

# Transposition of Votes from the 2017 Provincial General Election to 2019 Electoral District Boundaries

April 12, 2021



## Background

In the fall of 2019, the Nova Scotia House of Assembly legislated 55 electoral district boundaries as recommended by the Electoral Boundaries Commission. These new district boundaries will be used for the 41<sup>st</sup> provincial general election in Nova Scotia when it is called.

When new electoral boundaries are enacted, Elections Nova Scotia prepares a report to illustrate the transposition of votes from the previous provincial general election based on the new electoral boundaries. The following report outlines the methodology used to determine which party would have come first and which second within the new electoral district boundaries.

## Methodology

To determine which party came first and which came second within the new 55 electoral district boundaries as approved by the House of Assembly in 2019, the following methodology was used.

### A) Base Data

For each of the 51 electoral districts that existed on May 30, 2017, the following base data was considered to calculate the estimated vote transposition:

- 1) The 2017 Provincial General Election (PGE) vote count results for each registered political party that fielded a candidate at the electoral district and for independent candidates, for all the polls held at each of the 51 electoral districts:
  - Election day polls,
  - Early voting polls:
    - advance polls,
    - in-district write-in ballot poll,
    - out-of-district write-in ballot poll,
    - in-district returning office continuous poll,
    - out-of-district continuous poll
- 2) The digital electoral district boundaries for the 51 electoral districts distribution used in the 2017 PGE.
- 3) The digital polling divisions boundaries in each electoral district as used in the 2017 PGE.
- 4) The digital electoral district boundaries as approved by the House of Assembly in 2019 for the new 55 electoral districts.
- 5) The spatial distribution of the civic addresses in Nova Scotia as of October 2019.

- 6) The electors as registered on the Register of Electors at the Province's civic addresses as of October 2019.

## **B) Calculation methodology**

Using Geographic Information System (GIS) tools and the above datasets the following steps were followed to calculate the estimated vote transposition:

- 1) For transposing the votes cast at election day polls, the new 55 electoral district boundaries of the 2019 electoral district boundary distribution, were overlayed over the polling divisions boundaries in each of the 51 electoral districts as used in the 2017 PGE, and determined:
  - i. Which of the 2017 polling divisions was wholly contained within a new 2019 electoral district.
  - ii. Which of the 2017 polling divisions was split by the boundary of a 2019 electoral district. For those polling divisions, the GIS tool calculated the proportion of the electors for each split area in the following manner:
    - Extract the civic addresses located within each split of the polling division area.
    - Sum up the total number of registered electors living at civic address in that polling division.
    - Sum up the total number of registered electors living at civic addresses located in each of the split areas for that polling division.
    - Determine the proportion of the 2017 registered electors residing within each split piece to the total electors within the polling division.
    - The proportional distribution of registered electors for each polling division split piece was then multiplied by the votes cast for each party and independent candidate in that poll. The resultant number of votes by party was then attributed to the 2019 electoral district that incorporated that piece of the polling division.
    - Where a whole polling division was absorbed by one of the new 2019 electoral districts, all (100%) the votes cast for each party and independent candidate at that poll were attributed to the new district.
- 2) For transposing the votes cast at early voting polls, the new 55 electoral district boundaries of the 2019 electoral district boundary distribution, were overlayed over the 51 electoral districts boundaries as used in the 2017 PGE, and determined:
  - i. Which of the 2017 electoral districts was wholly contained within a new 2019 electoral district.

- ii. Which of the 2017 electoral districts was split by the boundary of a new 2019 electoral district. For those districts, the GIS tool calculated the proportion of the electors for each split area as described above.
  - iii. For transposing the votes cast at the early voting polls, the proportional distribution of registered electors for each electoral district split was then multiplied by the votes cast for each party and independent candidate at each early voting poll. The resultant number of votes by party was then attributed to the 2019 electoral district that incorporated that piece of the electoral district.
  - iv. Where a whole electoral district was absorbed by one of the new 2019 electoral districts, all (100%) the votes cast for each party and independent candidate at that early voting poll were attributed to the new district.
- 3) When all votes were re-distributed as above into the new 2019 electoral districts boundaries the total votes cast for each party was summed up and the parties who came first and second were determined for that electoral district.

2019 ED No.	2019 ED Name	Green	Liberal	NDP	PC	Atlantica	Independent	First	Second
01	Annapolis	309	5540	1167	1249	114	0	5540	1249
02	Antigonish	0	3877	1815	3139	106	0	3877	3139
03	Argyle	0	1172	150	2612	0	0	2612	1172
04	Bedford Basin	315	3596	803	2104	0	0	3596	2104
05	Bedford South	279	3029	835	1741	21	0	3029	1741
06	Cape Breton Centre-Whitney Pier	0	2968	3774	1970	0	0	3774	2968
07	Cape Breton East	0	2166	770	5790	0	0	5790	2166
08	Chester-St. Margaret's	390	2934	2867	2137	0	0	2934	2867
09	Clare	0	2059	742	1218	0	0	2059	1218
10	Clayton Park West	402	3312	1513	1899	133	0	3312	1899
11	Colchester-Musquodoboit Valley	0	1944	1623	3650	0	0	3650	1944
12	Colchester North	0	3654	980	3225	0	0	3654	3225
13	Cole Harbour	243	1984	1617	1863	0	3	1984	1863
14	Cole Harbour-Dartmouth	237	2743	1589	2082	26	0	2743	2082
15	Cumberland North	0	2715	496	3635	84	106	3635	2715
16	Cumberland South	0	2777	398	3532	154	0	3532	2777
17	Dartmouth East	650	3118	964	3309	0	0	3309	3118
18	Dartmouth North	318	2442	2771	1384	126	0	2771	2442
19	Dartmouth South	437	2515	3012	1053	97	0	3012	2515
20	Digby-Annapolis	57	2854	1289	1297	16	0	2854	1297
21	Eastern Passage	296	2121	1512	2182	0	0	2182	2121
22	Eastern Shore	233	3345	2075	2616	0	145	3345	2616
23	Fairview-Clayton Park	336	2662	1929	1699	0	0	2662	1929
24	Glace Bay-Dominion	0	3641	1193	3195	137	0	3641	3195
25	Guysborough-Tracadie	0	2053	677	2010	0	0	2053	2010
26	Halifax Armdale	301	3354	2521	1437	85	0	3354	2521
27	Halifax Atlantic	357	4219	1728	1300	0	0	4219	1728
28	Halifax Chebucto	317	2845	3469	803	0	0	3469	2845
29	Halifax Citadel-Sable Island	376	2873	2057	1606	0	0	2873	2057
30	Halifax Needham	460	2220	4007	1125	0	0	4007	2220
31	Hammonds Plains-Lucasville	335	3359	1132	2369	0	0	3359	2369

2019 ED No.	2019 ED Name	Green	Liberal	NDP	PC	Atlantica	Independent	First	Second
32	Hants East	384	3500	1345	2747	0	0	3500	2747
33	Hants West	261	4708	1071	2488	73	0	4708	2488
34	Inverness	0	2901	768	5338	0	0	5338	2901
35	Kings North	295	2781	1346	3819	72	0	3819	2781
36	Kings South	315	3902	1804	2259	95	0	3902	2259
37	Kings West	270	4559	653	3255	21	0	4559	3255
38	Lunenburg	1	3120	2339	2443	0	0	3120	2443
39	Lunenburg West	360	3829	1687	2255	0	0	3829	2255
40	Northside-Westmount	0	1985	1436	5941	0	0	5941	1985
41	Pictou Centre	0	2114	1421	4053	0	0	4053	2114
42	Pictou East	0	1205	546	4948	0	0	4948	1205
43	Pictou West	161	1152	1306	4380	0	0	4380	1306
44	Preston	231	2418	1162	1119	0	1	2418	1162
45	Queens	167	1269	858	2332	0	0	2332	1269
46	Richmond	0	2547	670	2466	0	0	2547	2466
47	Sackville-Cobequid	262	2037	3464	1990	88	0	3464	2037
48	Sackville-Uniake	234	2191	1271	2851	57		2851	2191
49	Shelburne	108	1701	896	2330	0	0	2330	1701
50	Sydney-Membertou	0	3257	2816	2632	0	0	3257	2816
51	Timberlea-Prospect	360	4450	1958	2123	118	0	4450	2123
52	Truro-Bible Hill-Millbrook-Salmon River	0	1897	3456	2517	0	0	3456	2517
53	Victoria-The Lakes	265	1969	544	4373	0	192	4373	1969
54	Waverley-Fall River-Beaver Bank	550	3429	1763	3453	9	0	3453	3429
55	Yarmouth	256	5365	243	2008	0	0	5365	2008

**Redistribution of the 2017 Provincial General Election Votes  
For the 2019 Electoral District Boundaries**

<b>2019 Electoral Districts</b>		<b>Party Placement in District</b>	
<b>ED No.</b>	<b>ED Name</b>	<b>FIRST</b>	<b>SECOND</b>
01	Annapolis	Liberal	PC
02	Antigonish	Liberal	PC
03	Argyle	PC	Liberal
04	Bedford Basin	Liberal	PC
05	Bedford South	Liberal	PC
06	Cape Breton Centre-Whitney Pier	NDP	Liberal
07	Cape Breton East	PC	Liberal
08	Chester-St. Margaret's	Liberal	NDP
09	Clare	Liberal	PC
10	Clayton Park West	Liberal	PC
11	Colchester-Musquodoboit Valley	PC	Liberal
12	Colchester North	Liberal	PC
13	Cole Harbour	Liberal	PC
14	Cole Harbour-Dartmouth	Liberal	PC
15	Cumberland North	PC	Liberal
16	Cumberland South	PC	Liberal
17	Dartmouth East	PC	Liberal
18	Dartmouth North	NDP	Liberal
19	Dartmouth South	NDP	Liberal
20	Digby-Annapolis	Liberal	PC
21	Eastern Passage	PC	Liberal

<b>ED No.</b>	<b>ED Name</b>	<b>FIRST</b>	<b>SECOND</b>
22	Eastern Shore	Liberal	PC
23	Fairview-Clayton Park	Liberal	NDP
24	Glace Bay-Dominion	Liberal	PC
25	Guysborough-Tracadie	Liberal	PC
26	Halifax Armdale	Liberal	NDP
27	Halifax Atlantic	Liberal	NDP
28	Halifax Chebucto	NDP	Liberal
29	Halifax Citadel-Sable Island	Liberal	NDP
30	Halifax Needham	NDP	Liberal
31	Hammonds Plains-Lucasville	Liberal	PC
32	Hants East	Liberal	PC
33	Hants West	Liberal	PC
34	Inverness	PC	Liberal
35	Kings North	PC	Liberal
36	Kings South	Liberal	PC
37	Kings West	Liberal	PC
38	Lunenburg	Liberal	PC
39	Lunenburg West	Liberal	PC
40	Northside-Westmount	PC	Liberal
41	Pictou Centre	PC	Liberal
42	Pictou East	PC	Liberal
43	Pictou West	PC	NDP
44	Preston	Liberal	NDP



<b>ED No.</b>	<b>ED Name</b>	<b>FIRST</b>	<b>SECOND</b>
45	Queens	PC	Liberal
46	Richmond	Liberal	PC
47	Sackville-Cobequid	NDP	Liberal
48	Sackville-Uniacke	PC	Liberal
49	Shelburne	PC	Liberal
50	Sydney-Membertou	Liberal	NDP
51	Timberlea-Prospect	Liberal	PC
52	Truro-Bible Hill-Millbrook-Salmon River	NDP	PC
53	Victoria-The Lakes	PC	Liberal
54	Waverley-Fall River-Beaver Bank	PC	Liberal
55	Yarmouth	Liberal	PC