Rules for Counting Votes and Ascertaining the Results of an Election

1. PREAMBLE

The by-laws call for the election of councillors to be determined according to the rules of proportional representation, also known as "preference voting." Proportional representation is based on the principle that any vote cast which would not otherwise elect a voter's most preferred candidate, is credited towards the voter's next-most preferred candidate. Thus, if a voter's first choice among the candidates receives more than enough votes to be elected, the surplus portion of that vote is transferred to the voter's second or succeeding (next-highest ranking) choice. Alternatively, if a voter's first choice candidate is eliminated, the vote is then cast for the voter's second or succeeding (next-highest ranking) choice.

The procedures set out herein implement the principle of proportional representation.

2. DEFINITIONS

In these rules, the expression:

"candidate" means the name of a person on the ballot.

"continuing candidate" means any candidate not elected at that time and not excluded from the poll.

"paper" means a paper ballot or its electronic replication.

"first preference" means the figure '1', "second preference" means the figure '2', "third preference" means the figure '3' set opposite the name of the candidate, and so on.

"transferable paper" means a paper on which a unique subsequent preference is recorded for a continuing candidate.

"non-transferable paper" means a paper on which;
   a) no unique subsequent preference is recorded for a continuing candidate, or
   b) the names of two or more candidates (whether continuing or not) are marked with the same figure, and are next in order of preference, or
   c) the name of the candidate next in order of preference (whether continuing or not) is marked,
      I. by a figure not following consecutively after some other figure on the paper, or
      II. by two or more figures.

"original vote" in regard to any candidate means a vote derived from a paper on which a first preference is recorded for that candidate.

"transferred vote" in regard to any candidate means a vote derived from a paper on which the subsequent preference is recorded for that candidate.

"parcel" means the number of votes ascribed to any candidate at any time.

"quota" means the number of votes sufficient to secure the return of a candidate.

"surplus" means the number of votes by which the total number of the votes, original and transferred, credited to any candidate at any time, exceeds the quota.

"returning officer" means
   a) scrutineers appointed in accordance with By-law 4.6; or
   b) the committee established under Section 8 herein for the purposes of a recount.

All actions required of the returning officer such as ascertaining, opening, counting, etc, shall be understood to permit his or her giving direction to have such action taken.

"system analyst" means the Association employee hired to perform computer programming and system analysis of the member database.

"return of a candidate" means election of a candidate.

3.   COUNTING PROCEDURES

All of the processes called for by these rules shall be carried out through a combination of a manual undertaking during data entry and in accordance with version 2.3.4, August 2009, of ChoicePlus Pro software from Voting Solutions.

4.   WITHDRAWAL OF NOMINATION

In the event that a candidate for election to council withdraws after the papers have been sent to the members, the counting of votes shall proceed with those papers indicating a preference (whether first, second, third or otherwise) for the withdrawn candidate being transferred to the next choice indicated on such paper. This procedure shall be followed during the first count and during each transfer of papers.

5. VACANCIES

If a vacancy, or vacancies shall have occurred among the elected councillors and one or more of the candidates for election to council is to fill a one-year term only, then:

a) Firstly, the candidates shall be ranked in the order in which they were declared elected;

b) Secondly, the vacancies shall be filled by allocating the number of two-year term vacancies to the equivalent number of elected candidates in accordance with the rank as determined under subparagraph (a), so that if, for example, there are four two-year term vacancies to be filled, the candidates declares elected first, second, third and fourth inclusive shall be elected to fill the two- year term vacancies;

c) Finally, after all the two-year term vacancies have been filled, the next candidate or candidates declared elected shall fill the one-year term vacancy or vacancies.

6. MANUAL INTERVENTION

a) Initial Sorting

After the returning officer has received and opened the envelopes containing the papers, they shall be numbered sequentially.

b) Data Entry

The votes contained on each manual paper shall be entered into the electronic database containing the electronic papers already received through electronic voting online. (In the process, if any paper becomes at any point a non-transferable paper, such paper shall be removed from further entering.) The data entry process shall be done twice and the two sets of data compared and any differences reconciled before proceeding.

c) ChoicePlus Software Settings

The returning officer shall direct the system analyst to set the software, thereby establishing the quota by the "Droop" method wherein the quota is established by dividing the total number of valid papers by a number exceeding by one the number of vacancies to be filled, and the result increased by one. Other settings shall be in accordance with those set out in Appendix A, attached.

d) ChoicePlus Software Verification

Before the counting of votes proceeds the returning officer shall process at least one standard set of vote data with known results to prove the integrity of the software and the validity of the program.

e) Ties

When ties occur at any stage of the tabulation the determination shall be based on whichever candidate was credited with the most votes at the previous stage of the tabulation (or stages taken back in succession until the tie is broken). If the tie occurs on the initial vote the process shall proceed in a forward direction to break the tie.

In each of the following cases the returning officer is authorized to make the required decision.

I. If two or more of the candidates have an equal number of original votes, a count shall be made of the total number of votes credited to those candidates at the first or subsequent transfer, at which they had an unequal number of votes, and the candidate with the highest number of votes at that transfer shall be declared elected first and, where the numbers of votes credited to those candidates are found equal at all transfers, the returning officer shall decide the order in which those tied candidates have been elected.

II. If a candidate is to be excluded and two or more continuing candidates have each the same number of votes at that stage and are lowest on the poll, a count shall be made of the number of original votes credited to each of those candidates, and the continuing candidate or candidates with the fewest number of original votes shall be excluded, and when the numbers of the original votes are equal, the total number of votes credited to those candidates at the first transfer at which they had an unequal number of votes shall determine the outcome in that the candidate with the lowest number of votes at that transfer shall be excluded and, where the numbers of votes credited to those candidates are equal at all transfers, the returning officer shall decide which shall be excluded.

7. DECLARATION OF RESULTS OF THE ELECTION

After the counting of the ballots is completed, the returning officer shall deliver to the registrar or the president the results of the poll, including a printout of the transfers and the ballots in a sealed package.

Prior to the Annual General Meeting, the CEO or the President shall inform each candidate of the results of the balloting as follows:

a) if the candidate has been elected, only that he or she has been elected; or
b) if the candidate has not been elected,
- that he or she was not elected; and
- the round in the transfer process in which he or she was declared defeated; and
- the number of votes that constitute the quota; and
- the number of votes received by the candidate at the time that he or she was defeated; and
- that the report of the scrutineer will be presented at the Annual General Meeting and that the procedures provide that the membership may approve by a vote a motion to cause a recount but only if the candidate or his or her agent, is present at the meeting and provides the statement described in section 8 below.

The results of the election shall be announced at the Annual General Meeting by the President. The number of votes received by each or any candidate will not be announced.

A motion to receive the report on the results of the election shall be made and seconded and, if no objection is made at the time, voted upon.

8. **RECOUNT OF VOTES**

The returning officer appointed in accordance with the by-laws may, at his or her discretion, and at any time during or after the counting procedures but not after the results of the poll are approved by vote at an Annual General Meeting, recount votes either once or more often in any case in which he or she is not satisfied as to the accuracy of any previous count; provided that nothing herein shall make it obligatory on the returning officer to recount the same votes more than once.

An objection to the results of an election may be made by a defeated candidate, or his or her agent, before the vote on the motion to receive the results is taken. Such objection must be accompanied by a statement to the meeting of its grounds. If so, a proper motion for a recount will be in order, and if it is duly made, seconded and carried, it shall override the motion to receive.

Where there has been a decision made at an Annual General Meeting to hold a recount, the returning officer for the recount shall be a committee comprised of the most immediate past president who is available and willing to serve, and who is not a candidate in the election, assisted by two other past presidents appointed by the President who presided as chair at the Annual General Meeting. The returning officer

shall forthwith recount the votes in accordance with the procedures of this policy. Candidates may be present or be represented at such recount. The results of the election as then determined by the returning officer shall be final.

Following either the duly approved receipt of the report on the election at the Annual General Meeting, or the declaration of the results of a recount, as the case may be, the ballots shall be destroyed as provided for in By-Law 4.6; except when the returning officer decides to retain them as a test set of data for proving the vote-counting procedure at a subsequent election, in which case he or she shall replace the names of the candidates by proxies.

9. DECISIONS OF THE RETURNING OFFICER

If any question shall arise in relation to the validity of any stage in the counting procedures or including any transfer of votes, the decision of the returning officer shall be final.

Adopted by the council June 22, 2017

Grant Koropatnick, PEng, FEC
CEO & Registrar

Appendix A – ChoicePlus Pro Software Settings

The following directives are used to configure the ChoicePlus Pro, v2.3.4, August 2009, from Voting Solutions, which Engineers Geoscientists Manitoba uses to tally Council election results according to Single Transferable Vote/Choice Voting/Proportional Representation.

Election Title
Each configuration file shall have suitably identifying .TITLE directives. These identify the organization, vote session, which ballot, and the date of election. There can be any number of .TITLE lines. These values are repeated in the result documents, to identify which election results you are looking at.

A typical council election configuration may begin with:

.TITLE "Engineers Geoscientists Manitoba - 2016 Council Election"
.TITLE "Engineers Ballot"
.TITLE "October 28, 2016"

Number to Elect
Each election will have a number of seats to fill. This is specified using the .ELECT directive. For example, the following line would be used to continue processing ballots until four candidates had crossed the election threshold:

.ELECT 4

Candidate Descriptions
The set of candidates must be described appropriately. The ballot data references a short numeric or alpha-numeric identifier, while the election results are presented with the corresponding name part from a .CANDIDATE directive. For example, to setup a ballot with four candidates, we may write:

.CANDIDATE 1, "Name 1 on Ballot"
.CANDIDATE 2, "Name 2 on Ballot"
.CANDIDATE 3, "Name 3 on Ballot"
.CANDIDATE 4, "Name 4 on Ballot"

Engineers Geoscientists Manitoba uses numeric identifiers, and numbers the candidates according to their last name, alphabetically. This is the order of candidates presented on the paper ballots; however, the online ballots randomize the order of candidates each time a ballot is viewed.

Ballot Data Format

The ballot data format directive describes the configurable format of the ballot data. Each line has a numeric identifier/sequence number, a weighted vote value, and a list of candidate ID values in preference order. The following directive is used to say the ballot lines will consist of (a numeric ID), (vote weight), (list of ranked candidate IDs)

.BALLOT-FORMAT-FIELDS BALLOT-ID-NUMERIC BALLOT-VALUE CAND-IDS-NUM-RANKED

Data lines that comply with that directive may look like:

1,1.00)8,5,1,6,7,2,4,9,3
2,1.00)7,9,2,5,1,6,8
3,1.00)3,5,1,8,2,9,7,4

While the 'BALLOT-VALUE' setting can be used to give certain ballots more weight, all ballots receive a '1.00' weight. The Candidate ID values come from a block like: .CANDIDATE 1, "Name on Ballot"

Simultaneous Drop

Candidates that can be shown mathematically to be guaranteed to lose can be defeated simultaneously. This typically occurs with write-ins and very unpopular candidates, and simplifies the election report substantially. This is the ChoicePlus Pro default. We set this to OFF.

.SIMULTANEOUS-DROP OFF

Ties

Any ties will be resolved by looking at who was ahead in previous rounds, falling back to human intervention according to *Section 6 e)* of the "Rules for Counting Votes and Ascertaining the Results of an Election".

.TIES PREVIOUS-ROUND BY-HUMAN

Optional Statistics

There is an optional result file that details how many ballots ranked how many candidates, then how many ballots elected their 1st, 2nd,… choice. For example, *36 voters ranked only 1 candidate -- 2.564102564102564%*, and *842 voters elected their #1 choice -- 59.971509971509974%*.

This file will be generated if we declare the following directive: .STATISTICS-ON

Include Directives

ChoicePlus supports an .INCLUDE directive that will allow the election data to span multiple input files. This is used to isolate the ballot data from the configuration data since they come from different places
and times. In a larger election, each district may produce its own data file, all included by the main configuration file as the tally is processed. The search path is relative to the configuration file location.

.INCLUDE Eng16.txt

Remarks or Comments

The configuration file format allows for lines that begin with a # character to be ignored by the software, so you can write notes or easily test different configuration options.

Sample Configuration File

.TITLE "Engineers Geoscientists Manitoba 2015 Council Election"
.TITLE "Engineers Ballot"
.TITLE "October 16, 2015"

.ELECT 2

.CANDIDATE 1, "Name on Ballot"
.CANDIDATE 2, "Name on Ballot"
.CANDIDATE 3, "Name on Ballot"
.CANDIDATE 4, "Name on Ballot"

.THRESHOLD DROOP
.STATISTICS-ON
c)   IMULTANEOUS-DROP OFF
d)   IES PREVIOUS-ROUND BY-HUMAN

.INCLUDE Eng15.txt

Sample Data File

.BALLOT-FORMAT-FIELDS BALLOT-ID-NUMERIC BALLOT-VALUE CAND-IDS-NUM-RANKED 1,1.00)8,5,1,6,7,2,4,9,3
2,1.00)7,9,2,5,1,6,8,4,3
3,1.00)3,5,1,8,2,9,7,4,6
4,1.00)7,9,3,4,5,6,1,2,8
5,1.00)9,7,2,5,3,1,8,6,4
6,1.00)5,7,3,1,9,4,6,2,8
7,1.00)3,5,1,2,4,6,8,9,7
8,1.00)5,4,3,9,8,1,7,6,2