

Options Analysis and Additional Information

Introduction

This document provides additional information about municipal censuses, including more detail about common components of any municipal census and a justification of the value of a biennial census compared to other options. Finally, an analysis of the different options identified in the cover report is provided.

Municipal Census Components

There are several major components to a municipal census:

1. *Program Team*

A small team is required to prepare and manage the delivery of the census and to manage the resulting data. This Administration team would ensure each census is performed in accordance with the provincial [Municipal Census Manual](#). One member of this team should be assigned to Geospatial Business Solutions (GBS) to support data processing, maintenance and analysis, as well as to make the census data available in the Corporate Geodatabase. A municipal census results in a significant amount of data and this position would focus on ensuring that data is clean and useable. Administration has options as to which department this team belongs, which will be determined during the preparation in 2025-2026.

2. *Software*

Modern census collection uses a software platform to collect the data and process it into a database for later review and analysis. This software must be able to process data collected from an online census questionnaire, as well as support intake of data from census takers going door-to-door. There should also be capabilities to check for errors, monitor census taker actions and support quality control as described in the new provincial [Municipal Census Manual](#).

Modern software exists in Alberta, is used by many municipalities to do their census and is available to The City of Calgary (The City) to contract. Alternatively, The City could develop its own software to perform the census.

For all options, personal information collected for a census will be stored securely in servers within Canada. All privacy and Freedom of Information and Protection of Privacy (FOIP) regulations and legislation will be adhered to. If the data is stored externally during census collection, it will be destroyed after being transferred to (and verified by) The City.

3. *Hardware*

Hardware such as iPads or Android tablets with cellular data connection are required to conduct the census and collect the data. These must be compatible with the software being used and can be either purchased, maintained and stored by The City, or rented for each census event.

4. *Census Takers*

Best results for census data collection are achieved through online and in-person census takers. Current best practice is to begin with online census collection, supported by mailing codes to every household

and encouraging them to complete the census online. After an online-only period, census takers would travel to each household that has not yet completed the census to collect the data in person. These census takers are also able to identify special considerations such as additional secondary suites (which should be collected separately from the main residence), or properties that are vacant, under renovation or under construction.

Numerous temporary census takers and associated supervisors would be needed each year the census is conducted. Hiring and training would be required for these positions and an appropriate method of compensation would need to be determined. Given the short-term nature of census taker positions, there are specific requirements that would need to be addressed.

5. Communications

A municipal census requires a significant communications investment. An information campaign will be needed to ensure residents know about the municipal census and to help answer questions. This campaign will also need to address privacy concerns and demonstrate to residents the value of a municipal census to encourage them to respond.

An initial mailout will also include a code for each household so that they can complete their census online. Every census that is completed online costs less than one completed by census takers, so it is important to encourage and enable residents to complete their census online.

Later in the census period, communications will need to continue to support awareness of census takers going door-to-door to finish collection. Large mailouts will not be needed at this stage as most households will have completed the census online.

Census Frequency

A key aspect of any municipal census program is the frequency of census collection. In Calgary, between 1958 and 2019, a census was collected annually. Other options that could be considered are every two years, every three years or every four (or more) years. Council direction was to conduct a biennial census (every two years) but other options were considered to confirm if biennial is the best option for a municipal census.

An important consideration in choosing the frequency of a municipal census is that a main objective is to obtain timely data. A reason why the Statistics Canada Census of Population (federal census) is not a sufficient substitute is that data is only collected every five years. Additionally, federal census data is only made available at a community scale two years after the census is collected and this community data is what is needed by The City. This long gap between census collections has been challenging in Calgary's high growth environment, not only to The City but also other partners such as the Calgary Board of Education, which relies on timely population data to plan for school enrollment.

The federal census also cannot be treated as another collection of a municipal census. Statistics Canada asks questions in a different way and does not provide individual census responses as they aggregate their results together. These differences mean that often results of a federal and municipal census are not directly comparable. Additionally, Statistics Canada did not ask the same questions as the previous municipal census and so some data was simply unavailable when relying on the federal census. Both provide good information but trends cannot be drawn between the two types of censuses.

It is not recommended to collect a municipal census annually. When collecting census data annually, there is little time between events to review the process to look for improvements or efficiencies. Biennial collection provides time for incremental improvements in the service delivery model, refinements of the questionnaire and costs less than an annual census. This will still provide quality data at small intervals. Data would be available in the same year it is collected.

A triennial (every three years) census is also not recommended. During a 2019 internal census review, census partners indicated a preference for biennial data compared to triennial. Collecting every three years would reduce the timeliness of the data and a two-year gap is more than required for improvements and refinements to the census process. Collecting every four years is also possible but provides even less timely data, being nearly the same cycle as the federal census. Note that in some cases there may be a larger gap as it is not recommended to collect a municipal census the same year as a federal census.

Analysis of Census Collection Options

Three methods for conducting a municipal census were studied. In the previous municipal censuses, everything was managed by Administration from the office of the City Clerk, but reinstatement provides an opportunity to look at new options.

Cost information provided is based on an internal report done by Administration in 2022. As costs will have increased since this report was prepared, cost estimates have been adjusted for inflation and population growth. If directed to proceed as recommended, Administration will refine the anticipated costs in time for a budget ask to be considered in the 2027-2030 Service Plans and Budgets process.

Table 1 on the following page provides additional detail about each option considered. All options use the same hardware and have the same frequency but there are differences in software, team size, contractor support and cost between the different options.

Option 1: Internally developed census

The census requirements can be fully developed internally, including new City-owned software designed to collect census information. This would require a core team who would research best practices for conducting a municipal census in Alberta. Additionally, this team would be fully responsible for developing proprietary software, acquiring hardware, hire and train the team of temporary census takers every two years, and manage and distribute the collected data. This is how the census was conducted in Calgary in the past. There are risks with initiating the development of new software required for the census as it would need to be designed, developed and tested before using it in 2027. If software development is not complete in time for a 2027 census, it would be necessary to delay until 2028.

Data storage would be done internally and would follow all FOIP regulations and legislation.

A City-developed and run census is estimated to cost \$4.5 million for preparatory work through 2025-2026, with a biennial cost of \$4.2 million thereafter. This includes software development, a permanent four-person team, hardware for census takers and hiring and training of census takers. The total cost for this option between 2025 and 2030 is \$12.9 million, making this the most expensive of the three options.

	Internally developed census	Internally developed census with licensed software	Contractor supported census
Administrative Team	4 FTE	4 FTE	3 FTE
Software	Internal	Licensed	Licensed
Hardware	Tablets	Tablets	Tablets
Frequency	Biennial	Biennial	Biennial
External Support	None	Software Only	Full Census
2025-2026 Cost	\$4.5M	0	0
2027 One Time Cost	0	\$0.7M	\$0.7M
2027-2030 Ongoing Biennial Cost	\$4.2M	\$4.9M	\$5.0M
2025-2030 Total Cost	\$12.9M	\$10.5M	\$10.7M
Advantages	No need to license commercial software	Can change software option at will	Can change software option at will; Use contractor experience to find efficiencies; Contractor support reduces administrative team size
	Software development and testing may take too long and prevent a census from occurring in 2027; Large up-front cost required	Recurring cost for software license	Recurring cost for contractors and software

Table 1: Census management and collection options

Option 2: Internally developed census with licensed software

The City has the option to use existing commercially available software to conduct a census which removes the initial costs to develop software internally. This option still requires a team to lead and administer the census processes. Commercial software is currently available in Alberta, is used by other Alberta municipalities and is ready for use in 2027.

The commercial software provides all the needed functions, allowing for a combination of online census collection and in-person census takers for cost efficiency. Quality control processes are built into the software based on the provincial [Municipal Census Manual](#) and this software is designed for Alberta municipalities. Census taker hardware (e.g., tablets) may be rentable through the software provider, ensuring that the software is fully compatible.

Data would be stored on servers provided by the software provider. These servers would be located in Canada. Data would be securely stored and protected and follow all FOIP policies and legislation. Upon completion of the census and successful transfer of data from the software provider to The City, the data stored externally would be destroyed.

This approach mitigates the risks of developing new software within two years and would require a one-time cost of \$0.7 million in 2027. Biennial census costs would be \$4.9 million starting in 2027, which includes biennial licensing of commercial software, a permanent four-person team, hardware for census takers and hiring and training of census takers. The total cost for this option between 2025 and 2030 is \$10.5 million.

Option 3: Contractor supported census (Preferred)

The City could engage external consultants experienced in conducting municipal censuses in Alberta. Expert consultants will have access to and experience using existing software, and experience in conducting a census for a large population. They will be well versed in the provincial [Municipal Census Manual](#) and will be able to ensure all results are collected properly to produce high-quality data. Over time, Administration can increase its responsibility over the actions of the census to help with cost efficiencies.

Additionally, The City would use existing commercial software to conduct a census, which (as with the previous option) removes the initial costs to develop software from scratch. This option still requires a team to lead and administer the census processes. Commercial software is currently available in Alberta, is used by other Alberta municipalities, and is ready for use in 2027.

The commercial software provides all the needed functions, allowing for a combination of online census collection and in-person census takers for cost efficiency. Quality control processes are built into the software based on the provincial [Municipal Census Manual](#) and this software is designed for Alberta municipalities. Census taker hardware (e.g., tablets) may be rentable through the software provider or through the external contractor, ensuring that the software is fully compatible.

Data would be stored on servers provided by the contractors or the software provider. These servers would be located in Canada. Data would be securely stored and protected and follow all FOIP policies and legislation. Upon completion of the census and successful transfer of data from the software provider to The City, the data stored externally would be destroyed.

Use of contractors means the administrative team can be smaller. Instead of a team of four, a team of three would be sufficient. This cost savings is expected to nearly offset the additional cost of contracting outside experts, meaning the cost difference between this option and the internally developed census with licensed software is small. This option requires a one-time cost of \$0.7 million in 2027. Biennial census costs would be \$5.0 million starting in 2027. Costs may be reduced over time as Administration could assume more responsibility of the census process. The total cost for this option between 2025 and 2030 is \$10.7 million.