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Date October 5, 2021 **Report No.** 2021-577

To Chair and Members
Committee of the Whole – Operations and Administration

From Inderjit Hans, P. Eng., PMP
General Manager, Public Works

1.0 Type of Report

Consent Item ☐
Item For Consideration ☒

2.0 Topic Natural Burials [Financial Impact – None]

3.0 Recommendation

- A. THAT staff Report 2021-577 regarding “Natural Burials” BE RECEIVED;
and
- B. THAT staff BE DIRECTED to include a project for a Cemetery Master Plan in the 2022 Capital Budget.

4.0 Executive Summary

This report outlines the process of a Natural Burial also referred to as a Green Burial and how the process differs from a traditional interment including costs and impact on the environment.

5.0 Purpose and Overview

This report has been drafted in response to a Council request for staff to provide information regarding natural burials and to outline for City Council the benefits

of a Natural Burial, costs that are involved and steps that would have to be taken in order to offer this service to the public.

6.0 Background

City Council at their meeting of March 26th, 2021 provided the following direction to staff;

12.1.20 Natural Burials

WHEREAS Natural or Green Burial is a way of caring for the deceased with minimal environmental impact that aids in the conservation of natural resources, reduction of carbon emissions, protection of worker health, and the restoration and/or preservation of habitat; and

WHEREAS Natural Burial is the simplest and oldest form of human disposition and has been practiced by human civilization for thousands of years; and

WHEREAS Natural Burial returns the body to the earth in a protected green space so that the body can contribute to the earth's renewal; and

WHEREAS Natural Burial uses non-toxic, biodegradable materials such as caskets, shrouds and urns; and

WHEREAS a Natural Burial is a way of returning a body to the earth with as little impact on the environment as possible; and

WHEREAS Natural Burials can be a spiritually fulfilling alternative to a conventional burial or cremation; and

WHEREAS Natural Burials can be more cost-effective than the conventional burials; and

WHEREAS the Natural Burial Association advocates to promote green burial in every community and build awareness of natural burial among the public; and

WHEREAS there are four Natural Burial sites in Ontario located in Niagara Falls, Picton, Cobourg and Waterloo;

NOW THEREFORE BE IT RESOLVED THAT

staff investigate and REPORT BACK in Q3 regarding the possibility of offering Natural Burial in the City of Brantford.

Corporate Policy Context

City of Brantford 2021-2022 Council Priorities

#1 Desired Outcome “ The City is mitigating its environmental footprint and adapting to climate change”.

The Parks and Recreation Masterplan suggested the following:

“There is a need to review plans for Oakhill Cemetery to assess current inventories, design deficiencies, plans for diversification relative to developing trends in disposition and memorialization, including scattering gardens, ossuaries, memorial gardens and green or natural burial...This will provide an efficient and cost-effective use of the remaining developable land.”

7.0 Input From Other Sources

Staff undertook research with respect to natural burials, and contacted other green burial service providers across Canada and locally in Ontario in preparation of this report.

8.0 Analysis

Traditional Burial

Although the concept of “traditional” burial has evolved over time, today contemporary Western burial methods typically involve the coordination of funeral arrangements through a funeral home, embalming the deceased, and burying the body in a casket and vault in a burial plot in a public cemetery. Gravesites are marked with headstones detailing the name and dates of a loved one’s life. Caskets range in materials but are often crafted of polished wood, with steel lining. Vault or liners are usually, made of concrete, steel or lightweight fiberglass-type materials and completely enclose the casket in the grave below ground. Embalming involves removing all bodily fluids and gasses and replacing blood with a formaldehyde-based solution for preserving and disinfecting.

Cremation is another method of final disposition of a body through burning that has also become a conventional funeral option. The cremation rate has been rising steadily for over 30 years and now accounts for more dispositions than

traditional casket burials. By 2035 it is predicted that cremation demand will account for more than 82% of all interments.

In modern times, cremation is commonly carried out with a closed furnace, at a crematorium. Following this, the “ashes” are transferred to either a temporary container or in an urn provided by the family.

There are numerous memorialization options for cremated remains including cemetery ground burials as well as interment in columbarium niches and scattering gardens.

Natural Burial

Green burial, also termed natural burial or eco-friendly burial emphasizes simple, in-ground burial practices, and is focused on reducing environmental impact on the earth. Minimal but dignified preparation of human remains, this method places the body of a deceased person in the soil or earth in a manner that does not inhibit decomposition but allows the body to contribute to the local ecology and be naturally recycled.

Natural burial involves the deceased being prepared for interment without chemical preservatives or disinfectants (embalming fluid) which destroy the microbial decomposers that break the body down. The body is typically not cremated and only biodegradable coffins, caskets, or shrouds are used. Protective vaults or outer burial containers that would prevent direct contact with soil are not used. Graves are often shallower to encourage microbial activity similar to that found in composting.

Some natural burial practices may even avoid the use of any machinery or heavy equipment to dig the grave site. Instead, the grave sites are dug by hand.

Rather than memorialize each individual plot with a stone marker, in natural burial grounds communal memorialization is emphasized. Ideally, naturally sourced, local materials are used to record simple basic inscriptions centrally or in common spaces throughout the grounds. Other memorialization strategies can include recording GPS coordinates of burial locations without physical markers, or inscriptions on flat wood plaques or natural stone. Living memorials such as trees and other native plants are also sometimes used.

Conservation Burials

Conservation burial grounds take environmental stewardship a step further, committing burial fees to pay for land acquisition, protection, restoration, and

management in perpetuity. These sites tend to be expansive tracts of land, sometimes contiguous with an existing park, critical habitat area, wildlife refuge, or nature conservancy area. Although there are several examples of conservation burials in the United States and the United Kingdom, these burials remain uncommon.

Hybrid burials

Hybrid burials can be implemented in traditional cemeteries wishing to accommodate green burials practices. These cemeteries may designate an area of land for green burials, and in that area, use only biodegradable products, avoiding vaults and harmful chemicals.

Sustainable elements of natural burials may be gradually introduced to traditional cemeteries by accommodating simpler biodegradable caskets, interments without liners or vaults and basic body preparation.

Hybrid burials are unique in that each cemetery determines how specific the green or eco – friendly the measures will be. Some cemeteries follow a prescriptive ecological restoration approach, minimizing use of all equipment and digging graves by hand while others may continue to use machinery, allow cremation interments and even low key natural markers on individual plots.

Environmental Impact

Both burials and cremations leave behind a significant environmental footprint. Embalming fluid and some of the glues used in casket making contain formaldehyde a known carcinogen that breaks down releasing chemicals into the ground after burial and ensuing decomposition are inert. An average 4 hectare cemetery holds enough embalming fluid to fill a small swimming pool.

Coffins and caskets are made from a variety of materials, most of them not biodegradable. It is estimated that roughly 30 million board feet (71,000 meters³) of casket wood is felled every year in North America some of which comes from tropical hardwoods, such as mahogany. The amount of steel used in caskets and vaults yearly is equivalent to the amount used in the Golden Gate Bridge. The amount of concrete used in vaults could build a highway between San Francisco and Portland. The manufacturing and transport of caskets and vaults requires large amounts of energy.

In addition, ongoing cemetery turf maintenance contributes to emissions of fossil fuels as do cremation practices releasing harmful gases like mercury, dioxin

hydrochloric acid, hydrofluoric acid, sulfur dioxide and carbon dioxide into the atmosphere. For comparative purposes the energy needed for one single cremation is the equivalent of the power an average person uses for an entire month or 106 litres (28 gallons) of fuel.

Conventional burial also occupies scarce and valuable land.

Green Burials, with no embalming, using a biodegradable casket or shroud, and with direct earth interment can offer a more environmentally sensitive alternative to both cremation and traditional burial options.

Regulations

As interest in eco-friendly practices continues to grow so does the interest in green burials and environmentally friendly funerary customs and alternatives. Although burials are governed by regulations set forth by each provincial government, there is currently no government standard or definition for “natural burial”.

The Green Burial Council is an environmental certification organization for green burial practices in North America (Canada and the US). Environmental certificates are offered to cemeteries, funeral homes, and product manufacturers involved in the funeral industry. These certificates allow consumers to distinguish between the three different levels of green burial grounds and their appropriate standards. The Green Burial Council also offers information on the types of coffins, urns, and embalming tools that fall under the eco-friendly category and are available for North American consumers.

The Green Burial Society of Canada was founded in 2013 with the goal to ensure standards of certification for green burial practices. The society emphasizes five principles of green burial:

- No embalming;
- Direct earth burial;
- Ecological restoration and conservation;
- Communal memorialization;;
- Optimization of land use.

The Natural Burial Association is an independent, non-profit organization established in 2005 to promote natural burial in Canada and to encourage the establishment of natural burial sites. Natural cemetery sites in Ontario on their website including: Niagara Falls, Cobourg, Picton and Waterloo with numerous sites in other municipalities pending.

Natural Burials in Brantford

Currently, there are no green burial options in the municipality. The City operates five cemeteries, three of which are active. Batson and Tranquility cemeteries are inactive (i.e. allow no new interments and are subject only to ongoing perpetual care maintenance). Greenwood Cemetery, the City's oldest active cemetery, is semi-active still allowing interments although there are no more lot sales. Oakhill and Mount Hope cemeteries continue to allow both interment right sales and new interments.

Mount Hope has limited additional capacity to expand other than the opportunity for additional columbarium niche walls. Oakhill is the only cemetery with remaining developable land within its current boundary (36 acres) and as such presents an opportunity for the development of a natural or green burial section. The introduction of eco-friendly elements to existing burial practices could also be considered for both cemeteries where some but not necessarily all natural burial elements are implemented.

The Parks and Recreation Masterplan (2018) identified the need to review plans for Oakhill Cemetery to assess current inventories, design deficiencies, plans for diversification relative to developing trends in disposition and memorialization, including scattering gardens, ossuaries, memorial gardens and green or natural burial. Further the masterplan recommended that:

“The City prepare a master plan for Oakhill Cemetery including conceptual design, capital costing and development phasing to efficiently utilize this depleting resource”.

A study such as this would allow for review of the developed and undeveloped sections of Oakhill, initiate a site selection process for an appropriate natural burial section as well as other changes to the cemetery to facilitate growth, changes in demographics as well as quality and variety of disposition and memorialization alternatives. A masterplan would include information related to estimated development and maintenance costs as well as procedural administrative steps necessary to move forward including drafting and alteration of the existing Cemetery By-laws.

9.0 Financial Implications

As with other funeral costs, prices for green burials can vary widely based on region and the type of burial site. Generally costs for green burials can be more affordable. It is estimated that on average, a traditional funeral and burial can cost up to or more than \$10,000, which typically include embalming, a casket, ceremony and burial.

Green burials would provide residents with an additional option for the interment of family and loved ones. The natural burial process is often a cost effective alternative with savings of up to 50%; achieved by use of a simpler casket, wrapping the body in a shroud instead of embalming and eliminating the cost of a headstone. Although maintenance costs are often presumed to be less, when not mowing grass, other measures may be undertaken that require labour and attention including removal of weeds and invasive vegetation and the establishment of new trees, shrubs and perennials.

Anticipated costs to the City would include staff time involved in further review of the use and availability of existing cemetery lands to support a natural burial section of an existing or new cemetery as well as required by-law amendments.

Following or in conjunction with this, costs would also include staff time to retain a cemetery consultant to review and update the Oakhill Cemetery Masterplan as well as other cemetery site plans to confirm appropriate lands, prepare site design for the new section(s) including cost estimates and implementation strategy.

If existing land was not available there could be potential costs to purchase additional cemetery lands. Staff would be required to further investigate the requirements for site selection and determine if existing cemetery lands meet the criteria.

It is not anticipated that additional operational staff would be required at this time if Council supported the inclusion of natural burial option(s). The natural burial process is an efficient means of interment with lower costs also impacting traditional revenue targets. As revenue could potentially be lower per interment the associated costs are also potentially reduced.

10.0 Conclusion

Natural or green burials is a trend that continues to grow in popularity throughout North America. The inclusion of natural burial sites in the City of Brantford

would provide alternate interment options for residents who are interested in reducing their environmental footprint. Staff support this initiative and recommend that should Council wish to proceed with offering natural burials in the municipality a Master Plan be completed that would provide a more detailed review of all cemetery locations, the cemetery bylaws, as well as the use and availability of existing cemetery lands to support natural burials.



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In adopting this report, is a by-law or agreement required? If so, it should be referenced in the recommendation section.

By-law required ☐ yes ☒ no

Agreement(s) or other documents to be signed by Mayor and/or City Clerk ☐ yes ☒ no

Is the necessary by-law or agreement being sent concurrently to Council? ☐ yes ☒ no