

Post-Mortem Matters – Shades of Green

Note: At the end of this document, Appendix 1 is an estimate of costs, Appendix 2 is some information on CO2 emission “costs”.

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General Information

1. Traditional American Funeral Service

\$15 Billion per year industry - conventional or traditional burials in the U.S. every year use:

- 30 million board feet of hardwood
- 2,700 tons of copper and bronze
- 104,272 tons of steel
- 1, 636,000 tons of reinforced concrete
- 1 million acres of land of memorial parks that require tons of water, chemical fertilizers and pesticides to maintain vibrant green lawns
- Estimated 5.3 million gallons of embalming fluid (its toxic chemicals have links to cancer)

The above is tantamount to a man-made environmental disaster. In effect, our cemeteries today are toxic landfills with nothing biodegradable. The environmental impact of the traditional American funeral service – with its colossal waste of resources; land, use of plastic, concrete and wood – is a far cry from the truly traditional way of death which was simpler and more personal.

The modern day casket is of metal and/or plastic, or expensive hardwoods, all of which are not biodegradable. Even with its special sealing features, the coffin does not protect the body forever.

Embalming restores a life-like appearance to the deceased. The embalming effluent/funeral waste 120 gallons of untreated body fluids (whole blood, fecal matter, liberated contents of internal organs and the embalming solution/toxic chemicals: formaldehyde, phenol, menthol, as well as any pathogens of disease harbored in the deceased e.g. T/B. Embalming can only slow the inevitable decomposition of the human body. Some municipalities require special treatment of the effluent prior to its release into the sanitary waste systems.

The burial vault – the use of this protective concrete or plastic enclosure for the casket is a required burial component for the cemetery. The vault's primary purpose is to maintain the conformity of the level grounds to keep the soil from sinking when the casket eventually

collapses. It avoids the creation of a depression in the ground which would makes mowing and grounds maintenance more difficult. For the family, it is an added expense that provides another barrier between their loved one and the surrounding natural elements.

2. Flame Cremation

Today an estimated 49 % of American deaths end in flame cremation and the number is growing. and why not? It's less expensive by 50% or more, it requires little planning, and the remains are portable, and can be dispersed in places that are meaningful to the departed.

Fiery cremation was commonly practiced by many ancient civilizations. Archaeologists have unearthed evidence of cremation sites dating back to 1,500 BC in Europe. The Greeks and Romans burned their dead to stop the spread of plague or to prevent enemy troops from desecrating their fallen warriors. And we know the practice was common in India and the Scandinavian countries where the elite were often cremated to release their spirits to the afterlife, and thus prevent them from tormenting the living . Even in Anglo-Saxon Britain, where the dead were burned upon the "bone fires" from which we inherit the less funereal "bonfire". However, disinterest in the practice of a fiery end occurred in the year 789 AD when the Christian king Charlemagne declared flame cremation, a pagan practice that desecrated the physical creation of the Maker, illegal and a crime punishable by death. For the next thousand years, burial prevailed as the common method of body disposal throughout much of the Western world. The first modern cremation occurred in Europe in the 1880's, and in the US in 1876 in a coal-fired retort in Pittsburgh. The practice was promptly banned by the Catholic church as a "detestable abuse" of the human body. Still, while interest in cremation gradually increased, it wasn't until 1963 when the Vatican determined that while burial should be the norm, cremation was allowable. In 2016 the Vatican released new guidelines that cremated remains should be kept in a sacred place, like a church cemetery and should not be scattered or preserved in mementos or other objects.

Only slightly better, environmentally speaking, than traditional burials, flame cremations account for little over half of the burials in the US, and produce an estimated 360,000 metric tons of CO₂ emissions, as well as vaporization of other chemicals such as mercury, used in amalgam dental fillings, and dioxins into the air. Moreover, the grey cremains are not compostable, having a very high pH level... making them toxic to most plant life, so they may need to be mixed with soil and other nutrients.

Most people don't realize Flame Cremation is unsustainable for our future and cannot be considered a green, eco-friendly choice of disposition because it is dependent on fossil fuels and contributes in large measure to global warming and climate change.

Each Flame Cremation lasts 3-4 hours and burning at 1,700-1,900 degrees Fahrenheit. Each cremation emits 250-350 pounds of carbon dioxide into the atmosphere. Multiply that by the countless number of cremations that occur each day around the world and the result is sobering. Again, cremains do not decompose. To minimize their impact, we need to enrich them with bacteria or nutrients to breakdown the bone fragments to neutralize their detrimental impact on the environment.

3. Water Cremation (aka Alkaline Hydrolysis)

Since 2018, 12 states, including Colorado, consider water cremation a legal form of body disposition. If you compare water cremation to flame cremation the A/H method is a gentler and greener process. The A/H process uses heat, lye and water to dissolve or breakdown the human body into a liquid and some remaining bone. A/H is done in a large stainless steel vessel/cylinder in which the body is reduced to a coffee-colored liquid that can be safely disposed of down the drain. The process takes 2-3 hours. The remaining bone fragments are ground into a white powder-like ash and offered to the family, much like as in a flame cremation. Also, some families may choose to retain a quantity of the liquid "essence."

While costs vary, A/H can cost somewhat more than flame cremation. However, the lower temperatures required result in significantly reduced carbon emission by up to 80% (or only 10-15% of CO2 emissions generated by flame cremation).

4. Decomposition (aka Natural Reduction aka Recomposure)

In this relatively new process, the deceased unembalmed human body is placed in a vessel/container where, with the addition of wood chips, alfalfa, straw and other additives, the process of biological decomposition is accelerated. Elsewhere, where the process is known as natural reduction or recomposure, depending on the provider of the service, the timing of complete decomposition may vary. The Washington-state provider requires 30 days to complete the process. In Colorado (The Natural Funeral) the process currently requires six months; however, efforts are ongoing to further reduce the time required in the process .

The commercial process of decomposition was first legalized in Washington State in 2019 by a Seattle-based company. In Colorado, where the process became legal on Sept. 7, 2021, "The

Natural Funeral" company in nearby Lafayette is the only known firm where the process is currently available. There the body is placed in a vessel surrounded by straw, alfalfa, wood chips and a lot of microbial beings, and a natural process of digestion occurs whereby the body gently becomes "soil." This resulting soil can be used to grow, plants, trees and flowers, giving new life. Colorado law does not allow for the soil to be sold or used to grow edible crops.

Enough soil will be produced from one body to fill a pick-up truck. Families that choose to compost their deceased loved ones may keep the soil or donate it to a farm. In effect, the conversion process brings the body back to something that the earth can accept and use. According to The Natural Funeral folks: "People who are environmentally-minded or agriculturally-minded have been clamoring for an option that respects the earth the way they do."

- The Catholic Church has voiced disapproval of this process.
- Legalization in Oregon is pending.

5. Green Burial

It's all about simplicity. A "green burial" (aka natural) can be highly cost effective and save the environment. Green burials bypass many of the standard expenses of modern funerals, such as no embalming, limousines, vaults, metal coffins, headstones & carving, and chapel services. Grave depth is at 3 ½-4 feet of soil where more oxygen and greater aerobic activity allows for faster natural decomposition. A green cemetery does not utilize toxic chemicals, such as herbicides and insecticides to maintain a well-groomed appearance. There are a number of green cemeteries in the area, including Lyons.

6. Home Funeral

Home funerals involve a 1 to 3 day vigil where the body is cared for naturally and preserved with dry ice or other cooling methods before disposition. It is held in the home which for many people seems more natural and healing as the departed is cared for by loved ones and friends. It is an act of both intimate care and mourning, as well as a celebration of loving thoughts and prayers. Usually a home funeral is followed by burial in a green cemetery or by cremation.

7. Burial at Sea

A burial at sea can be considered a green burial if it does not involve traditional embalming or containers made of steel, concrete or other non-biodegradable materials. Of course, how the ship/boat is powered raises questions of CO2 emissions. Government regulations require that site of body interment be at least 3 nautical miles from land and at a depth of at least 600 feet. Rules require remains be weighed down to sink to the bottom rapidly and permanently. The voyage may take about an hour into often rough water. However, local regulations re burial of cremains at sea may require going out only 500 yards, away from traffic, for dispersal/release.

8. Military/National Cemetery

Any veteran with an honorable discharge is entitled to a free gravesite or columbarium in one of many national cemeteries. Colorado offers three location. An application is required.

9. Memorials/Columbarium

In addition to gravesites and mausoleums, most cemeteries offer a choice of columbaria. An urn of cremains may be buried in a grave or secured in a columbarium.

10. Legacy/Endowment

FirstCong has benefitted from a long tradition of Legacy gifts from among its members. In recent years Legacy gifts were received from Miss Jessie Fitzpatrick and Jane Sawyer, as well as major anonymous gifts accepted in honor of retired Pastors Bruce MacKenzie and Martie McMane. These and other Legacy gifts have resulted in the establishment of FCC's Endowment Funds which enable us to better serve the community now and into the future.

Appendix 1:

**Post Mortem Matters - Shades of Green
Options**

1. Family and Faith Considerations: Christian, Jewish, Muslim

In Genesis 3:19, the Bible says: "For dust thou art, and unto dust shalt thou return."

	Estimated Cost in <u>Thousands of \$</u>
2. Traditional American Funeral	
a. Embalming with Casket	
b. Vault & Burial Plot	10-15
c. Interment & Misc.	
3. Cremation	
a. Flame	1-5
b. Water (Alkaline Hydrolysis)	4
i. Cremains/Ashes from either process	
1. Burial Plot	1-5
2. Columbarium (Niche)	3-5
3. Spreading	0-1
4. Natural Reduction (Body Composting)	8
5. "Green Burial"	3-5
a. With shroud and/or biodegradable coffin	
b. No embalming	
6. Other	
a. Home Funeral	0-1
b. Burial at Sea	0-1
c. Natural Cemetery	1-5
d. Military/National Cemetery	0
e. Memorial/Columbarium	4-5

Appendix 2: Some CO2 Emission Information for cremation: (courtesy of Libby Black)

From: <http://www.fullcirclelivingdyingcollective.com/cremation--not-so-environmentally-friendly.html>

For those who are interested, we also calculated the approximate CO2 emission per year in the US as a result of cremation. Assuming 2.4 million deaths in a year (2009 CDC data), a 38% national cremation rate (2009 data from the Cremation Association of North America), and a release of 540 pounds of CO2 per cremation, we estimate that each year 246,240 tons of CO2 are put into the environment as a result of cremation.

From National Geographic:

The average U.S. cremation, for instance, “takes up about the same amount of energy and has the same emissions as about two tanks of gas in an average car,” Menkin says. “So, it’s not nothing.”