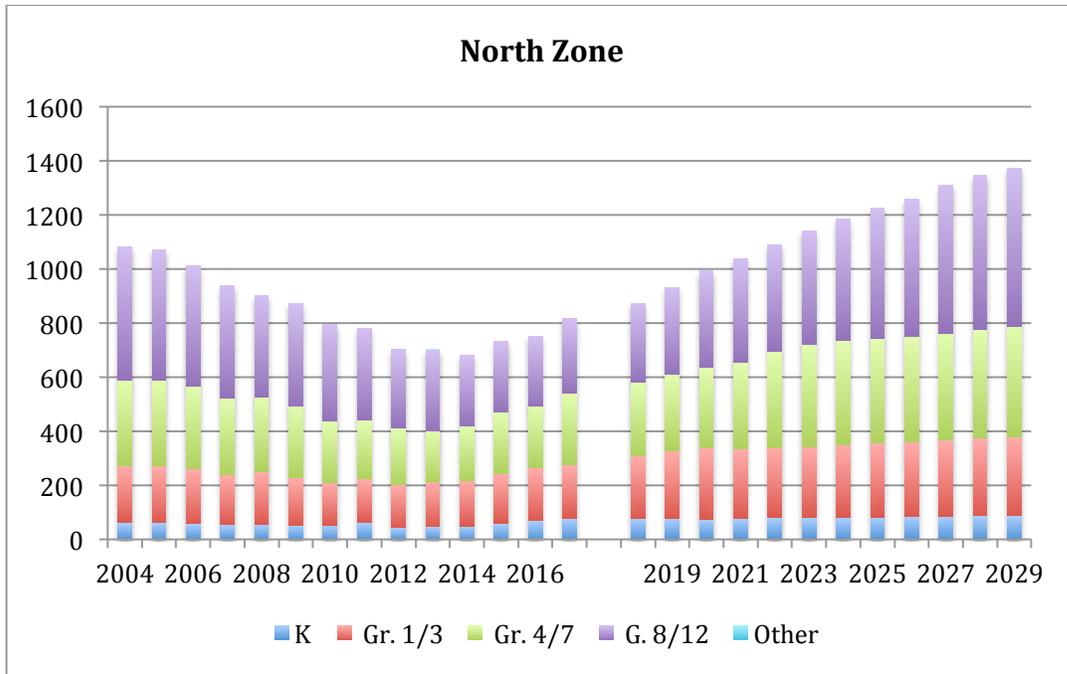
Lake Zone



	K	Gr. 1/3	Gr. 4/7	G. 8/12	Other	Total
2004	57	166	244	364	0	831
2005	50	157	253	343	0	803
2006	31	147	258	313	0	749
2007	39	140	215	319	0	713
2008	30	129	189	292	0	640
2009	42	106	197	271	0	616
2010	39	113	184	245	4	585
2011	40	116	186	203	7	552
2012	42	119	164	190	5	520
2013	33	111	150	202	3	499
2014	31	98	152	207	4	492
2015	22	97	141	200	4	464
2016	36	95	150	173	0	454
2017	35	98	147	166	0	446
2018	36	95	147	169	0	447
2019	35	111	141	159	0	447
2020	35	109	144	164	0	452
2021	36	109	145	169	0	460
2022	37	110	144	170	0	461
2023	37	111	161	154	0	463
2024	38	113	158	162	0	472
2025	39	115	159	166	0	479
2026	39	117	161	168	0	485
2027	40	119	163	168	0	490
2028	41	121	166	180	0	507
2029	41	123	169	179	0	512

The steep decline in enrolment, due largely to the decline of the forestry industry, has tailed off over the past few years, but no significant growth is expected in the next decade.

North Zone

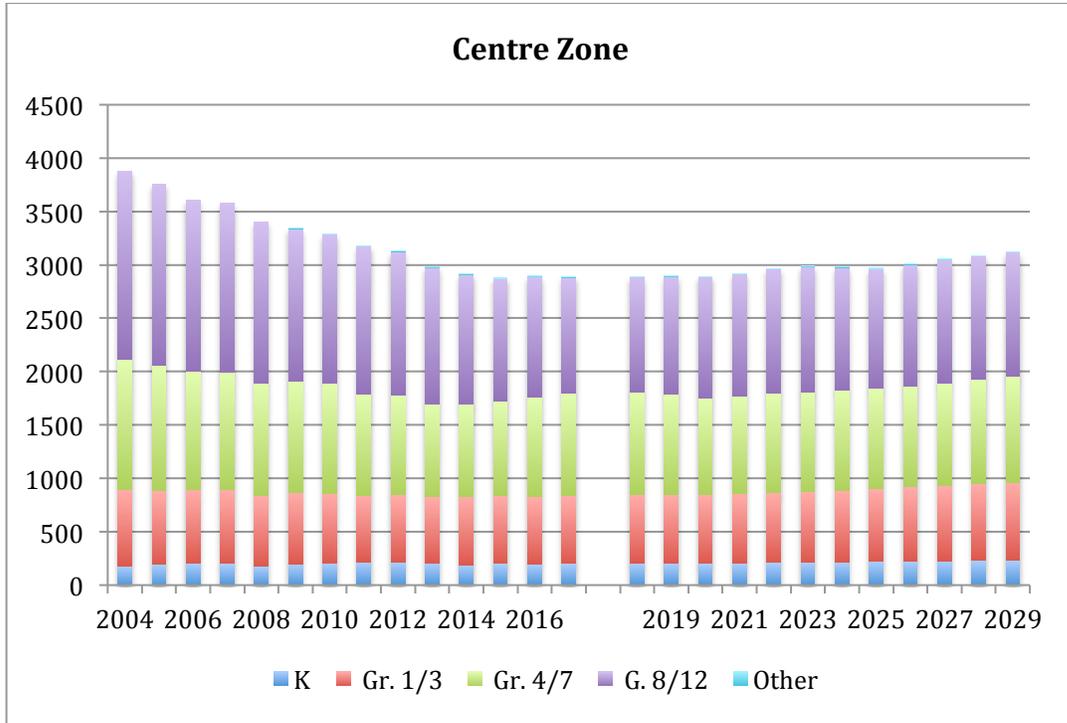


North Zone						
	K	Gr. 1/3	Gr. 4/7	G. 8/12	Other	Total
2004	62	210	318	493	0	1083
2005	63	208	319	481	0	1071
2006	58	202	306	445	0	1011
2007	56	183	283	415	0	937
2008	57	195	273	377	0	902
2009	52	177	264	379	0	872
2010	53	158	226	357	0	794
2011	64	160	217	339	0	780
2012	44	158	212	288	0	702
2013	48	164	190	300	1	703
2014	50	167	204	259	0	680
2015	59	184	229	259	0	731
2016	69	195	228	259	0	751
2017	78	197	267	276	0	818
2018	77	231	272	292	0	872
2019	76	250	285	321	0	932
2020	75	261	299	355	0	992
2021	77	259	318	384	0	1039
2022	80	259	355	396	0	1090
2023	80	263	376	420	0	1139
2024	81	268	388	446	0	1183
2025	83	272	387	483	0	1226
2026	85	276	391	505	0	1257
2027	86	281	395	547	0	1309
2028	88	287	402	569	0	1345
2029	87	291	410	585	0	1373

Since reaching a low point in 2012, enrolment has been growing in this zone. This has been most marked in the intermediate grades, where enrolment has increased from 190 to 267, with a particular jump in 2017. Primary enrolment has increased by 30 students, and kindergarten from as low as 44 in 2012 to 78 in 2017. These recent increases are likely to continue working their way through the grades, resulting in continuing increases over the next decade, first at the elementary and then, later, at the secondary grades.

Causes are no doubt multiple, but generally, the North Zone is outside the Gt Victoria 'commuting shed' and house prices are more affordable. The future of St Joseph's Catholic School, which may close, is also a factor.

Centre Zone



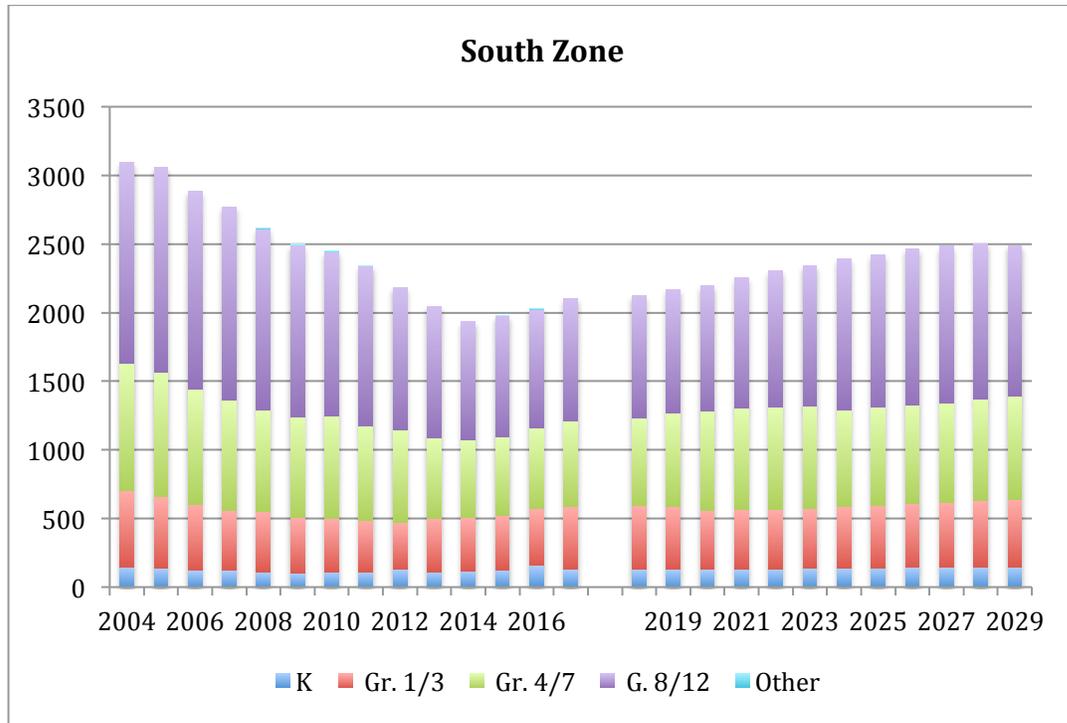
Centre Zone						
	K	Gr. 1/3	Gr. 4/7	G. 8/12	Other	Total
2004	181	713	1222	1764	0	3880
2005	194	691	1175	1696	0	3756
2006	208	685	1111	1600	0	3604
2007	203	691	1102	1578	0	3574
2008	177	662	1057	1502	0	3398
2009	200	671	1044	1425	3	3343
2010	208	653	1034	1390	4	3289
2011	219	621	954	1381	5	3180
2012	220	625	934	1347	2	3128
2013	207	622	869	1278	3	2979
2014	190	644	861	1216	2	2913
2015	202	641	884	1142	2	2871
2016	198	633	935	1124	1	2891
2017	205	630	960	1088	1	2884
2018	205	646	959	1077	1	2888
2019	205	646	936	1104	1	2892
2020	202	651	896	1139	1	2888
2021	208	648	916	1143	1	2916
2022	213	650	934	1165	1	2962
2023	215	659	934	1178	1	2986
2024	217	672	935	1152	1	2978
2025	223	682	938	1119	1	2963
2026	226	693	947	1139	1	3006
2027	229	705	958	1155	1	3048
2028	235	718	976	1152	1	3081
2029	234	730	993	1160	1	3119

Growth in the centre zone has been flat for several years, with some recent increase in intermediate numbers being the only evidence of growth.

If kindergarten enrolments do increase over the next few years, then some growth can be expected, but it will be spread thinly over the zone.

The key factor in this zone is municipal growth policies. The planning for new housing in the south end of the District of North Cowichan is underway and may make the area more affordable, and therefore more attractive for families with children.

South Zone



South Zone						
	K	Gr. 1/3	Gr. 4/7	G. 8/12	Other	Total
2004	149	556	928	1459	0	3092
2005	139	520	907	1489	0	3055
2006	121	483	836	1447	0	2887
2007	123	435	804	1409	0	2771
2008	111	437	741	1322	5	2616
2009	103	403	737	1249	5	2497
2010	111	390	745	1196	7	2449
2011	111	372	692	1163	6	2344
2012	130	344	668	1040	0	2182
2013	111	391	588	957	0	2047
2014	120	386	570	856	0	1932
2015	127	398	568	883	1	1977
2016	157	414	589	864	1	2025
2017	128	459	625	892	0	2104
2018	130	461	643	888	0	2122
2019	130	461	675	901	0	2167
2020	128	433	721	913	0	2196
2021	131	433	740	949	0	2253
2022	135	435	746	990	0	2305
2023	136	440	744	1021	0	2341
2024	138	449	707	1098	0	2392
2025	141	456	712	1114	0	2423
2026	143	463	718	1137	0	2462
2027	145	471	727	1140	0	2483
2028	149	480	740	1132	0	2501
2029	148	488	753	1097	0	2487

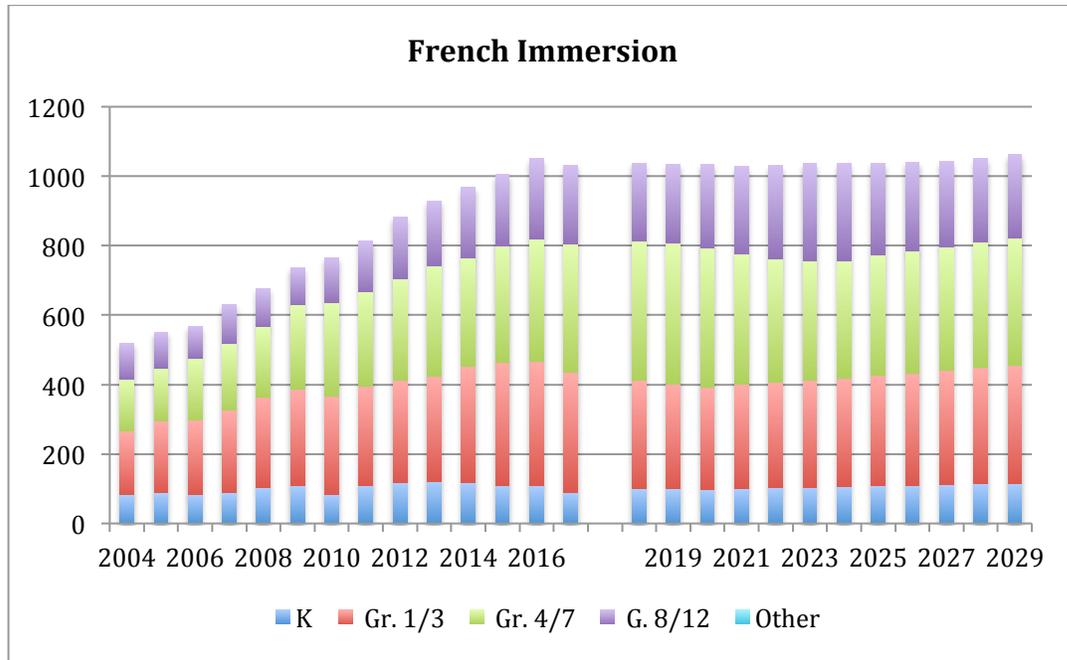
This zone has added just under 200 students in the past four years, and again, most of this growth has been across the elementary grades.

Kindergarten enrolments have been quite flat (one 'blip' in 2016), as has enrolment at the secondary level.

The future bodes well for Kelsey, since it gains significant numbers of students in grade 8 (2016 gr. 7 – 137, became 176 in 2017/gr.8). This will be on top of increasing intermediate numbers. This will likely see its enrolment rising by almost 200 students to 2029.

At the elementary level, growth will be slower, but again, housing affordability will be critical to any expectation of increased kindergarten or primary age students.

French Immersion



French Immersion						
	K	Gr. 1/3	Gr. 4/7	G. 8/12	Other	Total
2004	82	184	150	103	0	519
2005	88	208	152	102	0	550
2006	83	214	180	91	0	568
2007	89	237	193	112	0	631
2008	102	263	202	109	0	676
2009	109	279	241	108	0	737
2010	83	284	270	128	0	765
2011	108	288	271	147	0	814
2012	118	295	293	177	0	883
2013	121	304	318	186	0	929
2014	119	335	310	203	0	967
2015	110	353	336	205	0	1004
2016	108	360	352	230	0	1050
2017	90	345	369	228	0	1032
2018	100	313	401	223	0	1038
2019	100	301	407	225	0	1033
2020	98	293	401	242	0	1034
2021	101	301	374	252	0	1028
2022	104	303	357	267	0	1030
2023	104	307	346	279	0	1036
2024	106	313	338	278	0	1036
2025	108	318	348	264	0	1038
2026	110	323	351	255	0	1040
2027	112	329	356	246	0	1042
2028	114	334	362	241	0	1051
2029	114	340	368	239	0	1061

The attractiveness of the FI program has been a dominant factor over the past 20 years, increasing steadily in every year up to 2017.

The critical future factors, as they were in the past, are the size of kindergarten intake and the availability of space. Historically, there has been an intake of around 110 k students, but in 2017 the intake was 90 students.

It is likely that the FI elementary schools are at capacity, and, unless another school is added, enrolment in the FI program will remain at or close to its present level.

And of course, if a new school is added, then it will draw students from across the district, altering projections at all schools.

Housing and New Development

In assessing the impact of new housing on school enrolments, it is important to understand that it is the pace of growth that is the critical factor, not growth itself. Growth in housing is what drives retention and is captured in the projection model in the retention ratios. For instance, if there were 100 new houses built every year for the past five years, this amount of growth is captured in the retention ratio. Only if the number increases to 200 houses do we need to worry about accommodating additional growth within the projection model.

Of course, the pattern of housing growth is important: the total number of new houses might not change, but if they are all in a different school catchment area, the expectation is that growth at the one school will increase with a matching decline at another school.

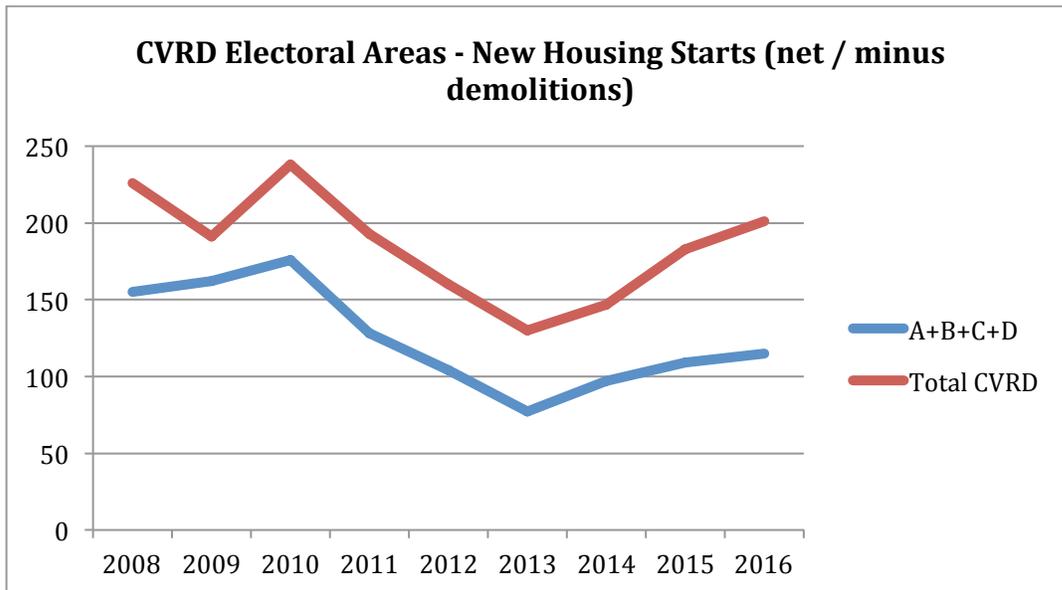
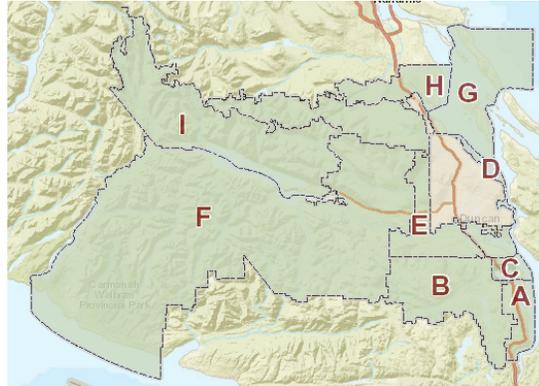
So in assessing new housing, the questions are:

- Is the total number of houses being built likely to increase?
- Will their geographic distribution change?

Growth in CVRD Electoral Areas

The majority of new housing starts in the CVRD outside the two municipalities have been in the southern EAs. While these have varied in number of the past decade, there is little consistency in overall trend.

This is also the case in the rest of the EAs.



South End Growth - Electoral Areas A, B, C, D

AS noted above, growth in the south end of the CVRD has averaged about 100 new units per year. This has been a mix of small subdivisions and individual new builds. Over the next decade, starting in 2019, a major development, Stonebridge, will come on stream. It will likely develop at a rate of about 50 units per year, to a total of 700 units likely over 15 years, developed in phases of 50 units. The key question again relates to the affordability of these units: if affordable, then likely families with children; if less affordable, then likely oriented to an more mature age group.



It is likely that there will be other smaller developments in EAs A, B, C, and D, but overall the rate of change from past years is unlikely to change.

Growth around Lake Cowichan - Electoral Areas E, F, G, H, I

In the area around Lake Cowichan, there will continue to be minor housing developments, but they will be almost exclusively focused on retirees and pre-retirees.

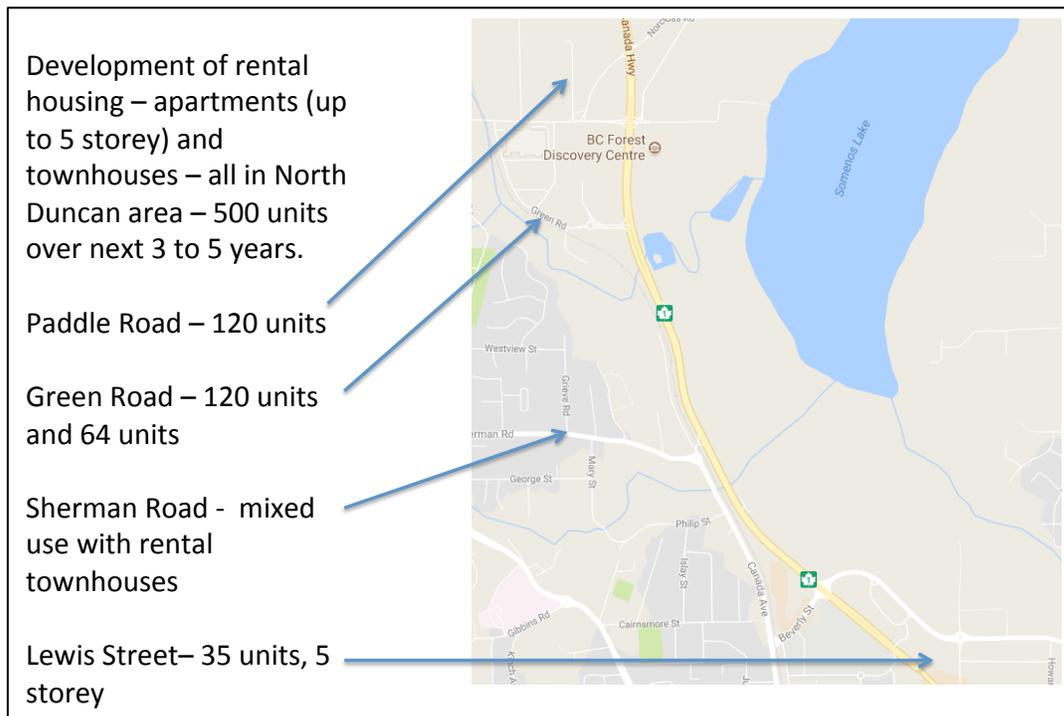
Growth in District of North Cowichan and Duncan

South End of North Cowichan and Duncan

The issues of housing affordability and family housing are most pertinent in this area. The District of North Cowichan has a strong policy focus on growth management and compact communities. Under this policy, they allow smaller lots which facilitate affordable housing, as well as other planning approaches toward the same end.

It is likely that this approach will continue as they move forward with planning for the Bell-McKinnon corridor, which could eventually house up to 5,000 people. The pace of development has been brought forward by the Council and Island Health decision to build a new hospital in that area; their land was rezoned earlier this year, and a local area plan will be developed in 2018.

The District also controls the area around Cowichan Secondary, for which it has recently developed the University Village Local Area Plan. This will facilitate the construction of affordable units, both rental and for sale. Several of these have recently been approved as noted on the map below:



There is very little land available within the City of Duncan boundary, although some single family lots are likely to be redeveloped into two to five or six lot developments, again for sale or rent.

In the area of Maple Bay, the Tzouhalem Mountain development has been under construction for many years. The lower areas are complete, and it is likely that development will start on building in the area above Kingsview Road. This will mostly be single family housing, with some townhouses and one apartment. It is likely that this development will occur very slowly and gradually over many years.

Crofton and Chemainus

Chemainus will see continued development of small infill projects, but no major development are anticipated.

Crofton has a very tight urban containment boundary, but development of the Hegland property will likely go ahead possibly adding about 220 new units.

Impacts of New Class Size and Composition Rules on School Capacities

The agreements reached earlier in 2017, and confirmed in MOUs between the Ministry and School Districts, lay out revised class size and composition requirements.

Class sizes will now be reduced if special needs students are part of a class. Class sizes have a maximum and minimum between which every class must fall. These are laid out below:

Class Size		22D Minimums	
K	20	K	15
K/1 Split	20	K/1 Split	15
1 to 3	22	1 to 3	17
3/4 Split	24	3/4 Split	19
4 to 7	30	4 to 7	24
Intermediate Split	27	Intermediate Split	21
8 to 12	30	K	24
*Shop	24	Shop	18
*Home Ec	24	Home Ec	18
*Science	24	Science	18
Band/Choir	30	Band/Choir	24

While this certainly will impact the effective capacity of all schools, it will also have various impacts on schools. These include:

- More split classes
- Smaller class sizes in schools with more special needs students
- Less ability of students to enroll out of catchment. With some spare capacity in the past, many schools have accepted out of area students. This will be more limited in future. This will impact both popular schools and schools which have historically seen a net outflow.
- Specialist classrooms will be pressed into use as enrolling classrooms
- Space will be squeezed throughout the school. Space for district Itinerant staff (and others) will be very limited. This general lack of space will make it more challenging for principals and teachers to find space for meetings and other activities that require small offices.
- Locating portables on site will reduce the amount of available space for play and other outdoor activities.
- Space historically provided to community uses such as child care will no longer be available.

Calculating School Capacities

In the past, 'capacity' was set/agreed with the Ministry:

- Nominal capacity was based on the number of classrooms available.
- Operating capacity was reduced to allow for a variety of other factors. It is this 'capacity' figure that the Ministry uses to calculate 'utilization' with a view to ensuring that all schools in a district are at or very close to 100% occupancy before new capacity is approved.

With the new class size and composition rules, capacity is effectively based on class size, from minimum to maximum based on the composition/special needs students.

The following example of Chemainus Elementary shows how the old and the new arrangements worked:

- The operating capacity of the school was 303 students plus 38 kindergarten students.
- The school has 13 enrolling classrooms plus two kindergarten rooms.
- It has a number of other non enrolling rooms.
- If it has a large number of special needs students, with each enrolling class being at the minimum class size, its effective capacity will be 30 kindergarten students and 270 in grades 1/7.
- If it has no special needs students, its effective capacity will be 40 kindergarten students and 342 in grades 1/7.
- The Ministry StrongStart program occupies, and will continue to occupy, one classroom at the school.

This school has been significantly impacted by the new class size rules:

2015

- 277 students K-7
- 11 divisions

2016

- 298 students K-7
- 74 Special Needs students
- 12 divisions

2017

- 333 students K-7
- 38 Special Needs students
- 17 divisions

School	Chemainus	
Current Nominal Capacity		
K	20	40
Elem	25	325
Current Operating Capacity		
K	19	38
Elem	21 to 23	303
Classrooms		
K		2
Elem		13
(Primary)		6
(Intermediate)		7
Other spaces (in sms)		
Library		96
Computer lab		51
Multipurpose		80
Sp Ed		192
Revised Capacity		
Minimum		
K	15	30
Primary	17	102
Intermediate	24	168
Total 1/7		270
Maximum		
K	20	40
Primary	22	132
Intermediate	30	210
Total 1/7		342
Notes		
		1
1 StrongStart accounted for in operating c		

Clearly the combination of high special needs and a growing enrolment overall will have significant impact on schools capacity.

The critical factor is the number of special needs students enrolled at a school.

Impact of Special Needs Students on Capacity

In September 2016, the following were the numbers of students at each school who had been assessed with some degree of special need:

	Low Incidence	High Incidence	Behaviour	Total
Alex Aitken	6	21	2	29
Alexander	16	36	1	53
Bench	9	39	1	49
Chemainus	17	54	3	74
Crofton	10	27	1	38
Discovery	17	54	7	78
Drinkwater	19	60	2	81
Ecole Cobble Hill	2	7	1	10
Ecole Mount Prevost	2	20	2	24
George Bonner	21	61	3	85
Khowhemun	14	42	3	59
Lake Cowichan	8	27	5	40
Maple Bay	12	40	0	52
Palsson	6	13	0	19
Tansor	19	15	1	35
Cowichan Sec	44	114	10	168
CVOLC	11	42	46	99
FKSS	28	75	4	107
LCS	7	9	11	27
CHSS	4	24	3	31

Clearly the numbers vary between schools, and there is some consistency in the geographic patterning of this incidence: some schools always receive more special needs students than others.

For the purposes of facility planning, it is necessary to develop a formula that will calculate the most likely capacity of a school based on the historic patterning of special needs students. Using the above data for 2016¹, and applying a rating scale to the different kinds of special needs (based on the Ministry rules), a 'score' for each school can be calculated, and then related to the total enrolment at the school. This calculation is as follows:

	Rating
Low Incidence	6
High Incidence	2
Behaviour	4

*"Classes can not have more than 3 students with designations and of those 3 only one can be an H (pink), and one can be either A or C or D or G (yellow), and one can be another designation. If after "best efforts" to comply with the composition limit you are unable to, Article 22 D of the MOA states the **minimum** size of a class that you have to go to (middle column at bottom of page) but by being over on composition limits you will still pay a remedy to the teacher for each month the class is over the composition limit."*

Roma Medves
Human Resources Manager
March 30, 2017 - email

¹ One year is not adequate to calculate 'historic patterning' but it is a place to start. Data for 2017 will be added once enrolments and assessments are stabilized.

	Low Incidence	High Incidence	Behaviour	Total	2016 Enrolment	As % of enrolment
Lake Cowichan School (4/7)	48	54	20	122	150	81%
Chemainus Elem	102	108	12	222	298	74%
Khowhemun	84	84	12	180	244	74%
George Bonner	126	122	12	260	387	67%
Crofton	60	54	4	118	180	66%
Discovery	102	108	28	238	378	63%
Alexander	96	72	4	172	277	62%
Drinkwater	114	120	8	242	400	61%
Tansor	114	30	4	148	254	58%
Palsson	36	26	0	62	131	47%
Maple Bay	72	80	0	152	340	45%
Alex Aitken	36	42	8	86	251	34%
Bench	54	78	4	136	399	34%
Thetis Island Elementary	0	2	0	2	14	14%
Ecole Mount Prevost	12	40	8	60	454	13%
Ecole Cobble Hill	12	14	4	30	366	8%

This 'score' can then be used to determine where a school is likely to fall between the revised maximum and revised minimum capacities. If the score were 100%, the capacity will equal the likely minimum figure; if the score is 0%, then the capacity will equal the likely maximum figure.

This exercise will need to be revised to match the situation on the ground, and at first look, it may be that these 'scores' are a little on the low side. For instance, all classes at Chemainus are at the minimum, which should be reflected in a score of 100%, not 74%. Bench is also much closer to its maximum than would be implied by its 34% score.

However this data allows us to compare capacities – current operating, maximum and minimum – against the projected school enrolments.

Matching School Capacities to Projected Enrolment

Across the school district, enrolments will be increasing over the next decade, while school capacities, essentially at a stroke, have been reduced at most schools, especially at those with historically high numbers of special needs students.

This next section of the report looks at how the impacts might vary in different zones.

Centre Zone

Currently (all figures are for grades 1/7):

- The Ministry agreed operating capacity in this zone is 1744 students.
- This is very similar to the most likely capacity which is 1735.
- The range between the maximum and the minimum capacity is over 400 students (1970 – 1555).
- The enrolment is projected to increase from 1621 to 1739 by 2029.

This suggests that:

- There will be some short term issues at Aitken and Drinkwater
- In the longer term, capacity issues can likely be addressed with the eventual upgrading or replacement of one of the schools
- However future housing growth in the south end of North Cowichan (University Village north to Bell-McKinnon) may require additional school capacity in the medium to long term (5 to 15 years).

School	Alex Aitken	Alexander Elem.	Drinkwater Elem.	Khowhemum Elem.	Maple Bay Elem.	Somenos Elem.	Tansor Elem.	TOTAL
Current Nominal Capacity								
Elem	25	225	325	375	325	350	0	275
Current Operating Capacity								
Elem	21 to 23	207	303	349	303	326	0	256
Revised Capacity								
Minimum								
Total 1/7		188	270	311	270	287	0	229
Maximum								
Total 1/7		238	342	394	342	364	0	290
Spec Needs Score		34%	62%	61%	74%	45%		58%
Likely Capacity								
		221	297	344	289	330		254
Projected Enrolments (Gr 1/7)								
2018		240	240	372	228	305	0	236
2019		235	235	367	223	300	0	237
2020		230	230	359	219	294	0	229
2021		233	233	363	221	297	0	231
2022		236	236	367	224	301	0	235
2023		237	237	369	225	303	0	236
2024		240	240	372	227	305	0	238
2025		241	241	375	229	308	0	240
2026		244	244	380	231	312	0	243
2027		248	248	385	235	316	0	246
2028		252	252	392	239	322	0	251
2029		257	257	399	243	328	0	255
Deficit from Likely Capacity								
2018 Difference	-19	57	-28	61	25	0	18	114
2029 Difference	-36	41	-55	45	2	0	-1	-4
Deficit from Minimum Capacity								
2018 Difference	-52	30	-61	42	-18	0	-7	-66
2029 Difference	-69	13	-88	27	-41	0	-26	-184

South Zone

Currently (all figures are for grades 1/7):

- The Ministry agreed operating capacity in this zone is 1071 students.
- This is identical to the most likely capacity which is 1071.
- The range between the maximum and the minimum capacity is about 250 students (1212 – 957).
- The enrolment is projected to increase from 1104 to 1241 by 2029.

This suggests that:

- There will be immediate problems at Bench and Discovery (note: Bench special needs score may well be too low)
- Spare capacity at Bonner will rapidly disappear.
- If capacity at Ecole Cobble Hill is capped, then some students might return to these neighbourhood schools, worsening the space problems.
- In the short to medium term, there will be a need for another elementary school
- A site review will likely conclude that the old Mill Bay Elementary site is not optimal
- A major housing development will occur in the Mill Bay area – Stonebridge – 700 units likely over 15 years, starting construction in 2019
- Elsewhere, there will continue to be smaller developments and infill/subdivisions

School		Bench	Bonner Elem.	Discovery Elem.	TOTAL
Current Nominal Capacity					
Elem	25	375	450	325	1150
Current Operating Capacity					
Elem	21 to 23	349	419	303	1071
Revised Capacity					
Minimum					
Total 1/7		311	376	270	957
Maximum					
Total 1/7		394	476	342	1212
Spec Needs Score		34%	67%	63%	
Likely Capacity		366	409	297	1071
Projected Enrolments (Gr 1/7)					
2018		387	370	347	1104
2019		401	379	356	1136
2020		410	382	363	1154
2021		416	390	367	1173
2022		419	390	370	1180
2023		419	394	370	1184
2024		409	385	363	1156
2025		413	389	366	1168
2026		418	393	371	1181
2027		423	398	376	1198
2028		431	406	383	1220
2029		439	413	390	1241
Deficit from Likely Capacity					
2018 Difference		-22	39	-50	-33
2029 Difference		-73	-4	-93	-170
Deficit from Minimum Capacity					
2018 Difference		-76	6	-77	-147
2029 Difference		-128	-37	-120	-284

Lake Zone

Currently (all figures are for grades 1/7):

- There is no Ministry agreed operating capacity in this zone.
- The most likely capacity is 271.
- The range between the maximum and the minimum capacity is about 64 students (314 – 250).
- The enrolment is projected to increase from 243 to 292 by 2029.

This suggests that:

- While there will be some pressure on space, there would seem to be little likelihood of significant capacity problems in this zone.

School	Palsson	Lake Cowichan Elem. (Gr 4/7)	TOTAL
Current Nominal Capacity			
Elem	25	125	150
Current Operating Capacity			
Elem	21 to 23	105	?
Revised Capacity			
Minimum			
Total 1/7	106	144	250
Maximum			
Total 1/7	134	180	314
Spec Needs Score			
	47%	81%	
Likely Capacity			
	121	151	271
Projected Enrolments (Gr 1/7)			
2018	95	147	243
2019	111	141	252
2020	109	144	253
2021	109	145	255
2022	110	144	254
2023	111	161	272
2024	113	158	272
2025	115	159	275
2026	117	161	278
2027	119	163	282
2028	121	166	287
2029	123	169	292
Deficit from Likely Capacity			
2018 Difference	25	3	29
2029 Difference	-2	-18	-21
Deficit from Minimum Capacity			
2018 Difference	11	-3	7
2029 Difference	-17	-25	-42

North Zone

Currently (all figures are for grades 1/7):

- The Ministry agreed operating capacity in this zone is 513 students.
- This is similar to the most likely capacity which is 499.
- The range between the maximum and the minimum capacity is about 120 students (580 – 458).
- The enrolment is projected to increase from 504 to 701 by 2029.

This suggests that:

- There will be immediate space issues at both schools
- Additional space will be required at both schools if current trends continue.

School		Chemainus	Crofton Elem.	Thetis Island Elem.	TOTAL
Current Nominal Capacity					
Elem	25	325	175	50	550
Current Operating Capacity					
Elem	21 to 23	303	163	47	513
Revised Capacity					
Minimum					
Total 1/7		270	147	41	458
Maximum					
Total 1/7		342	186	52	580
Spec Needs Score		74%	66%	14%	
Likely Capacity		288	160	50	499
Projected Enrolments (Gr 1/7)					
2018		311	179	13	504
2019		329	191	16	535
2020		344	201	16	561
2021		356	203	18	577
2022		379	218	18	615
2023		394	227	18	639
2024		403	235	18	656
2025		406	235	18	659
2026		410	238	19	667
2027		417	241	19	677
2028		424	246	19	689
2029		431	250	20	701
Deficit from Likely Capacity					
2018 Difference		-23	-19	37	-4
2029 Difference		-143	-90	31	-202
Deficit from Minimum Capacity					
2018 Difference		-41	-32	28	-46
2029 Difference		-161	-103	21	-243

French Immersion

Currently (all figures are for grades 1/7):

- The Ministry agreed operating capacity in this zone is 699 students.
- Due to the small numbers of special needs students in FI schools, the most likely capacity is high at 770.
- The range between the maximum and the minimum capacity is about 166 students (788 – 622).
- The enrolment is projected to stabilize at around the current projected 2018 enrolment of 715.

This suggests that:

- While it is hard to project FI enrolments, since they are partly policy controlled, a growing district enrolment could lead to a continued demand for FI education
- Demand from parents is high and a lottery was required this year as space was anticipated to be at a premium
- There may be concern in future years as class sizes will likely be higher in that program than at other elementary schools.
- The current projections assume that capacity and class size limit enrolments.
- If it is decided to offer FI in an additional school, all the projections will change.

School		Ecole Mt. Prevost Elementary	Ecole Cobble Hill	TOTAL
Current Nominal Capacity				
Elem	25	400	350	750
Current Operating Capacity				
Elem	21 to 23	373	326	699
Revised Capacity				
Minimum				
Total 1/7		328	294	622
Maximum				
Total 1/7		416	372	788
Spec Needs Score		13%	8%	
Likely Capacity		404	366	770
Projected Enrolments (Gr 1/7)				
2018		392	323	715
2019		387	322	708
2020		379	315	694
2021		368	307	675
2022		359	300	659
2023		357	296	653
2024		356	296	652
2025		363	302	666
2026		368	306	674
2027		374	311	684
2028		380	316	696
2029		387	322	709
Deficit from Likely Capacity				
2018 Difference		12	43	55
2029 Difference		17	44	61
Deficit from Minimum Capacity				
2018 Difference		-64	-29	-93
2029 Difference		-59	-28	-87