

# 2013 Voters List Quality Measurement

PREPARED FOR ELECTIONS BC  
BY BC STATS – NOVEMBER 2013

Authors: Beth Collins and Martin Monkman

Contacts: [Beth.Collins@gov.bc.ca](mailto:Beth.Collins@gov.bc.ca) or [Martin.Monkman@gov.bc.ca](mailto:Martin.Monkman@gov.bc.ca)

Acknowledgements: Written with assistance from Reg Moore, Elections BC, and Jackie Storen and Werner Grundlingh, BC Stats

Copyright © 2013, Province of British Columbia. All rights reserved.

This material is owned by the Government of British Columbia, and protected by copyright law. It may not be reproduced or redistributed without the prior written permission of the Province of British Columbia. To request permission to reproduce all or part of this material, please complete the Copyright Permission Request Form at <http://www.gov.bc.ca/com/copy/req/>.

Publish date: 2013-12-24

# Table of Contents

1. Introduction .....	2
2. Results .....	5
2.1. Coverage Estimates .....	6
2.3. Currency Estimates .....	10
2.3.1. Known Currency Group .....	13
2.3.2. Unknown Currency Group .....	14
2.3.3. Currency Estimates by Selected Voter Characteristics .....	19
2.3.4. Currency Estimates for Pre-enumeration and General Election Revised Voters List.....	19
2.4. Quality Estimates.....	23
3. Appendix A: Currency Estimation Flowchart .....	24
4. Appendix B: Definitions .....	25
5. Appendix C: Coverage Estimate Methodology .....	26
5.1. Part A: Provincial .....	26
Step 1: Estimating Total Population .....	26
Step 2: Removing the Population Aged 0 to 17 .....	26
Step 3: Removing Persons in BC Less Than 6 Months .....	26
Step 4: Removing Non Canadian Citizens .....	27
5.2. Part B: Electoral District Level Coverage by Age and Sex .....	28
Step 1: Estimating Base Population for Electoral Districts .....	28
Step 2: Removing Persons in BC Less Than 6 Months .....	28
Step 3: Removing Non-Canadian Citizens .....	29
User Note: .....	29
6. Appendix D: Currency Estimate Methodology .....	30
6.1.1. Phone Sourcing.....	30
6.2. Survey Administration .....	31
6.2.1. Proxy Decision Rules .....	33
6.3. Voter List Accuracy .....	37
7. Appendix E: B.C. Electoral District Regional Groupings .....	38
8. Appendix F: Telephone Survey Script.....	41
9. Appendix G: Introductory Letter – Respondents with Telephone Number.....	47
10. Appendix H: Mail Survey Form - Respondents without Telephone Number .....	48
11. Appendix I: Web Survey Text.....	51

# 1. Introduction

This report presents the findings of the 2013 Voters List Quality Study, conducted by BC Stats on behalf of Elections BC. The main purpose of the research is to assess the quality of the voters list at three (3) points: 1) Pre-Enumeration, 2) General Election Revised Voters List, and 3) General Voting Day (GVD) May 14, 2013. The quality study reviews the number of voters registered (coverage) and the currency of information (currency) at both the regional and provincial levels.

Coverage and currency are the two main indicators used by Canadian electoral agencies to assess the overall quality of a voters list at a given point in time. Coverage is a measure of the comprehensiveness of the voters list and is calculated as the percentage of total eligible voters who are registered on the provincial voters list. Currency is a measure of how up-to-date the voters list is and is calculated as the percentage of registered voters who are registered at their current address. This report also presents an indicator of overall list quality, which combines the concepts of coverage and currency to show the percentage of eligible voters in B.C. who are registered on the voters list at their current address.

The voter list quality study begins with a comprehensive assessment of currency as of General Voting Day (May 14, 2013). The study utilizes natural informational feedbacks from electoral events (the enumeration and general election) to define the currency of a voter record. All records are flagged as having Known or Unknown currency. The enumeration and general election yielded known currency information for over half of the voter records (61.7%) on the GVD voters list. This allowed the study to focus on the Unknown Currency portion of the voter records, where no information was collected in either the enumeration or the general election. (The Currency Estimation Flowchart (Appendix A) shows the steps in the estimation of voter list currency.)

From the Unknown Currency records a sample of 4,008 voters, stratified across the 85 Electoral Districts was selected. These voters were contacted<sup>1</sup> by mail and telephone between September 19 and October 15<sup>th</sup>. Respondents were asked to verify four key details, specifically the voter's name, date of birth, home address, and mailing address. From the 1,255 actual survey responses as well as 1,663 proxy responses<sup>2</sup> an estimate of currency from the sample is produced. The survey results are then used to identify demographic and administrative characteristics that are linked to currency.

---

<sup>1</sup> Respondents were also able to complete the verification through a web survey.

<sup>2</sup> Proxy responses are cases where a direct survey response was not obtained but reliable information regarding the currency of the voter's residential address was available from another source during the process of collecting survey data.

The Known Currency records are also analyzed for patterns of currency based on demographic and administrative characteristics. The estimate of the Unknown Currency group is derived through a statistical process known as multiple imputation. The imputation procedure estimates currency values for Unknown Currency records by comparing the characteristics of the survey respondents and the Known Currency voter records on key variables known to be linked to currency (e.g., a match to Drivers License files or the National Register of Electors (NRoE)). The final currency estimates for the entire voters list as of general voting day (May 14, 2013) utilizes information from numerous sources (electoral events, survey responses, and additional statistical analysis) to produce a high quality estimates.

This report will present GVD currency estimates at the regional and provincial levels as well as estimates for currency at pre-enumeration (January 23, 2013) and close of registration (April 24, revised voter list for general election). The earlier currency estimates are developed using extrapolation techniques from the starting point of GVD currency. The tables below (Table 1-1 and Table 1-2) show the currency estimates by region for the three relevant points in time.

**TABLE 1-1: CURRENCY ESTIMATES FOR REGISTERED VOTERS**

Region	Pre-Enumeration List Currency (Jan. 23)	Revised List Currency (Apr. 24)	Currency Increase, Jan. 23 to Apr. 24 (ppt*)	GVD Currency (May 14)	Currency Increase, Apr. 24 to May 14 (ppt*)	Overall Currency Increase, Jan. 23 to May 14 (ppt*)
Burnaby and New Westminster	89.9%	92.5%	2.6	93.2%	0.7	3.3
Cariboo - Thompson	89.7%	93.6%	3.9	95.0%	1.5	5.3
Columbia - Kootenay	89.9%	93.5%	3.6	94.6%	1.1	4.7
Fraser Valley	90.1%	93.1%	3.0	94.5%	1.3	4.4
North Shore	90.7%	93.9%	3.2	94.9%	1.0	4.2
Okanagan	88.1%	92.1%	4.0	93.9%	1.8	5.8
Richmond - Delta	91.4%	93.7%	2.4	94.4%	0.7	3.0
Surrey	91.0%	93.2%	2.3	94.2%	0.9	3.2
The North	89.2%	93.0%	3.8	94.5%	1.4	5.3
Tri-Cities	91.9%	93.9%	2.0	94.5%	0.6	2.7
Vancouver	88.0%	91.3%	3.3	92.7%	1.4	4.7
Vancouver Island and South Coast	88.2%	92.4%	4.2	94.7%	2.3	6.5
<b>BRITISH COLUMBIA</b>	<b>89.4%</b>	<b>92.7%</b>	<b>3.3</b>	<b>94.2%</b>	<b>1.4</b>	<b>4.7</b>

\*percentage point change

This study also estimates coverage by comparing the number of voters registered on Elections BC's voters list as of General Voting Day (May 14, 2013) with an estimate of the eligible population of B.C. voters for the same date.<sup>3</sup> Similar estimates are also produced for pre-enumeration (January 23, 2013) and close of registration (April 24, revised voter list for general election). These results are shown in the table below.

**TABLE 1-2: COVERAGE ESTIMATES**

Region	Pre-Enumeration List Coverage (Jan. 23)	Revised List Coverage (Apr. 24)	Coverage Increase, Jan. 23 to Apr. 24 (ppt*)	GVD Coverage (May 14)	Coverage Increase, Apr. 24 to May 14 (ppt*)	Overall Coverage Increase, Jan. 23 to May 14 (ppt*)
Burnaby and New Westminster	99.1%	97.6%	-1.5	99.1%	1.5	0.0
Cariboo - Thompson	93.6%	92.6%	-0.9	94.8%	2.2	1.2
Columbia - Kootenay	97.0%	95.9%	-1.1	97.8%	1.9	0.8
Fraser Valley	94.6%	93.4%	-1.2	94.9%	1.5	0.3
North Shore	96.7%	95.3%	-1.4	97.3%	2.0	0.6
Okanagan	96.7%	95.3%	-1.3	97.0%	1.6	0.3
Richmond - Delta	99.5%	98.0%	-1.5	99.3%	1.3	-0.2
Surrey	95.3%	94.5%	-0.8	96.2%	1.8	0.9
The North	89.8%	88.8%	-1.0	91.7%	2.9	1.9
Tri-Cities	96.5%	95.3%	-1.1	96.7%	1.3	0.2
Vancouver	96.7%	95.3%	-1.3	97.5%	2.1	0.8
Vancouver Island and South Coast	98.0%	96.6%	-1.4	98.3%	1.8	0.3
<b>BRITISH COLUMBIA</b>	<b>96.3%</b>	<b>95.1%</b>	<b>-1.2</b>	<b>96.9%</b>	<b>1.8</b>	<b>0.6</b>

\*percentage point change

<sup>3</sup> Please see Appendix C for a detailed discussion of the methodology used by BC Stats to create the eligible voter population estimate.

## 2. Results

Estimates of coverage, currency and quality are based on the May 14, 2013 (GVD) voters list<sup>4</sup> that consisted of 3,176,455 registered voters. The table below outlines the major steps of this research project.

**TABLE 2-1: TIMELINE FOR STUDY**

<b>CURRENCY</b>	
Elections BC produces file reflecting pre-enumeration voters list	January 23
Elections BC produces general election revised voters list file (close of registration)	April 24
Elections BC utilizes information from the general election and enumeration to identify “known currency” records	May 14 – September 9
Survey of 4,008 “unknown currency” records	September 19 – October 15
Analysis of survey results	October 15 – October 29
Multiple imputation to estimate currency	October 30 – Nov 4
BC Stats produces overall currency estimates for pre-enumeration, close of registration and general election day	November 5 – November 15
<b>COVERAGE</b>	
BC Stats produces coverage estimates using Census population counts	November 1 - 29
<b>OVERALL QUALITY</b>	
Quality estimates for pre-enumeration, close of registration and general election day are produced using coverage and currency estimates	December 2 - 4

<sup>4</sup> Also referred to as “General Voting Day Voters List” or “Scrubbed List”.

## 2.1. Coverage Estimates

The coverage estimate compares the number of voters registered on Elections BC's voters list as of General Voting Day (May 14, 2013) with an estimate of the eligible population of B.C. voters for the same date.<sup>5</sup> BC Stats estimates that 71.7 percent of B.C.'s population of approximately 4.6 million met the citizenship and age eligibility requirements to vote in B.C. Of the total population eligible to vote, 96.9 percent were registered on the B.C. voters list on May 14, 2013. This overall, provincial coverage estimate is 3.3 percentage points higher than the estimate produced as of July 22, 2011 and 4.3 percentage points higher than the estimate BC Stats produced for April 6, 2009<sup>th</sup>.

### EQUATION 1: CALCULATION OF PROVINCIAL COVERAGE ESTIMATE

<p><u>Given</u></p> <ul style="list-style-type: none"><li>- B.C. population: 4,571,494</li><li>- Population of eligible voters: 3,279,141</li><li>- Population of registered voters: 3,176,455</li></ul> $\text{Coverage}\% = \frac{\text{Registered Voters}}{\text{Eligible Voters}} = \frac{3,176,455}{3,279,141} = 96.9\%$
---

---

<sup>5</sup> Please see Appendix B for a detailed discussion of the methodology used by BC Stats to create the eligible voter population estimate.



Table 2-2 provides an overview of coverage statistics at the regional level for May 14, 2013<sup>6</sup>. Across regions, there is an eight percentage point spread in coverage values, from a low of 91.7 percent for The North, to a high of 99.3 percent for Richmond Delta. As a general rule, regions with low population density, such as The North, Cariboo Thompson, and the Fraser Valley, tend to have coverage percentages below the provincial average, and those with higher population densities tend to have above-average coverage values. Exceptions to this rule include Surrey which has a relatively high population density and a lower than average coverage value.

**TABLE 2-2: COVERAGE ESTIMATES, MAY 14, 2013**

<b>Region</b>	<b>Population</b>	<b>Population 18+</b>	<b>Eligible voters</b>	<b>Registered voters</b>	<b>Coverage %</b>
Burnaby and New Westminster	297,128	249,140	198,991	197,120	99.1%
Cariboo - Thompson	205,711	167,330	158,789	150,592	94.8%
Columbia - Kootenay	153,702	125,179	118,430	115,860	97.8%
Fraser Valley	516,843	406,045	370,509	351,477	94.9%
North Shore	232,444	189,589	161,032	156,613	97.3%
Okanagan	395,285	326,390	306,709	297,488	97.0%
Richmond - Delta	297,225	243,076	204,093	202,702	99.3%
Surrey	498,797	391,527	325,100	312,835	96.2%
The North	269,073	208,695	198,025	181,504	91.7%
Tri-Cities	224,312	180,359	155,636	150,469	96.7%
Vancouver	675,469	576,605	456,068	444,476	97.5%
Vancouver Island and South Coast	805,505	671,431	625,759	615,319	98.3%
<b>BRITISH COLUMBIA</b>	<b>4,571,494</b>	<b>3,735,366</b>	<b>3,279,141</b>	<b>3,176,455</b>	<b>96.9%</b>

Along with the assessment of coverage as of General Voting Day (May 14, 2013), estimates were calculated for coverage prior to the enumeration (January 23, 2013) and at the time of the general election revised voters list (April 24, 2013).

<sup>6</sup> Appendix E shows the allocation of electoral districts to regions.

The tables below (Table 2-3 and Table 2-4) show the estimated coverage for pre-enumeration (January 23) and close of registration (April 24).

**TABLE 2-3: COVERAGE ESTIMATES, JANUARY 23 (PRE-ENUMERATION)**

<b>Region</b>	<b>Population</b>	<b>Population 18+</b>	<b>Eligible voters</b>	<b>Registered voters</b>	<b>Coverage %</b>
Burnaby and New Westminster	296,417	248,244	198,384	196,628	99.1%
Cariboo-Thompson	205,585	166,927	158,462	148,286	93.6%
Columbia-Kootenay	153,567	124,822	118,150	114,647	97.0%
Fraser-Valley	514,916	403,724	368,411	348,381	94.6%
North Shore	232,048	188,797	160,416	155,093	96.7%
Okanagan	394,198	324,985	305,492	295,274	96.7%
Richmond-Delta	296,791	241,996	203,239	202,149	99.5%
Surrey	496,953	389,295	323,233	307,898	95.3%
The North	268,596	207,896	197,334	177,175	89.8%
Tri-Cities	223,489	179,183	154,603	149,148	96.5%
Vancouver	674,506	575,117	455,328	440,094	96.7%
Vancouver Island & South Coast	804,043	669,097	623,821	611,103	98.0%
<b>BRITISH COLUMBIA</b>	<b>4,561,109</b>	<b>3,720,083</b>	<b>3,266,873</b>	<b>3,145,876</b>	<b>96.3%</b>

**TABLE 2-4: COVERAGE ESTIMATES, APRIL 24 (CLOSE OF REGISTRATION)**

<b>Region</b>	<b>Population</b>	<b>Population 18+</b>	<b>Eligible voters</b>	<b>Registered voters</b>	<b>Coverage %</b>
Burnaby and New Westminster	297,121	248,942	199,018	194,196	97.6%
Cariboo-Thompson	205,771	167,233	158,786	147,114	92.6%
Columbia-Kootenay	153,741	125,097	118,457	113,653	95.9%
Fraser-Valley	516,709	405,570	370,240	345,822	93.4%
North Shore	232,469	189,421	161,018	153,431	95.3%
Okanagan	395,251	326,090	306,653	292,376	95.3%
Richmond-Delta	297,269	242,848	204,045	199,955	98.0%
Surrey	498,668	391,070	324,904	306,900	94.5%
The North	269,097	208,523	197,993	175,764	88.8%
Tri-Cities	224,256	180,122	155,511	148,269	95.3%
Vancouver	675,570	576,254	456,376	434,983	95.3%
Vancouver Island and South Coast	805,572	670,914	625,732	604,163	96.6%
<b>BRITISH COLUMBIA</b>	<b>4,571,494</b>	<b>3,732,084</b>	<b>3,278,733</b>	<b>3,116,626</b>	<b>95.1%</b>



## 2.3. Currency Estimates

The approach used to measure currency in this study builds on the methodology utilized in the 2011 quality study for the Harmonized Sales Tax (HST) Referendum. The foremost criterion of both studies is to utilize natural informational feedbacks from electoral events that may define the currency of a voter registration. By knowing the set of current records, referred to as Known Currency group, the survey and imputation portion can focus on the Unknown Currency group. This study combines intelligence gathered from the survey data with other voter information (also referred to as administrative data) to produce estimates of currency. Once this comprehensive assessment is completed for the GVD voters list, currency estimates are extrapolated for the earlier two points: 1) Pre-Enumeration, January 23, and 2) Revised Voters List, April 24. For the detailed description of this methodology refer to the document “2013\_VLQ\_Project Plan (2013-05-03).pdf”<sup>7</sup>.

Currency is defined as the percentage of registered voters in B.C. who are on the voters list at their current residential address. Calculations of accuracy (the correctness of voter name and mailing address information on the voters list) for the survey respondents are included in Appendix D (Section 6.3: Voter List Accuracy).

To prepare the currency estimates, the May 14, 2013 (GVD) voters list (population of 3,176,455 registered voters) was divided into two groups: 1) those with known currency based on outcomes from the enumeration and the general election (61.6%), and 2) those with unknown currency (38.4%). (The Currency Estimation Flowchart (Appendix A) shows the steps in the estimation of voter list currency.)

---

<sup>7</sup> A copy of this methodology document is in the folder “P:\15285 - Enum-Specific\EN-2013\20-Event Plan and Schedule\VoterListQualityStudy\Concept&MOU”.

The table 2-5 summarizes the number of records belonging to each group. The “known currency” group includes voter records that are known to be current and known to be not-current.

**TABLE 2-5: VOTER RECORD GROUPS**

<b>Total Voters List, May 14, 2-13, n=3,176,455</b>
<b>Known Currency Group: n=1,957,781</b>
Current: n=1,905,884
<ul style="list-style-type: none"> <li>• Voters who participated in the general election and/or created, updated or confirmed their voter registration during the 2013 enumeration.</li> </ul>
Not Current: n=51,897
<ul style="list-style-type: none"> <li>• Voters whose enumeration letters were returned by Canada Post</li> <li>• Voters whose Where-To-Vote (WTV) cards were returned by Canada Post.</li> </ul>
<b>Unknown Currency Group: n=1,218,674</b>
<ul style="list-style-type: none"> <li>• Voters who did not participate in the general election and/or no update or confirmation on their registration during 2013 enumeration.</li> </ul>

The Known Currency group consists of records known to be current *and* records known to not be current as a result of the enumeration or general election. Records associated with voters who voted in the general election were included in the Known Currency group and considered to be current. In addition, records that were updated, confirmed, or created on or after January 23, 2013 (pre-enumeration) were assumed to be current as of the reference date of May 14, 2013 (GVD), regardless of participation (voted) in the general election. Records were defined as not current when all three of the following conditions are met: 1) the enumeration letter and/or the Where to Vote card was returned as undeliverable, 2) no registration update was collected through either of the events, and 3) the voter didn't vote. Just over 60 percent of all records on the May 14, 2013 (GVD) voters list (1,957,781) had a known currency status. Of these records in the Known Currency group, 97.4 percent were known to be current and the remaining 2.7 percent were known to not be current.

The remaining 38.4 percent of the May 14 (GVD) voters list defined the Unknown Currency group. A record is included in this group when 1) the voter didn't participate (vote) and 2) no registration information was collected in the enumeration or general election. The currency of these 1,218,674 records cannot be confidently inferred from the enumeration or general election, and therefore they are the focus of the quality survey.

Table 2-6 shows the distribution of the voter records in the Known and Unknown Currency groups across regions. Some regions are over-represented in the Known Currency group relative to others due to a relatively high voter turnout in the general election. For example, 66.3 percent of voter records in the Vancouver Island and South Coast region have a known currency from the enumeration or general election, leaving one-third (33.7%) to be estimated. By contrast, currency is unknown for 42.6 percent of voter records from Richmond-Delta region.

The final currency estimates are calculated by combining the currency values from the Known Currency Group with currency estimates for the Unknown Currency Group.

**TABLE 2-6: ALLOCATION OF MAY 14 VOTER RECORDS TO KNOWN AND UNKNOWN CURRENCY GROUPS BY REGION**

<b>Region</b>	<b>Known Currency Group</b>	<b>% of Records with Known Currency</b>	<b>Unknown Currency Group</b>	<b>% of Records with Unknown Currency</b>	<b>May 14 Voter Records (GVD)</b>
Burnaby and New Westminster	114,566	58.2%	82,208	41.8%	196,774
Cariboo - Thompson	98,319	65.2%	52,385	34.8%	150,704
Columbia - Kootenay	70,183	60.6%	45,666	39.4%	115,849
Fraser Valley	220,841	62.7%	131,233	37.3%	352,074
North Shore	102,010	65.2%	54,493	34.8%	156,503
Okanagan	182,739	61.3%	115,434	38.7%	298,173
Richmond - Delta	116,195	57.4%	86,139	42.6%	202,334
Surrey	184,471	59.0%	128,139	41.0%	312,610
The North	109,996	60.6%	71,384	39.4%	181,380
Tri-Cities	90,351	60.1%	60,107	39.9%	150,458
Vancouver	259,803	58.6%	183,763	41.4%	443,566
Vancouver Island and South Coast	408,307	66.3%	207,723	33.7%	616,030
<b>BRITISH COLUMBIA</b>	<b>1,957,781</b>	<b>61.6%</b>	<b>1,218,674</b>	<b>38.4%</b>	<b>3,176,455</b>

### 2.3.1. Known Currency Group

The group with Known Currency accounts for 61.6 percent of the May 14, 2013 (GVD) voters list. The overall currency of this group is 97.3 percent. The range of currency within the Known Currency group only varies 2.5 percentage points from the regions with the highest known currency (Surrey and Tri-Cities) to the region with the lowest (Vancouver). High currency values are expected for this subset of the voters list because it consists of voters who voted and of records where the voter's information was confirmed, updated, or created during the enumeration or general election. Table 2-7 shows the currency of the Known Currency group by region.

**TABLE 2-7: CURRENCY OF KNOWN CURRENCY GROUP BY REGION AS OF MAY 14, 2013**

<b>Region</b>	<b>Current</b>	<b>Not Current</b>	<b>Total</b>	<b>% Current</b>
Burnaby and New Westminister	110,994	3,572	114,566	96.9%
Cariboo - Thompson	96,334	1,985	98,319	98.0%
Columbia - Kootenay	67,853	2,330	70,183	96.7%
Fraser Valley	216,366	4,475	220,841	98.0%
North Shore	99,544	2,466	102,010	97.6%
Okanagan	176,713	6,026	182,739	96.7%
Richmond - Delta	114,133	2,062	116,195	98.2%
Surrey	181,243	3,228	184,471	98.3%
The North	106,529	3,467	109,996	96.8%
Tri-Cities	88,860	1,491	90,351	98.3%
Vancouver	248,930	10,873	259,803	95.8%
Vancouver Island and South Coast	398,385	9,922	408,307	97.6%
<b>BRITISH COLUMBIA</b>	<b>1,905,884</b>	<b>51,897</b>	<b>1,957,781</b>	<b>97.3%</b>

## 2.3.2. Unknown Currency Group

Currency for the Unknown Currency segment of the May 14 voters list was estimated through two methods: a survey, and imputation of missing records.

### 2.3.2.1. Survey

BC Stats conducted a survey of 4,008 voter records selected at random from the 1,166,222 records in the Unknown Currency group<sup>8</sup>. Efforts were made to collect information from all sampled voters through one or more of the following data collection streams: telephone interview, online survey and/or mail-in questionnaire during a period from Thursday September 19 to Saturday, October 13, 2013<sup>9</sup>.

The main goal of the quality survey was to estimate the currency of the home address portion of the voter registration record<sup>10</sup>.

#### Survey Responses

There are two types of responses: *actual responses* and *proxy responses*. *Actual responses* to any of the three data collection streams<sup>11</sup> are considered the most reliable form of currency information for the sample and are classified as *confirmed responses* upon which *confirmed findings* are based. For some records, it was not possible to obtain a direct response to the survey, but in the process of collecting data, information came to light that provided reliable information regarding the currency of the voter's residential address (see Section 5.2.1 Proxy Decision Rules). These *proxy responses* are also considered *confirmed responses* and contribute to *confirmed findings*. Sources of proxy responses include telephone interviews where enough information is collected from a third party to make a currency determination, return-to-sender mail, and Canada Post tracking information.

There is a subset of sampled records for which it was not possible to obtain enough information directly from the respondent or from a proxy source to determine whether the residential address was current; these records are considered *non-responses*.

---

<sup>8</sup> There were 42,025 voters whose records had unknown currency at GVD but who updated their records between GVD and the production of the scrubbed list. These records were excluded from the survey sample. Including this group in the sample and attempting to verify their addresses would have caused considerable confusion for these voters who had so recently updated their voter information.

<sup>9</sup> Telephone interviewing was completed on October 13, 2013. Mail-in questionnaires that were received by BC Stats on or before October 22, 2013 were included as survey responses.

<sup>10</sup> See Appendix D for survey and imputation methodology details.

<sup>11</sup> Telephone, mail or web. A small number of respondents also confirmed their information directly with Elections BC during the data collection period.



## Survey Response & Confirmed Findings

Over half of the sample (62.4%) yielded a confirmed, current response and a further 10.4 percent yielded a confirmed, not current response. Together, confirmed responses were received for 72.8 percent of the original sample of 4,008. 27.2% of the sample did not respond to the survey.

The proportion of the sample that was confirmed as current is substantially lower for both this survey (62.4%) and the 2011 survey (55.7%), as compared with the 2009 survey (74.0%). This reflects differences in the methodology used in 2013 and 2011 compared to 2009. The methodology for the 2013 quality study and the 2011 study focuses on the subset of the voters list with Unknown Currency. In 2009, the study drew a sample from the entire voters list, including the group referred to as “Currency Known” in the 2013 study. It should also be noted that in 2011, Elections BC did not conduct an enumeration before the referendum, as was the case prior to the 2009 and 2013 general elections.

Response data from the 2009, 2011 and 2013 voters list quality studies is provided below in Table 2-8 for comparison purposes.

TABLE 2-8: FINAL RESPONSE RATES

Response Type	Currency	Disposition Source		2013 (n = 4,008)		2011 (n=1,275)		2009 (n=2,499)	
				n	%	n	%	n	%
Confirmed Responses	Current	Actual Responses	Telephone	407	10.2%	303	23.8%	563	22.5%
			Mail	468	11.7%	91	7.1%	392	15.7%
			Web	281	7.0%	62	4.9%	66	2.6%
			Other*	7	0.2%	2	0.2%	2	0.1%
			<b>Total</b>	<b>1163</b>	<b>29.0%</b>	<b>458</b>	<b>35.9%</b>	<b>1,023</b>	<b>40.9%</b>
		Proxy	<b>Total</b>	<b>1338</b>	<b>33.4%</b>	<b>252</b>	<b>19.8%</b>	<b>827</b>	<b>33.1%</b>
	<b>Total Current Responses</b>		<b>2501</b>	62.4%	<b>710</b>	<b>55.7%</b>	<b>1,850</b>	<b>74.0%</b>	
	Not Current	Actual Responses	Telephone	26	0.6%	22	1.7%	29	1.2%
			Mail	37	0.9%	32	2.5%	37	1.5%
			Web	27	0.7%	11	0.9%	11	0.4%
			Other*	2	0.0%	-	-	-	-
			<b>Total</b>	<b>92</b>	2.3%	<b>65</b>	<b>5.1%</b>	<b>77</b>	<b>3.1%</b>
		Proxy	<b>Total</b>	325	8.1%	201	15.8%	175	7.0%
	<b>Total Not Current Responses</b>		417	10.4%	266	20.9%	252	10.1%	
<b>Total Confirmed Responses</b>		<b>2918</b>	<b>72.8%</b>	<b>976</b>	<b>76.5%</b>	<b>2,102</b>	<b>84.1%</b>		
Non-Responses	<b>Total Non-Responses</b>		<b>1084</b>	<b>27.0%</b>	<b>294</b>	<b>23.1%</b>	<b>397</b>	<b>15.9%</b>	
	<b>Total Deceased</b>		<b>6</b>	<b>0.1%</b>	<b>5</b>	<b>0.4%</b>	-	-	
<b>Total Responses and Non-Responses</b>			<b>4,008</b>	<b>100.0%</b>	<b>1,275</b>	<b>100.0%</b>	<b>2,499</b>	<b>100.0%</b>	

\*In 2013 this includes respondents who called Elections BC directly to confirm their currency or update their information during the data collection period. In 2011 and 2009 this group includes those respondents who confirmed through multiple modes.

## Confirmed Responses

The sample included 334 records from each of the 12 regions. The proportion of confirmed responses ranged from 68.3 percent in the North to 76.9 percent in the Cariboo-Thompson region. Confirmed responses were received for each of the 85 electoral districts (ED). At the ED level, the proportion of confirmed responses ranged from 55.6 percent in Vancouver-West End, to a high of 91.3 percent in Saanich North and the Islands. The survey yielded an average of 72.8 percent confirmed responses at the provincial level.

Table 2-9 shows the currency for “confirmed response” at the regional level, based on the survey results. The overall weighted<sup>12</sup> estimate of currency for the Unknown Currency Group is 86.0 percent ( $\pm 1.4$  percentage points, 19 times out of 20). This currency estimate varies at the regional level from a low of 78.6 percent for Cariboo-Thompson, to 91.3 percent for Richmond-Delta.<sup>13</sup>

**TABLE 2-9: CURRENCY OF CONFIRMED RESPONSES BY REGION AS OF MAY 14, 2013**

Region	Current*	Not Current	Total	% Current
Burnaby and New Westminster	216	24	240	90.0%
Cariboo – Thompson	202	55	257	78.6%
Columbia – Kootenay	203	47	250	81.2%
Fraser Valley	222	27	249	89.2%
North Shore	192	37	229	83.8%
Okanagan	207	39	246	84.1%
Richmond – Delta	221	21	242	91.3%
Surrey	214	28	242	88.4%
The North	185	43	228	81.1%
Tri-Cities	226	24	250	90.4%
Vancouver	205	26	231	88.7%
Vancouver Island and South	208	45	253	82.2%
<b>BRITISH COLUMBIA</b>	<b>2,501</b>	<b>417</b>	<b>2,918</b>	<b>86.0%**</b>

\* Combined survey responses and proxy measures

\*\* Weighted to the proportion of registered voters in each region.

<sup>12</sup> The sample weights ensure that each electoral district contributes to the overall estimate of currency for the Unknown Currency Group in proportion to the number of registered voters in those electoral districts.

<sup>13</sup> Estimates of currency at the regional level for survey respondents have relatively higher margin of error due to the smaller sample sizes in each.

### 2.3.2.2. Imputation: Estimating the Currency of the Unknown Currency group

As noted earlier, the currency of the Known Currency group is precisely established. For the remaining registered voters, the Unknown Currency group, BC Stats has estimated the overall currency by examining the patterns of currency in the survey responses and in the administrative records of the Known Currency group of voters.

The estimate of the Unknown Currency group was estimated through a statistical process known as multiple imputation. The imputation procedure estimates currency values for Unknown Currency records by comparing the characteristics of the survey respondents and the Known Currency voter records on key variables known to be linked to currency (e.g., a match to Drivers License files or the National Register of Electors (NRoE)).

The final result estimates the currency of the Unknown Currency group at 89.1%.

### 2.3.2.3. Estimating the Currency of the Entire Voters List

Table 2-10 shows the estimated currency of the Voters List, by Region. The currency of the list as a whole was 94.2 percent. Currency ranges from a high of 95.0 percent in Cariboo – Thompson, to a low of 92.7 percent in Vancouver.

**TABLE 2-10: CURRENCY ESTIMATES OF REGISTERED VOTERS BY REGION AS OF MAY 14, 2013**

<b>REGION</b>	<b>TOTAL</b>	<b>ESTIMATED CURRENT<sup>1</sup></b>	<b>% CURRENT</b>
Burnaby and New Westminster	196,774	183,490	93.2%
Cariboo - Thompson	150,704	143,240	95.0%
Columbia - Kootenay	115,849	109,600	94.6%
Fraser Valley	352,074	332,570	94.5%
North Shore	156,503	148,570	94.9%
Okanagan	298,173	279,840	93.9%
Richmond - Delta	202,334	191,000	94.4%
Surrey	312,610	294,360	94.2%
The North	181,380	171,340	94.5%
Tri-Cities	150,458	142,220	94.5%
Vancouver	443,566	411,190	92.7%
Vancouver Island and South	616,030	583,260	94.7%
<b>BRITISH COLUMBIA</b>	<b>3,176,455</b>	<b>2,990,720</b>	<b>94.2%</b>

<sup>1</sup> Rounded to the nearest 10

### 2.3.3. Currency Estimates by Selected Voter Characteristics

Certain demographic and other voter record characteristics are related to currency and may be useful to Elections BC when identifying targets for enumeration. For example, Table 2-11 shows that the currency estimates for males (94.3%) and females (94.7%) are almost the same, but the rate of currency for records with unknown gender is lower, at 91.1 percent. Voters under the age of 40 also tend to have lower currency rates. Finally, voter records that are linked to B.C. motor vehicle records are more likely to be current than records linked to any other source.

**TABLE 2-11 CURRENCY ESTIMATES FOR THE FULL VOTERS LIST, SELECTED VOTER CHARACTERISTICS**

SELECTED VOTER CHARACTERISTICS	MAY 14 VOTERS LIST		
	TOTAL REGISTERED VOTERS	TOTAL CURRENT	% CURRENT
<b>Gender</b>			
Male	1,442,181	1,358,720	94.2%
Female	1,519,135	1,436,850	94.6%
Unknown Gender	215,139	195,500	90.9%
<b>Age Group<sup>1</sup></b>			
18-29	460,195	417,380	90.7%
30-39	497,117	454,470	91.4%
40-49	558,019	522,950	93.7%
50-59	646,193	616,270	95.4%
60+	1,014,931	979,950	96.6%
<b>NRoE / DL Linkage<sup>2</sup></b>			
Linked on Drivers License Only	95,988	94,140	98.1%
Linked on NRoE Only	218,570	181,050	82.8%
Linked on Both	2,810,537	2,665,620	94.8%
Linked on Neither	51,360	49,910	97.2%
<b>BRITISH COLUMBIA</b>	<b>3,176,455</b>	<b>2,990,720</b>	<b>94.2%</b>

Notes:

<sup>1</sup> One registered voter does not have a record in the age field

<sup>2</sup> Four registered voters do not have a record of either NRoE or DL Linkage

### 2.3.4. Currency Estimates for Pre-enumeration and General Election Revised Voters List

Along with the comprehensive assessment of currency as of General Voting Day (produced from the survey results as well as imputation), estimates were calculated for the currency of the voters list (regionally and provincially) prior to the enumeration

(January 23, 2013) and for the general election revised voters list (April 24, 2013). The estimation of currency for these additional dates relies on having a relatively accurate assessment of currency for May 14 (known currency date) from which to extrapolate.

Currency estimates for pre-enumeration and general election revised voters list are developed using extrapolation techniques which compare ‘snaps shots’ of the voters list (January 23, April 24) and analyse transactions that occur between these dates and the known currency date (May 14). Specifically, the following transactions are considered:

- new records on the voters list,
- records that are removed from the voters list, and
- address changes within a region.

The equation below used to estimate currency for January 23 and April 24. Currency is estimated first at the regional level and then at the provincial level.

**EQUATION 2: CALCULATION FOR ESTIMATING CURRENCY FOR JANUARY 23 AND APRIL 24**

$$Currency_{T_1} = \frac{Current_{T_2} - Adds(T_1-T_2) - Updates\ within\ region(T_1-T_2)}{Registered\ voters_{T_1}}$$

Where  $T_1$  is the earlier date and  $T_2$  is the known currency date.

The assumptions underlying the currency estimates for  $T_1$  are as follows:

- 1) All new voters added<sup>14</sup> to the region between  $T_1$  and  $T_2$  were not on the list and current at  $T_1$  and therefore they are subtracted from the estimate of current voters at  $T_2$  in that region.
- 2) All voters removed from the region between  $T_1$  and  $T_2$  were on the list and current at  $T_1$ .
- 3) All voters who updated within the region between  $T_1$  and  $T_2$  were not current at  $T_1$  and therefore they are subtracted from the estimate of current voters at  $T_2$ .

2.3.4.1. Analysis of Assumptions:

If the time between  $T_1$  and  $T_2$  is not long, the first assumption is likely an accurate reflection of reality. That is, if someone moves into a region or is a new registrant in a region during a relatively short period of time, it is likely that their registration is current

---

<sup>14</sup> This includes additions to the provincial voters list as well as additions at the regional level that occur because of moves between regions.

at the end of that period. The second assumption likely under-estimates currency at  $T_2$  because some voters removed from the list between two points in time will not have been current at the earlier point in time. This is especially the case when intensive list “clean-up” is underway (e.g., “reported moved” from an enumeration). The third assumption will contribute to a conservative estimate of currency because some records updated between  $T_1$  and  $T_2$  were current at  $T_1$ . For instance, some voters who moved between  $T_1$  and  $T_2$  had a current record at both points in time. The formula, however, treats all updates as though they were not current at  $T_1$ .

The tables below (Table 2-12 and 2-13) show the estimated currency for pre-enumeration (January 23) and close of registration (April 24). The currency of the voters list increased 3.3 percentage points from the pre-enumeration period (89.4%) to general election revised voters list (92.7%) and then increased another 1.5 percentage points to 94.2 on GVD voters list (May 14).

**TABLE 2-12: CURRENCY ESTIMATES FOR JANUARY 23 (PRE-ENUMERATION)**

<b>Region</b>	<b>Total</b>	<b>Current</b>	<b>% Current</b>
Burnaby and New Westminster	196,628	176,842	89.9%
Cariboo - Thompson	148,286	133,024	89.7%
Columbia - Kootenay	114,647	103,030	89.9%
Fraser Valley	348,381	313,893	90.1%
North Shore	155,093	140,699	90.7%
Okanagan	295,274	260,112	88.1%
Richmond - Delta	202,149	184,694	91.4%
Surrey	307,898	280,041	91.0%
The North	177,175	158,014	89.2%
Tri-Cities	149,148	137,016	91.9%
Vancouver	440,094	387,239	88.0%
Vancouver Island and South	611,103	539,054	88.2%
<b>BRITISH COLUMBIA</b>	<b>3,145,876</b>	<b>2,813,593</b>	<b>89.4%</b>

TABLE 2-13: CURRENCY ESTIMATES, FOR APRIL 24 (CLOSE OF REGISTRATION)

<b>Region</b>	<b>Total</b>	<b>Current</b>	<b>% Current</b>
Burnaby and New Westminster	194,196	179,715	92.5%
Cariboo - Thompson	147,114	137,645	93.6%
Columbia - Kootenay	113,653	106,216	93.5%
Fraser Valley	345,822	322,068	93.1%
North Shore	153,431	144,111	93.9%
Okanagan	292,376	269,169	92.1%
Richmond - Delta	199,955	187,388	93.7%
Surrey	306,900	286,089	93.2%
The North	175,764	163,492	93.0%
Tri-Cities	148,269	139,209	93.9%
Vancouver	434,983	397,017	91.3%
Vancouver Island and South	604,163	558,322	92.4%
<b>BRITISH COLUMBIA</b>	<b>3,116,626</b>	<b>2,890,441</b>	<b>92.7%</b>



## 2.4. Quality Estimates

An estimate of overall list quality of the voters list is calculated as the percentage of eligible voters registered on the voters list at their current address. For the May 14, 2013 voters list, the quality estimate is 90.5 percent.

### EQUATION 3: CALCULATION OF PROVINCIAL QUALITY ESTIMATE

Given

- Population of eligible voters: 3,279,141
- Population of registered voters at correct address (current voters): 2,966,778

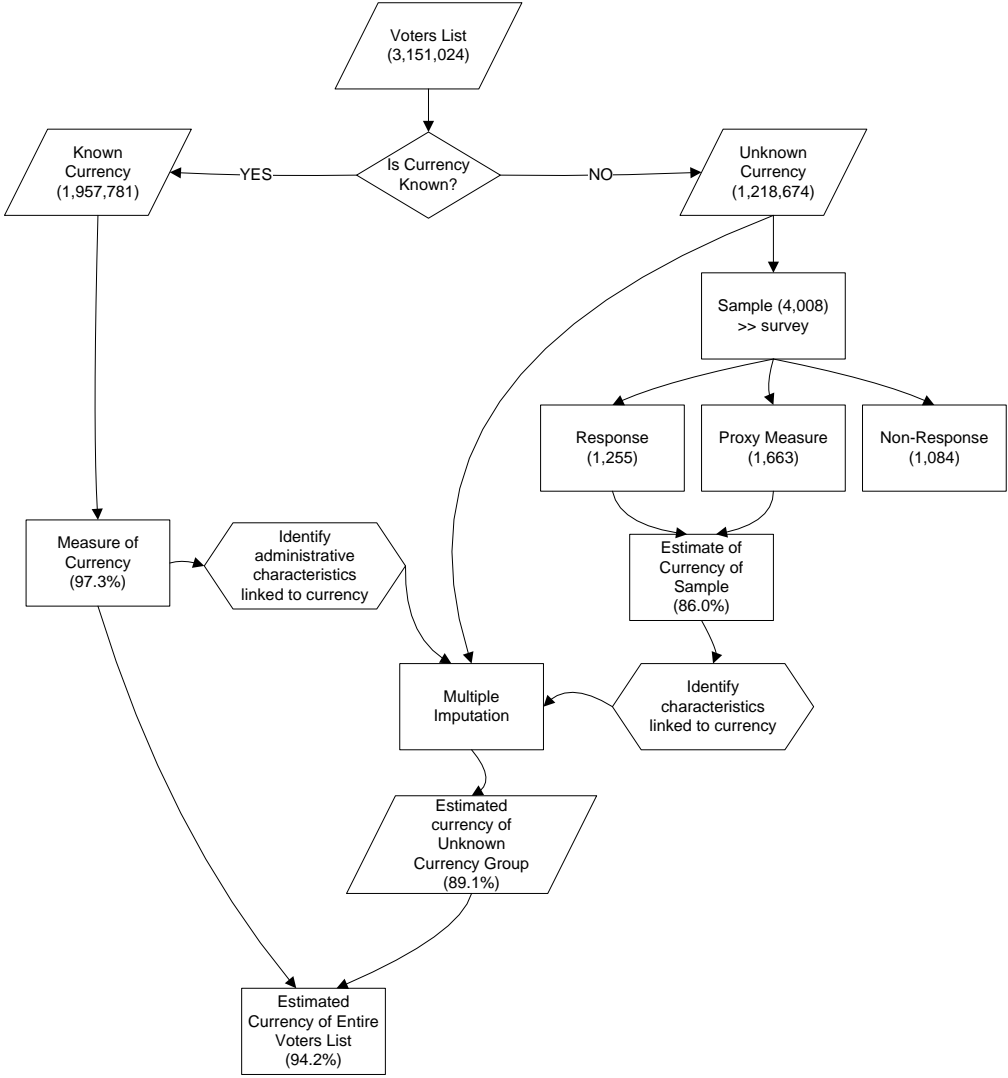
$$\text{Quality\%} = \frac{\text{Current Voters}}{\text{Eligible Voters}} = \frac{2,966,778}{3,279,141} = 90.5$$

Table 2-14 provides a summary of coverage, currency and quality estimates at the regional level.

TABLE 2-14: SUMMARY OF QUALITY STATISTICS, FULL VOTERS LIST

	<b>Eligible Voters</b>	<b>Registered Voters</b>	<b>Current Voters</b>	<b>% Coverage</b>	<b>% Currency</b>	<b>% Quality</b>
Burnaby & New Westminster	198,991	197,120	183,500	99.1%	93.1%	92.2%
Cariboo - Thompson	158,789	150,592	143,240	94.8%	95.1%	90.2%
Columbia - Kootenay	118,430	115,860	109,600	97.8%	94.6%	92.5%
Fraser Valley	370,509	351,477	332,580	94.9%	94.6%	89.8%
North Shore	161,032	156,613	148,570	97.3%	94.9%	92.3%
Okanagan	306,709	297,488	279,840	97.0%	94.1%	91.2%
Richmond - Delta	204,093	202,702	191,010	99.3%	94.2%	93.6%
Surrey	325,100	312,835	294,360	96.2%	94.1%	90.5%
The North	198,025	181,504	171,350	91.7%	94.4%	86.5%
Tri-Cities	155,636	150,469	142,220	96.7%	94.5%	91.4%
Vancouver	456,068	444,476	411,190	97.5%	92.5%	90.2%
Vancouver Island and South	625,759	615,319	583,260	98.3%	94.8%	93.2%
<b>BRITISH COLUMBIA</b>	<b>3,279,141</b>	<b>3,176,455</b>	<b>2,990,720</b>	<b>96.9%</b>	<b>94.2%</b>	<b>91.2%</b>

### 3. Appendix A: Currency Estimation Flowchart



## 4. Appendix B: Definitions

**Accuracy** – the correctness of the name and mailing address for a voter record on the voters list.

**Coverage** – the number of voters registered on Elections BC's voters list as of General Voting Day as a proportion of all eligible population in of B.C. voters for the same date.

**Currency** – the percentage of registered voters in BC who are on the voters list at their current residential address.

**GVD** – General Voting Day.

**Known Currency** – is derived outcomes from the enumeration and the general election. Records with Known Currency can be either Current or Not Current.

**Current** – a status given to records associated with voters who voted in the general election as well as records that were updated, confirmed, or created on or after January 23, 2013.

**Not Current** – a status given to records associated with voters whose Enumeration letters or Where-To-Vote cards were returned as undeliverable by Canada Post, no registration update was collected through either of the events, and the voter didn't vote.

**Participation** - in the context of a general election refers to voting.

**Scrubbed List** – the list of registered voters as at GVD.

**Unknown Currency** – a status given to a voter registration record when the voter didn't participate in the general election and/or any update or confirmation was collected for them during 2013 enumeration.

# 5. Appendix C: Coverage Estimate Methodology

The eligible voter population must be estimated on a provincial, regional and electoral district (ED) basis. The sub-provincial estimates are made such that they sum to the provincial estimate.

## 5.1. Part A: Provincial

There are four steps to estimating the number of eligible voters in British Columbia.

### Step 1: Estimating Total Population

Statistics Canada produces estimates of the total population for Canada and the Provinces. The reference date for these estimates is the first day of each month and are produced using a component model with the 2011 Census adjusted for net census undercount forming the base. The population counts are released by Statistics Canada quarterly, approximately 3 months after the end of each quarter.

If available, the total population estimated by Statistics Canada is used. However, if the reference date for the eligible voter calculation is outside the published range of Statistics Canada, a forecast of the total provincial population is prepared by BC Stats using a standard component cohort-survival model. As the dates from the model will not match the voting dates, an interpolation between the closest estimated/forecasted quarterly data is performed to produce a total population count for the voting date.

### Step 2: Removing the Population Aged 0 to 17

Age specific estimates of the provincial population are prepared by Statistics Canada each year with a reference date of July 1. The proportion of the British Columbia population aged 18 and over from the latest Statistics Canada estimate is applied to the total population in Step 1 to produce an estimate of the population 18 years of age and over.

### Step 3: Removing Persons in BC Less Than 6 Months

An estimate of inter-provincial in-migrants aged 18 years and older for a six month period prior to the reference date is removed from the population estimated in Step 2. The estimate of inter-provincial in-migrants is taken either from Statistics Canada's most

recent quarterly estimates, or if the reference period is outside the range published by Statistics Canada, the most recent estimate or forecast of quarterly inter-provincial immigration prepared by BC Stats.

## Step 4: Removing Non Canadian Citizens

To take in to account the resident British Columbia population who are not Canadian citizens the following three components are removed from the population estimated in Step 3.

- a. The 18 and over immigrant population that were counted in the 2011 Census, had arrived in Canada prior to 1991 and are not citizens, is subtracted from the population estimated in Step 3. It is assumed that immigrants in Canada for more than 20 years who have not become a Canadian citizen will likely never become a citizen of Canada.
- b. The immigrant population from the last five years who would be 18 or over as of the reference date are subtracted from the population estimated in Step 3.<sup>15</sup> Given that residency requirements and processing time for citizenship takes a minimum of approximately 4 ½ years, it was considered reasonable to reduce the eligible estimate by the immigrant population for at least that period of time.
- c. Non-permanent Residents aged 18 years and over (i.e. persons in BC on a Student Visa, Work or Ministerial Permit, or are Refugee Claimants), are removed from the population estimated in Step 3. As the number of Non-permanent Residents in BC has been relatively stable for the past year, the most recent estimate published by Statistics Canada is used. The population derived in Step 4 is taken as the number of eligible voters as of the reference date.

---

<sup>15</sup> The immigrant population for the last five years is based on actual immigrant landings (not census). [Sources: Statistics Canada (quarterly components of population change) and Citizenship and Immigration Canada (personal communication)]

## 5.2. Part B: Electoral District Level Coverage by Age and Sex

The Provincial Electoral District (ED) age and sex estimates are derived from the latest BC STATS small area population projection model, otherwise known as PEOPLE2013. These estimates are further developed using data from the 2006 Canadian Census<sup>16</sup>, the Medical Services Plan (MSP) client registry and Statistics Canada estimates of population components. These sources are employed to establish voter eligibility at the lowest level of detail possible. For the purposes of these estimates, all data have been aggregated into 15 age groups: 0-17, 18-24, 25-29, 30-34,..., 80-84, and 85+.

### Step 1: Estimating Base Population for Electoral Districts

Estimates of the population for each ED by age group and gender are obtained via a geographic translation of the PEOPLE2013 projection model for BC Local Health Authorities (LHA). This translation provides an estimate of the population at two different points in time: July 1, 2012 and July 1, 2013. Using a linear interpolation between the two, estimates specific to the dates in question (January 23, 2013; April 24, 2013; May 14, 2013) were derived and prorated to match the provincial control totals. These resulting estimates provide a base population or a starting point for estimating the eligible voter population of each ED.

### Step 2: Removing Persons in BC Less Than 6 Months

Mobility data from the 2006 Canadian Census were used to estimate the proportion of BC's interprovincial in-migrants arriving in each ED by age group and gender. This proportioning is based on those citizens who have been identified as having moved in the year prior to the census. The distributions of in-migrants by ED, age group, and gender are then prorated to the provincial control totals to provide consistency with previously-reported totals.

---

<sup>16</sup> 2006 Canadian Census data is used to estimate mobility; the proportion of BC interprovincial migration in-migrants arriving in each ED by age and gender (see step 2).

## Step 3: Removing Non-Canadian Citizens

Data from the 2001 and 2006 Censuses are also used to remove non-Canadian citizens over the age of 18 from the PED population estimated in Step 2. Provincial estimates of past immigrants who have never obtained citizenship, recent immigrants, and non-permanent residents are shared among the PEDs by age group and gender according to the distribution of non-citizens from the 2001 and 2006 Census.

The resulting estimates are taken as the number of eligible voters by PED as of the dates in question.

### User Note:

While every effort is made to produce relevant and reliable estimates, there are limitations to any estimation methodology.

The estimates of eligible voters by PED are based on a series of assumptions regarding the demographic structure of the population. These assumptions in turn are based primarily on data gathered during the 2001 and 2006 Censuses of Canada, since comparable figures from the 2011 Census were not available at the time.

## 6. Appendix D: Currency Estimate Methodology

A total of 4,008 records were selected in a stratified, random sample from the records in the Unknown Currency Group in order to produce currency estimates for this sub-group of the May 14 voters list. A total of 334 records were selected at random from 12 regional groups.

Efforts to gather information from sampled records involved three types of surveys: 1) telephone interview, 2) online survey and 3) self-administered, mail-in questionnaires. Upon selection of the sample, the first step in the methodology involved identifying the subset of the sample for which Elections BC provided a phone number, or for which a phone number could be sourced.

### 6.1.1. Phone Sourcing

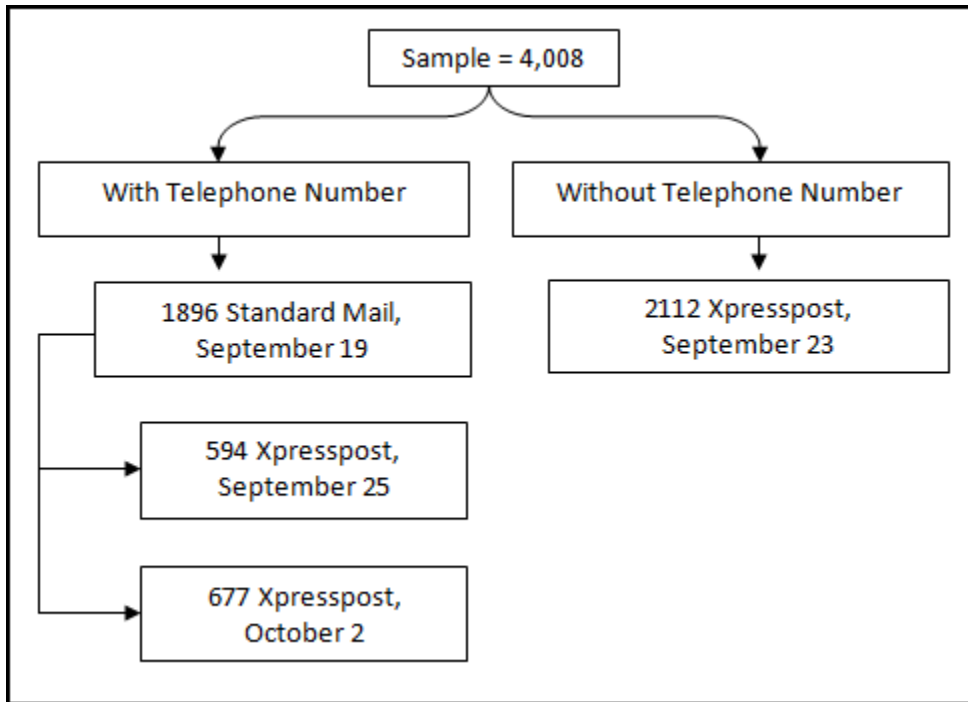
Information available in the voter's list for sampled records, including voter name, home and mailing address, was used to source telephone numbers. Phone numbers were provided by Elections BC for 697 records (17% of the sample). The sampled voter addresses were matched to listed telephone numbers, as well as a database of British Columbia telephone numbers. In total, telephone numbers were sourced for 1,896 of the original 4,008 sampled voter records, bringing the proportion of the sample with a phone number to 47 percent.



## 6.2. Survey Administration

With phone sourcing complete, the sample of 4,008 registered voters was divided into two groups: voters with a sourced telephone number and voters without a telephone number (Figure 3-1).

**FIGURE 6-1: SUMMARY OF MAILINGS**



The 1,896 sampled voters with a telephone number were sent an introductory letter (see Appendix G) by standard mail on September 19. The letter provided some background about the study and notified recipients that they would be contacted by telephone to participate in the voters list quality study. The letter also invited these respondents to call the data collection agent on a toll-free line or to complete the survey online.

The 2,112 sampled voters for whom a telephone number was not sourced were sent a letter and self-administered questionnaire by Xpresspost on September 23. These voters were given three options to respond to the survey: calling the toll free number to complete the survey by telephone, complete the survey online, or complete the paper survey and return it in the postage-paid envelope. Please see Appendix H for a copy of the letter and self-administered questionnaire sent by Xpresspost to respondents without a phone number.

From Thursday September 19 to Sunday September 22, attempts were made to contact the sampled voters with a phone number to complete the brief quality survey (see Appendix F). Over 30 percent of the records originally identified as having a telephone number were found to be unreachable by phone as of September 22. These 594 voters were sent a letter survey via Xpresspost September 25. This included cases with call statuses of:

1. Not in Service,
2. Fax/Modem Line,
3. Business Number (Not Employed Here),
4. Wrong Number/Respondent Unknown,
5. Moved – No Further Contact,
6. Never at this Address,
7. Never at this Number,
8. Language Barrier,
9. Hearing Impaired,
10. Respondent Unavailable During Period, and
11. Refusals where the respondents was unconfirmed.

A second list of 677 votes created on September 30 included the same invalid telephone number statuses as listed above, but also included all unresolved call statuses, such as:

1. Answering Machine,
2. Busy Signal,
3. Hard Appointment,
4. Soft Appointment,
5. No Answer, and
6. Left Message that was not returned.

Unlike previous quality studies, mail-in completions accounted for the largest proportion of survey responses (40%) followed by telephone interviews (35%) and online surveys (25%). Just 1 percent of sampled voters called Elections BC directly to verify their information for the study. In total 1,255 responses came from survey completions<sup>17</sup> and 1,663 responses came from proxy sources.

---

<sup>17</sup> An additional 25 voters attempted to complete the survey by telephone, mail or online but due to missing information in the physical address fields their surveys were not accepted as complete. Six of these were classified as “non-response” and the other 19 were confirmed using proxy information based on mail returns or mail tracking information.

## 6.2.1. Proxy Decision Rules

A set of decision rules was developed to guide the analysis of records for which a completed phone, mail or online survey could not be obtained. Listed below are the main proxy rules used through the course of this study. In instances where an inconsistency appeared between an actual survey response and proxy information for the same record, an actual response to a telephone interview, online survey or mail-in questionnaire was given precedence. For example, if a telephone response indicated that the voter's home address was correct, but their introductory letter was returned by Canada Post as moved, the record would be considered current.

### 6.2.1.1. Telephone Proxies

Proxy information was gathered by phone whenever possible from:

- 1) respondents who refused to complete the telephone interview;
- 2) current and former household members

Telephone proxies were only applied to records that did not have an actual interview response (telephone, online or mail) by October 22, 2013.

Several call statuses provided telephone proxy information used to categorize the voter information as **current**:

1. Respondent indicated to an interviewer that they wanted to complete a web survey online (but did not actually complete the web survey)
2. Soft or firm interview appointment with confirmation of name (but survey not completed)
3. Refusal with confirmation of name
4. Confirmation of name on answering machine
5. Current telephone number but not available during survey period

The following status was treated as proxy information to categorize voter information as **not current**:

1. Wrong number with the confirmation that the respondent had moved

### 6.2.1.2. Mail Proxies

Canada Post requires signature confirmation to successfully deliver an Xpresspost mail item to a home address. This signature can be provided by anyone who is fourteen years of age or older at the address. If the mail carrier is unable to deliver the Xpresspost mail at the address, then a notice is left on the door indicating to the addressee that there is a piece of mail available for pick up at a nearby post office. In order to successfully pick up the Xpresspost mail from the post office, the addressee must provide a piece of photo ID to the Canada Post customer service representative. Acceptable photo ID needs to contain both a name and address that matches the Xpresspost delivery information.

In the majority of cases, a digital copy of the signature was uploaded for viewing to the Canada Post tracking website. Based on this information, it was possible to make two separate proxy decisions.

1. If a survey was successfully delivered to a home address, the presence of a signature match was considered to be a proxy confirmation that the home address of the record was current. A signature match is defined as any instance where the initials or last name of the digital signature matched the last name of the voter record.
2. If a survey was successfully picked up from a post office, then due to Canada Post's delivery requirements, this information was considered a proxy confirmation that the home address was current.

If the mail was returned by Canada Post as undeliverable, the returns were either taken as proxy information that record was not current, or that the record had an unconfirmed status. The different treatment of these returned mail items depended on the reason Canada Post provided for the item's return.

Any of the following Canada Post reasons were taken as a proxy indication of a not current home address: no such address, address incomplete, moved, no such post office, and item was redirected to receiver's new address.

Mail proxies were only applied to records that did not have an actual interview result or telephone proxy by October 22, 2013.

Records were considered as unconfirmed if the mail tracking details stated unclaimed, unknown, attempted delivery, and item refused by addressee. Cases where the signature did not match were considered unconfirmed.

### 6.2.1.3. Multiple Imputation

In order to estimate voters list currency for the Unknown Currency group, BC Stats made use of a technique known as multiple imputation (MI). Compared to other methods of imputation, the MI method offers several benefits, including the introduction of random variance to the estimate and robustness to violations of normality.

There are two assumptions that need to be made if missing data are to be estimated through MI. First, the data both before and after imputation are assumed to follow a multivariate normal distribution. The second assumption is that missing data are missing at random (MAR). This does not mean data are missing completely at random (MCAR). Rather, the rate at which data are missing can be predicted, based on the analysis of relationships among other variables throughout the dataset.

With these assumptions in mind, both the confirmed response records and the non-response records were subjected to a range of tests. The results of these diagnostics clearly indicated that the distribution of non-responses throughout the sample was not completely random (MCAR). Rather, non-responses were found to cluster within particular demographic groups and across certain characteristics, indicating that currency information for non-response records was missing at random (MAR). This ensured that reasonable currency values for the non-response records could be estimated through the MI procedure.

There are three distinct steps to multiple imputation. First, the imputation process is repeated  $m$  times to generate  $m$  complete datasets. Second, the  $m$  datasets are analyzed using conventional statistical tools and third, results from the  $m$  datasets are combined into a summary set of findings. Typically, as few as three to five imputations are adequate and the end results offer the benefit of introducing uncertainty into the model. This in turn generates valid statistical inferences that correctly reflect this uncertainty due to missing data.

In order to facilitate the imputation, a sample of 20% of the Voters List was drawn, and combined with the responses drawn from the survey. Five imputed datasets were then generated and then combined to produce the final estimates of currency for the 2013 Voters List on General Voting Day.

The 10 variables used to impute unconfirmed currency values for non-response voter records consisted of:

1. A voter's age
2. A variable indicating a voter's gender or if it is missing a gender value
3. A binary variable indicating if a voter's record has a NROE value
4. A binary variable indicating if a voter's record has a BCDL value
5. A binary variable indicating if a voter's record has a SIN value
6. A binary variable indicating if a voter's mailing address is different from their residential address
7. For survey respondents, a binary variable indicating whether the voter's record is current or not

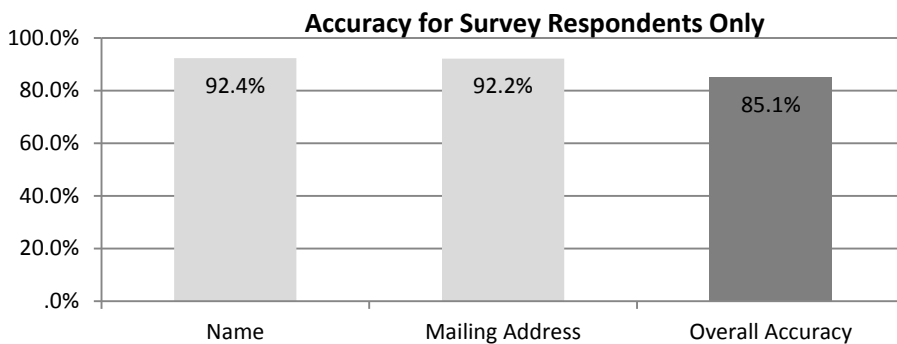
The entire analysis, including the missing values diagnostics tests, the MI procedure and the predictive model was performed with SPSS 19's Missing Values and Imputation Module.

### 6.3. Voter List Accuracy

While this study focuses on voter list quality as measured through coverage and currency, the accuracy of other voter information (name and mailing address) was also measured in the survey. Accuracy was only measured for the survey respondents and no estimates were extrapolated to the entire voters list.

As shown in Figure 2-1, of the 1,255 respondents who completed the survey, 92.4 percent confirmed that their name was correct on the voters list and 92.2 percent confirmed that their mailing address was correct. Overall accuracy among survey participants, taking into account correctness of name, physical address, and mailing address was 85.1 percent.

**FIGURE 6-2: ACCURACY OF VOTER INFORMATION, SURVEY RESPONDENTS ONLY**



## 7. Appendix E: B.C. Electoral District Regional Groupings

### **The North**

NEC	Nechako Lakes
NOC	North Coast
PCN	Peace River North
PCS	Peace River South
PRM	Prince George-Mackenzie
PRV	Prince George-Valemount
SKE	Skeena
SKN	Stikine

### **Cariboo - Thompson**

CBC	Cariboo-Chilcotin
CBN	Cariboo North
FRN	Fraser-Nicola
KAN	Kamloops-North Thompson
KAS	Kamloops-South Thompson

### **Okanagan**

BDS	Boundary-Similkameen
KLA	Kelowna-Lake Country
KMI	Kelowna-Mission
PEN	Penticton
SHU	Shuswap
VRM	Vernon-Monashee
WTK	Westside-Kelowna

### **Columbia - Kootenay**

CLR	Columbia River-Revelstoke
KOE	Kootenay East
KOW	Kootenay West
NEL	Nelson-Creston

### **Fraser Valley**

ABM	Abbotsford-Mission
ABS	Abbotsford South
ABW	Abbotsford West
CHC	Chilliwack
CHH	Chilliwack-Hope
FLA	Fort Langley-Aldergrove
LLY	Langley
MRM	Maple Ridge-Mission



MRP Maple Ridge-Pitt Meadows

**Tri-Cities**

CQB Coquitlam-Burke Mountain

CQM Coquitlam-Maillardville

POC Port Coquitlam

POM Port Moody-Coquitlam

**Surrey**

SRC Surrey-Cloverdale

SRF Surrey-Fleetwood

SRG Surrey-Green Timbers

SRN Surrey-Newton

SRP Surrey-Panorama

SRT Surrey-Tynehead

SWH Surrey-Whalley

SWR Surrey-White Rock

**Richmond - Delta**

DLN Delta North

DLS Delta South

RCC Richmond Centre

RCE Richmond East

RCS Richmond-Steveston

**Burnaby and New Westminster**

BND Burnaby-Deer Lake

BNE Burnaby-Edmonds

BNL Burnaby-Lougheed

BNN Burnaby North

NEW New Westminster

**Vancouver**

VFA Vancouver-Fairview

VFC Vancouver-False Creek

VFV Vancouver-Fraserview

VHA Vancouver-Hastings

VKE Vancouver-Kensington

VKI Vancouver-Kingsway

VLA Vancouver-Langara

VMP Vancouver-Mount Pleasant

VNP Vancouver-Point Grey

VNQ Vancouver-Quilchena

VNW Vancouver-West End

**North Shore**

NVL North Vancouver-Lonsdale  
NVS North Vancouver-Seymour  
WCA West Vancouver-Capilano  
WSS West Vancouver-Sea to Sky

**Vancouver Island and South Coast**

APR Alberni-Pacific Rim  
CMX Comox Valley  
CWV Cowichan Valley  
ESR Esquimalt-Royal Roads  
JDF Juan de Fuca  
NAN Nanaimo  
NCW Nanaimo-North Cowichan  
NOI North Island  
OBG Oak Bay-Gordon Head  
PAQ Parksville-Qualicum  
POR Powell River-Sunshine Coast  
SAN Saanich North and the Islands  
SAS Saanich South  
VTB Victoria-Beacon Hill  
VTS Victoria-Swan Lake

# 8. Appendix F: Telephone Survey Script

## INTRODUCTION

Hello may I speak with <Given Name > <Surname >. My name is \_\_\_\_\_. I am calling on behalf of Elections BC and BC Stats, who are working together to conduct a brief 4 minute survey that will improve the quality of the voters list. The information in this survey is collected and kept confidential in accordance with the Statistics Act. Your answers will be used for statistical and research purposes only and will be used by Elections BC for the purpose of updating your voter record.

### IF NEEDED:

Your participation in this survey is voluntary. Your voter record has been randomly selected for verification. Your response is needed to confirm that your name, date of birth, home address and mailing address are accurate on the voters list. Since only a limited number of people have been selected, your information is essential in order to produce meaningful results. .

May I continue?

- YES .....Q1
- Correct person, hard refuse.....INT 2
- Correct person, soft refuse.....INT 4
- Correct person, call back.....INT 3
- Refused – would not confirm if correct person.....INT 2
- Never at this number.....INT 2
- Never at this address.....INT 2
- Moved/No longer here.....INT 2
- Deceased.....INT 2
- Completed online/paper survey.....INT 2
- Hearing impaired.....INT 2
- Language barrier.....INT 2
- Not available during survey period.....INT 2
- Never call again.....INT 2
- Abusive respondent.....INT 2
- No Answer
- Busy
- Answering machine confirms name
- Answering machine does not confirm name
- Business number
- Not in service
- Fax/Modem
- Wrong number

---

---

## INT2

### Proxy end/ Thank and terminate

Thank you for your time, and have a good day/ afternoon/ evening. => /TERMINATE

---

---

## INT3

### Call back end

Thank you. We will call back at <Date and Time >.

Have a good day/ afternoon/ evening.  
Correct name & number call back => /CB

---

---

**INT4**

**Web and proxy end**

I understand you do not wish to complete the survey over the phone. Would you prefer to complete the survey online?

Yes => WEB1  
No => INT2  
Refused => INT2

---

---

**WEB1**

Would you like to give me your email address and I will send you a link to the survey, or would you prefer that I give you the online address?

Email address .....=> WEB2  
Online address.....=> WEB3  
Refusal.....=> INT 2

---

---

**WEB2**

**Web end**

Ok, I'll take your email address, then give you a PIN ID to access the survey. Do you have a pen and paper handy to record that number?

First – what is your email address please?  
Record email address

Thank you. You will receive an email from us within 2 business days that will have the survey link. Please record the following PIN Number that you will need to access the survey < PIN ID >

Refusal..... INT 2

---

---

**WEB3**

**Web end**

Ok, do you have a pen and paper handy?

The web survey address is  
[www.nrg-surveys.com/VQL](http://www.nrg-surveys.com/VQL)

Once there, type in your personal and confidential survey password:  
< PIN ID >.

Thank you.....=> INT 2

---

---

**Q1**

Thank you for agreeing to participate in the survey. Did Elections BC have your name, <Given Name><Middle Name><Surname> correct on May 14, 2013?

IF NEEDED: On May 14<sup>th</sup>, 2013 was your name <Given Name><Middle Name><Surname>

NOTE: CONFIRM BOTH THE CORRECTNESS AND SPELLING OF THE RESPONDENT'S NAME

Yes               => Q3  
No                => Q2  
Refused           => Q3  
Refused some information               => Q3

---

---

**Q2**

You indicated that your name is not <Given Name><Middle Name> <Surname>, what is your correct name?

NOTE: CONFIRM BOTH THE CORRECTNESS AND SPELLING OF THE RESPONDENT'S NAME

Q2a Given Name: \_\_\_\_\_  
Q2b Middle Name: \_\_\_\_\_  
Q2c Surname: \_\_\_\_\_

Refused               => Q3

---

---

**Q3**

We would like to verify your home address as of May 14, 2013.

At that time, was your **home address**:

IF NECESSARY: Your home address refers to the physical location where you live and is not necessarily the same as your postal address

**IF ANY ARE WRONG THEN CHOOSE "NO"**

Unit Number  
Building Number  
Street Prefix (East, West, etc.)  
Street Name  
Street Type  
Street Suffix (East, West, etc.)  
City

Yes               => Q7  
No                => Q4a  
Refused           => Q7

---

---

**Q4a**

Have you ever lived at this **address**?

Yes               => Q5  
No                => Q5

Refused => Q5

---

---

**Q5**

**You indicated that the home address on file is incorrect. What was your correct home address on May 14, 2013?**

Q5a Unit Number: \_\_\_\_\_

Q5b Building Number: \_\_\_\_\_

Q5c Street Name: \_\_\_\_\_

Q5d Street Type (Avenue, Street, etc.): \_\_\_\_\_

Q5e Street Direction (Norths, East, etc): \_\_\_\_\_

Q5f City: \_\_\_\_\_

Q5g Province or State: \_\_\_\_\_

Q5h Postal Code: \_\_\_\_\_

Refused => Q7

---

---

**Q7**

We would like to verify your mailing address as of May 14, 2013.

At that time, was your **mailing address**

**IF ANY ARE WRONG THEN CHOOSE "NO"**

Mail Line 1

Mail Line 2

Mail City

Mail Province or State

Mail Country

Postal Code

Yes => Q5

No => Q4a

Refused => Q5

---

---

**Q8**

**You indicated that the mailing address is incorrect, what was your correct mailing address on May 14, 2013?**

Q8a Mail Line 1

Q8b Mail Line 2

Q8f Mail City

Q8g Mail Province or State

Q8h Mail Country

Q8i Postal Code

Refused => Q10

---

---

**Q10**

And finally, what is your **date of birth**?

Q10c Year (YYYY): \_\_\_\_\_

Q10b Month (MM): \_\_\_\_\_

Q10a Day (DD): \_\_\_\_\_

Refused => INT5 or END

---

---

**INT5**

=> INT if NOT (Q1=NO OR Q3=NO OR Q7=NO)
---

**Completed with incorrect information end**

The information in this survey is collected under Section 26 of the Freedom of Information and Protection of Privacy Act (FOIPPA). It is collected and kept confidential in accordance with the Statistics Act for statistical and research purposes. When survey results are published, your responses will be combined with the responses of others so that you cannot be identified. Your answers will be shared with Elections BC unless you give notice in writing to the Director of Statistics before [DATE].

**IF NEEDED**

Do you have any questions or require contact information?

YES

NO

**IF Yes**

For questions about the FOIPPA, access and privacy please contact:

Mike Griffin, Manager of Project and Risk Management at BC Stats by phone at 250-387-6744 or mail, post office box 9410, Station Provincial Government, Victoria, BC, postal code V8W 9V1.

Contact information for the Director of Statistics is:

Angelo Cocco, Director of Statistics at BC Stats, post office box 9410, Station Provincial Government, Victoria, BC, postal code V8W 9V1

---

---

**END**

On behalf of Elections BC, I would like to thank you very much for your time today. If you receive a letter from Elections BC, you can ignore it because you've completed this interview. Again, thank you for your time, and have a good afternoon/ evening/ day.

---

---

**Answering machine message left for respondents:**

I am calling on behalf of Elections BC and BC Stats, who are working to assess the quality of the voters list. You are part of the subset of individuals being asked to verify their voter list information. The verification is being conducted using telephone, mail and online methods. You can confirm your information online at [www.nrg-surveys.com/VLQ](http://www.nrg-surveys.com/VLQ), where you will need an 8 digit Record Verification number. If you did not receive this in a letter from Elections BC in the mail, you can call us toll free at 1-866-997 4322 to complete

the survey. Once we receive your response from any method you will be removed from the telephone contact list. Thank you.

---

---

**Inbound line voicemail during study:**

Thank you for calling the Voter List Quality Study at 1-866-997-4322. This line has been dedicated to verification of voter records.

Verification hours are 9 am to 9 pm Monday to Friday, 10 am to 6pm Saturday and noon to 8pm Sunday.

To complete the verification by phone, please leave your name, phone number and the 8 digit survey password provided to you in a letter from Elections BC and we will return your call within 1 business day. Alternatively, you can complete the verification online at [www.nrg-surveys.com/VLQ](http://www.nrg-surveys.com/VLQ)

Thank you.

---

---

**Inbound line voicemail after study (October 14th to October 31:**

Thank you for calling the Voter List Quality Study at 1-866-997-4322. This line was dedicated to verification of voter records. The official study was finished on Sunday, October 13, 2013.

If you would like to update your voter record please contact Elections BC directly at 1-800-661-8683.

Thank you for your efforts to keep the BC Voters List current.



## 9. Appendix G: Introductory Letter – Respondents with Telephone Number

<<vu\_given\_names>> <vu\_surname>>  
<<vu\_mail\_line\_1>>  
<<vu\_mail\_line\_2>>  
<<vu\_mail\_city>>, <<vu\_mail\_province\_state >>  
<<vu\_mail\_postal\_code>>, <<vu\_mailing\_country\_code>>

<b>Home Address:</b> <<unit_number_alpha>> <<building_number_alpha>> <<street_dir_prefix>> <<street_name>> <<street_type>> <<street_dir_suffix>>, <<city_name>>, BC
---

<<MONTH>> <<DAY>>, 2013

### PERSONAL AND CONFIDENTIAL

Dear <<vu\_given\_names>> <<vu\_surname>>:

Elections BC needs your help to ensure the provincial voters list is up-to-date and accurate. Elections BC is working with BC Stats, the province's statistical agency, to conduct a survey to determine the quality of the voters list.

Your voter record has been randomly selected for verification. Your response is needed to confirm that your name, date of birth, home and mailing addresses are accurate on the voters list, and we need your **reply before October 13, 2013**. Please verify your information by doing *one* of the following:

1. *Call BC Stats at 1-866-997-4322 during call centre service hours and quote this verification reference number <<VER\_REF\_NUM>>. **Call centre service hours:** Monday to Friday, 9 a.m. to 9 p.m., Saturday, 10 a.m. to 6 p.m. and Sunday, 12 p.m. to 8 p.m.; OR*
2. *Complete an online survey at <https://www.nrg-surveys.com/VLQ>, using your confidential password <<VER\_REF\_NUM>>.*

The information in the survey is collected and kept confidential in accordance with the *Statistics Act*. Your answers will be used for statistical and research purposes only and will be used by Elections BC for the purpose of confirming or updating your voter record.

When survey results are published, your responses will be combined with the responses of others so that you cannot be identified. More information about this survey is available on Elections BC's website at <http://www.elections.bc.ca/index.php/resource-center/surveys/>.

Sincerely,



Anton Boegman  
Deputy Chief Electoral Officer, Electoral Operations

# 10. Appendix H: Mail Survey Form - Respondents without Telephone Number

<<vu\_given\_names>> <vu\_surname>>  
<<vu\_mail\_line\_1>>  
<<vu\_mail\_line\_2>>  
<<vu\_mail\_line\_3>>  
<<vu\_mail\_city>>, <<vu\_mail\_province\_state >>  
<<vu\_mail\_postal\_code>>,<<vu\_mailing\_country\_code>>

**Home Address:**

<<unit\_number\_alpha>>  
<<building\_number\_alpha>>  
<<street\_dir\_prefix>> <<street\_name>>  
<<street\_type>><<street\_dir\_suffix>>,  
<<city\_name>>, BC

<<MONTH>> <<DAY>>, 2013

**PERSONAL AND CONFIDENTIAL**

Dear <<vu\_given\_names>> <vu\_surname>> :

Elections BC needs your help to ensure the provincial voters list is up-to-date and accurate. Elections BC is working with BC Stats, the Province's statistical agency, to conduct a survey to determine the quality of the voters list.

Your voter record has been randomly selected for verification. Unfortunately, we have been unable to reach you by phone. Your response is needed to confirm that your name, date of birth, home address and mailing address are accurate on the voters list, and we need your **reply before October 13, 2013**. Please verify your information by doing *one* of the following:

1. Call BC Stats at 1-866-997-4322 during call centre service hours and quote this verification reference number <<VER\_REF\_NUM>>. **Call centre service hours:** Monday to Friday, 9 a.m. to 9 p.m., Saturday, 10 a.m. to 6 p.m. and Sunday, 12 p.m. to 8 p.m.;
2. Complete an online survey at <https://www.nrg-surveys.com/VLQ>, using your confidential survey password <<VER\_REF\_NUM>>; or
3. Answer the questions in the enclosed survey and return it in the postage-paid envelope.

The information in the survey is collected and kept confidential in accordance with the *Statistics Act*. Your answers will be used for statistical and research purposes only and will be used by Elections BC for the purpose of confirming or updating your voter record.

When survey results are published, your responses will be combined with the responses of others so that you cannot be identified. More information about this survey is available on our website at <http://www.elections.bc.ca/index.php/resource-center/surveys/>.

Sincerely,



Anton Boegman  
Deputy Chief Electoral Officer, Electoral Operations

*Important – Please complete and return to BC Stats no later than October 13, 2013*

**Thank you!**

**As of May 14<sup>th</sup> 2013, your information on the provincial voters list, is:**

**Name:** <<vu\_given\_names>> <<vu\_surname>>

**Date of Birth:** (yyyy-mm-dd) <<vu\_DOB>>

**Home Address:** <<vu\_unit\_number\_alpha >> <<vu\_building\_number\_alpha >>  
<<vu\_street\_dir\_prefix>> <<vu\_street\_name>>  
<<vu\_street\_type>><<vu\_street\_dir\_suffix>> <<vu\_city\_name>> BC  
<<vu\_mail\_postal\_code>>

**Mailing Address** <<vu\_mail\_line\_1>> <<vu\_mail\_line\_2>> <<vu\_mail\_line\_3>>  
<<vu\_mail\_city>> <<vu\_mail\_province\_state>> <<vu\_mailing\_country\_code>>  
<<vu\_mail\_postal\_code>>

1. Is the **name** correct?

Yes  No



What is your correct **name**?

Given Name(s): \_\_\_\_\_

Last Name: \_\_\_\_\_



2. Is the **date of birth** correct?

Yes  No



What is your correct **date of birth**?

Year (YYYY): \_\_\_\_\_

Month (MM): \_\_\_\_\_ Day (DD): \_\_\_\_\_



Page 1 of 2

1. Is the **home address** correct for where you lived, as of **May 14<sup>th</sup>, 2013**?

Yes  No



What was the correct **home address** for where you lived?

*Please do not provide a postal address*

Apartment, Unit, Pad Number: \_\_\_\_\_

House or Building Number: \_\_\_\_\_

Street Name: \_\_\_\_\_

Street Type (Avenue, Street, etc.): \_\_\_\_\_

Street Direction (North, East, etc.): \_\_\_\_\_

City or Town: \_\_\_\_\_



2. Is the **mailing address** correct, as of **May 14<sup>th</sup>, 2013**?

Yes  No



What was the correct **mailing address** for where you received mail?

Mail Line 1: \_\_\_\_\_

Mail Line 2: \_\_\_\_\_

Mail City: \_\_\_\_\_

Postal Code: \_\_\_\_\_



The information in this survey is collected under Section 26 (c) and (e) of the *Freedom of Information and Protection of Privacy Act* (FOIPPA). It is collected and kept confidential in accordance with the *Statistics Act* for statistical and research purposes. When survey results are published, your responses will be combined with the responses of others so that you cannot be identified. Your answers **will be shared with Elections BC** unless you give notice in writing to the Director of Statistics before November 1, 2013.

Contact information for questions about the FOIPPA, access and privacy:

Michael Griffin, Manager, Project & Risk Management  
BC Stats, PO Box 9410 Stn Prov Govt  
Victoria, BC, V8W 9V1  
Telephone: 250 387-6744

Contact information for Director of Statistics:

Angelo Cocco, Director of Statistics  
BC Stats, PO Box 9410 Stn Prov Govt  
Victoria, BC, V8W 9V1

**Thank you for completing this survey**

Page 2 of 2

# 11. Appendix I: Web Survey Text

---

---

## Screen 1 – Welcome and PIN confirmation

Header: Elections BC 2013 Voters List Quality Survey

Elections BC and BC Stats Logos available.

### Welcome

Please enter your eight-digit confidential password and click on the Begin button.

The confidential password was given to you either in a letter from Elections BC or over the phone.

### Questions?

For questions about the voters list or the survey, contact Elections BC toll-free at 1-800-661-8683 or visit <http://www.elections.bc.ca/index.php/resource-center/surveys/>

For help with the online survey, or to do the survey over the phone, please call 1-866-997-4322

Confidential Survey Password

Access Code:

Begin

---

---

## Screen 2 - Welcome and Instructions

Header: Elections BC 2013 Voters List Quality Survey

Elections BC needs your help to ensure the provincial voters list is up-to-date and accurate. Elections BC is working with BC Stats, the province's statistical agency, to conduct a survey to determine the quality of the voters list.

Your voter record has been randomly selected for verification. Your response is needed to confirm that your name, date of birth, home address, and mailing addresses are accurate on the voters list and we need your reply before October 13, 2013.

The survey will take approximately five minutes to complete, depending on your answers.

The information in this survey is collected and kept confidential in accordance with the *Statistics Act*. Your answers will be used for statistical and research purposes only, and will be used by Elections BC for the purpose of updating your voter record.

When survey results are published, your responses will be combined with the responses of others so that you cannot be identified. More information about this survey is available on our website at <http://www.elections.bc.ca/index.php/resource-center/surveys/>.

When you are ready to go to the next page, hit "**Next**" at the bottom of the page. To go back and change a previous response, hit "**Back**". **Please DO NOT use the forward or back buttons at the top of the page on your internet browser.**

The survey allows you to pause and return at a later time. If you leave the survey form, please sign back in using the link previously emailed; you will automatically be taken to the last completed page.

To begin the survey, press '**Next**'.

Thank you.

Back Next

Footer: For assistance with completing the survey, please call toll-free: 1-866-997-4322.

---

---

### Screen 3 - Name Confirmation

Header: Elections BC 2013 Voters List Quality Survey

Q1. Did Elections BC have your name <First><Middle><Last> correct on May 14, 2013?

Yes – SKIP TO SCREEN 6 Residential Address Confirmation

No

Decline to answer – SKIP TO SCREEN 6 Residential Address Confirmation

Back Next

Footer: For assistance with completing the survey, please call toll-free: 1-866-997-4322.

---

---

### Screen 4 - If No to Screen 3 – Name Confirmation

Header: Elections BC 2013 Voters List Quality Survey

What is your correct name?

Q2a. First name [REQUIRED]

Q2b. Middle name(s) [NOT REQUIRED]

Q2c. Last name [REQUIRED]

Back Next

Footer: For assistance with completing the survey, please call toll-free: 1-866-997-4322.

---

---

### Screen 5 - Name Correction Confirmation

Header: Elections BC 2013 Voters List Quality Survey

You indicated that your correct name is:

**FIRST MIDDLE LAST**

If this is **incorrect**, please press the Back button below, and re-enter your correct name.  
Otherwise, click Next to continue.

Back Next

Footer: For assistance with completing the survey, please call toll-free: 1-866-997-4322.

---

---

### Screen 6 - Residential Address Confirmation

Header: Elections BC 2013 Voters List Quality Survey

**Q4. On May 14, 2013**, was your home address:

<<Unit\_number\_alpha>>  
<<Building\_number\_alpha>><<street\_dir\_prefix>><<street\_name>><<street\_type>><<street\_dir  
\_suffix>>, <<city\_name>>, BC,

Please note: Your home address refers to the physical location where you live and is not necessarily the same as your postal address

Yes – SKIP TO SCREEN 9 MAILING ADDRESS CONFIRMATION

No

Decline to answer – SKIP TO SCREEN 9 MAILING ADDRESS CONFIRMATION

Back Next

Footer: For assistance with completing the survey, please call toll-free: 1-866-997-4322.

---

---

### Screen 7 - If No to Screen 6 – Residential Address Confirmation

Header: Elections BC 2013 Voters List Quality Survey

What was your correct home address as of **May 14, 2013**?

Please provide the physical location where you lived on May 14<sup>th</sup>, 2013. Your home address is not necessarily the same as your postal address.

Q5a. Apartment, Unit, Pad Number [NOT REQUIRED]

Q5b. House or Building Number [REQUIRED]

Q5c. Street Name [REQUIRED]

Q5d. Street Type (Avenue, Street, etc.) [REQUIRED]

Q5e. Street Direction (North, East, etc.) [NOT REQUIRED]

Q5f. City or Town [REQUIRED]

Q5g. Province or State

Q5h. Postal Code [REQUIRED BUT NO FORMAT REQUIRED]

Previous Next

Footer: For assistance with completing the survey, please call toll-free: 1-866-997-4322.

## Screen 8 - Home Address Correction Confirmation

Header: Elections BC 2013 Voters List Quality Survey

You indicated that your correct home address on **May 14, 2013** was:

**Show address entered in Screen 7 in bold**

If this is **incorrect**, please press the Back button below, and re-enter your correct home address. Otherwise, click Next to continue.

Back Next

Footer: For assistance with completing the survey, please call toll-free: 1-866-997-4322.

---

---

## Screen 9 - Mailing Address Confirmation

Header: Elections BC 2013 Voters List Quality Survey

**Q7. On May 14, 2013**, was your mailing address:

<<Unit\_number\_alpha>>

<<Building\_number\_alpha>><<street\_dir\_prefix>><<street\_name>><<street\_type>><<street\_dir\_suffix>>, <<city\_name>>, BC, <<mail\_postal\_code>>

Yes – **SKIP TO SCREEN 12 BIRTHDATE**

No

Decline to answer – **SKIP TO SCREEN 12 BIRTHDATE**

Back Next

Footer: For assistance with completing the survey, please call toll-free: 1-866-997-4322.

---

---

## Screen 10 - If No to Screen 9 – Mailing Address Confirmation

Header: Elections BC 2013 Voters List Quality Survey

What was your correct mailing address as of **May 14, 2013**?

Q8a. Mail Line 1

Q8b. Mail line 2

Q8f. Mail City or Town [REQUIRED]

Q8g. Mail Province or State [REQUIRED]

Q8h. Mail Country [REQUIRED]

Q8i. Postal Code/Zip Code [REQUIRED NO FORMAT REQUIRED]

Back Next

Footer: For assistance with completing the survey, please call toll-free: 1-866-997-4322.

---

---

## Screen 11 - Mailing Address Correction Confirmation

Header: Elections BC 2013 Voters List Quality Survey



You indicated that your correct mailing address on **May 14, 2013** was:

**Show address entered in Screen 10 in bold**

If this is **incorrect**, please press the Back button below, and re-enter your correct mailing address. Otherwise, click Next to continue.

Back Next

Footer: For assistance with completing the survey, please call toll-free: 1-866-997-4322.

---

---

## Screen 12 - Birthdate

Header: Elections BC 2013 Voters List Quality Survey

What is your date of birth?

Please select a day, month and year from the dropdown boxes below.

Q10a. Please select a day from the dropdown box

Q10b. Please select a month from the dropdown box

Q10c. Please select a year from the dropdown box

Back Next

Footer: For assistance with completing the survey, please call toll-free: 1-866-997-4322.

---

---

## Screen 13 - Date of Birth Confirmation

Header: Elections BC 2013 Voters List Quality Survey

You indicated that your correct date of birth is:

**Show birth date entered in Screen 12 in bold**

If this is **incorrect**, please press the Back button below, and re-enter your correct birth date.

Otherwise, click Next to continue.

Back Next

Footer: For assistance with completing the survey, please call toll-free: 1-866-997-4322.

---

---

## Screen 14 - Thank You

Header: Elections BC 2013 Voters List Quality Survey

Thank you for completing this survey.

If you have any questions or concerns regarding this survey, please contact Elections BC toll-free at 1-800-661-8683. If you would like additional information about the survey, please visit Elections BC's website at <http://www.elections.bc.ca/index.php/resource-center/surveys/>.

The information in this survey is collected under Section 26 (c) and (e) of the *Freedom of Information and Protection of Privacy Act* (FOIPPA). It is collected and kept confidential in

accordance with the *Statistics Act* for statistical and research purposes. When survey results are published, your responses will be combined with the responses of others so that you cannot be identified.

Your answers **will be shared with Elections BC**, unless you give notice in writing to the Director of Statistics before November 1, 2013.

<b>Contact information for questions about the FOIPPA, access and privacy:</b> <b>Michael Griffin</b> <b>Manager, Project and Risk Management</b> <b>BC Stats</b> <b>PO Box 9410 Stn Prov Govt</b> <b>Victoria, BC</b> <b>V8W 9V1</b> <b>Telephone: 250 387-6744</b>	<b>Contact information for Director of Statistics:</b> <b>Angelo Cocco</b> <b>Director of Statistics</b> <b>BC Stats</b> <b>PO Box 9410 Stn Prov Govt</b> <b>Victoria, BC</b> <b>V8W 9V1</b>
---	--

Press 'NEXT' to submit the survey.

Back

Footer: For assistance with completing the survey, please call toll-free: 1-866-997-4322.

---

---

## Screen 15 - Information Submitted Confirmation

Information Submitted

Thank you for completing the Elections BC Voters List Quality Survey.

Please press 'Next' to exit the survey.

Back Next

Footer: For assistance with completing the survey, please call toll-free: 1-866-997-4322.

---

---

Exit page: Elections BC website: <http://www.elections.bc.ca/>



---

BC Stats is the provincial government's central statistics agency and has the government's largest concentration of statistical products, services and expertise. As a branch of the Ministry of Technology, Innovation and Citizens' Services, the organization is in the business of providing government with statistical information and analytical services to support informed decision-making and policy development.

---

Web: [www.bcstats.gov.bc.ca](http://www.bcstats.gov.bc.ca)  
Twitter: @BCStats  
Phone: 250-387-0327  
Email: [BC.Stats@gov.bc.ca](mailto:BC.Stats@gov.bc.ca)

BC Stats  
Box 9410 Stn Prov Govt  
Victoria, B.C.  
V8V 9V1

