

MASTER PLAN FOR EASTERN CEMETERY, CITY OF PORTLAND, MAINE



Chicora Research Contribution 534

The cover photos compare the monument of Admiral James Alden ca. 1930, taken by Mr. William Jordan (courtesy of the Maine Historical Society), to the monument today. Although taken from a different angle these, and similar historic photographs, document the extraordinary loss of monuments in the cemetery over the past 70 years.

**MASTER PLAN FOR
EASTERN CEMETERY
CITY OF PORTLAND, MAINE**

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CHICORA RESEARCH CONTRIBUTION 534



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March 1, 2011

This report is printed on permanent paper ∞

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MANAGEMENT SUMMARY

This study was funded by Spirits Alive and the field investigations were conducted by Chicora Foundation from November 16 through 21, 2010. Report production followed immediately afterwards.

The study examines the oldest of Portland's burial grounds, called Eastern Cemetery and situated at the eastern end of the coastal city. This burial ground dates to at least the early eighteenth century and likely earlier. The 6.8 acre parcel was expanded from the original small burial ground over the years. Approximately 3 acres were acquired in 1795 by the town of Falmouth from its owner, the Rev. Thomas Smith.

The research included an examination of available historical resources with the goal of creating a synthesis of the Cemetery's history, building on the early work by William B. Jordan, Jr. The current work made extensive use of city documents and newspapers, and provides additional information concerning the City's sporadic – and often minimal – efforts to maintain the Cemetery.

The majority of the problems documented at Eastern Cemetery fall into one of three primary categories:

- Inadequate maintenance,
- Pervasive homelessness and trespassing, and
- Vandalism.

All three have been ongoing for generations as the owner of the burial ground has ignored and neglected the problems.

In spite of the herculean efforts of private citizens such as William Jordan and more recently

Spirits Alive, the survival of the Cemetery requires the City of Portland to accept its ethical and legal obligation to care for its property.

The maintenance the Cemetery has received over its long life has been too tenuous and sporadic to justify the term. Problems include the decaying hardscape, such as the fences and walls; the care given to the landscape, including the failure to provide even minimally adequate lawn care; and the upkeep of the below grade tombs.

The Cemetery, listed on the National Register, is clearly being subjected to what has become known as demolition through neglect – the process of actively allowing a historic resource to deteriorate to the point that it loses historic integrity.

The Cemetery, by all accounts, is periodically taken over by trespassers engaged in illegal activities. This creates a situation where legitimate visitation is discouraged and the Cemetery is further damaged. Allowing such activities is yet another aspect of the demolition activities de facto permitted by the City of Portland.

Vandalism is the third significant problem, both in the past and continuing today, albeit to a reduced level. This may be associated with homelessness and trespassing, but since it is not being adequately documented it is difficult to identify the actors.

The City must make administrative changes in the way the Cemetery is operated and in the ordinances that govern the property. The Cemetery requires caregivers to give careful

attention to the Secretary of the Interior's Standards for Preservation.

Most fundamentally, it is critical that the Cemetery have a solid, permanent funding base. The requirements of Cemetery maintenance do not change based on political vagaries or economic forecasts. In fact, the funding requirements only increase with age.

This report evaluates all of the identified needs, classifying them into three broad categories:

- Those issues that are so critical – typically reflecting broad administrative issues, health and safety issues, and issues that if delayed will result in significantly greater costs – that require **immediate** attention. These actions should be accomplished in 2011.
- Those issues that, while significant and reflecting on-going deterioration and concerns, can be spread over the **next 2 to 3 years** (i.e., 2012-2014). This allows some budgeting flexibility, but this flexibility should not be misconstrued as a reason to ignore the seriousness of the issues.
- Finally, those issues that represent on-going maintenance and preservation issues. These costs can be spread over the following **three years** (i.e., 2015-2017). Like the Second Priority issues, this budgetary flexibility should not be interpreted as allowing these issues to slide since further delay will only increase the cost of necessary actions.

We acknowledge that these goals will be costly. Nevertheless, the City has deferred responsibility and care for generations – it is now time to ensure that this early Portland cemetery is appropriately preserved for future generations.

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INTRODUCTION

The Project

In June 2010 Spirits Alive, an organization dedicated to the preservation of Portland's Eastern Cemetery, requested proposals for a preservation plan focusing on the cemetery. Chicora's proposal, dated July 7, 2010, was eventually chosen.

The assessment was conducted from November 16 through 21, 2010 by the authors, Michael Trinkley and Debi Hacker. The work involved a day-and-a-half inspection of the cemetery, three-and-half-days of historical research, and a day spent examining the other principal city cemeteries (specifically Western, Forest City, and Evergreen). The work in the

cemetery included not only a careful inspection of the overall cemetery condition, but also an inspection of one family tomb, as well as the city receiving tomb. Also involved was a meeting that included a variety of Spirit Alive members, as well as the City's Historic Preservation Program Manager and the Public Services Department of Parks and Cemeteries Coordinator.

On the City of Portland's Community Development website it is noted that a comprehensive or master plan is a "long-range plan that provides a policy framework in which to guide municipal decisions." The site goes on to note that "Portland has a strong history of comprehensive planning" (<http://www.portlandmaine.gov/planning/complan.asp>). There are, for example, master plans for both Evergreen and Western cemeteries in Portland (available on-line at <http://www.portlandmaine.gov/planning/evergreencemeterymasterplan.pdf> and <http://www.portlandmaine.gov/planning/westerncemeterymasterplan.pdf> respectively).

The presence of a plan, however, does not guarantee any improvement. Plans do not always, for example, focus on or even pay passing attention to the issue of preservation. The Evergreen plan is over a decade old and provides almost no preservation guidance. The Western Cemetery plan is more recent, having been completed in 2001 and provides more detailed preservation recommendations. Regardless, the presence of a plan is no guarantee that preservation efforts will be undertaken.

Eastern Cemetery is fortunate in that the group requesting this study is active, energized, and seriously interested in the long-term preservation of the property. Spirits Alive forms the constituency that is critical for a property's preservation.

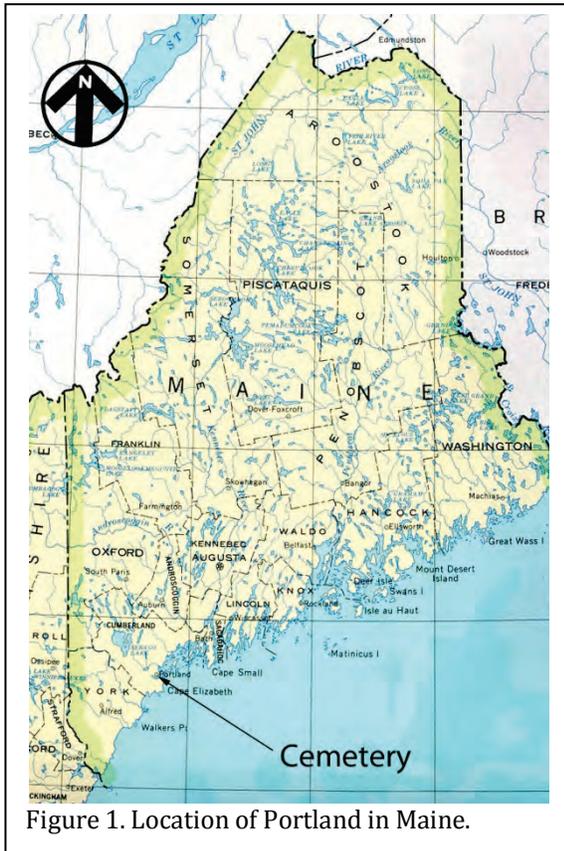


Figure 1. Location of Portland in Maine.

MASTER PLAN FOR EASTERN CEMETERY, PORTLAND, MAINE

Portland

Portland is not only the county seat of Cumberland County, but it is also the largest city in the state of Maine with a population of nearly 63,000. Portland is the principal city of the Portland-South Portland-Biddeford metropolitan area (also known as Greater Portland), encompassing Cumberland, York, and Sagadahoc counties. Portland is situated on the southern coast of Maine, about 50 miles north of the Maine-New Hampshire border (Figure 1). It is also about 250 miles southeast of Montreal and 225 miles south-southeast of Quebec, both on the St. Lawrence River.

Portland was long known as “the Neck,” identifying the peninsula that is about 3 miles in length and averaging about ¾ mile in width

(Figure 2). In the eighteenth century there was room for only three streets running parallel to the harbor: Fore, Middle, and Back (today Congress). Two additional streets, Cumberland and Oxford, were added in the nineteenth, but it required extensive modifications in the form of wide spread filling to create the city seen today.

The peninsula is bounded by the Fore River to the southwest and southeast. Open ocean is about 3½ miles to the east. The proximity to the ocean and the presence of a deep channel that remains passable during the winter assured Portland of its early maritime importance and economic success. Initially, Maine’s economic importance hinged on its forest products from the interior and its fishery resources. With the coming of the Atlantic and St. Lawrence Railroad connecting Portland to Montreal in 1853 and the

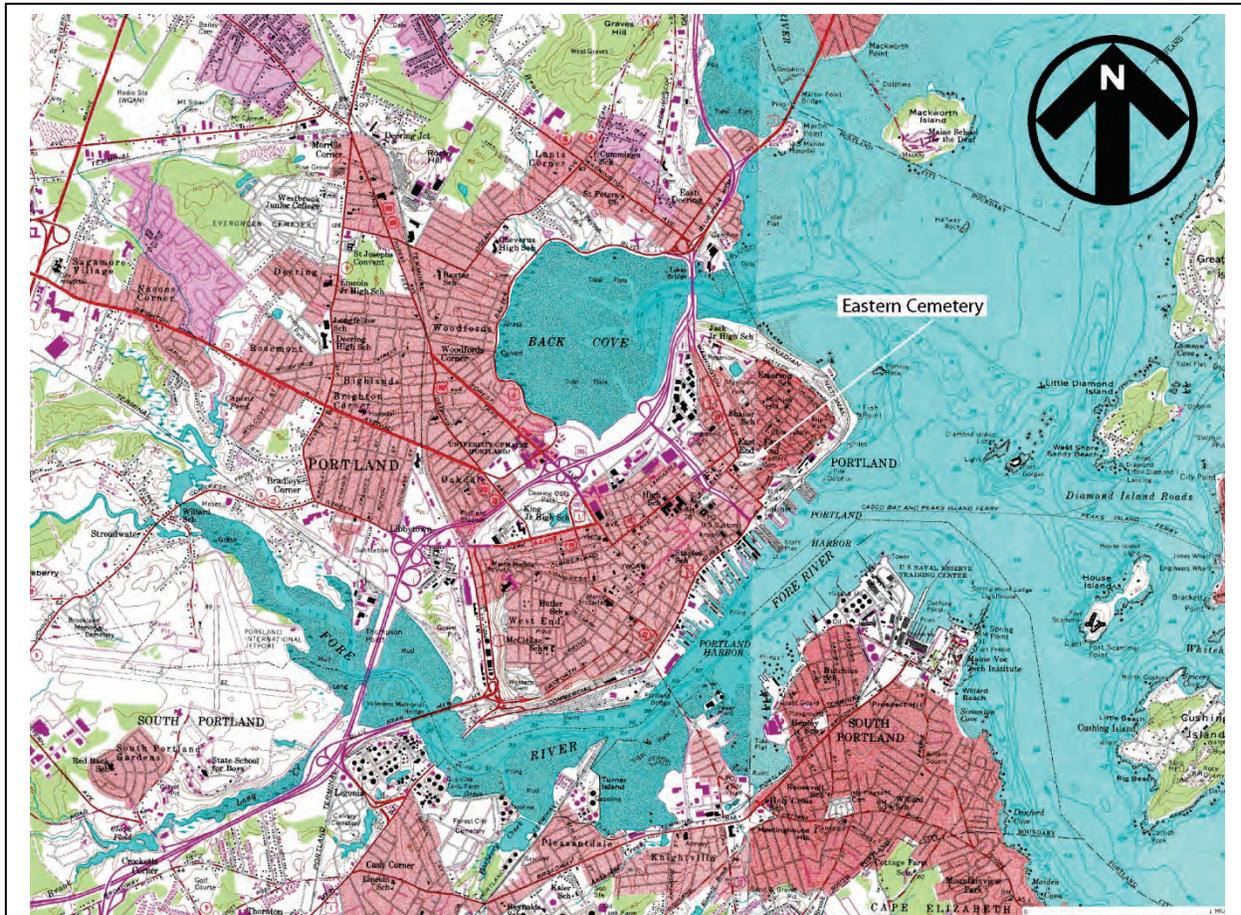


Figure 2. Portions of Portland East and West USGS 7.5' topographic maps showing the City of Portland and the surrounding area.

subsequent Grand Trunk Railroad, Portland's commercial importance was further reinforced – first by grain and later by oil.

To the northwest is Back Cove, which in spite of tons of fill, remained in 1895 “a slimy and ill-odored waste not only offensive to the nostril and eye, but a menace to the health of the city,” according to then Mayor James Phinney Baxter (Conforti 2005:xviii). To the northwest was the community of Deering, a residential community for Portland workers that was annexed – in spite of its residents – into Portland in 1899.

Portland is dominated by two hills – Munjoy at the east and Bramhall at the west. It was on the eastern hill that Eastern Cemetery, the town's earliest, was created. The area was apparently chosen because of its proximity to the early settlement on the Neck and may date back to the seventeenth century, although the earliest marked grave dates to 1717 (Jordan 2009:vii).

Why Preserve?

Preservationists may take the question “why preserve” for granted; yet it remains an important issue, especially in the current economic climate. It is useful to provide at least some brief discussion of why preservation of Portland's Eastern Cemetery is a worthwhile – even critical – goal for the city and its citizens.

Cemeteries are different from all other types of historic sites. Most fundamentally they contain the physical remains of past generations and are considered sacred, consecrated ground. The right to a decent burial has long been recognized in common law. So, too, is the duty to continue a cemetery once begun. Thus a municipality, opening a cemetery, creates a duty of the city through its officials to execute the trust and maintain the cemetery for the benefit of the public.

Cemeteries are also artistic sites, such as a sculpture garden or outdoor museum that contains a collection of three-dimensional artifacts. The monuments trace changes in both designs and social attitudes toward religious and moral views, death and eternity. They provide

examples of the largely disappeared art of stone carving, illustrating numerous famous artisans. They are permanent collections, but must be considered finite and irreplaceable.

These collections are archives, having the same value and importance to the community as any archives. They are storehouses of genealogical information that often cannot be identified through any other means. They provide information concerning both the individual and collective pasts.

Part of this archive is the archaeological and bioanthropological information they contain – even if the site is never excavated. The graves and tombs can provide information on mortuary behavior, such as the coffins and hardware chosen by relatives. The human remains can provide information on diet, disease, and burial practices – information that is available from no other source.

Cemeteries are also scenic landscapes, similar to parks or open spaces, except they are much more. They are far more fragile and susceptible to damage and deterioration. As such they require distinctly different care.

Thus, cemeteries are important social, historic, architectural, and archaeological artifacts. When there is little else physically remaining of a community's earliest history, there will often be a cemetery that provides a unique tie to the community's collective past that would otherwise be lost.

Beyond these ties to the community's history and the ethical responsibility of caregivers, the preservation of our past also has clear economic benefits to a community. These serve to dispel the argument that while history may be important, there are more pressing needs. History can, in fact, generate the economic stimulus to help address the other needs of a community.

Taking just a few examples from the numerous studies available:

- Historic preservation activities generate more than \$1.4 billion of economic activity in Texas each year.

- Rehabilitation of historic properties in Georgia during a five-year period created 7,550 jobs and \$201 million in earnings.
- Each dollar of Maryland's historic preservation tax credit leverages \$6.70 of economic activity within that State.
- In one year, direct and indirect expenditures by heritage tourists in Colorado reached \$3.1 billion.
- A New York state study found that prices of houses in historic districts are higher than those of similar houses outside historic districts.
- A detailed Massachusetts study found that heritage tourism travelers spend "considerably more" than other travelers and that most come from out of state, further accentuating the economic contribution of heritage tourism. The study found that heritage tourists contributed an estimated \$2.5 billion annually over the 1998 through 2000 period. Considering both direct and multiplier effects, Massachusetts received annually from heritage tourism 53,000 jobs; \$1.2 billion in income; \$1.8 billion in gross state product; \$559 million in taxes (including \$301 million in state-local taxes); and annual in-state wealth creation of about \$1.5 billion.

Thus, we see a broad range of reasons why we should be concerned about the preservation of Eastern Cemetery. As a colleague has noted, "the ultimate significance . . . is the aggregate sum of its parts" (Walker-Kluesing Design Group 2001:3). In fact, we would argue that the significance is actually greater than the sum of its parts.

Preservation or Restoration?

We note that the plan for Western Cemetery calls for restoration efforts (Walker-Kluesing Design Group 2001:4, 25). While respectful of the expertise represented, we do not concur with this approach.

Preservation is *not* restoration. Restoration means, very simply, making something "like new." Restoration implies dramatic changes of the historic fabric, including the elimination of fabric that does not "fit" the current "restoration plan." Restoration is inherently destructive of patina and what makes a property historic in the first place. The "restorer" of a property too often knows little of the Secretary of the Interior's Standards for Preservation and may care even less.

One of the most important early writings was that of nineteenth century art critic and observer John Ruskin. In *The Seven Lamps of Architecture* published in 1849 and in particular, "The Lamp of Memory," Ruskin introduces us to the issue of trusteeship where he explains,

it is again no question of expediency or feeling whether we shall preserve the buildings of past times or not. We have no right whatever to touch them. They are not ours. They belong partly to those who built them, and partly to all the generations of mankind who are to follow us.

Ruskin also crisply stated the difference between restoration and repair, noting that "restoration" means,

the most total destruction which a building can suffer: a destruction out of which no remnants can be gathered: a destruction accompanied with false description of the thing destroyed.

In contrast, preservation (or conservation for that matter) can be defined as preventing or delaying loss, depletion, waste, or harm. Preservation seeks to limit natural deterioration.

Preservation will respect the historic fabric, examine the variety of options available, and select those that pose the least potential threat to the property. Preservation (as well as conservation) will ensure complete

documentation, whether it is of cleaning, painting, or repair. Preservation treatments will ensure that the work done today does not affect our ability to treat the object tomorrow.

Preservation Fundamentals

Preservation is not an especially difficult concept to grasp, although the key principles are not always clearly articulated. The fundamental concepts are well presented in the Secretary of the Interior's Standards for Preservation (see Table 1).

This document reminds us – at least at a general level – of what caregivers need to be thinking about as they begin a cemetery preservation plan. Those responsible for the care of Eastern Cemetery should be intimately familiar with the eight critical issues it outlines.

For example, all other factors being equal, a cemetery should be used as a cemetery. Until the caregivers are able to do what needs to be done, it is their responsibility to make certain that the site is preserved – it must not be allowed to suffer damage under their watch.

Caregivers must work diligently to understand – and retain – the historic character of the cemetery. In other words, they must look at the cemetery with a new vision and ask themselves, “what gives this cemetery its unique, historical character?” Whatever it is, those undertaking its care and preservation become the guardians responsible for making certain those elements are protected and enhanced (whether they are particularly appealing to the caregivers or not).

Whatever conservation efforts are necessary must be done to the highest professional standards; these conservation efforts must be physically and visually compatible with the original materials; these conservation efforts must not seek to mislead the public into thinking that repairs are original work; and the conservation efforts must be documented for future generations. If the caregivers aren't

conservators, it is their responsibility as the stewards of the property to retain a conservator appropriately trained and subscribing to the Code of Ethics and Standards of Practice of the American Institute for Conservation (AIC).

The Secretary of the Interior reminds those responsible for the resources that each and every cemetery has evolved and represents different styles and forms. Few, if any, cemeteries are “frozen in time.” For example, Eastern Cemetery, while originating in the colonial period, contains examples of a variety of later memorials, including late nineteenth and early twentieth century granite die on base monuments. The landscaping provides a post-colonial Victorian representation of the landscape. It is the responsibility of care-givers to care for all of these modifications and not seek to create a “Disney-land” version of the cemetery, tearing out features that don't fit into their concept of what the cemetery “ought” to look like.

Likewise, caregivers are reminded that there will be designs, monuments, and other features that characterize the cemetery – and the caregivers are responsible for identifying these items and ensuring their preservation. Caregivers must be circumspect in any modifications, ensuring that they are not destroying what they seek to protect (a problem with virtually all “restoration” efforts).

Before acting, those responsible for preservation are required as good and careful stewards to explore and evaluate the property, determining exactly what level of intervention – what level of conservation – what level of tree pruning – is actually necessary. And where it is necessary to introduce new materials – perhaps a pathway – into the cemetery, they must do their best to make certain these new elements are not only absolutely necessary, but also match the old elements in composition, design, color, and texture. In other words, if the cemetery has soil pathways, they would be failing as good stewards if they allowed concrete pathways – especially if the only justification was because concrete was less expensive or easier to maintain.

Where conservation treatments are necessary, the Secretary of the Interior tells stewards that they must be the gentlest possible. However phrased – less is more – think smart, not strong – caregivers have an obligation to make certain that no harm comes to the resource while under their care. And again, one of the easiest ways to comply is to make certain that caregivers retain a conservator subscribing to the ethics and standards of the American Institute for Conservation.

Finally, the caregivers must also recognize that the cemetery is not just a collection of monuments and the associated landscape – the cemetery is also an archaeological resource. They must be constantly thinking about how their efforts – whether to repair a monument, put in a parking lot, or resurface a path – will affect the archaeological resources – archaeological resources that are the remains of people buried at the cemetery by their loved ones.

These are especially critical issues for the Eastern Cemetery. This cemetery has been fighting gradual – and at times exponential – deterioration since at least the early twentieth century (although damage can be traced back to at least the early nineteenth century). Various clean-up efforts have made a substantial difference in the overall appearance of the burial ground, but the deferred maintenance has created a substantial problem that will not be easily overcome. Original fabric has deteriorated and much has been lost. Many monuments simply no longer exist – or have been significantly altered by well-meaning but inappropriate restoration efforts. Even the landscape and viewshed have

Table 1.
Secretary of the Interior’s Standards for Preservation

1. A property will be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where a treatment and use have not been identified, a property will be protected and, if necessary, stabilized until additional work may be undertaken.
2. The historic character of a property will be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historic materials and features will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive feature, the new material will match the old in composition, design, color, and texture.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

been compromised by development activities on surrounding parcels and a lack of careful attention to critical management issues.

Our first recommendation, therefore, is that those assuming care for the cemetery, especially the City of Portland (including City Council, the City Manager, Historic Preservation Officer, Historic Preservation Committee, and those in the Portland Department of Public Services), become thoroughly familiar with the Secretary of the Interior’s Standards for Preservation and reaffirm their responsibility as stewards of this historical resource to ensure that future preservation efforts are consistent with sound preservation principles and practices. These standards must become “talking-points” for all future discussions and decisions made concerning the cemetery.

Past Preservation Efforts in Portland

Conforti (2005:xix-xx) provides a brief overview of Portland's urban renewal efforts of the 1960s and 1970s that resulted in the loss of many extraordinary structures. Of particular note are Union Station (demolished in 1961), Grand Trunk Terminal (demolished in 1966), the Falmouth Hotel (demolished in 1963), and the Old Post Office (demolished in 1965). Conforti observes that Union Station was replaced "by one of Portland's most aesthetically impoverished places, a trite 1960s commercial strip" (Conforti 2005:xx).

As a result of these failures of civic pride and preservation, Greater Portland Landmarks was incorporated in 1964. As early as 1966 the Wadsworth-Longfellow House was added to the National Register of Historic Places. Additional properties began to be listed by the early 1970s (Eastern Cemetery was nominated and listed in 1973).

Figure 3 reveals that much of Portland is listed in one of 12 different historic districts and historic landscape districts. Unfortunately these largely focus on the western portion of the city. Eastern Cemetery stands alone as a National Register site, but receives none of the protection offered by local historic designations. This may account for the loss of the cemetery's viewshed by the construction of modern structures between the cemetery and harbor.

Administrative and Legal Issues

This section is not intended to offer legal advice – only to provide recommendations from the perspective of proactive cemetery preservation.

The laws relating to Portland's burial grounds are found in the Code of Ordinances, Chapter 7, Cemeteries. These ordinances almost exclusively address issues specific to the active Forest City and Evergreen cemeteries. The only more general issue we identified is that hours are set from 8am to sunset, except November 1 through April 1 when the hours are adjusted to 8am to 4:30pm (Section 7-2 Hours).

Recognizing that these ordinances were largely inappropriate for the City's historic properties, several years ago a coalition proposed the addition of Article VIII, Inactive and Semi-Active Historic Cemeteries to Chapter 7. We are told that the proposal was never finalized and was never presented to the City for action. The proposed verbiage at that time is reproduced below. Recommended additions or changes are noted in red.

Sec. 7-145 Inactive and Semi-Active Historic Cemeteries Defined

In recognition of the unique cultural resources represented by and contained within the City's historic cemeteries, the following are designated as Inactive or Semi-Active Historic Cemeteries: Stroudwater Cemetery, Eastern Cemetery, Western Cemetery, Evergreen Cemetery, War of 1812 Cemetery (Eastern Promenade).

Sec. 7-146 Value of Historic Cemeteries

Names on grave markers serve as a directory of early residents and reflect the ethnic diversity and unique population of an area. **In many cases these names provide the only surviving historic record of these individuals, their ancestry, or their connections to the community.** Grave marker designs and cemetery decoration and landscaping represent a variety of cultural influences that helped shape the history of Portland **and relate our community to the broader historical events and context of our nation.** These cemeteries represent outdoor sculpture gardens and museums, providing links to our past. They are archaeological sites, offering information on mortuary activities, bioanthropological resources, and data that are unavailable in any historical records. These cemeteries are also sacred places, representing the final resting places of our ancestors and, as such, deserve the respect and protection afforded to all burial grounds. As cultural resources, historic cemeteries **are unique and irreplaceable, deserving of the special protection afforded by this Chapter.**

Sec. 7-147 Applicable Regulations

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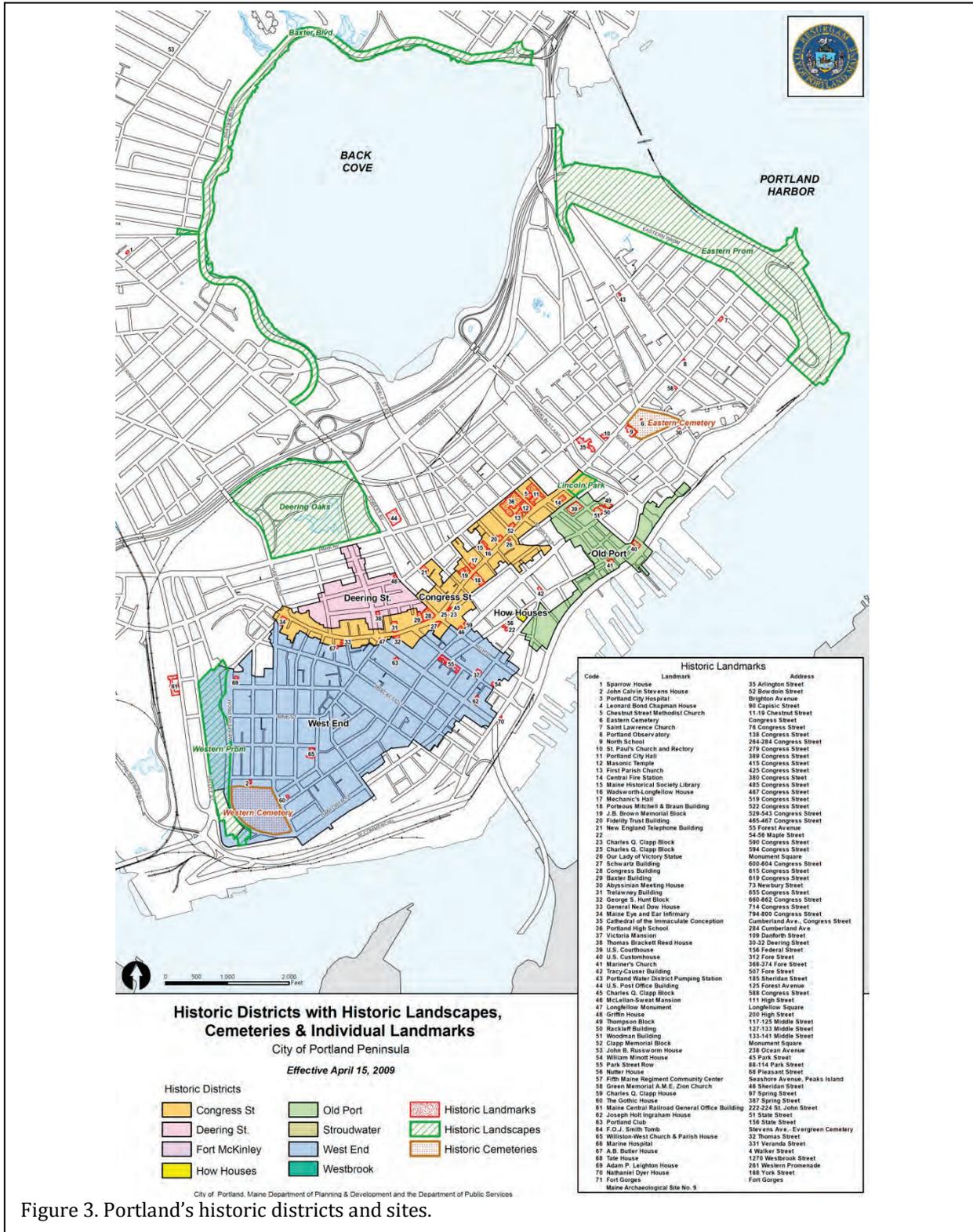


Figure 3. Portland's historic districts and sites.

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Unless modified below, all other cemetery regulations are applicable to Historic Cemeteries.

Sec. 7-148 Hours and Trespass

(a) The closing hours of a historic cemetery may be modified by the superintendent for the purposes of tours or other activities, conducted by a non-profit corporation organized to benefit a historic cemetery.

(b) ~~Anyone in the cemeteries other than during these identified hours shall be deemed trespassing and will be subject to arrest and prosecution.~~

Sec. 7-149 Solicitations

(a) With the prior approval of the superintendent, a non-profit corporation organized to benefit a historic cemetery may solicit donations in connection with tours or other events in the cemetery, with such donations dedicated to improving the cemetery. Such donations may be controlled by the nonprofit until such time as they are to be applied to a specific cemetery improvement, at which time they are to be transferred to the City ~~if that improvement is to be handled by the City and includes at least a 50% match in funding by the City.~~

(b) ~~If the City does not contribute to the improvement effort, the funds may be spent by the soliciting organization for use in the cemetery without transfer to the City.~~

Sec. 7-150 Gravestone ~~Restoration~~ Repair

(a) Upon proper public notification, the City may undertake, in collaboration with a non-profit corporation organized to benefit a historic cemetery, ~~restoration~~ repair of historic gravestones of interred, the descendants of whom cannot be determined.

(b) ~~All such repairs will meet or exceed the Secretary of Interior Standards for Preservation regardless of whether or not the cemetery is listed on the National Register of Historic Places.~~

Sec. 7-150 Maintenance

(a) In recognition of the cultural value of historic cemeteries, special care must be taken in the course of ~~basic maintenance of the cemetery as a~~

~~whole, and individual plots~~ cemetery and plot maintenance. In general, maintenance efforts will meet or exceed the Secretary of Interior Standards for Preservation regardless of whether or not the cemetery is listed on the National Register of Historic Places.

(b) In particular, volunteer growth must be ~~managed~~ removed to avoid damage to gravestones or family plot edges coping or fencing. Special care shall be taken in mowing and edging in the proximity of gravestones, so as to avoid damage to the monuments. Erosion must be prevented through the careful selection, planting, and maintenance of groundcover and/or turf, as appropriate. Cemetery trees must be inspected at least annually to identify hazards to the cemetery and the visiting public; pruning as recommended by a certified arborist must be conducted as necessary to ensure the health of the tree, the safety of monuments, and the visiting public.

Sec. 7-151 Family Plot Restoration

(a) Upon proper public notification ~~consisting of the advertisement in a paper of general circulation once each week for four successive weeks prior to the work,~~ the City may undertake, in collaboration with a non-profit corporation organized to benefit a historic cemetery, ~~restoration~~ repair of gates, fencing, gravestones, tombs, or edging coping surrounding family plots the descendants of whom cannot be determined.

(b) ~~All such repairs will meet or exceed the Secretary of Interior Standards for Preservation regardless of whether or not the cemetery is listed on the National Register of Historic Places.~~

Sec. 7-152 Prohibited ~~Activity~~ Activities

In order to protect ~~surface of historic gravestones from further erosion or damage, gravestone rubbing is prohibited.~~ the integrity and historical significance of the identified historic cemeteries the following activities are prohibited in all cemeteries identified in Sec. 7-145:

(a) Gravestone rubbing is prohibited in order to protect stones from further erosion, spalling, and damage.

(b) It shall be unlawful for any person to litter, deposit trash or debris, or to dump any material in the historic cemeteries.

(c) Because the stones in these cemeteries are especially fragile, all children under the age of 18 must be accompanied by an adult or otherwise be under adult supervision.

(d) Absolutely no alcoholic beverages, fireworks, or fire arms are allowed in the cemeteries. Proper conduct is expected at all times.

(e) Current leash laws are in effect within Evergreen, Stroudwater and War of 1812 Cemetery (Eastern Promenade). No animals, except service animals, are allowed in Eastern and Western cemeteries. Owners are required to collect and remove from the cemeteries all solid waste.

(f) No monument or memorial may be replaced in any of the cemeteries and no new monument or memorial may be placed without the concurrence of the Superintendent, after consultation with any non-profit corporation organized to benefit the historic cemetery and the City's Preservation Officer. All such replacements must comply with the intent of the Secretary of Interior Standards for Preservation regardless of whether or not the cemetery is listed on the National Register of Historic Places.

The Cemetery, Its Setting, and Context

The Eastern Cemetery is located in Census Tract 5, Block Group 2 in Portland. This broadly corresponds to what is known as the East Bayside, India Street neighborhood of Portland. Census Tract 3, corresponding to the East End neighborhood, begins immediately to the east of the cemetery, on the east side of Mountfort Street.

Eastern Cemetery is identified as parcel 020 A001 and it encompasses about 6.8 acres. It is

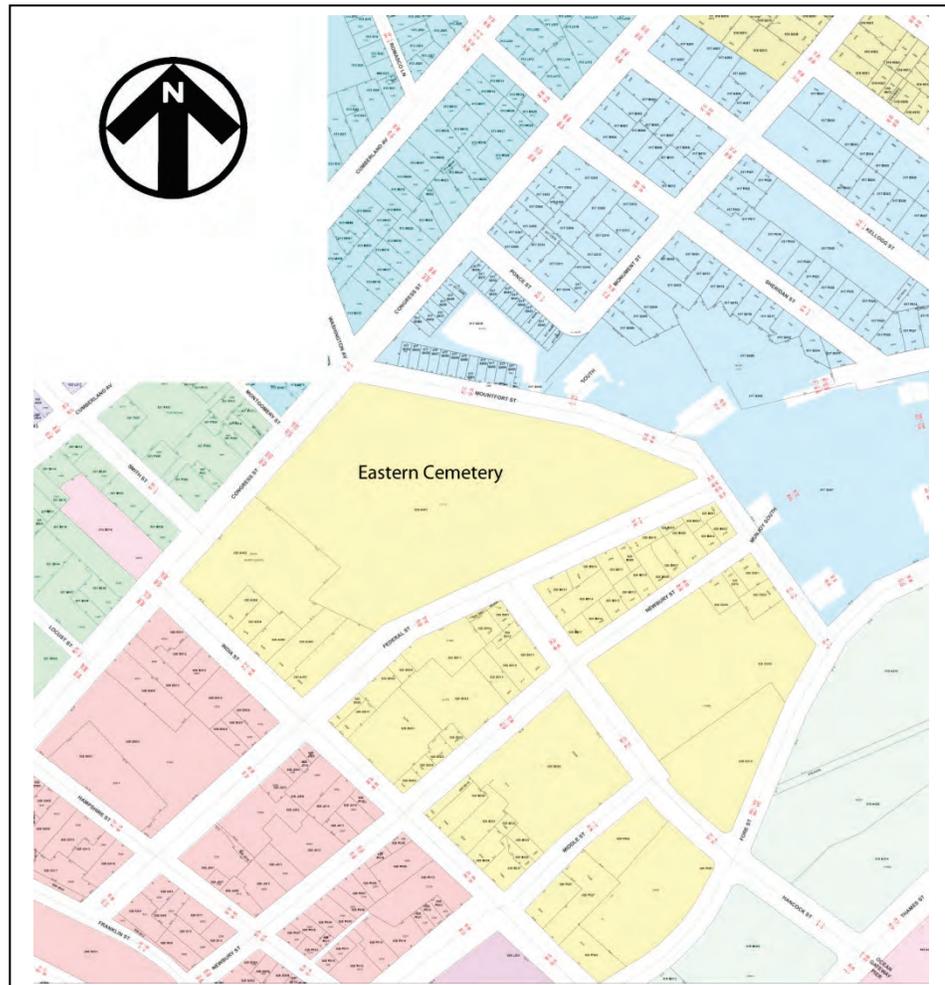


Figure 4. Property map showing Eastern Cemetery and adjacent tracts.

bounded by Congress Street to the northwest, Mountfort Street to the north and northeast, and Federal Street to the south. To the west are a series of private properties abutting the cemetery. Perhaps most notable is North School, which has been converted into apartments (Figure 4). The

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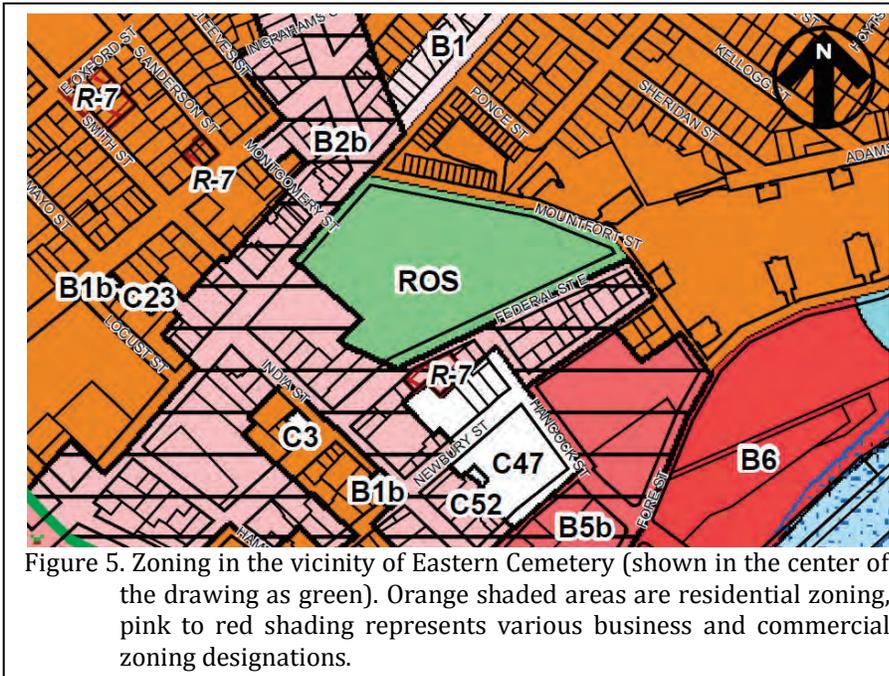


Figure 5. Zoning in the vicinity of Eastern Cemetery (shown in the center of the drawing as green). Orange shaded areas are residential zoning, pink to red shading represents various business and commercial zoning designations.

cohesiveness and creates situations such as noise and litter that adversely affect the cemetery.

In addition, the cemetery itself is zoned Recreational Open Space (ROS). A more appropriate zoning would be Resource Protection (RPZ) that would restrict the nature of nearby development and help ensure the visual and landscape integrity of the burial grounds. This zoning designation would be far more suitable for a historic site that is listed on the National Register of Historic Preservation.

boundary along Congress is marked by a cast iron fence; along Mountfort is a modern fence on a granite retaining wall. Federal Street is marked by a 16-foot stone retaining wall on which is a chain link fence. The boundary between the cemetery and adjacent properties to the west is delimited by a deteriorated chain link fence and remnant iron fence.

Unfortunately, the City has already allowed development south of the cemetery, toward the waterfront that has significantly affected the viewshed of the property. High rise modern properties have blocked the view of the

Zoning around the cemetery is primarily residential (Zoned R6 and R7) to the northwest and northeast. Along Congress Street, extending northward along Washington Avenue, and westward around India Street are a variety of business zones, including Neighborhood Business (B1 and B1b), Business Commercial (B2b), and Urban Commercial (B5b and B6). This patchwork creates a difficult situation for long-term preservation since the business zoning dissuades much neighborhood

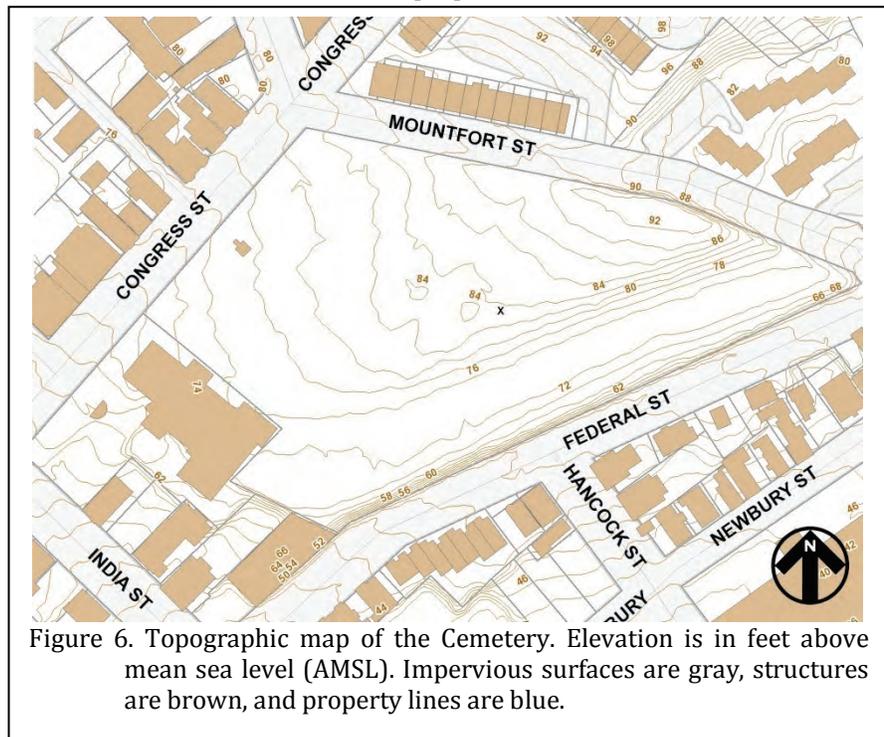


Figure 6. Topographic map of the Cemetery. Elevation is in feet above mean sea level (AMSL). Impervious surfaces are gray, structures are brown, and property lines are blue.

MASTER PLAN FOR EASTERN CEMETERY, PORTLAND, MAINE

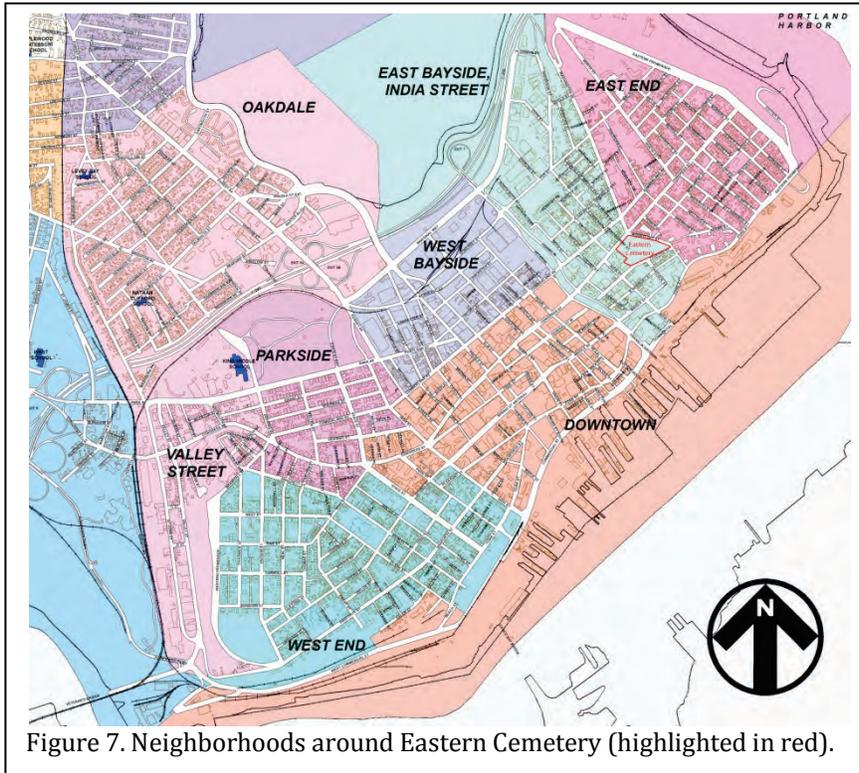


Figure 7. Neighborhoods around Eastern Cemetery (highlighted in red).

water, changing the historic context of the property and degrading the visual integrity of the property.

A topographic map (Figure 6) of the cemetery reveals that elevations vary from 93 feet above mean sea level (AMSL), along the northeastern edge of the burial ground, to 69 feet AMSL along the top of the Federal Street retaining wall at the property's southern edge – a fall of 24 feet. From Mountfort street westerly to the North School, the topography drops to about 75 feet AMSL. Thus, the property slopes steeply from the northeast to the south and more gradually from the northeast to the west.

These elevations affect the long-term preservation of the cemetery in several ways, resulting in noticeable erosion, as well as making it more difficult to detect vagrants and other security issues.

The cemetery consists of a single soil series, Hinckley gravelly sandy loam. This series consists of very deep, excessively drained soils formed in glaciofluvial materials. Slopes for this

series may range up to 60%, although the range in the cemetery is from 6% in the northwestern quadrant to as much as 26% toward Federal Street.

The soils have very rapid permeability and available water capacity is very low. These factors are significant since they indicate the potential for drought and indicate that the soils will not readily retain fertilizer.

In general the A horizon is no greater than 0.7 foot of very dark grayish brown (10YR 3/2) loamy sand. This overlies a B horizon to a depth of 2 feet below grade. This soil ranges from a strong brown (7.5YR 5/6) gravelly loamy sand to a yellowish brown (10YR 5/4) gravelly loamy sand. Upwards of 25% of the soil may consist of gravel. A BC transition zone is found for an additional 1.6 foot and consists of a yellowish brown (10YR 5/4) very gravelly sand. The C horizon usually consists of light olive brown (2.5Y 5/4) extremely gravelly sand consisting of stratified sand, gravel and cobbles.

The cemetery is not within the FEMA identified 100 or 500 year flood zone and the elevations protect the property from most hurricane surge events.

As previously mentioned, the cemetery is situated in the East Bay, India Street neighborhood, which correlates with Census Tract 5. This is a relatively poor area of Portland. While the city's median household income is \$35,650 and the per capita income is nearly \$22,700, the Census Tract median household income is only \$22,010 and the per capita income is not quite \$12,200 – just over half that of the city as a whole. Moreover, while city-wide only about 14% of the individuals and 9.7% of the families are below the poverty level, in the vicinity of the cemetery

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nearly 30% of the families and over 35% of the individuals are below the poverty level.

This portion of Portland is also more ethnically diverse. While 91.3% of the city's residents as a whole are white, less than 71% in Census Tract 5 are white and nearly 11% are African American.

The median value of housing in Portland is \$121,200 with 42.5% of the housing units being owner-occupied (and 57.5% being renter occupied). In the vicinity of the cemetery nearly 82% of the housing units are rental units and only 18.4% are owner occupied. The median value of structures in the cemetery area is only \$69,800.

Although 88% of Portland's residents have at least a high school diploma and over 36% have a B.A. degree, in Census Tract 5 only 62% have a high school education or higher and less than a fifth (18.7%) have a college education.

Maine's economy, like much of the United States, has been affected by the recent recession with unemployment state-wide at 6.5% (September 2010, seasonally unadjusted). Portland, however, has demonstrated some stability and the unemployment rate there is only 5.4%.

Maine's 2008 violent crime rates (the most recent data available) are considerably lower than nationwide, at 147 per 100,000, compared to 676 nationwide. Portland's rate of 405 per 100,000, while higher than the average for Maine, is still less than the national average.

Of greater importance in terms of gauging the potential threat to the cemetery are property crimes. This data is far less reassuring. While the national average is 3727 per 100,000 and Maine's rate is 2898, the rate for Portland is 4419 per 100,000 – significantly over the national rate. This

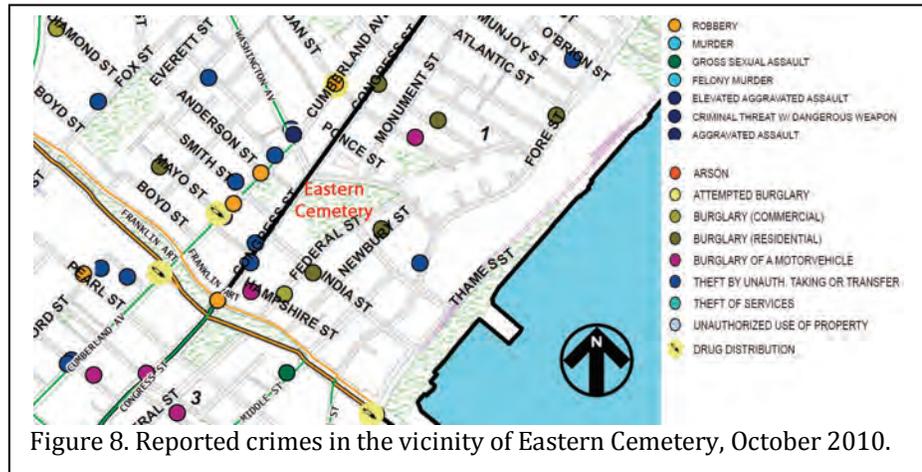


Figure 8. Reported crimes in the vicinity of Eastern Cemetery, October 2010.

high incidence is found for both larceny theft and arson (3443 and 54 per 100,000 compared to a national average of 2542 and 23 respectively).

Figure 8 provides a graphic analysis of both violent and property crimes in the immediate area of Eastern Cemetery for October 2010. The most common property crime, with 14 occurrences, is theft. Nine of the 14, or over two-thirds, occurred between Oxford and Congress streets. The next most common crime was residential burglary, with six reported incidents. Two of these, or a third, occurred within a block of the cemetery. Five motor vehicle thefts occurred, although these appear evenly distributed. Three of the four reported drug incidents are along Congress Street, suggesting that this may be a significant artery for drug distribution in Portland.

Although a single month should not be used to gauge the level of crime in the vicinity of Eastern Cemetery, these data combined with the 2008 crime statistics for the city suggest that Eastern Cemetery is at a significant risk of property crimes. This is entirely consistent with anecdotal information concerning vagrancy, public intoxication, the large amount of litter, and the extensive vandalism in the cemetery. Clearly Eastern Cemetery is at an increased risk of damage and the level of policing is a critical long-term preservation issue.

The cemetery is situated in Police Sector 1. There are two nearby community policing centers, each about equidistant from Eastern Cemetery.

At the present time the only neighborhood association in the vicinity of Eastern Cemetery is the Munjoy Hill Neighborhood Association (<http://www.munjoyhill.org>). There is, however, an effort to organize the India Street community, focusing on the area between Franklin and Mountfort streets and from Congress to

only 8 column inches devoted to “Historical Tours.” Not only are the tours of Eastern Cemetery *not* listed, but this provides the most minimal coverage of heritage tourism.

We found no recognition on the part of the city or the various tourism organizations concerning the benefits and importance of heritage tourism.

It would greatly benefit the tourism agencies, as well as the city to more carefully and consistently focus on the real benefits of heritage tourism. Eastern Cemetery – with the active participation of Spirits Alive – can make a significant contribution to the economic well-being of the community.

Simply put, *preservation is good business*. Thus, the costs that we identify for the preservation of Eastern Cemetery must be viewed not as simply expenditures, but rather

investments in the economic well-being of the city and community.

Factors Affecting the Landscape Character

The cemetery complex is situated at the northern edge of what is known as the Northeastern Coastal Zone ecoregion. This covers most of southern New England and the coastal areas of New Hampshire. Its landforms include irregular plains and plains with low to high hills. Appalachian oak forests and northeastern oak-pine forests are the natural vegetation types. Similar to the Northeastern Highlands found to the west, the Northeastern Coastal Zone contains relatively nutrient-poor soils and concentrations of continental glacial lakes. This ecoregion, however, contains considerably less surface irregularity and greater concentrations of human population. Although historically farmed, land use now mainly consists of forests, woodlands, and urban and suburban development, with only some minor areas of pasture and cropland.

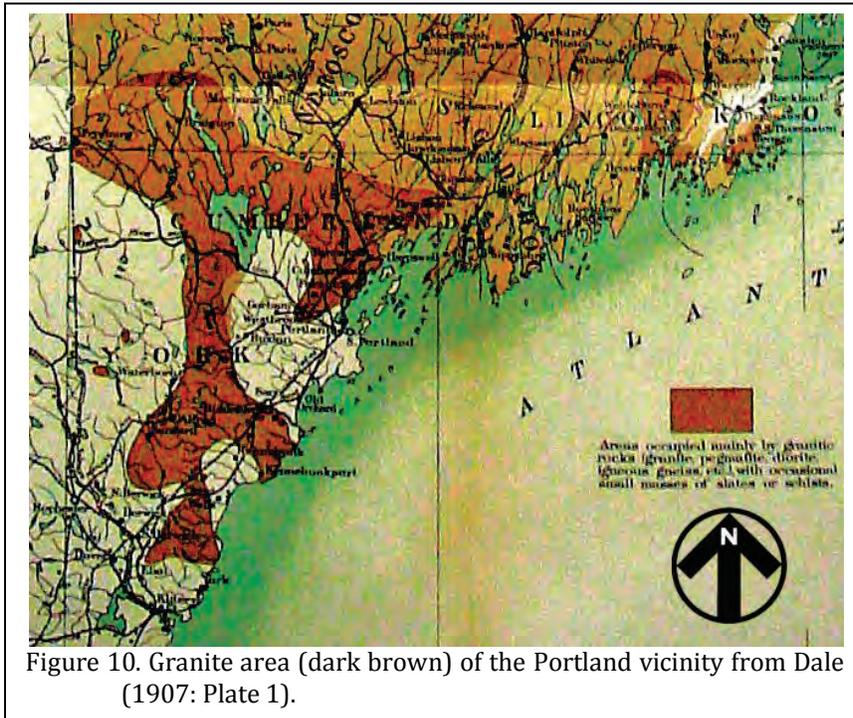


Figure 9. Overview of Eastern Cemetery looking east.

Commercial (“Up on India: India Street Residents Organize to Reverse Area Decline,” *Munjoy Hill Observer*, November 2010). The area has recently been studied by the Muskie School of Public Service. A study of the East Bayside Neighborhood – just north of Eastern Cemetery – was conducted in 2009 by this organization and is available at <http://www.portlandmaine.gov/planning/603finalreport.pdf>.

This brief discussion reveals that there are a number of consortial organizations and opportunities for Spirits Alive. While none of the current organizations are specifically focused on cemetery preservation, or even historic preservation in a more general sense, all are interested in neighborhood improvement and this offers multiple opportunities for cooperation.

Curiously, we find that there is little recognition of the economic benefits of historic preservation. For example, the *Visit Portland Maine* magazine developed and distributed by the Portland Convention & Visitors Bureau provides



is marked by Ordovician to Precambrian gneiss, schist, quartzite, amphibolite, and granite; Carboniferous and Devonian granite; and Silurian to Ordovician calcareous metasandstone, quartzite, and phyllite. Overlying is Quaternary marine silt and clay, marine sand and gravel, and small areas of sandy till.

Maine produced quantities of granite, slate, and limestone – all of which can be found in various cemeteries. Granite quarrying was active throughout the 1800s, peaking in 1901, ranging from Penobscot Bay to Washington County. Maine granite ranged from red to pink to gray to black (Dale 1907). Many of Maine’s ships carried granite:

To the north along the coast are Maine’s Acadian Hills and Plains, a mostly forested region with dense concentrations of continental glacial lakes. It is less rugged than the Northeastern Highlands to the west into New Hampshire and less populated than the coastal region to the south into Maryland. Vegetation is mostly spruce-fir on lowlands with maple, beech, and birch on the hills.

The Northeastern Coastal Zone ecoregion can be divided into a variety of subregions. Portland is within the Gulf of Maine Coastal Lowland subregion – a 10- to 20-mile wide coastal strip, stretching from Casco Bay in Maine to Plymouth Bay in Massachusetts. It is mostly an arcuate embayment type of coast. Extensive glacial sand, silt, and clay deposits blanket this region, with a coastal pattern typified by plutonic capes and intervening sand beaches that front the region’s largest salt marshes. The area has relatively low relief, and elevations are mostly from sea level to 250 feet. Mt. Agamenticus, west of Ogunquit, Maine, is the atypical high spot at 691 feet.

Bedrock geology consists mostly of metasedimentary rocks, intruded by several Paleozoic and Mesozoic plutonic bodies. The area

Stone droghers hauled large pieces of granite that neither smelled good nor bad. But unlike the lumber load it was not very buoyant. Early on sloops hauled stone, using a boom stepped off the mast just above the deck for loading. Most of these were out of Chebeague Island in Casco Bay. In later years schooners were refitted and riggered for hauling stone. A lot of smaller boats on the Boston run, like the schooner Annie and Reuben, were loaded just shy of the sinking point. John Leavitt wrote, “I have seen the Annie and Reuben with something over 200 tons of stone aboard, lying at Crotch Island wharf with the water flowing through the scuppers to the height of an inch or more on the main hatch coaming. This in a flat calm. A rugged schooner and good sailer, “winged out before the wind she was almost

impossible to catch.” It was said that between Deer Isle and Boston there wasn't a harbor where she wasn't known (Crowe 2000:2).

From 1880 to 1904 Maine was among the top five slate-producing states in the country, with the quarries extending from Waterville to Brownville Junction, with most activity having been in southern Piscataquis County. Limestone quarrying began in the early 1800s and focused on the Rockland-Thomaston area where the

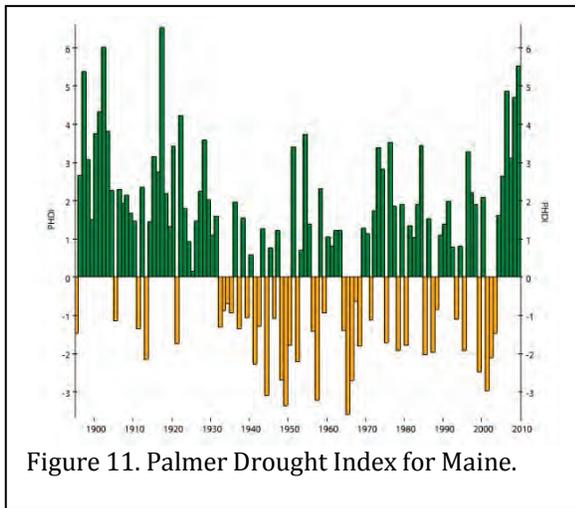


Figure 11. Palmer Drought Index for Maine.

limestone is actually a metamorphosed coarse-grained marble (<http://www.maine.gov/doc/nrimc/mgs/explore/mining/quarry.htm>).

The vegetation mosaic includes white oak and red oak forests, some isolated chestnut oak woodlands, extensive post-settlement white pine, pitch pine in sandy areas, pitch pine bogs, some Atlantic white cedar swamps, red maple swamps, and *Spartina* saltmarsh. The vegetation contains some southern hardwood species (e.g., shagbark hickory, flowering dogwood, and chestnut oak) that reach the northern limit of their range within this ecoregion. There are also some subarctic maritime species that reach their southern limit, such as crowberry, golden heather, and oysterleaf. The region's forests and farms are being rapidly converted to residential developments and bedroom communities of larger nearby cities.

Portland's climate is classified as humid continental with somewhat long, cold snowy winters, and warm summers. While hurricanes are rare, the area can be affected by severe "northeasters" during the winter.

The average annual temperature is 53.6°F; in winter the average is 24°F, with an average minimum of 12.5°F in January. In summer, the average temperature is 67°F and the average daily maximum temperature is 78.8°F in July. The urban areas, however, serve to store heat so they can have temperatures 5 to 10°F higher than rural areas.

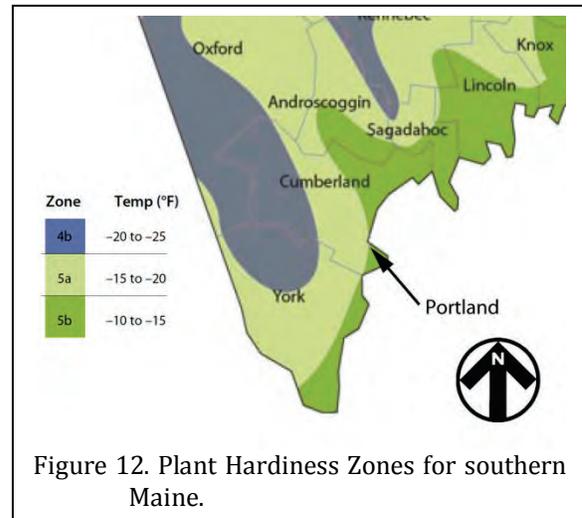
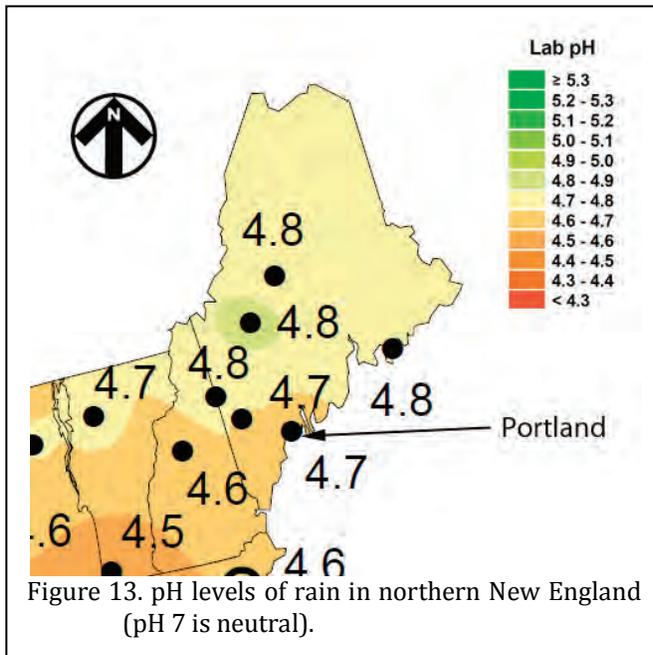


Figure 12. Plant Hardiness Zones for southern Maine.

The total annual precipitation is typically in excess of 46 inches. Of this, 21 inches, or about 46%, usually falls in April through September, the growing season for most crops. Figure 11 reveals that while droughts have occurred in the past, most recently between 2001 and 2003, the past few years have had abundant rainfall. The region has an average of 20 thunderstorms per year, with most occurring in the summer. Winter snowstorms are common with an average seasonal snowfall of 70 inches. Most of this, or an average of 19 inches, occurs in January.

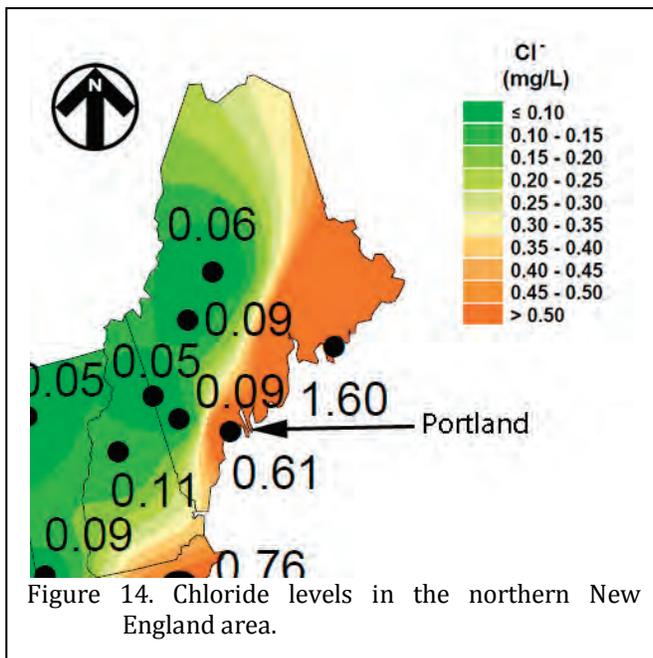
The average growing season for the Portland area is 143 days (generally between May 10 and September 30). Figure 12 shows that Portland is on the border between Plant Hardiness Zones 5a (with minimum temperatures

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of -15 to -20°F) and 5b (with minimum temperatures of -10 to -15°F).

The warm summers and long, cold winters can pose challenges for many turfgrasses. Nevertheless, cool season grasses such as Kentucky Bluegrass and Red Fescue do well in sunny locations, while Tall Fescue has better



shade tolerance. While perennial ryegrass does poorly overall, it is often used for quick coverage while a seed such as fescue becomes established.

A factor not only affecting the landscape but also stone preservation, is the level of pollutants. Based on EPA monitoring in Portland, the annual mean of NO_2 is 0.012 ppm and the annual mean of SO_2 is 0.003 ppm. These levels result in significant levels of acid rain (see Figure 13) and deterioration of marble and many sandstones.

Figure 14 also reveals that very high chloride levels dominate the Portland area. These can lead to the corrosion of iron. This affects not only iron fences, but also the ferrous pins that were commonly used in die on base stones. While sea-salt certainly contributes to these levels, they also appear to be related to a variety of man-produced pollutants.

Brief Consideration of the Cultural Landscape

The spatial organization of the Eastern Cemetery is dominated by Funeral Lane – a narrow drive that runs southeast off Congress turning 90° and exiting to Mountfort Street to the northeast. This roadway divides the cemetery into two parcels; these are further divided by a series of pathways running off Funeral Lane to the southeast, down slope. This intentional spatial division is further affected by the topography, with the southern edge of the burial ground on a slope below the central area. It is likely that this arrangement was more pronounced when the pathways were well maintained. The effect of plantings on this landscape arrangement is difficult to determine since nothing remains of the original design.

Character-defining features of the landscape include topography, vegetation, circulation, and small-scale features. These have significantly degraded over the years, but some remnants provide clues. The topography, as previously mentioned, helps organize the landscape. There is no indication that it was manipulated. Unlike Western Cemetery where tombs were built into the natural topography, at Eastern the tombs were all constructed below

grade, close to the natural peak – and center – of the property. Graves extended over the crest of the hill, making use of the slope. This was likely an effort to maximize the available space in the burial ground.

Vegetation was never an important aspect of early town burial grounds – space was too valuable for it to be taken up by trees or other plantings. It was only during the Victorian Period that plantings began to soften the harsh landscape of the town burial ground. Little of this early vegetation remains. Elms were likely intentionally planted, but began to die off during the mid-twentieth century. Other trees may represent volunteer growth, introduced by wind, birds, or animals. Today an effort has been made to replant

erosional depressions. All are grassed and provide no evidence of any surfacing material, although historic photographs suggest that at least some were graveled or graded. These features today have largely faded into the overall softscape and are not dominant features.

Structures and other small-scale features – most especially the stones themselves – dominate the cemetery. The only standing structure is the Victorian tool shed, which historically was called the “Dead House,” probably because it also sheltered the entrance to the city tomb. Constructed in 1871, this building has been an integral component of the landscape for 140 years. Other structures – such as individual family tombs and the city tomb – are below grade and rarely seen.



Figure 15. Pathway running down slope from Funeral Lane. View to the northwest.

the cemetery; virtually all of this vegetation, however, is small and it will be several decades before the revegetation efforts will have a significant impact on the cemetery appearance.

Circulation features – as previously mentioned – include Funeral Lane and a series of pathways that are still visible primarily as

Individually fenced plots were never common in the burial grounds, and very few remain today. Most are gas pipe fences set in granite posts. There has been much loss, making those that remain of considerable value and importance. The remaining plots represent clusters of family burials – as do the below grade tombs.

The most common – and visually dominant – features in the cemetery are the memorials. Most of these are simple headstones, although box tombs, obelisks, and die on bases are all present. These three-dimensional monuments help define the landscape. Orientation varies considerably tending to follow individual sections as well as the topography. Generally the orientation of graves is approximately northeast-southwest. Rows are not always easy to identify or follow.

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Figure 16. Map of Eastern Cemetery prepared by William B. Jordan, Jr. dated December 1990.

The cemetery boundary is today largely defined by fencing that has been historically introduced and much of it is relatively modern. Of course the limits today are also modern roads, building parcels, and structures. The viewshed has been significantly degraded by the introduction of structures whose scale and massing are inconsistent with the historical context of the burial ground. In particular the view of the harbor, once an often remarked upon feature of the cemetery, has been largely blocked by modern structures.

Recommendations

All decisions regarding modifications, alterations, additions, or other actions affecting Eastern Cemetery should be carefully evaluated against the Secretary of the Interior's Standards for Preservation.

Special care should be taken to protect all remaining historic fabric and the context of the cemetery.

The City of Portland should amend the City Code to reflect the importance and special needs of the historic cemeteries.

Consideration should be given to modifying the zoning of Eastern Cemetery from Recreational Open Space (ROS) to Resource Protection (RPZ).

HISTORIC SYNTHESIS

This research is intended to provide a reasonably complete, although certainly not comprehensive, synthesis of the history of Portland's Eastern Cemetery. In so far as possible we have relied on primary documents, including city records and period newspapers, supplemented with various historical accounts. Most of the research was conducted at the Maine Historical Society and the Portland Public Library. We greatly appreciate the cooperation and assistance of these organizations. The City Engineer's Office also provided maps and plans of the Cemetery and we appreciate this spirit of cooperation. Unfortunately, it was not possible to glean as much as is certainly possible from other city records under the control of the City Clerk's Office. These materials were not available to us during our visit and we were able only to request, through Freedom of Information, records for which we had specific citations. It is likely that much more awaits further research or the more open sharing of these documents.

Early History

Authors such as Jordan (2009:vii) and Zwicker (2007:26) assert that Eastern Cemetery developed in the seventeenth century and likely contained the remains of one of Portland's earliest settlers, George Cleeve. Such claims may be traced back to Hull (1885) who claims that what became Eastern Cemetery abutted the northern edge of Cleeve's property. Goold made somewhat similar claims, noting that, "for two centuries from the first settlement of the Neck, this now 'Field of Ancient Graves' was the only common burial place" and "George Cleeves, the first settler on the Neck, who died about 1670, was probably one of the first who was buried in the old burial-ground on the hill" (Goold

1888:508). Of course, he also noted that it was possible Cleeve was buried on Hogg Island (Goold 1888:509).

These claims must be taken with some caution. Not only were they made 200 years after the fact, but Portland's early history was complex and violent.

Shortly after Captain John Smith sailed along the coast of Maine in 1614, the native populations suffered a series of epidemics (1616-1619) that reduced their population and shattered much of their culture (Baker 2005:4). While little came from Smith's efforts, other than shattering



Figure 17. "Ancient Falmouth, from 1630 to 1690" from Willis's *History of Portland*, published in 1865.

the native populations, his associate, Sir Ferdinando Gorges, was able to secure a royal charter for the Council of New England, which began granting lands - largely to Gorges and his colleagues (Baker 2005:5). In 1623 6,000 acres were granted to Christopher Levett who settled in the Casco Bay area, calling the area York in honor of his English hometown.

Eventually Gorges and his colleague on the Council, John Mason, divided their interests, with Mason taking the area to the south into New

Hampshire, while Gorges was given a proprietary grant in 1639 to what was called the Province of Maine.

Eventually Richmond Island became the site of a fishing station and trading post known as Trelawney, developed by John Winter. It was that initial settlement that Baker claims attracted George Cleeve and Richard Tucker to settle in the vicinity of the Spurwink River (Baker 2005:7). In an ownership dispute with Winter, Cleeve and Tucker were forced north, taking up residence on the Neck. Already located nearby was Arthur Mackworth, who Baker (2005:7) reports had settled there in 1630. The patent they were issued by Gorges called the area Stogummor, although among locals it was more commonly known as Casco. By 1640 the settlement included seven families with 14 children (Baker 2005:8). Apparently the settlement continued to grow during the 1640s and 1650s.

Beginning in 1652 Massachusetts began negotiating to assume control of the various Maine settlements; while Cleeve opposed these moves, he eventually yielded in 1658. The Casco Bay and Spurwink settlements were brought together under the name of Falmouth (Baker 2005:9). While Massachusetts lost control of Maine between 1665 and 1667, control was regained in 1668 and Maine continued under Massachusetts jurisdiction until it achieved statehood in 1820.

By September 1675 King Philip's War spread to Maine, but it wasn't until August of 1676 that Casco Bay was attacked, Falmouth was burned, and the English settlements there were abandoned for several years. With the Treaty of Casco signed in April 1678 the area was repopulated and Falmouth was rebuilt. While earlier the settlement was scattered, the new town was more compact (Baker 2005:12-13).

The new peace lasted only for a decade before the local Indians, with urging from the

French, attacked Falmouth and its protector, Fort Loyal in May 1690. After five days the fort fell and its defenders were killed by the Indians. This led to the collapse of settlements all along the Maine coast (Baker 2005:14).

It wasn't until the 1697 treaties between England and France and the 1699 treaty between Massachusetts and the Wabanaki Indians that settlers again returned to Casco Bay. Fort New Casco was constructed about a mile and a half east of the mouth of the Presumpscot River. The resulting peace, however, lasted only a few years and by 1702 the English and French were again at war. By August 1703 the French and Wabanaki swept through Maine and Queen Anne's War began. This time, however, the fort survived and peace returned in 1713 (Baker 2005: 14-15). By 1716 Fort New Casco was abandoned and the settlement gradually returned to Falmouth. The community continued to grow through the remainder of the eighteenth century.

This brief account reveals that the settlements that became Portland were often brief and for significant periods the area was abandoned. Whether any formal burial ground existed – or was able to survive – is impossible to determine from the available records. Certainly none of the early maps show the Cemetery.



Figure 18. "Coast of Maine - From Roger's Bay to Portland Sound including Falmouth Harbor," 1776. This plan shows the nucleated settlement at the time of the American Revolution.

The earliest marked grave surviving today is that of Mary Green, who died in 1717 (Jordan 2009:vii). This would have been one of the first burials after the re-establishment of Falmouth and may mark a more formal beginning of the burial ground.

Eighteenth Century

We have found little information concerning the burial ground during the first three quarters of the eighteenth century. This is perhaps because it remained under private ownership and thus would not have shown up in town records. Nor is it shown on any of the identified plans of Falmouth for the period. Jordan reports that “the First Parish paid Joseph Noyes two shillings to prepare a plan of known burials” (Jordan 2009:vii), but no evidence of this plan has surfaced.

During the eighteenth century Falmouth became a significant commercial center. Wheat, in spite of the problems posed by Maine’s climate, was both grown and imported. As a result, Falmouth had not only granaries, but also a mill to grind wheat flour (Outwin 2005:22-23). While the area had yet to develop a commercial fishing fleet, the local population made extensive use of both fish and shellfish. Of far greater commercial significance, however, were the forest resources. Outwin notes that “white pine . . . was the central pillar of Falmouth’s economy, the source of masts and spars that drove His Majesty’s fighting ships and, through its merchant vessels, the realm’s economy” (Outwin 2005:24).

By the end of the French and Indian War (1756-1763) Falmouth had surpassed the other

regional hubs of York and Saco as the region’s commercial center. The Falmouth waterfront supported two shipyards that produced two or three vessels a year during the height of their activity (Outwin 2005:29). Outwin (2005:Figure 2.2) reconstructs the port area, documenting the extensive commercial activities, including the construction of a distillery, that were taking place in the relatively constrained area.



Figure 19. “Town of Falmouth Burnt by Captain Moet Oct 18, 1775.” The cemetery, and its pine tree, are shown in the upper right hand corner. The windmill in the upper middle of the plan is where Lincoln Park is today.

The American Revolution came to Falmouth suddenly. On October 18, 1775 Lieutenant Henry Mowat ordered the British squadron of four ships to open fire on the civilian population in Falmouth (Leamon 2005:44). The cannonade lasted the entire day and while there were no deaths, 136 dwellings, as well as numerous other buildings, were destroyed. Afterwards a landing party came ashore to torch whatever prominent buildings still stood. The merchant fleet in the harbor was either seized or sunk. It has been estimated that 160 families were left destitute, 400 of the 500 structures were destroyed, and the losses exceeded £55,000.

The destruction was complete from what is today “India Street up the hill to Congress Street and then in a rough diagonal down to the foot of Exchange Street, then eastwardly back along Fore Street, which was then waterfront, to India Street and even beyond” (Leamon 2005:60). This roughly triangular area is immediately west of Eastern Cemetery, suggesting that at least some of

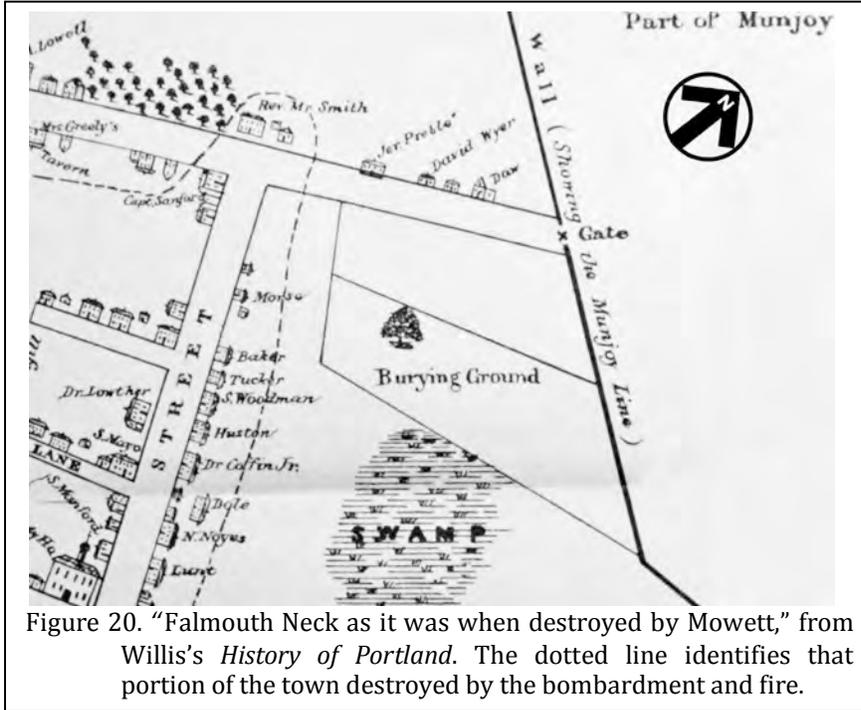


Figure 20. "Falmouth Neck as it was when destroyed by Mowett," from Willis's *History of Portland*. The dotted line identifies that portion of the town destroyed by the bombardment and fire.

(Cumberland County Register of Deeds, DB 22, pg. 417-418). The metes and bounds of the property are shown in Figure 21, based on the verbal description in the deed.

The actual survey included 3.83 acres, but of far greater interest are some of the metes and bounds. Congress Street was apparently Smith Street and an entrance into the already existing burial ground was called "Funeral Lane." There also was already a stone wall running along at least part of the northeastern boundary, which is today Mountfort Street. This might have been the remnants of the wall along the Mountjoy line, shown in

the destruction may have extended into the burial ground. The Cemetery is visible in a 1780 engraving, "Town of Falmouth Burnt by Captain Moet Oct 18, 1775" (Figure 19). This is the first known topographic view of the town and it shows flames "lapping" at the edges of the Cemetery. A similar, albeit much later, map was prepared for inclusion in William Willis's *History of Portland*, published in 1865 (Figure 20). Again the fire is shown as falling just short of the burial ground.

Figure 20.

Figure 22 shows a property map made by

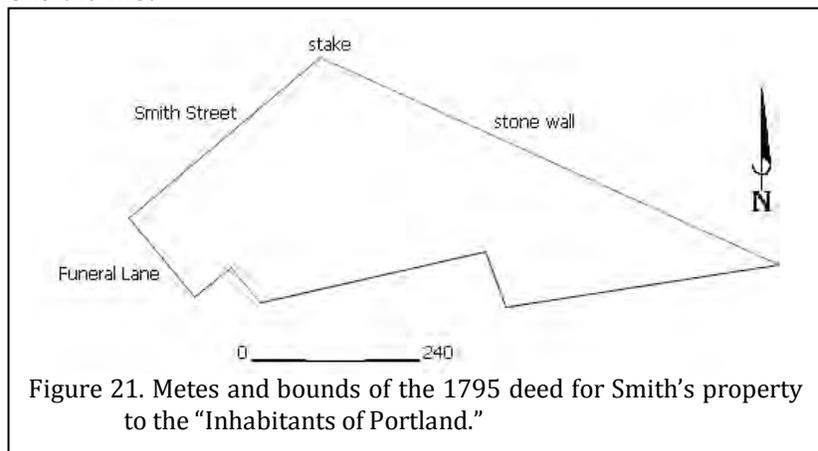


Figure 21. Metes and bounds of the 1795 deed for Smith's property to the "Inhabitants of Portland."

Leamon (2005:62) noted that residents returned to Falmouth even before the end of the Revolution and the rebuilding was well underway by 1783, with 41 new homes, 10 stores, and seven shops rebuilt by 1784. In July 1786 the Massachusetts General Court approved an act establishing the Neck as a separate municipality to be called Portland (Leamon 2005:63).

Thomas Noyes representing property lines in 1773. A notation shows that the property was "Granted for burying ground May 5 1774." While the shape is similar (compare to Figure 21), there are distinct differences and we cannot explain the divergence from the calls in the deed itself.

On May 5, 1795 Smith sold what was described as 3 acres 90 rods, or about 3.56 acres, to the "Inhabitants of Portland" for £71.5.0

Nevertheless, it is clear that the first portion of the Cemetery to come into public ownership was the northern portion along

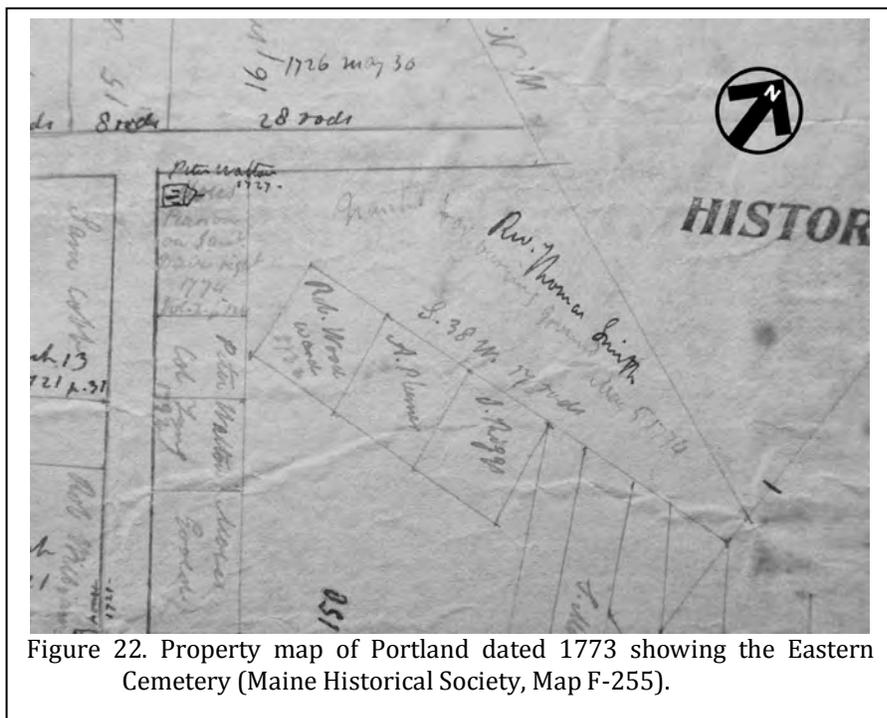


Figure 22. Property map of Portland dated 1773 showing the Eastern Cemetery (Maine Historical Society, Map F-255).

Street gate to the old burying-ground, called "Funeral Lane." At the time of the first enlargement of the ground, a lane one and a half rods [24.75 feet] wide was laid out from the eastern end of Funeral lane, northeast "to stone wall," where Adams Street [Mountfort Street] now is. This with Funeral lane now forms the open passage from the gate on Congress street to that on Adams street. From the new lane six others, "each half a

Congress and Mountfort. Of course, it is often claimed that burials were already present in the southern portion, around the famous pine.

Goold, writing in 1886, provides a somewhat different account of the burial ground,

The ancient burial-ground was very small for many years after its commencement, and has been several times enlarged on the northwest side. In 1789, a vote was passed by the town to "fence the burying-ground." In 1795, the committee on enlarging the burying-ground reported that they had purchased of Rev. Mr. Smith land on the southeast side of Smith street (now a part of Congress street), for seventy-one pounds, five shillings. The same year the burying-ground was enlarged on the northwest side "to a line from the easterly line of the school lot parallel with Smith street." Previous to this enlargement, a lane had been laid out from the present Congress

rod [8.25 feet] wide, to run on a course south 16 degrees east," were laid out, "within which no grave shall be dug." There seems never to have been any attention paid to the vote establishing these six narrow passages (Goold 1886:515-516).

Jordan expands this discussion, quoting from uncited records that, the town's selectmen were authorized,

To lay out the . . . Burying Ground into regular plats and divisions, and that the Sextons of the several Parishes be strictly enjoined to conform in digging the graves for any persons to such divisions that some degree of regularity and order may be introduced among the mansions of the dead, and not be scattered over the ground in so confused and irregular a manner as has heretofore been the case (Jordan 2009:viii).

He quotes another order from the council that,

No part of said Burying Yard shall be reserved for particular families, but that the bodies of persons as they die be interred, without distinction as to place, in a regular manner, contiguous to each other, that the ground may include the greatest number of graves possible and be sufficient for many years to come. Provided that notwithstanding that this regulation shall not be confused to restrain any person who may incline so to do, from building tombs under the direction of the Selectmen (Jordan 2009:viii).

Goold implies that the 1795 conveyance was an addition to an already existing burial ground. This may be the case, although it is not shown on any plan. Willis (1849) quotes a lengthy itemization of Thomas Smith's property prepared in 1742. One item is of special interest,

Item. Joining to these but not under the same enclosure is a three acre lot bought of Mr. East, which extends from said Smith's fence to the burial place, and is bounded by the fence or line that shuts in Munjoy's Neck (Willis 1849:16).

While vague in its description, this is likely the property conveyed by Smith to Portland in 1795. If we are correct, then this brief note indicates that there was some portion of a burial ground beyond or outside of his holdings.

With the city burial ground beyond (or south of) Smith's property, it makes sense that the town would establish Funeral Lane, providing easy access to the burial ground from Congress Street, cutting through Smith's property. It becomes likely that the property fenced by the city in 1789 was that portion beyond Smith's tract. With the acquisition of the Smith tract, it would also make sense to turn Funeral Lane 90° and exit the burial ground to Mountfort Street. Of course, it

is odd that Smith did not identify the town's burial ground in his call of the metes and bounds, but this issue aside, the reconstruction seems plausible.

Goold alludes to an extension to the northwest taking place in 1795. We were unable to identify any additional conveyances to the City for that year, although the additional land east "of the school lot parallel with Smith street" would be the property today encompassing the burial ground from Funeral Lane westward to the school property. We have not found a deed for this property, but it may be revealed by additional investigations.

The additional pathways mentioned by Goold were laid out and are seen on the various plans of the Cemetery, calling into question his assertion that these passages were never formalized. Thus, Goold leaves us with as many questions as answers. Clearly, it is critical that researchers obtain unfettered access to the City records in order to clear up some of these mysteries.

Goold also explains that the purchased land "was an open training-field with the town pound at the eastern end, and the pillory and whipping-post in about the middle" (Goold 1886:516). The pound was an enclosure in which strayed farm animals were maintained by the town "pinder" until claimed. While once common in Maine with perhaps over 200 present, the Maine Historic Preservation Commission reports that today there are only about 19 pinders (<http://www.angelfire.com/me2/corinthhistorical/juliecorinth/townpound.html>).

Since this was private property it seems odd that these would have been located here. Hull notes only that a portion of Eastern Cemetery was in the open muster field, suggesting that the public lands may have extended off the burial ground (Hull 1886:181).

It would be reasonable to think that Smith's journal (Willis 1849) might help clarify some of the confusion, or perhaps even comment on some of the town's early actions – such as establishing Funeral Lane. Unfortunately, the

journal is spectacularly quiet on the City's burial ground. In fact the burial ground is only mentioned in passing by Smith's colleague, the Rev. Samuel Deane. Deane notes only that a monument to Henry Wadsworth could be found "in the eastern cemetery of this city" (Willis 1849:386).

Both Smith and Deane do, however, mention burials in which two individuals were placed in a single grave. In 1760 Smith mentions the collapse of a building that killed two individuals, John Flett and Aaron McLean. Willis identified that the two were buried in one grave (Willis 1849:184). When Captain Chase and his apprentice drowned on February 11, 1787, Deane remarks that "both buried in one grave" (Willis 1849:360).

Goold also reports that it was in 1795 that Portland,

Set off to the Friends or Quakers, twenty-five square rods [0.16 acre or an area 82.5 feet square] in the northerly corner of the burying ground, and at the southward of the new street, and to give them a quit claim deed. This spot is on the Adams street front, and next east of the gate (Goold 1886:516).

Hull provides a slightly different account, observing that the Quakers had three different burial grounds in Portland, one of which was the

Lot of twenty-five rods in the northeasterly corner of Eastern cemetery. This lot was set off to Friends by a vote at a town meeting in 1795 (Hull 1886:104).

Even today this area is largely devoid of marked burials, suggesting that the location was likely used by the Quakers, who:

reject the fashions of the world in the use of tomb-stones and monumental inscriptions. . . . The Quakers, however, are of opinion,

that this is not the proper manner of honoring the dead. If you wish to honor a good man, who has departed this life, let all his good actions live in your memory; let them live in your grateful love and esteem; so cherish them in your heart, that they may constantly awaken you to imitation. Thus you will show, by your adoption of his amiable example, that you really respect his memory. . . . These convey no merit of the deceased, by which his example should be followed. They convey no lesson of morality (Clarkson 1806:30-31).

Nevertheless, we were unsuccessful in finding any deed made to the Society of Friends for this ground. Thus, it seems likely that the conveyance was informal, or at least not recorded.

When the United States gained its independence in 1783, what was left of the new nation's seacoast defenses were in poor condition. War scares in 1794 caused Congress to appropriate money to guard critical harbors, such as Portland. These fortifications are today called the First System (with subsequent construction in 1798 and 1807).

One of the First System fortifications was constructed by Colonel Rochfortain in 1794. One account describes the efforts,

After the consultation of engineers and town authorities a square work was laid out on the present site of Fort Sumner park. A ditch was excavated on four sides; a wall of boulders fifteen feet high led from the bottom of this to the top of a parapet. It was surmounted by a palisade and entered on the southwest side. The plan of defence [sic] included a battery between the observatory and the burying ground, connected with the citadel by a covered way never

built on account of the sandy soil (Porter 1905:6; see also Figure 23).

Nineteenth Century

Jordan reports that there were two “colored grounds” laid in for Portland’s African Americans. One was at the corner of Federal and Mountfort and the other at the corner of Congress and Mountfort streets. This would have placed

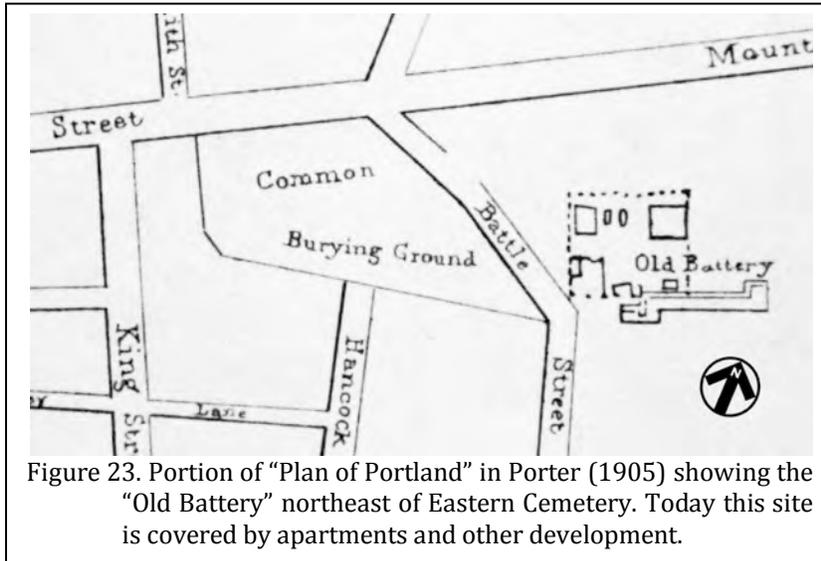


Figure 23. Portion of “Plan of Portland” in Porter (1905) showing the “Old Battery” northeast of Eastern Cemetery. Today this site is covered by apartments and other development.

them on either side of the Quaker section. Neither corner contains especially dense markers, so these locations may be accurate.

Also about this time Portland established one or more Strangers’ Grounds. Jordan (2009:ix) suggests more than one was present, but fails to explain the rationale for this. He also reports that in 1838 the City directed that “strangers” be buried two to a grave (Jordan 2009:x), although as previously discussed, this seems to have been done with some regularity for many of Portland’s middling and lower classes.

Beginning about 1790 and continuing into the nineteenth century (Jordan [2009:viii] claims until about 1825-30; see also Jordan 1979:230-32) 95 below ground tombs were constructed in Eastern Cemetery. The bulk of these – 85 – are located in the central part of the burial ground south of Mountfort and west of Funeral Lane where four lines of tombs occur in two back-to-

back rows, all presumably with common walls. An additional 10 are scattered elsewhere (eight of these are situated east of Funeral Lane and two are found to the south and southwest). Zwicker (2007:27) reports that tombs “have collapsed over the years from the shifting of the ground caused by burials and visitors.” We have been unable to identify the source of this observation or any confirmation of tomb collapses.

William A. Goodwin prepared an exceptional plan of Eastern Cemetery and also collected considerable information about the tombs (Goodwin n.d.). Relatively few of those tombs clustered west of Funeral Lane could be ascribed dates of construction, but those that could appear to cluster from the late 1820s. The average date for these tombs is 1827.

In contrast, those tombs that are scattered to the east of the Funeral Lane (and not constructed in association with other tombs) appear to be slightly later. These tombs average 1831, although at least one (F-131) is reputed to date to 1720 and H-71 dates to 1823.

We speculate that at least a few of the individual tombs were constructed first, by owners desirous of the security offered by the construction. Then, in the 1860s, perhaps when the tomb rows had sold out, a few additional, isolated below ground tombs were constructed.

In about 1815, the pine at Eastern Cemetery, used by mariners to navigate into the Portland harbor, was blown down in a storm and was shortly afterwards replanted (Goold 1886:521). Willis described the original as “a large and venerable pine tree, the last relic of his race, which was a landmark sea-ward for the weather-tossed mariner” (Willis 1865:758).

The first identified account of vandalism in Eastern Cemetery dates from 1816 when the

Chair of the Selectmen, Daniel Tucker, posted a notice in the *Eastern Argus*,

It has been observed with deep regret that some evil minded person or persons, have wantonly broken, injured and defaced many of the monuments & gravestones in the burying ground in this town, and the selectmen will take measures to detect and bring to punishment the perpetrators of such shameful and wicked acts committed among the sacred repository of the dead (*Eastern Argus*, May 29, 1816, pg. 3, col. 1).

There is no evidence that the vandal was identified or punished, but the notice itself is unusual.

By 1820 space was at a premium in Eastern Cemetery and the selectmen considered whether to enlarge the Cemetery or buy new land in the western part of the city, without reaching a decision (City Records, March 27, 1820). In fact, it wasn't until 1829 that the town decided to purchase 10 acres on the Western Promenade to create Western Cemetery (City Records, September 28, 1829).

It was also about 1820 when Portland apparently contemplated the removal of tombs of the Commander and officer of the *Enterprise* and the Captain of the *Boxer*, buried there in 1813 after action off Portland. Some thought the modest tombs were insufficient and wanted them replaced with "a stately monument." Eventually, "it was thought in better taste to restore them [what was already present], than erect new monuments" (Anonymous 1868c:308; see also Willis 1868:759 for a brief account). This marks the first of several "restorations."

In 1821 the city voted to fence Eastern Cemetery, which was apparently, up to that time, open. That same year regulations were passed concerning burials in the Cemetery (City Records, April 9, 1821 and August 2, 1821).

Jordan (2009:x) claims that the burial ground was enlarged again in 1821, although we have not found documents to support this, the 1795 purchase clearly did not include a large portion of what is today Eastern Cemetery, so additional acquisitions beyond the 1795 purchase and the original ground are certainly necessary. This is another area where additional research is needed.

The City By-Laws of 1824 gave the selectmen authority over the Cemetery with the right to appoint a superintendent. It seems unlikely that a superintendent was appointed, however, since in 1834 the Common Council reported,

Whereas there is a want of system and proper order, relative to opening graves, & burying the dead it is order'd that the committee on city burying ground employ one or more persons to take charge of the grounds . . . and . . . persons are forbidden to open the ground for graves . . . without first consulting . . . the person or persons appointed to take charge (City Records, May 21, 1834).

Jordan (2009:xiii) reports that the Superintendent of Burials position was created in 1832 – an assertion we have not confirmed. At least by 1835 a notice appeared that an ordinance had been passed authorizing the joint standing committee on burying grounds to appoint a superintendent to, "take charge of, & lay out said grounds in such order and manner as they may from time to time direct." The ordinance also specified that anyone desiring to erect a tomb must first obtain a license from the committee, which would designate where the tomb might be placed. Finally, the ordinance placed all funerals under the regulation of the mayor and aldermen. James H. Mitchell was appointed to "take charge of the public burying grounds" (*Portland Advertiser*, June 13, 1835, pg. 3).

In 1828 the State of Maine created an act to protect grave yards, requiring all towns,

parishes, or religious societies owning an “ancient or public Burying Yard” to erect a “good substantial and durable fence” around the burial grounds. The set fine of \$100 was likely adequate to encourage participation, especially since another provision of the new law made all selectmen, committee, or treasures individually liable for the fine (*Eastern Argus* April 1, 1928, pg. 2). Eastern Cemetery, however, had erected a fence at least by 1821.

Goold, who published his history in 1886 remarks that “at the time of my first knowledge of this spot, sixty-five years ago . . . ,” suggesting a period in the early 1820s,

The burying-ground fence inclosed one row of tombs northwest of the Adams street lane [today Mountfort] and gate, and ran parallel with Congress street to the school lot, where there was a small tool-house, one end of which was filled with the openwork wooden gates, on which were the owner’s names; these were set up at the entrance to the vaults when they were opened. These two or three acres, now covered thickly with graves, remained an unclosed common until about 1825, when the fence between it and the buying-ground was removed to the Congress street line, and the living gave up their play-ground to the dead. The eastern section of the new ground, has, by common consent, been devoted to tombs, many of which are surmounted by elegant monuments (Goold 1886:516-517).

It is difficult today to understand Goold’s rambling prose. It suggests, however, that the original 3.83 acre purchase was fenced and the later acquisition, to the south and west, was pasture until eventually fenced. What is more interesting is the suggestion that a “tool-house” was present in the Cemetery as early as the 1820s. That it

might contain “wooden gates” for up to 95 tombs also suggests that it was significantly larger than the one present today.

Also in 1828 we find another complaint of vandalism in Eastern Cemetery. John Neal wrote,

At every step he would find the turf that should lie there, uptorn with sacrilegious levity – the superb marble shattered by violence, and literally trodden to pieces and ground to dust under the feet of mere children . . . see the very gravestones broken down for sport, and shattered to pieces in play, by mere children . . . why not plant our grave-yard with young trees? Why not try to render it a cheerful and attractive place for every body? Take one single case in proof. About three weeks ago, a superb marble slab was set up – in a few days the corners were knocked off – in a few days more it was broken to pieces, and now, there is hardly a vestige of it left. Are we to endure such things? If a reward be not offered for the discovery of these wretches – the people of this town deserve to see their wives and little ones dug up and scattered to the four winds of heaven – or launched under the waters of Casco-Bay (*The Yankee*, May 28, 1828, pg. 172).

Space was always an issue and by 1829 the town voted, at a cost of \$2,000, to purchase a 10 acre lot on what is now the Western Promenade for a second cemetery (City Records, September 28, 1829). The development of Western Cemetery took some of the pressure off Eastern, but crowding – and problems – continued. More information on Western Cemetery is available in Walker-Kluesing (2001; see also Willis 1865:760).

An article in 1835 may be one of the first “romantic” pieces about the city’s oldest burial

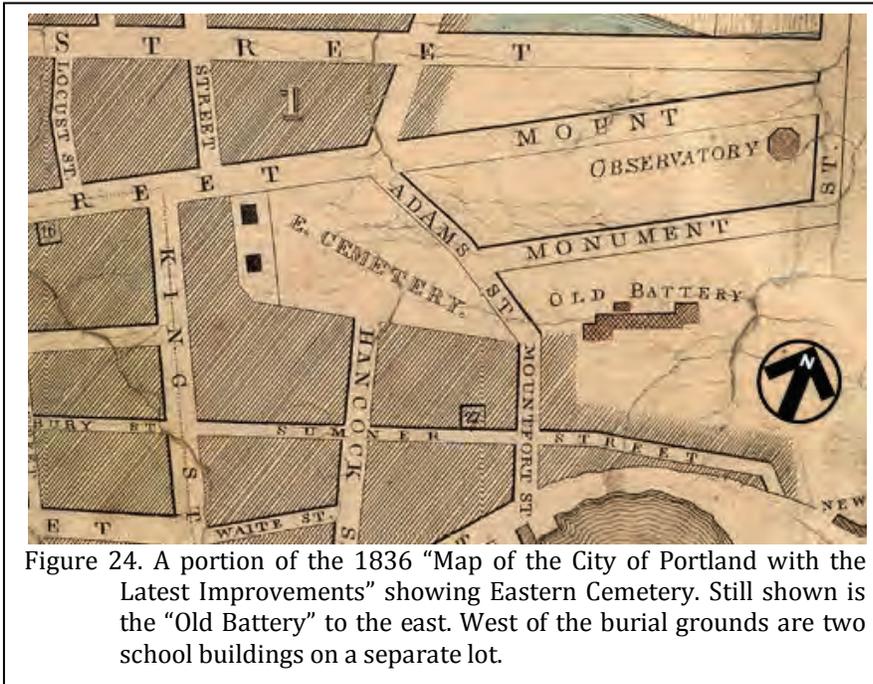


Figure 24. A portion of the 1836 “Map of the City of Portland with the Latest Improvements” showing Eastern Cemetery. Still shown is the “Old Battery” to the east. West of the burial grounds are two school buildings on a separate lot.

width of every grave dug therein, to cause said graves to be dug in exact ranges, and parallel with the lines as laid out put in said cemeteries, and as near to each other as he may think proper, and to take care that said graves be so filled and elevated that water may not remain to stagnate thereon; to assign to each and every family, on application therefore, such spaces as he may think necessary . . . and it

ground. Entitled “Our Burial Place” the author recounts stories of those buried, noting that “every little mound I tread upon in this burial-place recalls some social or individual history” (*Eastern Argus*, November 27, 1835, pg. 1-2).

shall be his duty to record in a book to be kept for the purpose, the name age and sex of each person interred, the family to whom the deceased belonged, the disease of which he or she died, and whether citizen or stranger, the time when interred, the number and range of grave or tomb, &c., and report to the City Council in the month of March annually a schedule of such interments the preceding year, specifying the particulars as recorded (*Portland Advertiser*, April 21, 1841, pg. 2).

By 1838 the issue of Eastern Cemetery’s overcrowding was again a topic and the City Council considered the “expedience” of having strangers and even those without close relatives exhumed and moved to Western Cemetery in order to create additional space in the eastern burial ground. These recycled plots would be reserved for natives and descendants of Portland’s early families (City Records, November 21, 1835). No action was taken on this intriguing concept.

Later that year the City Council voted to pay the expenses associated with “setting out ornamental trees in and around the Eastern Cemetery.” This would only happen, however, “provided the sum of twenty-five dollars can be raised in addition by subscribers, or in that proportion, but not to exceed \$50 on the part of the city” (*Portland Advertiser*, November 19, 1841, pg. 2). At that time the City of Portland was paying only \$47.48 for the care of both Eastern and Western cemeteries.

In April 1841 the ordinance “relating the interment of the dead” was published with revisions. The superintendent, however, was still responsible,

to keep the fences, walls and gates of the several burying grounds in the city in good and sufficient repair and to take care that said burying grounds be well secured by locks and bolts, to point out the place, depth and

It appears no action was taken on the 1841 vote to plant trees in Eastern Cemetery since a visitor to Portland in 1844 wrote,

All the walking portions of the city gave evidence of order, dignity and civility, in the males and lady-like deportment in the females. . . . Of dandies and loafers . . . I saw but few – of street beggars, none; and I witnessed no cases of intoxication It was with regret I observed your ancient burying ground but indifferently enclosed and destitute of trees (*Eastern Argus*, May 25, 1844, pg. 2).

It was noted that,

public feeling is now not a little offended when it perceives any people neglectful of their place of sepulcher, not merely in their necessary protection, but also in their decoration. Something more is required than a common fence . . . and the people who fail to add the winding walk, the graceful monument, the overhanging tree . . . justly entitle themselves to the reproach of not meeting the wants of a refined society (*Portland Advertiser*, June 21, 1843, pg. 2).

The article goes on to state bluntly that, “no effort has been made either by those who occupy those silent mansions, or those who are soon to become their tenants, to make this last resting place . . . an agreeable and attractive object.”

A citizen wrote the *Tribute & Bulletin* in 1846 that in Eastern Cemetery, “flowers are afraid to blush and grass grows sparingly – where birds refuse to sing, and even the reptiles are sluggish and mute – where the clouds drop no fatness and the sun scorches to desolation – where the breath of God’s displeasure seems to linger, as on the plains of Sodom. Say, ye fathers of our city, shall

not a green thing be planted in our graveyard?” (quoted in Batignani 2003:49).

The complaint was again raised in 1847 when a citizen wrote that Eastern Cemetery gave visitors to Portland the impression that,

The city having provided a vacant lot, and enclosed it with a fence that no private gentleman would place round his grounds, has done all that the necessities of the case require – Nothing has ever been done by the city to ornament and relieve the blank and naked appearance of these grounds. I know of no other city that has so neglected its place of sepulture. . . . Trees should at once be set out round the whole, and both grounds [including Western Cemetery] should be filled up with shrubbery. With a little expense and care, a few years would make these as beautiful as they are now repulsive (*Portland Advertiser*, April 20, 1847:pg. 2).

But other issues at Eastern Cemetery also concerned the citizens. In 1843 a petition by Samuel Fessenden asked the City to open “a narrow street or alley, from India street, opposite Federal street, along by the Burying ground to the upper end of Hancock street.” Apparently no action was taken, since in 1848 another citizen complained,

Many of us are desirous of visiting occasionally the Burying Ground, and, in order to do so, are obliged to walk quite an unnecessary distance to effect our object. Those of us who live beyond India street, are under the necessity of coming to this street and walking quite a distance round, or of wading through the sand and gravel on Mountfort street. . . . Now it seems to me that this matter can

be very easily remedied. Let there be an opening at the head of Hancock street . . . (*Portland Advertiser*, August 5, 1848, pg 2, col. 4).

It appears that eventually the city complied since the 1852 Walling map of Portland (Figure 25) shows this narrow alley in place (compare with Figure 24).

In 1846 the tomb of Parson Smith was “restored” by the First Parish Church, indicating that throughout the Cemetery’s history stones have been repaired and probably had lettering recut (Elwell 1876:51).

By 1847 the City had increased its funding of Eastern and Western cemeteries, spending \$219.84. In addition, the salary of the Superintendent of Burials was \$75 a year (Anonymous 1847:1, 10). In 1848 the City spent \$709.82 for a wall at Eastern Cemetery – presumably the stone wall along Mountfort Street. The following year an additional \$713.82 was spent on this construction (Anonymous 1849:11). In 1854 this wall was finally completed, at an additional cost of \$1,102.23, which also included fencing (Anonymous 1854:10). The National Register nomination appears to incorrectly place this construction in 1852.

The city receiving tomb at Eastern Cemetery was built by the City in 1849 at a cost of \$463.24 (City Records, August 8, 1849; Anonymous 1850:10). How the bodies of individuals dying during Portland’s winters had been previously handled isn’t clear. Over its history, the tomb has received only minimal maintenance. We have found only one reported repair, in 1862, at a cost of \$11.86 (Anonymous 1863:25).

By 1850 one citizen suggested the “time of attending to them [Eastern and Western cemeteries] has arrived.” He focuses his remarks

on Western Cemetery, urging the City to construct a gravity fed fountain or “jet d’eau,” although he believed that “Munjoy affords at least equal facilities for the carrying out of a similar plan” at Eastern Cemetery (*Portland Advertiser*, June 20, 1850, pg. 2).

Eventually the Council decided to not allow additional burials in Eastern Cemetery “whereby any of the remains of the old inhabitants” might be disturbed (City Records, March 13, 1851). In response, a citizen wrote,

It is a fact, shameful as ‘tis true, that without our city, the bones of the first inhabitants – the pioneers who reclaimed from the



Figure 25. Portion of the 1852 Walling “Map of Portland” showing the new alley connecting India Street with Hancock and extending east almost to Mountfort Street.

forests and conquered from the Indians, this fair heritage of ours – that the bones of these have been disturbed, and dug up to make room for others who are comparatively strangers in the land (*Portland Advertiser*, March 20, 1851, pg. 2).

This resulted in the Superintendent taking offense at the allegation that he had not done his job. The citizen wrote back that his motive was only “to call the attention of the

citizens . . . to the crowded state of the their cemetery.” They also concurred that the problems occurred without the knowledge or consent of the Superintendent, “who cannot personally superintend the digging of every grave.” Nevertheless, they conclude, “the fact that it did occur, shows that it is high time this matter received the particular of our citizens and their agents, the City Council” (*Portland Advertiser*, March 20, 1851, pg. 2, col. 4).

Cemetery in 1831 – about the right time to observe repairs in the 1850s (City Records, April 18, 1831). Hull does, however, mention that the city hearse was kept in the same structure that the Artillery Company kept its cannon (Hull 1885).

Jordan states that by 1858 the City “suspended all burials except in cases of close family ties where it was obvious that space was available” (Jordan 2009:xi).

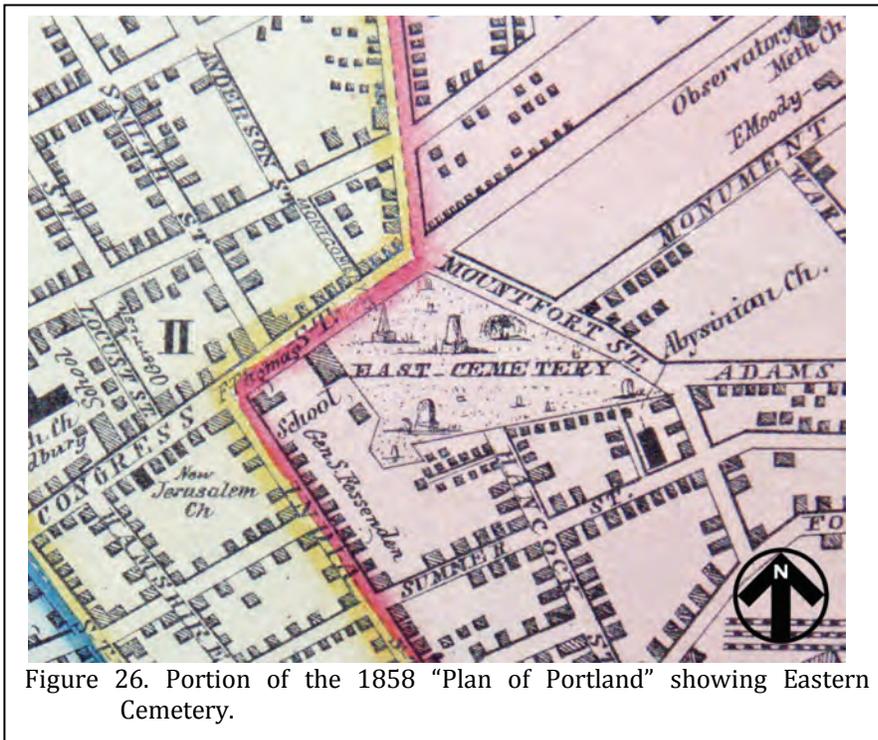


Figure 26. Portion of the 1858 “Plan of Portland” showing Eastern Cemetery.

In 1850, the year the city receiving tomb was constructed, Portland spent only \$39.01 on maintenance of the two burial grounds. The following year, however, these expenses escalated to \$484.75, suggesting that the citizens’ complaints had been heard and Eastern Cemetery entered a period of improved maintenance (Anonymous 1850:17, 1851:11).

In 1852 the Mayor reported,

During the past season, the Eastern Cemetery has been enclosed by a neat and substantial fence, by which that section of the town

has been much improved. That ground is now so much crowded, that but few additional interments can be made in it (Parris 1852:4).

In 1856 the City apparently finally planted trees in Eastern Cemetery, at a cost of \$99.00. The labor associated with the Cemetery that year was a miserly \$29.00, suggesting that the grounds were receiving only the most minimal care (Anonymous 1857:18).

Mayor Parris reported that a committee had been appointed to find a suitable location for another cemetery.

Although Jordan reports that the City first purchased a hearse in 1805, it wasn’t until 1857 that periodic – and often very costly – repairs to the city hearses begin to be documented in the financial returns. And while Jordan states “it is nevertheless evident that a hearse house stood opposite the little Gothic building on Funeral Lane,” the only documented construction of a hearse house we have found is at Western

Land was selected near the Westbrook Seminary. The purchase was completed and lots were made available by September 1853 (City Records, September 12, 1850; Gould 1886:123). This new cemetery was called Evergreen and was the city’s third. A fourth cemetery, acquired in

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1858, was in Cape Elizabeth (now South Portland) and called Forest City. While still outside the city, it was closer to Portland than Evergreen and therefore considered more convenient by many citizens. Located in a heavily industrial area, it suffered from lack of landscaping and received numerous complaints about the poor maintenance.

Also in 1852 Portland increased the salary of the Superintendent of Cemeteries from \$75 to \$100 (Anonymous 1852:1).

Jordan (2009:xiii) asserts that in 1858 the City offered lots in Evergreen Cemetery in exchange for lots in the Eastern and Western cemeteries. The only evidence relating to this we have identified is an 1888 ordinance that closed Western Cemetery to burials without a special permit that would be issued only for “those who are natives, or who died residents of Portland, and who were at their deaths the owners, or members of the immediate families of owners, of private lots in that cemetery.” This ordinance also specified that,

The board of mayor and aldermen acting with the trustees of Evergreen Cemetery are hereby authorized at any time, free from cost, or upon such terms as they may determine, to exchange any lot to which the city has full title in Evergreen Cemetery for any lot

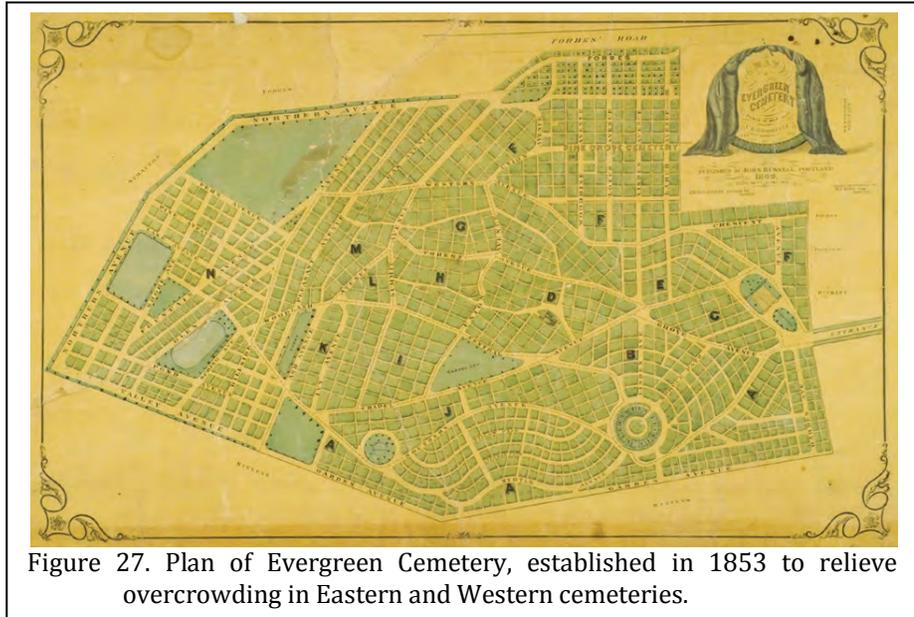


Figure 27. Plan of Evergreen Cemetery, established in 1853 to relieve overcrowding in Eastern and Western cemeteries.

in the Western Cemetery now held by a private owner, upon condition of the immediate removal of the remains of the

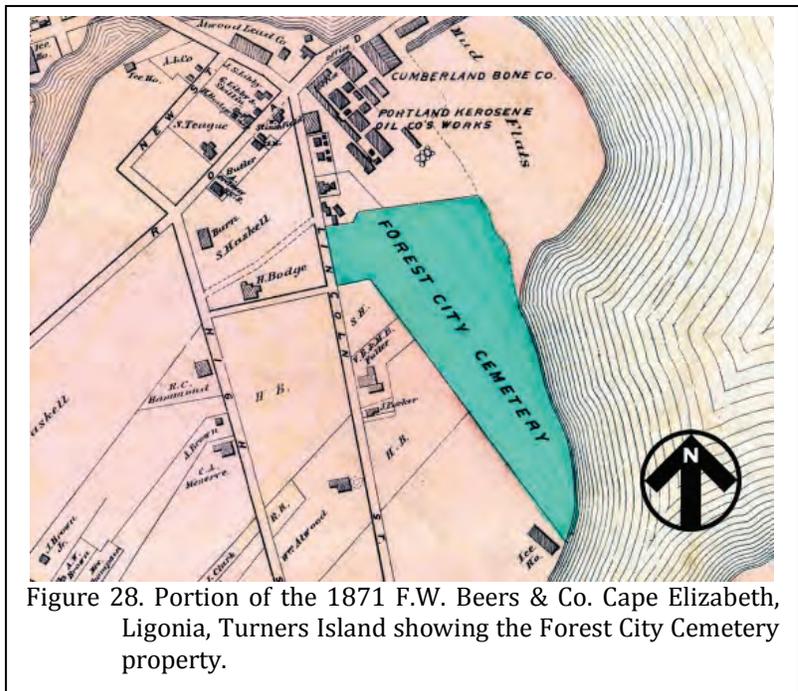


Figure 28. Portion of the 1871 F.W. Beers & Co. Cape Elizabeth, Ligonias, Turners Island showing the Forest City Cemetery property.

dead from such lot in the Western Cemetery (Anonymous 1896b:41).

Earlier ordinances (such as that from 1868 [Anonymous 1868b] and 1856 [Anonymous 1856]) are quiet on the subject.

The 1868 ordinances do, however, regulate the fees that undertakers could charge. For burying an adult in Evergreen Cemetery they were allowed to charge \$7; for a child interred at Evergreen they were allowed \$5. "For interring in either cemetery in the city, including hearse and porter's fee, five dollars; and for a child four dollars" was allowed by the 1868 ordinance. An additional \$2 was allowed for "opening church and carrying the body into the same for funeral services." For removing bodies from Eastern or Western cemetery for reburial in Evergreen Cemetery undertakers were allowed \$5 for the first body and \$3 for every additional body. The removal of children, however, was set at \$3.50. For depositing bodies in the city tomb undertakers were allowed \$4. For removing the body for burial in Eastern Cemetery they were allotted \$1.50. If the body was going to Western Cemetery \$2 were allowed. Again, the fee for children was reduced (Anonymous 1868:213). These fees remained unaltered through at least 1902 (Fagan 1902:425).

Whether removal was free or not, Goold railed against the practice of moving remains,

. . . I want to say a word against the removal of the dust of its [Eastern Cemetery] tenants. This was the chosen spot for their burial. Its beauty is marred in some places by partially filled graves, where relatives have sought (often in vain) for the bones of ancestors, and were compelled to be content with the removal of the head-stones set up by their immediate families. . . . If the dust of ancestors is removed to another cemetery, perhaps in a few years another generation may think that this dust is not yet in its property place, and then there will be another removal. . . . Under ordinary circumstances I think no one has any better right

to remove the remains of a relative from their chosen place of burial, and change the monument, than they have to disobey his attested will and change the disposition of his other former property (Goold 1886:519-520).

The monuments of the Commander and officer of the *Enterprise* and the Captain of the *Boxer*, placed in 1813 and first restored in the 1820s, "had become dilapidated" and were again restored by the City in 1864 (Willis 1865:760). Another "restoration" was that of the Rev. Smith's box tomb where the ledger was broken. Goold reports that about 1860 it was "renewed in the same style by his heirs" (Goold 1886:513).

There is an 1861 report that \$10.00 was paid for the removal of snow from the City tomb "and hearse houses" (Anonymous 1862:24). This may indicate that a hearse house was present in Eastern Cemetery, although it more likely indicates the presence of one at Evergreen.

In 1866 additional property was purchased for Eastern Cemetery. It was described as "adjoining the westerly side of the school-house lot" and included 5,262.5 square feet, or 0.12 acre. The cost of this expansion was \$3,157.50 (Anonymous 1867:25).

On the night of July 4, 1866 Portland suffered its greatest loss since the British burned the community in October 1775. It reportedly began in a boat house on Commercial Street, spread to a lumber yard, then a sugar house, and eventually burning out on Munjoy Hill at the city's east end. Over 1,800 structures were destroyed, including the two school houses at the west end of Eastern Cemetery. Goold (1886:509) reports that the replanted pine in the Cemetery died as a result of the heat of this fire. In fact, it was reported that the glare of the fire was seen more than 60 miles away ("Miscellaneous Items," *New York Times*, July 10, 1866).

In spite of the destruction, it was reported that by late November over 1,000 structures had

either been replaced or were under construction (*New-Hampshire Sentinel*, November 29, 1866).

In 1867 the North School was completed, at a cost of over \$123,000, on the lot adjacent to the Cemetery replacing the school buildings lost in the 1866 fire. It was described as “a large and commodious brick school-house . . . when the grounds and fences are completed it will undoubtedly be second to no school in New England” (Anonymous 1868a:18).

It was also in 1867 that the City acquired additional land for the use of the Cemetery. As in 1866 it was described as “on Congress Street, adjoining the westerly side of the school-house lot near the eastern cemetery, and intended to enlarge the same, containing 7,468 square feet, at a cost of \$2,937.00” (Anonymous 1868a:17). This addition was only 0.17 acre and its precise location has not been determined.

In 1868 it was recorded that the Superintendent of Burials, Louis Bunce, was paid \$147.58, while an assistant, Eli Goss, was paid an additional \$2.42 (Anonymous 1869:47). Making greater news, however, was the work on Federal Street. The Report of Street Commissioner reveals that Federal Street from India eastwardly to Mountfort was “partly graded and a heavy bank wall against Eastern Cemetery” was “under

construction and partly built.” This work continued into 1869 (Anonymous 1870). There is no mention that any remains in the burial ground were disturbed, although Jordan claims that “about twelve feet of surface was cut away” with “[b]ones and stones . . . simply carted away (Jordan 2009:xi).

Cartographic analysis is hindered by the generally poor quality maps available for the period. In addition, we have no maps that reveal the topography prior to the construction of the wall. However, our comparison of maps before and after the construction of Federal Street on the south side of the Cemetery suggests that all of the lost property was at the southern edge of the parcel (see Figure 30). In addition, this comparison reveals the probable location of the 0.12 and 0.17 acre purchased by the City in 1866 and 1867. While the loss of the southern edge of the Cemetery likely caused the destruction of some graves, there was certainly no “wholesale” removal of remains and most of the Cemetery boundary remained intact.

It was also in 1868 that Jordan claims there were 111 bodies in the city tomb awaiting burial (Jordan 2009:x). In fact, the report of the Superintendent identified that there had been 40 burials in Eastern Cemetery that year (compared to 215 in Evergreen, 59 in Western, and 59 in Forest City). In addition, there were 32 remains in the city tomb (Anonymous 1869:46). The City report was generally prepared in March and at that time there were often bodies remaining in the tomb from the previous winter awaiting burial. In later years the report of the Superintendent simply combined the number of burials with the number of bodies awaiting burial. Regardless, we have found no evidence for there ever having been 111 bodies in the city tomb.

It is also in 1868 that we learn it was not only Eastern Cemetery that was receiving little City attention or funding. The Superintendent of Forest City Cemetery, E.H. Ripley, complained,

But little work has been done in the Forest City Cemetery since it was dedicated to burial purposes. . . . The originally well laid out,

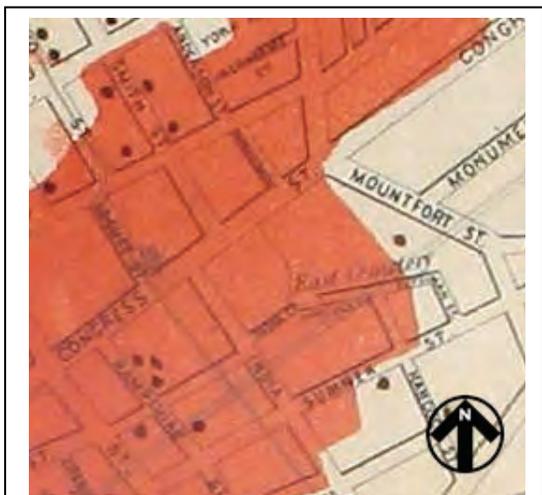


Figure 29. Portion of Bufford's "Great Fire of Portland - 1866" showing its extent into Eastern Cemetery.

have become grass-grown, and the numerous shade-trees, for want of seasonable and proper care, have been each year dying out and decaying. Owners of lots express dissatisfaction that so little has been done by the city since the cemetery was opened; and others, who would desire to purchase lots here, are induced, from signs of general neglect, which are becoming more and more apparent, to purchase elsewhere (Anonymous 1869:43-44).

In 1873 the City report reveals that \$169.46 was spent “building Dead House and extra labor [for that construction]” (Anonymous 1874:33). The “Dead House” is the small frame building that was added to the entrance of the city tomb. While the annual reports provide no clues why this structure was necessary, additional research using the City Council minutes may provide additional information. Beginning that year the City reports consistently itemize a “city receiving tomb” and “Dead House” in Eastern Cemetery (Anonymous 1874:128).

Also in 1873 the City reported spending \$65.93 in “labor, lumber, and repairs,” as well as \$50.00 to paint the fence in Eastern Cemetery. Another entry of interest is \$5.00 paid “copying index to records of burials” (Anonymous 1874:33). In contrast, the City spent \$223.97 to maintain Western Cemetery that same year.

Beginning in 1871 the City apparently began paying an individual \$40 a year for “oversight of Eastern Cemetery.” This was in addition to the \$150 salary of the Superintendent of Burials and “oversight” likely means maintenance. In 1874 this oversight payment increased to \$50 and it continued until 1883 when it was reduced to \$38.50, being eliminated the following year (Anonymous 1872:20, 1875:27, 1883:35). At the same time the

Superintendent of Burials, James S. Gould, began being paid \$200 a year (Anonymous 1885:52).

Elwell described the burial ground in 1876,

Most of the old monuments are box-like structures of brick or granite, or tables supported on four pillars. The grass grows rankly over the crowded graves; the elms and poplars, which have sprung up at their sweet will, cast here and there a shade; and year by year the gravestones settle and grow more and more awry” (Elwell 1876:51).

Perhaps as a result of this perception of decay there was some considerable effort being expended in Eastern Cemetery in the late 1870s and early 1880s. While the yearly expenditure for

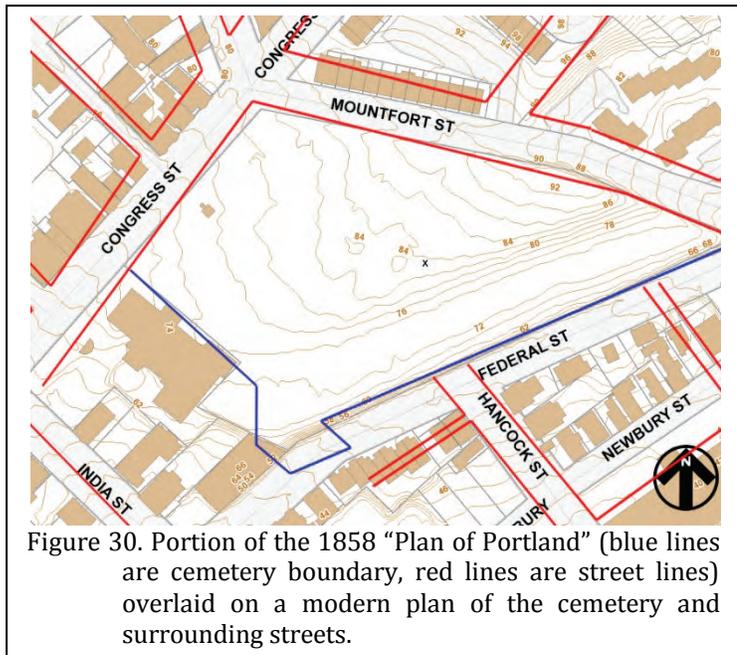


Figure 30. Portion of the 1858 “Plan of Portland” (blue lines are cemetery boundary, red lines are street lines) overlaid on a modern plan of the cemetery and surrounding streets.

“labor, lumber, and repairs” had been averaging about \$122 between 1872 and 1878, it increased to \$479.32 in 1879 and then averaged about \$256 for the next several years. In 1885 it was also apparently necessary to make repairs on the Federal Street wall, costing the City \$146.41 (Anonymous 1886:45).



Figure 31. Eastern Cemetery in 1876, from Warner's Bird's Eye View of the City of Portland, Maine. This shows the stone retaining walls on Mountfort and Federal streets, the board fence separating the cemetery from North School, and the entrance gates on Congress. Funeral Lane, however, is shown running straight through the cemetery – a probable error.

By 1885, perhaps as a result of the funding increases, the Commissioners of Public Grounds reported that, “the condition of our parks, cemeteries, and public grounds, their embellishments, and attractiveness, is the thermometer that registers the degree of refinement and culture of the individuals that compose the community” (Anonymous 1886:211). However, by 1889 only \$9.00 was spent in Eastern Cemetery (\$5.95 was spent in Western Cemetery) and from 1890 to 1894 the City spent on average only \$26 a year at Eastern Cemetery. Apparently the “thermometer registering refinement and culture dropped precipitously” – and this undoubtedly resulted in a noticeable decline in the appearance of the burial ground.

In 1890 the City Civil Engineer, William A. Goodwin, reported,

[a] survey and plan of the Eastern Cemetery have been completed. The survey determined the position of every tomb and

perceptible grave, and these have been laid down on the plan, which is divided into sections, and the sections into ranges and numbers. Three lists of interments, of which there are more than 4,000, have been made and the location of each, so far as can be ascertained from the old records and from the testimony of the headstones, has been entered on the plan and on the final record by section, range and number. Two copies of the final record have been finished and turned over to the city clerk, with a blue print of the plan. This has been in special charge of Mr. Edwards, assisted in the field work by Mr. Foster and a sub-assistant employed for one month

for this purpose; plan and compilations by Mr. Edwards. The magnitude of this work can be appreciated only by those who have witnessed its various details, and the time and patience bestowed upon them (Anonymous 1891:204-205).

This was the first complete recordination of the Cemetery, described by Jordan (2009:xii) as “thorough and systematic.” The map developed by Goodwin is reproduced here as Figure 32. Goodwin – or more likely Edwards – also produced a handwritten journal (Maine Historical Society, Collection 218). Tables 2-5 summarize some of the information contained in this journal and provide a snapshot of the Cemetery about 1890. For example, they reveal that at the end of the nineteenth century there was only one wooden headboard still present in the burial ground. There were, however, three wooden fences around plots, one was probably a simple

MASTER PLAN FOR EASTERN CEMETERY, PORTLAND, MAINE



Figure 32. Plan of Eastern Cemetery by William A. Goodwin, produced in 1890 (from the files of the Portland City Engineer's Office).

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Table 2.
Summary of Stones in Section A of Eastern Cemetery According to Goodwin

Row	Grave #	Single Marker	Double Marker	Triple Marker	4 on Marker	5 on Marker	Multi-Marker	Family Plot	Monument	No Name on Stone	Initials Only	First Name Only	No Stone	Approximate # of People Represented
1	1-35	31	2							4			2	39
2	1-27	23	1		2								1	34
3	1-37	28	4		1					1			4	44
4	1-12	6	3			1			1				1	19
5	1-26	24	1	1						3				29
6	1-16	13	1	1							1		1	19
7	1-27	24	1	1							1		1	30
8	1-27	20	4							1	1		3	31
9	1-21	18	1	1						2			1	24
10	1-35	24	8	2					1		1			47
11	1-34	21	2		1					1				29
12	1-13	11	1										1	14
13	1-33	25	6	2										43
14	1-22	19	2	1										26
15	1-21	16	1	1	1	1	1 has 7			1				37
16	1-17	13	3	1								2		22
17	1-17	13	4									1		21
18	1-14	13						1						13
19	1-14	16				1								21
20	1-9	8		1						1				11
21	1-9	7	2											11
22	1-2	2												2
23	1-7	7												7
24	1-30	23	5	2										39
Totals		405	52	14	5	3	1	1	2	14	4	3	15	612

structures on the south side of Federal Street. This work, however, was never authorized and Federal Street remained in its current location.

In 1891 Eastern Cemetery was allocated a total of \$135.92 (Anonymous 1892:30). This included \$20 for cutting the grass, \$84.02 to repair “the fence,” \$3 for

board fence, and the other two were post and rail fences. The journal also reveals that there were only 19 unmarked graves recognized by Goodwin in 1890 – although there were likely hundreds in the Cemetery.

whitewashing and cleaning the tomb, and \$28.90 for labor and lumber. In contrast, Evergreen Cemetery spent \$13,190.34 and made, largely

Figure 33 shows the sheet of the 1882 reevaluation maps for Eastern Cemetery. This plan, prepared after the construction of Federal Street, indicates that Eastern Cemetery contained 221,851 square feet (5.1 acre), plus 8,256 square feet (0.18 acre) “in Federal St.” for a total of 230,107 square feet or 5.282 acres. The drawing appears to suggest that Federal Street was shifted away from the Cemetery (i.e., southward) and in that process the burial ground gained acreage. Additional research is necessary to clarify this situation.

Regardless, an 1880 plat in the City Engineers Office (Figure 34) indicates that the City was contemplating the movement of Federal Street further southward, to incorporate the remnants of Hancock Court and a number of the

Table 3.
Summary of Stones in Section B of Eastern Cemetery According to Goodwin

Row	Grave #	Family Plot	No Name on Stone	Initials Only	No Stone	Notes
1	1-41		1		1	
2	1-33					
3	1-43		3	1		
4	1-29		1			#27: stone partly buried, could not read name
5	1-40		4			
6	1-29		1			
7	1-32		4	1		
8	1-36	1: wood posts and rails	3			
9	1-43		1			
10	1-20	1: 4 stone posts	1	2		
11	1-29		1			
12	1-14		1			
13	1-20					
14	1-35		2	1		
15	1-17	1: wood posts and rails; 4: iron fence	6	5		
Totals	461		29	10	1	

through the sale of lots, \$17,124.05, with the associated perpetual care funds totaling \$4,948.75 (Anonymous 1892:35). During this period the City was actually generating funds from its burial grounds; unfortunately little of those were going into the maintenance of the “ancient burial grounds.” In 1892 there were 349 burials at Evergreen Cemetery, 146 in Forest City, 25 in Western Cemetery, and 42 in Eastern Cemetery (including those still present in Eastern’s city tomb from winter) (Anonymous 1892:135). While

MASTER PLAN FOR EASTERN CEMETERY, PORTLAND, MAINE

**Table 4.
Summary of Stones in Sections C-L of Eastern Cemetery According to Goodwin**

Section	Single Marker	Double Marker	Triple Marker	4 on Marker	5 on Marker	Multi-Marker	Family Plot	Monument	No Name on Stone	Initials Only	First Name Only	Last Name Only	No Stone	Wood Marker	Approximate # of People Represented	
C	227	15	3	2	1	6 on 1 6 on 17 on 1	1: wooden fence 1: stone posts & iron rails	1 w/8 names	10		1				293	
D	139	13	5	1	1		1: 4 stone posts		6			1			202	
E	84	4	3	-	1			2	1						108	
F	165	8	3	-	1		1: wood posts & rails 1: stone posts & rails		4	1			1		196	
G	135	14	2	1	-	6 on 1		3	6				2		201	
H	156	16	6	3	-		1: no fence, 2 graves, no stones	7							232	
I	192	15	2	2	1		2: 4 stone posts		4						241	
J	186	30	5	2	-	6 on 1	1: iron posts & rails 1: wood posts & rails	1		6					277	
K	160	16	2	-	1		1: stone posts		4	1				1	204	
L	79	8	-	2	2			1	2	1					114	
Totals	1523	139	31	13	8	5		11	15	37	9	1	1	3	1	2068

**Table 5.
Tombs in Eastern Cemetery According to Goodwin**

Tomb #	# of People	Notes	Tomb #	# of People	Notes
1	?	James S. Gould (many bones in this tomb, names unknown)	51	1	(1826)
2	7		52	1	(1825)
3	1		53	1	
4	1		54	1	
5	1		55	1	
6	1		56	8	
7	1		57	12	1 baby removed to Evergreen
8	8		58	6	
9	1		59	3	
10	14		60	17	
11	1		61	1	(1823)
12	8		62	12	
13	1		63	1	(1826)
14	19		64	1	
15	1		65	5	
16	8		66	7	
17	2		67	1	
18	8		68	1	
19	4		69	28	
20	?	unknown	70	8	
21	14		71	10	
22	6		72	24	
23	8		73	19	
24	1		74	8	
25	11		75	7	
26	14		76	9	
27	15		77	6	
28	1		78	11	
29	26		79	14	
30	1		80	?	John MUSSEY, moved to Evergreen. Sold Ezekial Jordon.
31	1		81	14	
32	1		82	3	
33	7		83	11	
34	1	(1836)	84	2	
35	3		85	17	
36	22		86	9	
37	0	Owen - bodies removed to Evergreen Cem Nov 1890	87	1	
38	9		88	4	
39	11		89	?	grave between Tombs No. 67 & 68
40	13		F-95	10	1802/1867
41	1	(1829)	F-93	2	(1850)
42	8		F-96	5	1795/1861
43	1		F-105	17	1707/1827
44	10		F-131	7	(1720)
45	14		G-113	7	1801/1859
46	16		H-71	2	1823
47	1		J-48	1	1838
48	16		Totals	336	
49	1	(1826)			
50	3				

HISTORIC SYNTHESIS

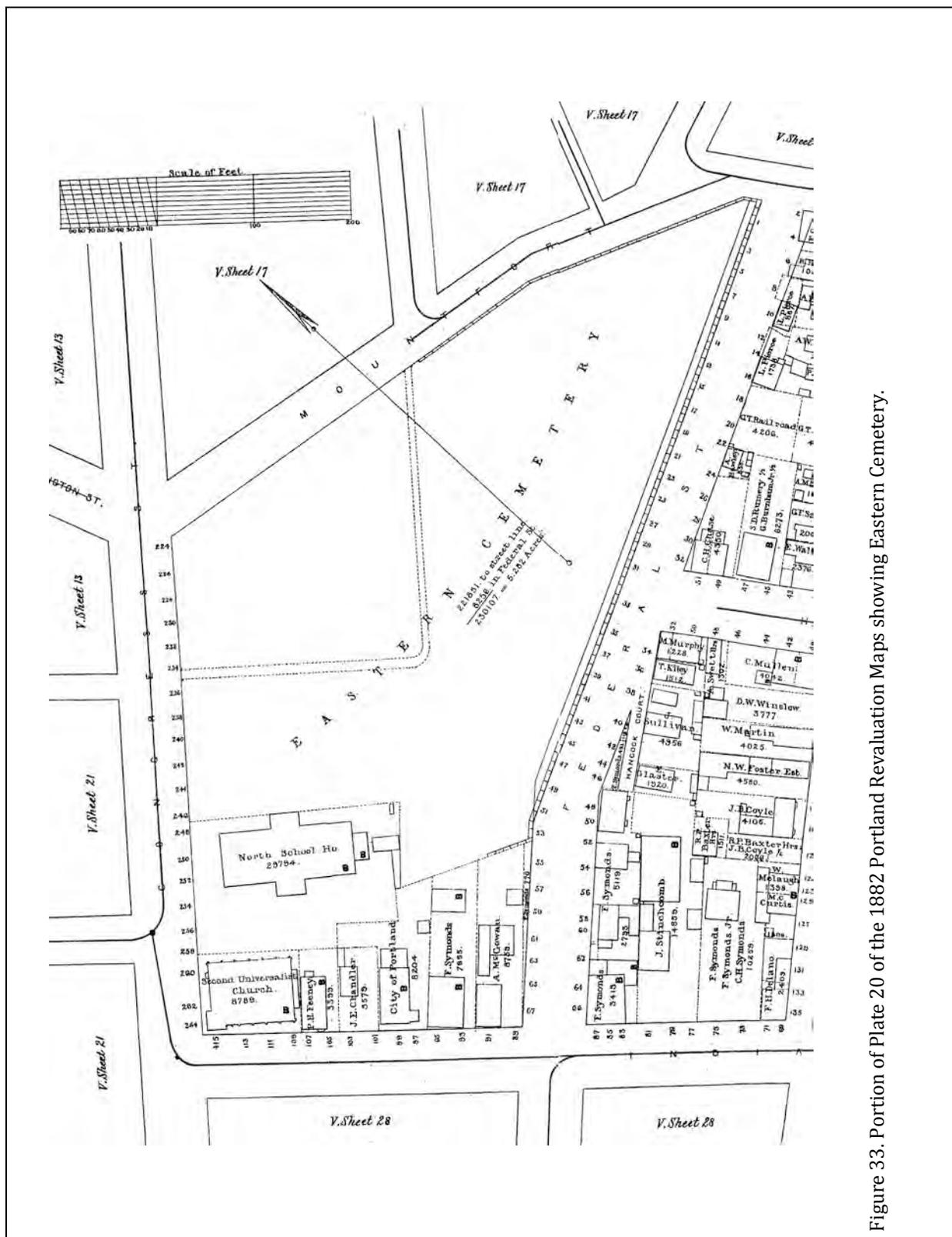


Figure 33. Portion of Plate 20 of the 1882 Portland Revaluation Maps showing Eastern Cemetery.

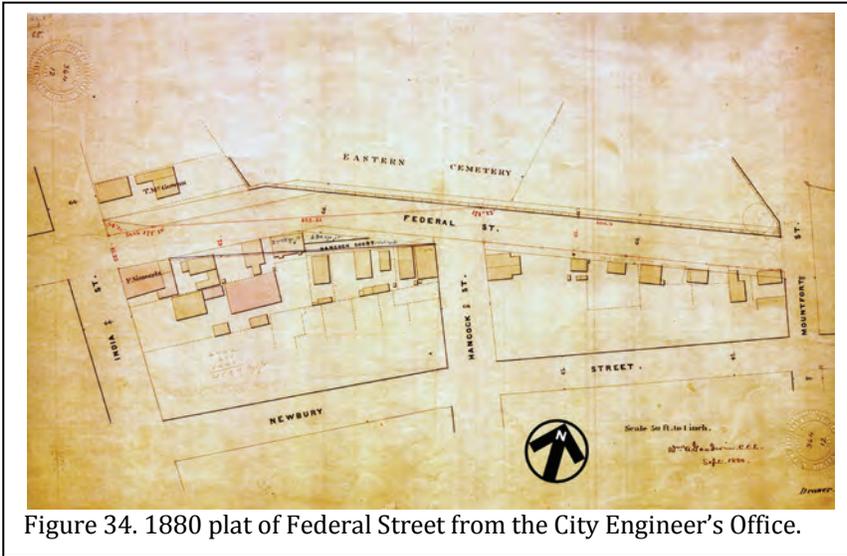


Figure 34. 1880 plat of Federal Street from the City Engineer's Office.

the Commissioners of Cemeteries and Public Grounds complained about the lack of funds, the City opened yet two new parks – Fort Sumner and Fort Allen – apparently in denial of their inability or unwillingness to care for the properties already under their charge (Anonymous 1892:201).

Although Jordan (2009:xiii) indicates that in 1890 the job of maintaining burial records was transferred to the City Clerk, the Superintendent continued providing annual reports until 1892. Unfortunately the practice was not continued under the City Clerk, so we have no readily accessible information on the number of burials at the different burial grounds operated by the City. The Superintendent of Burials was also paid through 1893, albeit at the reduced rate of \$100 a year (Anonymous 1893:48).

By 1894 only \$23.65 was spent to maintain Eastern Cemetery, identified by the City Engineer as containing 5.28 acres (Anonymous 1895:38, 296).

As another example of the City's cyclical maintenance of Eastern Cemetery, in 1895 it was remarked,

[t]his old cemetery is especially notable for a number of eminent individuals whose mortal remains are buried there. A few of these have a national reputation, but there will also be

found a large list of names of the dead who in life are among our most prominent businessmen. Some of the gravestones erected in the early history of this cemetery were found to be in poor condition, so last spring the Commissioners had these righted and the grass cut and kept down with lawn mowers, thereby improving the looks of this old landmark very

much. They also had a new fence built around Congress and Mountfort street sides, expending in all about eight hundred dollars for improvements in and around this cemetery (Anonymous 1896a:407-408).

In 1896 \$75 was spent repairing the Eastern Cemetery wall, which may have been either the Mountfort or Federal street retaining wall (Anonymous 1897:37). In 1898 the inaugural address of Mayor Charles H. Randall specifically mentioned the neglected condition of Eastern Cemetery, suggesting that a "custodian be employed in the Eastern and Western Cemeteries to keep them in order and to point out to strangers places of historical interest" (Anonymous 1899:15). The Commissioners of Cemeteries and Public Grounds, who always placed their parks far above the care of cemeteries, reluctantly stated,

Last summer, by the desire of the Mayor, a man was given charge of these two old cemeteries [Eastern and Western], whose duty it was to keep them in good order, and who also carefully reset all of the old gravestones in both cemeteries, which was a great improvement to the looks of them" (Anonymous 1899:280).

This view was reiterated by the Commissioners the following year,

As there seemed to be a demand by the general public that more care be given to those two old cemeteries, they were placed in charge of a man who gave his whole time to them and did all that was done in the way of maintenance, also acting as watchman as well in such spare time as he had (Anonymous 1899:260).

For the next several years the Commissioners of Cemeteries and Public Grounds were careful to point out their efforts at the burial grounds. In 1899 they remarked that Eastern was “receiving constant care” and as a result was “very much improved.” In fact, they even comment that,

The average citizen has no idea of the number of strangers that visit the Old Eastern Cemetery every day during the summer months. It is historic ground, and it is no uncommon sight to see ten or even twenty strangers looking the cemetery over a pleasant afternoon in the height of our summer travel (Anonymous 1900:309).

This should come as no surprise since Eastern Cemetery was often listed in the “Points of Interest in and about Portland, Me.” in various publications (Crowley & Lunt 1908).

In a rare event, “Parson Deane’s tomb” was open for repairs in 1898 and those participating in the Maine Historical Society’s Annual Field Day were able to tour the underground vault (Anonymous 1898a:437).

The Twentieth Century

In 1901 the Commissioners noted that the work done in the old cemeteries “should be

appreciated by the public” and again note that they are continuing to employ an individual specifically for that work. They also note that the fences at the cemeteries were painted. In addition, they ‘removed many old and rotten fences from around lots where the owners have ceased to care for them’ – probably documenting the loss of many of the fences earlier reported by Goodwin (Anonymous 1901:314).

The following year efforts to improve Eastern Cemetery continued and the Commissioners reported that “the grass has been cut as often as needed” and gravestones reset. In addition, “in the fall the old and historic resting place of William Burrowes, the Commander of the United States Brig Enterprise, was repaired. I will state in this connection that this was suggested by John B. Keating, British Vice-Consul, who had the same repairs made upon the grave of Capt. Samuel Blythe, the Commander of the British Brig Boxer” (Anonymous 1901:303). It is likely after this work that we have a photograph of these tombs and the surrounding burial ground (Figure 35 top).

This photograph shows a neatly trimmed earthen pathway to, and around, the box tombs. The grass is well mowed and there are numerous trees in the burial ground. A wooden sign stands behind the graves. In addition, the photograph is notable for the very large number of tombs present in this area of the burial ground – far more than are present today.

In addition, the tombs are each distinct. The first tomb, that of the British commander, is a brick box. The second is a sandstone box and the third is a table tomb with sandstone column supports.

While taken from a different angle, the area – and tombs – are far different today (Figure 35 bottom). Inappropriate restorations have defaced all three tombs. The landscape has lost all of the mature trees and the pathway around the tombs is no longer present. A large number of stones, once present, are no longer in the Cemetery. The monuments are sad reminders of what was once present.

Jordan (2009:xi) recounts that William F. Hoadley, a “self-appointed sexton,” collected inscriptions of the Eastern Cemetery stones, as well as information from coffin plates when individual tombs were opened. A period news account reported,

[m]ore than half of these inscriptions were obtained from coffins in the vaults and have not been seen since the coffins were placed in their resting places. The graveyard is honeycombed with vaults each of which contains from 30 to 50 coffins and these are never seen by the visitors to the cemetery. The entrances are concealed under the ground and the slab which covers the hole is gotten only by digging into the earth. Mr. Hoadley has been into nearly every one of these and copies the inscriptions from the coffins. . . . Mr. Hoadley has been sexton in the cemetery since 1897 (“Historical Facts of People Buried in the Eastern Cemetery,” *Telegram*, January 25, 1903; see also Maine Historical Society, *Portland Scrapbook*, vol. 5, pp. 6-7).

The cemeteries are not mentioned in the Commissioner’s reports from 1902 through 1905. In 1906 the report mentions only that the two old cemeteries “have had their usual care,” a comment echoed in 1907 and again in 1908 (Anonymous 1907:325, 1908:318, 1909a:240).

In July 1908 the survivors of Company H, Fifth Maine Regiment, erected a monument to the memory of Alonzo P. Stinson, a 19-year-old who lost his life at the first Battle of Bull Run (Writer’s Program 1940:279).

Also in 1908 the DAR contracted



Figure 35. Photograph of the tombs of Commander and officer of the *Enterprise* and the Captain of the *Boxer*; (top) about 1900 (Library of Congress LC-D4-71502 DLC) (middle) view ca. 1910 (Jordan Collection 2176, Maine Historical Society) and (bottom) today.

with Hawkes Brothers in Portland for a “9 foot granite shaft” for \$300 and Paul Cabaret & Company in New York for a “22x36” bronze plaque” for an additional \$100. The lot for the monument to the area’s Revolutionary soldiers was 15 feet square and was to be mounded up 2 feet, further increasing the height of the monument. This was the result of an effort in 1905 to mark the graves of individual Revolutionary War graves and the DAR discovering that only two could be identified with any certainty. The DAR commented that,

Unlike many old cemeteries, which are allowed to fall into decay, this one is beautifully kept. No stone is allowed to fall, and thus the historic burying ground presents an attractive appearance to visitors and passers by (Anonymous

1909b:874-875; see also Maine Historical Society, *Portland Scrapbook*, vol. 16, pg. 4-5; Figure 36).

In 1911 the Commissioners reported that Eastern Cemetery received its “usual care,” but went on to mention that there had been two burials in the Cemetery that year. One tomb was reported under perpetual care, “two tombs have been repaired and two lots regraded” (Anonymous 1912:205). This suggests that Eastern was still being relatively well maintained. The repairs of tombs may simply have been the replacement of the boards covering entrances.

Reports of activities in Eastern Cemetery are again spotty and generic (“usual care”) after 1911, although another burial did occur in 1912. In 1916 the Commissioners reported that,

The iron fence at the Portland High School was taken down, moved up to the Eastern Cemetery, and rebuilt on the Congress Street side. The board fence on the westerly side of the cemetery, from the school yard to the concrete wall, was repaired and a new section of about sixty feet built. Five tombs were replanked with new plank, the roadways have been kept clean and grass cut” (Anonymous 1917:73).

Figure 36, showing the fence between the burial ground and the school, reveals that the board fences being constructed in Eastern Cemetery – at least by the first quarter of the twentieth century – were substantial and solid. They were, however, only about 3-4 feet in height.

Only a year later, in 1917, the Commissioners reported that “a new iron fence was built on the southerly side, next to the school yard” at a cost of \$2,626.37, replacing the board fence erected only a year earlier (Anonymous 1918:169). The Congress Street fence and the “Dead House,” now called the “tool house,” were

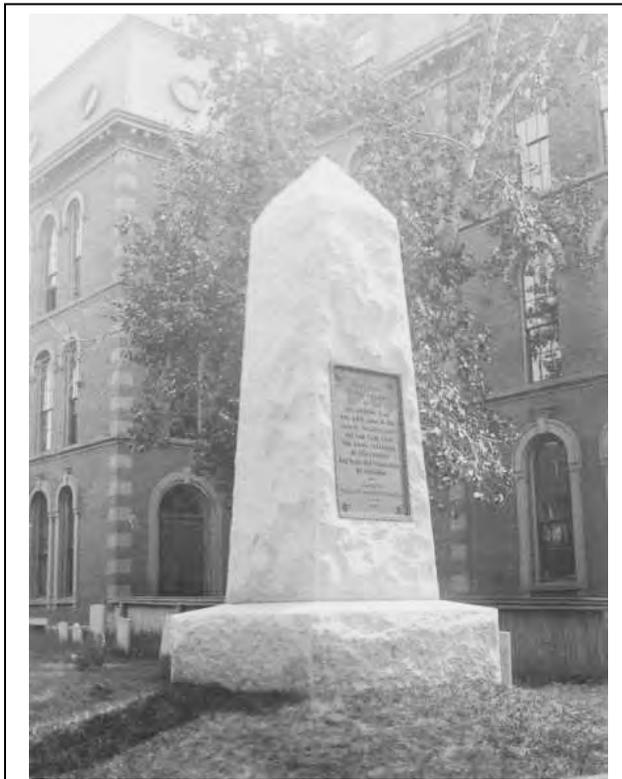


Figure 36. Board fence between the cemetery and North School is shown at the rear of the Revolutionary War Monument, ca. 1915 (Maine Historical Society).

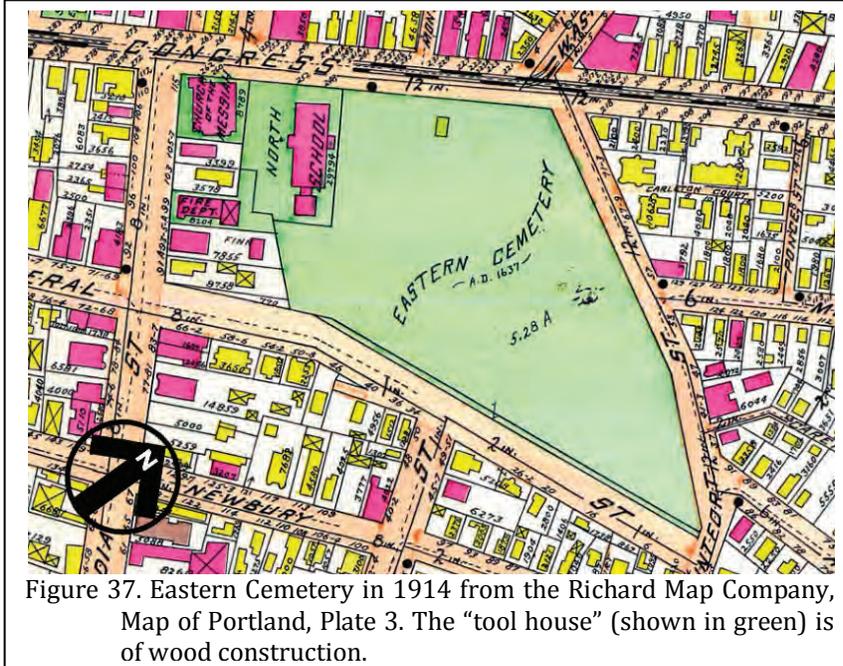


Figure 37. Eastern Cemetery in 1914 from the Richard Map Company, Map of Portland, Plate 3. The “tool house” (shown in green) is of wood construction.

painted. There were also four burials in Eastern Cemetery.

Two years later, in 1919, the Congress Street fence was again painted (Anonymous 1920:477). In the report of the Forestry Department for that year additional information is provided about the fence. The fence had been stored in a barn on Park Avenue and the transfer to Eastern Cemetery included not only the fence, but also its stone foundation.

The Federal Street wall also required extensive repairs. The itemized costs include labor (\$802.80), cement (\$159.75), rock (\$9.00), and other material (\$1.15), for a total of \$1,486.70 (Anonymous 1920:468).

The Annual Report of the Park Commissioners reported that in 1921,

All perpetual care lots were kept in good shape. The grass was cut, urns watered, and paths and drives kept clean and free of weeds. The wall of the tomb of a naval officer was broken down by vandals and had to be rebuilt and cemented. A section of the Monfort Street fence, run into by

an automobile, had to be repaired. The walks around this yard were plowed and sanded during the winter. The tool house was shingled and painted and the iron fence painted (Anonymous 1922:207).

The damage to the tomb is clearly seen in Figure 35 bottom, where the far wall, originally sandstone, has been replaced with brick, laid using a Portland cement mortar.

There were apparently only three perpetual care lots: The Robinson tomb (\$250), the Webster Tomb (\$100), and the

Abigail B. Frothingham Trust Fund (\$150), set up to care for Tomb 81 in Section A (Anonymous 1921:281-283).

In 1923 the concrete wall today found at the southwest edge of the Cemetery was constructed. The Commissioners reported,

A gravity section of cement concrete retaining wall was constructed at the Eastern Cemetery on a section of the westerly property line dividing the Hyman and Nathan Finn land and the land of the City of Portland, and used as the North School ground, from the cemetery land. The length of this wall is eighty-three feet and is mounted by a wire fence installed by the Anchor Post Iron Works, at a cost of \$190.00. The contract for the wall construction was let to the Gulliver Company for the sum of \$906.00 (Anonymous 1923:257).

The fence along Mountfort Street was constructed in 1928,

The Wickwire-Spencer Company, Worcester, Mass., constructed along Mountfort Street 312 linear feet of chain link fence, type No. 320, 5 feet high, including a 10 foot double swing gate (Anonymous 1929:202).

The last report by the Park Commission was in 1934 when the upkeep on Eastern Cemetery was listed as \$605.50 (Anonymous 1936:217, 220). That year the tool house had new sills and floor installed. In addition the tomb was “completely cleaned and disinfected.”

Jordan (2009:x) indicates the tomb was in use until at least 1889 (the last documented use we have identified is actually 1892), but the cleaning and disinfecting in 1934 may suggest that it was periodically used up to this time. It seems unlikely, however, that it was required past this point.

The Writer’s Program of the Works Progress Administration commented that Eastern Cemetery was “maintained in excellent condition by various patriotic organizations” – the only account we have identified of care being provided by any organization other than the city itself (Writers Program 1940:277). We know that in the late 1940s the City was still caring for the property, with funding at \$968 in 1947 – a level hardly increased from several decades earlier (“Old Western Cemetery Being Improved by City Park Dep’t,” *Portland Evening Express*, September 20, 1948).

By 1950 the problem was readily apparent and was attracting media attention. A newspaper article observed that the ancient burial grounds in Portland “stand in growing decay around this city and no one knows what to do about them.” While the City budget included \$23,000 for Forest City and \$56,000 for Evergreen,

there is no provision specifically made for the older cemeteries. Their care is cribbed from general park department maintenance funds, and amounts

to a mere dribble by comparison (“Run-Down Burial Grounds Pose Worrisome Problems to City,” *Portland Evening Express*, May 8, 1950, pg. 19, 32).

In fact, the care for Eastern Cemetery was identified as only \$565 in 1949, a reduction of nearly 42% in only two years.

As a result, all the Parks Department was doing to maintain the cemeteries was mowing the grass once a year and occasionally painting the iron fences. The article made it clear that the City had no interest in improving care – the only tentative solution offered was “renovation” that focused on converting the burial ground to a flat, featureless lawn marker cemetery by removing all of the monuments and replacing them with flush granite stones – an idea as disastrous to the historical integrity of the burial ground as it was unimaginative.

Figure 38 illustrates known funding levels (uncorrected for inflation) for Eastern Cemetery from 1848 to 1949. It reveals cycles of near abandonment followed by efforts to improve conditions, only for the Cemetery to once again become ignored by those responsible for its care.

This problem had attracted the attention of Jordan at least by 1956 when he wrote an impassioned letter observing that,

Within recent years it has become increasingly apparent that despite repeated complaints, little has been done to correct the appalling conditions existing in the Eastern Cemetery. . . . The oldest section of the cemetery has become a veritable snarl of brambles and tall grass, utilized by various individuals as a common trysting spot and as a repository for assorted rubbish. Here, as in the rest of the cemetery, fragments of broken tombstones litter the ground in profusion. Many of the stones that have survived mutilation

MASTER PLAN FOR EASTERN CEMETERY, PORTLAND, MAINE

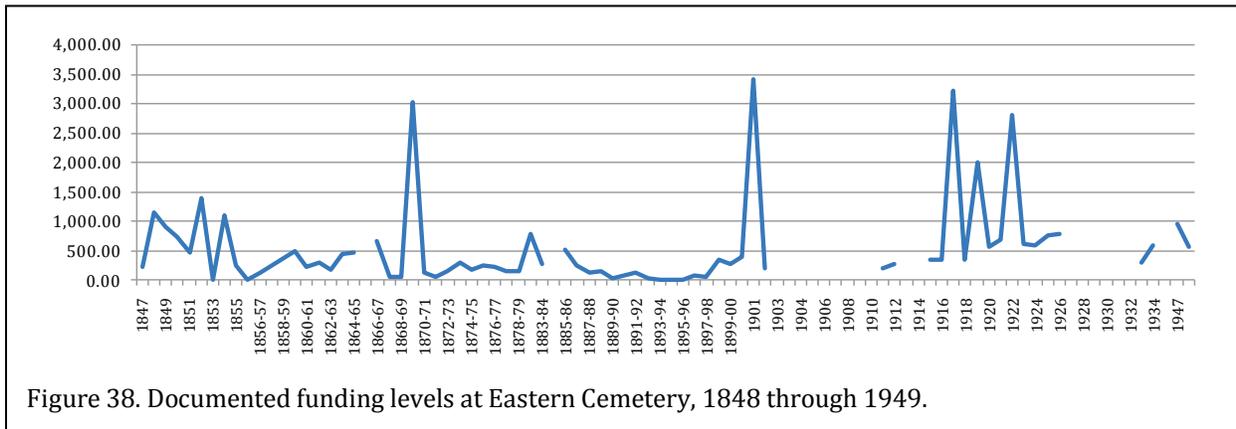


Figure 38. Documented funding levels at Eastern Cemetery, 1848 through 1949.

have been toppled from their foundations and maliciously defaced. . . . One can only conclude that here is a fitting memorial to what can be achieved through ignorance, chicanery, and gross neglect (“Graves of the Great Lie Neglected in Eastern Cemetery,” *Portland Press Herald*, February 3, 1956, pg. 16).

Also in 1956 we have one of the earlier aerial images of Eastern Cemetery (Figure 39). While grainy and lacking in detail, it shows the Cemetery’s vegetation as consisting of a variety of relatively mature trees. Only a few years later the *Portland Evening Express* published an oblique aerial photograph of the Cemetery (Figure 40). It also reveals mature vegetation, especially lining Funeral Lane where it appears that at one time trees had been intentionally planted.

The vandalism that Jordan remarked on in 1956 was still an issue in 1961 when it was reported that “five youngsters got a stern lecture in court today for . . . damage” at Eastern Cemetery that included the removal of a ledger from a box tomb (“Repairs for a Hero’s Grave,” *Portland Evening Express*, April 6, 1961, pg. 1). The article also mentions that the ledgers on the graves of the Commander and officer of the *Enterprise* and the Captain of the *Boxer* were replaced by the City in 1958.

By 1963 the funds spent on both Eastern and Western cemeteries had fallen to a mere \$459

– the funds generated by “interest on endowments left the city for this purpose” (“Some Hidden by Time,” *Portland Evening Express*, May 23, 1963, pg. 12). The available funds allowed the City to mow Eastern cemetery once a year. The conclusion of the article was that “Portland’s ancient burial grounds are returning to the dust from which they came” – and this apparently stirred little, if any, complaint from Portland’s citizens or preservationists.

In fact, in 1965 the City’s Superintendent of Cemeteries claimed that the cost of maintaining the City’s cemeteries would be “too painful for the citizens to bear.” Superintendent F. Eugene Cofran claimed that preparing all of Evergreen for perpetual care would cost over \$1 million. The article makes clear, however, that in providing better care in the cemeteries, “the city would lose considerable revenue from perpetual and annual care fees since it could not charge for some care and do the rest free” (“Cemetery Untidiness Too Costly To Correct Official Says,” *Portland Evening Express*, October 13, 1965, pg. 25).

In 1966 the Longfellow Garden Club took an interest in Eastern Cemetery and began a long-term restoration with the goal of improving the burial ground’s condition sufficiently to allow it to be listed on the National Register of Historic Places. The Club found that the City was maintaining only the small portion of the Cemetery bounded by Congress, Mountfort, and Funeral Lane. That portion east, south, and west of Funeral Lane – described as the older section – had a “heavy growth of weeds, worthless trees and overgrown scrub brush [that] harbored tramp



Figure 39. Aerial photograph of Eastern Cemetery, May 17, 1956 (GS-VLE-2-37).

'dens'" (Longfellow Garden Club, Beautification, Eastern Cemetery, Maine Historical Society, Collection 1936). It was in this deplorably abandoned section that the garden club found the gravestones of Longfellow's paternal grandparents, as well as his uncle, Lieutenant Henry Wadsworth, and other family members.

Work began in the fall of 1966 with one laborer, three to five "Youth Corps boys" and the voluntary labor of the garden club members. A newspaper article from this early period remarked that "for many more decades than Portland wishes to remember, the maintenance at the Eastern Cemetery has been a problem" ("Eastern Cemetery Restoration Due to Conscientious Local Efforts," *Portland Evening Express*, July 26, 1966, pg. 13). The Park Department "reshingle[d] the small storage building at the entrance to the Cemetery and plans to paint it soon." In addition, "they have also removed high grass, old bushes and assorted debris from half of the early section in the back."

By April 1967 the garden club planted disease-resistant elms in Eastern Cemetery ("Part of the 'Fix-Up' Campaign - Longfellow Club

Enriches City with 100 Elm Trees," *Portland Evening News*, April 28, 1967). Monument repair work began in 1967 and continued through 1974. In 1972 some of the repaired stones were damaged by the Park Department as they attempted to remove dead elms. The Department dismissed the accident, noting, "vandals do a good deal more damage to both the Eastern and Western Cemetery in a short period of time than construction errors and such do in a decade" ("Park Department Investigation Shows Grave Marker Damage Accidental," *Portland Evening Herald*, February 18, 1972, pg. 14).

The Cemetery saw additional vandalism on the evening of May 14, 1975, but work continued. Herbicides were used

to control weeds and a local monument company apparently "restored" or repaired a large number

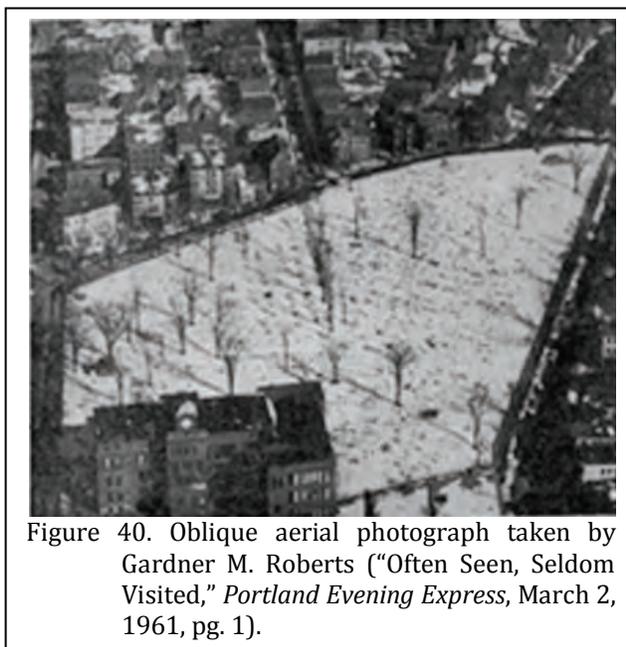


Figure 40. Oblique aerial photograph taken by Gardner M. Roberts ("Often Seen, Seldom Visited," *Portland Evening Express*, March 2, 1961, pg. 1).

of stones. This effort may be seen in the number of failed stones that evidence "simple epoxy repairs."



Figure 41. Several photographs taken by William Jordan, probably in the early 1960s, showing the condition of Eastern Cemetery. In particular these reveal not only the absence of mowing and other routine maintenance, but also the large number of stones that are no longer present in Eastern Cemetery (Jordan Collection 2176, Maine Historical Society).

In 1969 the "historic pine" was for the third time replaced by the Club ("Historic Pine Replaced," *Portland Press Herald*, May 13, 1969, pg. 17).

Toward the end of the project the City told the Club that maintenance of the grounds would be taken over by the City using funds to be added to the City Park Department's budget. The Club's goal was accomplished and by December 1973 the Cemetery was listed on the National Register of Historic Places ("Eastern Cemetery Added to Historic Places List," *Portland Evening Express*, December 31, 1973). The Club dedicated the Cemetery in July 1975. The project cost was in excess of \$3,500, not including the volunteer hours. The final accounting indicated monetary contributions of only \$400, including a Sears Award for Civic Development (\$100) and a donation from the Greater Portland Landmarks, Inc. (\$225). The City's commitment to the Cemetery was again mentioned in a January 15, 1974 letter from Richard Anderson, Director of the Department of Parks and Recreation to the Club in which he stated that the listing on the National Register "will mean much in obtaining funds annually within the City budget from the City Council" (Longfellow Garden Club, Beautification, Eastern Cemetery, Maine Historical Society, Collection 1936). Earlier the Greater Portland Landmarks, Inc. added their weight to the support of City funding, writing Mayor Gerard Conley ("Landmarks Adds Muscle in Old Cemeteries' Issue," *Portland Evening Express*, February 3, 1972, pg. 16; see also "Landmarkers Endorse Cemetery Fund Idea," *Portland Press Herald*, February 3, 1972, pg. 18).

Unrelated to the restoration efforts, City Superintendent of Cemeteries Frank Cofran in 1975 decided that the individual flag holders at the various cemeteries should be replaced by "courts of honor and flagpoles" at the cemeteries. This may date the installation of the flagpole still seen in Eastern Cemetery ("Grave Flag Holders Ordered Replaced," *Portland Evening Express*, July 22, 1975, pg. 1). This apparently did not set well with members of the local American Legion Post, who complained to City Council and the City Manager. The Superintendent was ordered to replace the markers.

The following year the local papers reported that Evergreen and Forest City, that for years had been relatively well maintained and which were, at one time, making far more money than was required for their maintenance, were in deep financial trouble. While in the past these burial grounds used 40 summer workers, financial problems had reduced the total number to 10. These problems also affected Eastern Cemetery. Parks and Recreation had requested \$12,720 for workers at the small cemetery - a line item that Portland's City Council entirely removed ("City's Major Cemeteries Face Financial Problems," *Portland Evening Express*, July 28, 1976, pg. 1).

In March of 1979 vandals again hit Eastern Cemetery, and 30 stones were toppled. That the discovery was made long after the event, "sometime this winter," clearly reveals that the City was again ignoring the care of this burial ground. In fact the Director of Parks and Recreation explained that "his department doesn't maintain regular patrols during the winter" ("Vandalism Discovered in Eastern Cemetery," *Portland Evening Express*, March 15, 1979, pg. 1).

In 1980 local papers again exposed the problem in the burial grounds. The article opened with the words, "ancient burial grounds stand in growing decay around this city, and no one knows what to do about them." This was quoted from an article written 30 years earlier; the story hadn't changed. The Parks Department requested \$13,000 for upkeep of the inactive cemeteries; City Council approved only \$3,000. The article also revealed that while Maine state law required "each town, city, plantation or organization controlling an old or public cemetery" to keep up headstones, monuments and markers and to cut and trim the grass on the graves of all veterans, Portland's excuse was that the law didn't specify how often or how well that maintenance had to be ("Portland's Cemeteries Sometimes Lie in Ruins," *Portland Evening Express*, May 23, 1980, pg. 1, 16).

By 1981 the City of Portland was relying on the use of prison labor in Eastern Cemetery ("Cemetery Spruced Up by Convicts," *Portland Evening Express*, May 7, 1981, pg. 1, 14). Inmates from the Cumberland County jail were being used

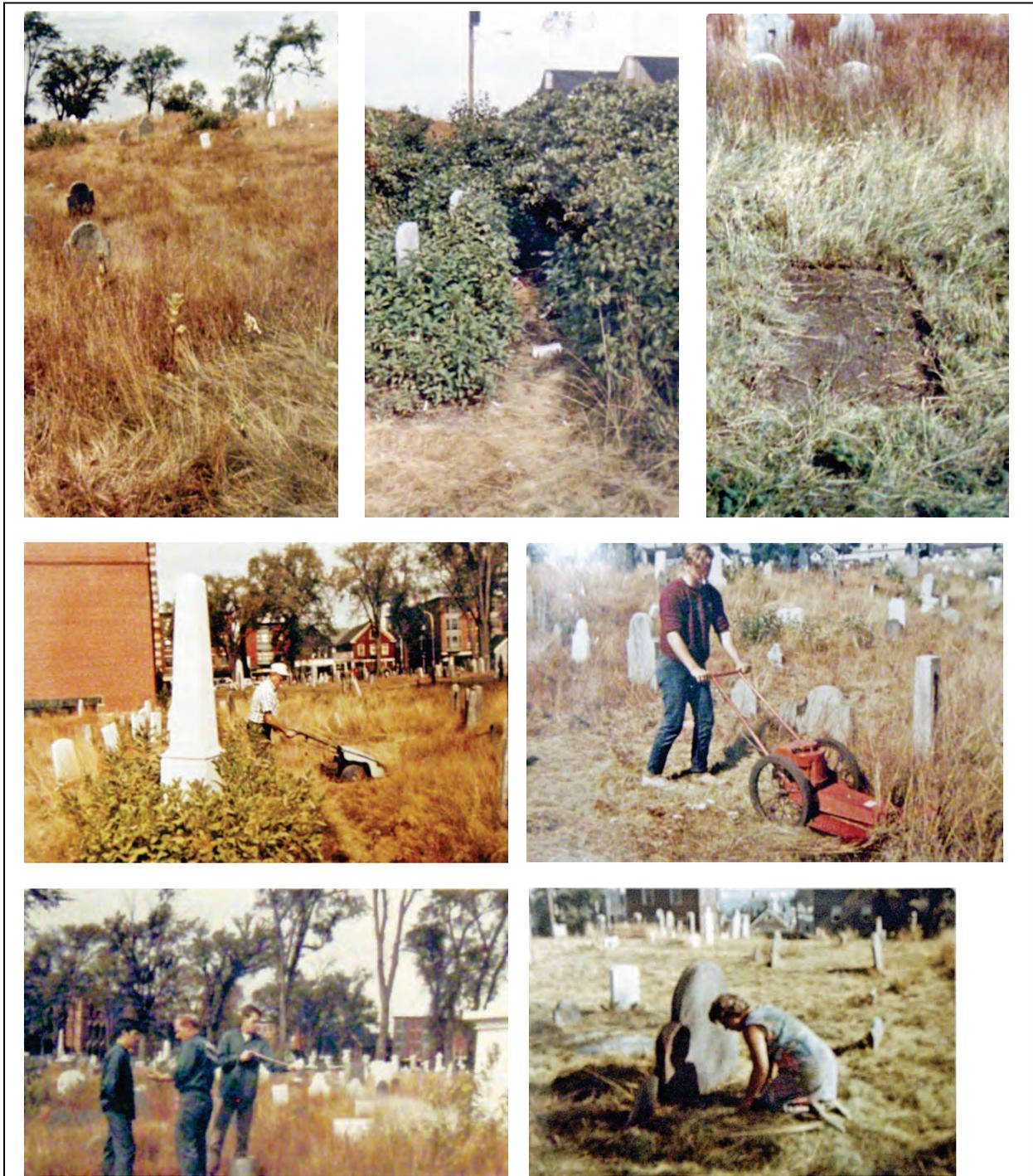


Figure 42. Photographs from the Longfellow Garden Club restoration of Eastern Cemetery. The upper row illustrates conditions prior to their work (the middle photograph is of the “tramp dens” in the burial ground). The middle row illustrates efforts to mow the tall grass. The bottom row shows spraying of herbicide and weeding by garden club members (Longfellow Garden Club, Beautification, Eastern Cemetery, Maine Historical Society, Collection 1936).

to clean up the litter in Eastern Cemetery, as well as repair stones using “a new kind of ‘super cement’.”

In 1982 a new organization, “Friends of Eastern Cemetery,” was created by Edward Kaynor, who began mowing the grass with help from his son. Efforts, however, still relied largely on inmates from the Cumberland County jail (“Group Acts to Save Cemetery,” *Portland Evening Express*, April 14, 1982; see also “Eastern Cemetery Holds First Graves,” *Portland Press Herald*, May 29, 1982, pg. 4, 9). William Jordan was quoted as observing that “the cemetery’s ghastly now – a real horror show.” He also noted that the City consistently “used the ploy that city funds were better used somewhere else.” Jordan also mentioned that Greater Portland Landmarks ought to show more interest in the Cemetery, “I think something should be forthcoming from Landmarks,” although apparently nothing was.

By the following year a cleanup was being organized by a student from Portland High School, Karen Marshall (“Old Cemetery Due for Cleanup,” *Portland Evening Express*, May 27, 1983, pg. 13a). The Friends of Eastern Cemetery followed up with another cleaning in June. A City representative, Victor Esposito, Superintendent of Parks and Recreation, again excused the lack of care explaining, “we had to make a decision about caring for the living or the dead. Some gravesites haven’t seen a visitor in 50 years. On the other hand, you have Deering Oaks . . . you take care of the masses.” The newspaper called this the city’s “consistent response.” The work was largely undertaken by Workfare and the paper reported that the City’s budget for Eastern and Western Cemeteries was \$1,000 – essentially what was available in 1860 (although \$500 in 1860 was the equivalent of \$5,550 in 1983).

The success of these efforts is questionable since on October 12, 1983 the Longfellow Garden Club received a letter from John Holman, a New Hampshire resident who was visiting Portland. He explained that he was “appalled” by the condition of the Cemetery, observing,

Grass and weeds grown up throughout the entire cemetery, broken grave markers covering the ground, over-grown brush, broken glass, litter, fragments of American flags on the ground, absence of American flags on the graves of the veterans . . . and other evidence of disrepair, deterioration, and vandalism throughout the cemetery (Longfellow Garden Club, Beautification, Eastern Cemetery, Maine Historical Society, Collection 1936).

Mr. Holman went on to ask where are the “civic-minded groups, the Historical Society, the Veterans Associations, the Garden Clubs, and public citizens of Portland.” He perhaps should also have asked where the City mayor, council members, and representatives of the Parks Department were.

While embarrassed by the letter, the Longfellow Garden Club response did little more than note that the burial ground was turned over to the City after restoration efforts. The original volunteers “once so especially interested and active in the work of caring for the Cemetery are now from ten to twenty years older than when the project was undertaken” (Longfellow Garden Club, Beautification, Eastern Cemetery, Maine Historical Society, Collection 1936).

Meanwhile, community efforts continued. High school volunteers and inmates again worked in the Cemetery in the Spring of 1984 (“Memorial Cause – Jail Guard Organizes Students, Inmates in Cleanup,” *Portland Press Herald*, May 25, 1984). But as so often before, just months later the Cemetery was again hit by vandals (“Vandalism,” *Portland Evening Express*, November 5, 1984).

William Jordan was successful in obtaining 60 stones from the Veterans Administration to mark graves in Eastern Cemetery. The stones were set, apparently reluctantly, by the City (“Historian Badgers VA – New Stones for Old Heroes,” *Portland Press Herald*,

June 4, 1985; William Jordan, personal communication 2010).

In August 1985 a series of articles were written by Bill Caldwell that created a stir in the local community. Caldwell noted the tireless efforts of Jordan, comparing them to the City, observing that “city government and city councilors have done little over the years except wash their hands of their responsibility with bureaucratic soft soap” (“Maine’s ‘Establishment’ Shuns its Dead,” *Portland Press Herald*, August 20, 1985, pg. 6). He went on to note that, “the same do-nothing run-around is given Portland’s desecrated dead by many of Portland’s high principled community leaders who pay lip service to preserving our heritage and honoring our forebears.” He complained that while Portland’s Park and Recreation Department had a budget of more than a million dollars a year, they would spend only \$1,300 for the care of the City’s old cemeteries. Then the columnist went down the list of organizations Jordan had contacted with requests for assistance – the Portland Museum of Art, the Cumberland County Bar Association, and the Episcopal Diocese of Maine. Each in turn refused to provide any funds.

In a second column Bill Caldwell named additional groups with no interest in the preservation of the old cemeteries, including the Masonic lodges in Portland, the Irish-American Club, and the Ancient Order of Hibernians all refused to provide assistance. He closed his column by returning to the responsibility of the City, noting the irony that the City’s manual of cemetery regulations uses the quotation “show me the manner in which a nation cares for its dead, and I will measure with mathematical exactness the tender mercies of its people, their respect for laws of the land and their loyalty to high ideals” (“Cold Shoulder Given Cemetery Crusader,” *Portland Press Herald*, August 22, 1985, pg. 8).

Caldwell’s columns generated cries of outrage – not from the public, but from the named groups. The Irish-American club noted they had put up a green ribbon and sign in Western Cemetery, the Longfellow Garden Club took credit for work done a decade earlier, and the Hibernians thought putting up a \$4,000

monument in Calvary Cemetery was adequate (“Cemetery Columns Prompt Praise, Criticism,” *Portland Press Herald*, August 31, 1985, pg. 14). It seemed that the respondents were far more concerned with their reputations than with the preservation of Eastern Cemetery.

In May 1986 it was announced that a \$2 million historic preservation bond issue would fund a \$30,000 grant by the Maine Historic Preservation Commission, to be matched by the City. The funds would be used to “restore and repair the mid-19th century cast-iron fence across the front of the cemetery and replace the deteriorating chain-link fence that borders the other sides of the cemetery with a new chain-link fence” (“Eastern Cemetery Gets Grant,” *Portland Press Herald*, May 9, 1986, pg. 9). While supporting the grant, an editorial observed that,

City Hall has tilted the struggle [to preserve the cemetery] in favor of the desecrators through official indifference and budgetary neglect. Routine maintenance, limited to a yearly allocation of only a few hundred dollars, has been practically non-existent (“Cemetery – Fighting Neglect,” *Portland Evening Express*, May 12, 1987, pg. 14).

When, in October 1987, the City’s Superintendent of Cemeteries John DiPaolo claimed that the conditions at Eastern Cemetery had improved over the last several years, Jordan responded that the City is “‘absolutely out of it’ when it comes to maintaining its cemeteries” (“Public Cemetery Plight Continues,” *Portland Evening Express*, October 20, 1987, pg. 1, 14).

The \$60,000 restoration project was successful in having the fence along Congress sandblasted and painted. The damaged pickets were recast by Etheridge Foundry and Machine Company in Portland and then brazed onto the original fabric. Unfortunately, there was only funding for a new iron fence for about 100 feet along Mountfort, while the existing chain link fence was left along the remaining boundary (“Eastern Cemetery Restoration Done, For Now.”

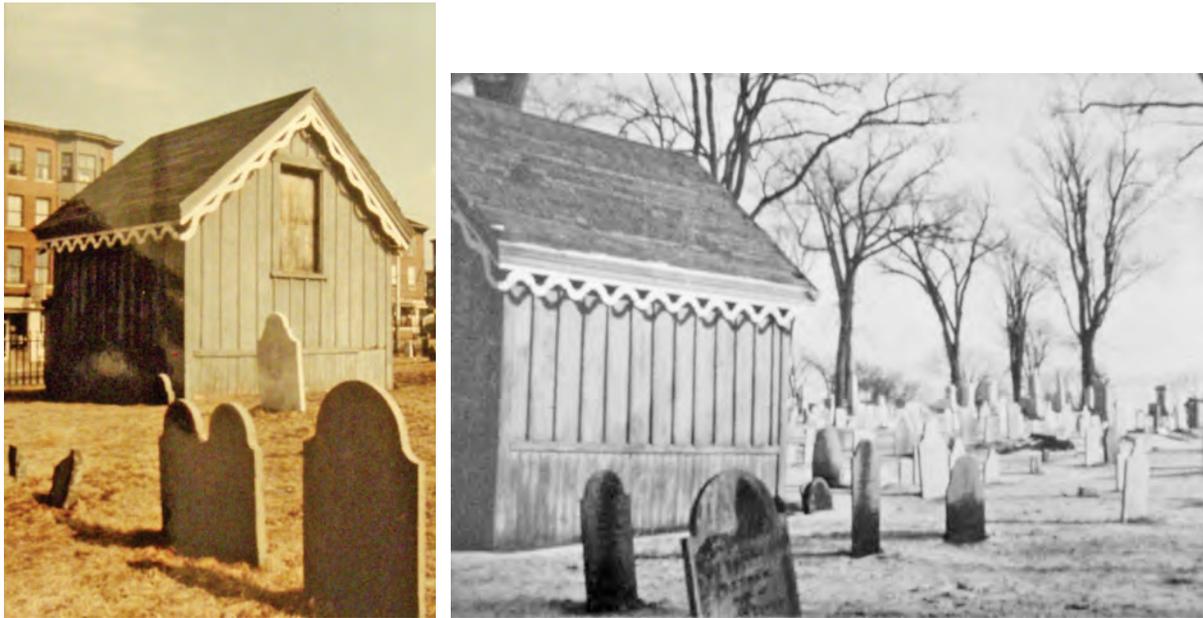


Figure 44. The tool shed, originally called the “Dead House,” at Eastern Cemetery prior to the 1987 restoration work.

Portland Evening Express, December 26, 1987, pg. 1, 5). The article also reveals that repairs were being done on the tool shed at Eastern Cemetery as part of the work.

In 1987 the City, concerned with its liability for the underground tombs, decided to randomly select one for inspection. The tomb chosen was that of Thomas Beck (Tomb 81). Although Goodwin reported 14 individuals in that tomb, the inspection reported only seven – five adults and two children. The resulting article described the tombs,

Each tomb is about 14 feet long by 8 feet wide by 6.5 feet deep and has a bricked, arched ceiling to withstand the weight of the earth and tombstone or monument above it. Each is accessible via a granite slab or wooden planks. The stairs begin about two feet below ground. Most of the tombs are connected, sharing common walls (“City Opens Old Tomb,” *Portland Press Herald*, September 28, 1988, pg. 5, 32).

Jordan suggested in the article that all of the tombs were built by one contractor, “over 35 years starting in 1798 and were sold to individual families” – a view different from that suggested by Goodwin’s dates.

As a result of the inspection the City pronounced the tomb in “great shape.” Jordan, however, was more circumspect, noting “in this instance the tomb seems to be all right. . . . But I’m not convinced that the situation is perfectly safe in every instance (at Eastern Cemetery). Some of those monuments weight several tons. I would certainly find it unfortunate if someone were standing by one of those monuments and the tomb collapsed.” Jordan indicated that he had been concerned since “learning about records left by a judge who checked one back in the 1930s. Its ceiling had started to crumble, and he repaired it and added support.”

The article also reveals that in the past five or six years (since perhaps the early 1980s) the City knew of several tombs that had been broken into by vandals who “removed coffins and bones.”

In what had become a monotonous repetition, in 1989 the local newspaper reported

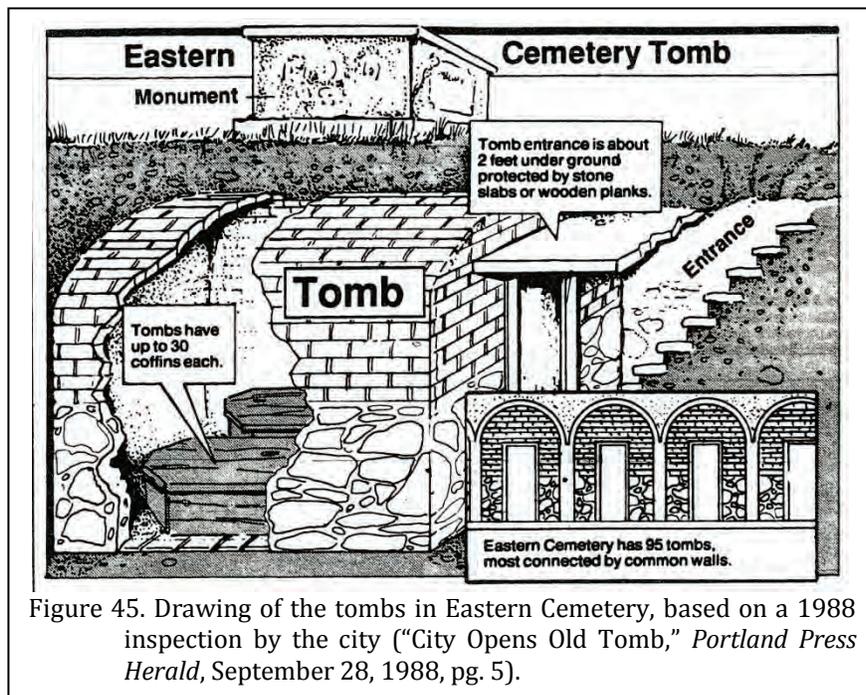


Figure 45. Drawing of the tombs in Eastern Cemetery, based on a 1988 inspection by the city ("City Opens Old Tomb," *Portland Press Herald*, September 28, 1988, pg. 5).

pride and self control left in the city, a group should be formed to help identify, isolate and punish the responsible parties for these crimes ("Portland is Shamed by Eastern Cemetery," *Portland Evening Press*, September 28, 1990, pg. 8).

Another facet of the Cemetery's plight was reported in 1991. The article told of a stone found in a yard of a nearby vacant house that belonged in a family plot at Eastern Cemetery. Jordan reported on finding another stone "about a year ago at an antique show at the Expo."

on yet another effort to restore Eastern Cemetery. That year it was announced that,

professionals from the Association for Gravestone Studies based in Massachusetts will lead the discussions and instruct participants on the art of straightening and resetting broken stones with special glues, epoxies and nylon pins (Eastern Cemetery to Get Facelift," *Portland Evening Express*, August 16, 1989, pg. 2; see also "Workshop Held to Restore Cemetery," *Maine Sunday Telegram*, August 20, 1989).

Just a year later, however, a visitor to Portland wrote that the Cemetery was a disgrace,

the grass has not been cut. Evidence of vandalism is everywhere. . . . Evidence of defecation is everywhere. Tissue and the debris from snacks and beverages are scattered over the graves. . . . many empty six-pack containers If there is any

After complaining to the dealer seeking to sell the stone, it was given back to the Cemetery ("Missing Stone Returned to Cemetery," *Portland Press Herald*, August 2, 1991, pg. 1C, 2C). The story, however, left unaddressed how many others might have been stolen from Eastern Cemetery over the years.

Only a year later another account of vandalism, this time of William Burrowes' box tomb, was reported. A photograph shows that the ledger had been removed and the side wall collapsed ("Vandals Damage Sea Hero's Grave," *Portland Press Herald*, September 19, 1992, pg. 1B, 2B). Although police investigated, there is no indication that an arrest was ever made.

In 1992 Barry Hosmer, a Portland landscape architect, began working on a restoration plan for Eastern Cemetery. In 1995 that plan was approved by the Portland Historic Preservation Committee and by 1996 plantings in the Cemetery had begun. Among the first were five elms, grown from stock resistant to Dutch elm disease and the first American elms planted in Portland in 26 years. A 15-foot pine was also planted in the location of the tree long reported to have been used as a beacon by sailors ("Trees

Bringing Old Cemetery Back to Life," *Maine Sunday Telegram*, July 7, 1996, pg. 4G).

Hosmer explained that he used

19th Century books on Portland history. He found turn-of-the-century picture postcards of Eastern Cemetery, and identified trees from the pictures. An early 1960s aerial photo of Munjoy Hill showed remains of elm trees along Funeral Lane. And there was Baxter's poem, "The Burial Pine in the Old Eastern Cemetery" ("Trees Bringing Old Cemetery Back to Life," *Maine Sunday Telegram*, July 7, 1996, pg. 4G).

The landscape plan focused on American elms and sugar maples along Funeral Lane. Elsewhere in the Cemetery he included red horse chestnut, Washington hawthorn, lilacs, and pitch pine. Predominantly native trees were selected for use; non-native species were those documented as popular at the turn of the century.

In 1998 an article was published explaining how the Congress Street fence remained unrepaired for 11 weeks after being hit by an automobile because the City had difficulty finding a company capable of doing the repairs ("City's Venerable Cemetery Fences Endure Twists of Fate in 20th Century," *Portland Press Herald*, August 31, 1998:pg. 1, 12). The article reported that a contract was being let for the repair of about 20 linear feet of fence, at a cost of \$5,000.

In 2006 Spirits Alive was organized for the preservation of Eastern Cemetery. It was chartered as a non-profit in November 2007. This organization is the second, replacing the long defunct Friends of Eastern Cemetery.

Summary

The history of Eastern Cemetery is complex and even after this research there remain questions that we have been unable to address.

Nevertheless, this provides a fairly detailed account of the burial ground.

A sadly consistent feature of the history is the City's failure to provide adequate (or appropriate) maintenance. This failure to maintain the burial ground has directly led to repeated episodes of vandalism, as well as inappropriate "restoration" efforts.

The failure of the City of Portland to maintain Eastern Cemetery has resulted in extraordinary decay and losses. Jordan has estimated that at least 50% of the stones once in the burial ground have been lost. We have no reason to question that assessment and the available period photographs clearly reveal a burial ground once crowded with stones. We have never seen a cemetery with greater losses. Nor have we seen a cemetery with greater documentation of vandalism. That these problems have been allowed to continue unabated for 175 years is beyond comprehension.

Coupled with these losses are multiple periods of inappropriate restoration during which times stones have been recut, replaced, and incorrectly treated. Of course much of these restoration efforts can be dismissed as typical of the period. Nevertheless, the actions have left marks on the burial ground that are hard to erase.

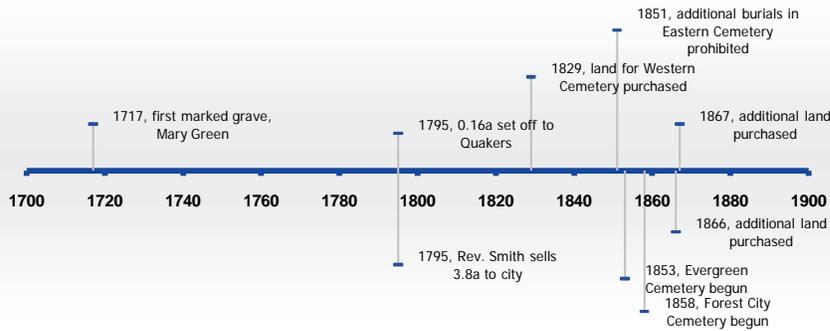
The historical research also reveals incalculable lost opportunities. On numerous occasions the burial ground was poised to receive appropriate and valuable care. Yet repeatedly those opportunities were lost or squandered, largely by a city government unwilling to accept the responsibility of appropriate maintenance.

While there remain several avenues of additional historical research – for example the careful review of the City Council records at the City Clerk's office and the careful scanning of early twentieth century newspapers – we do not recommend further historical research as a high priority. The burial ground has many immediate, and critical needs. Further historical research can be conducted at leisure.

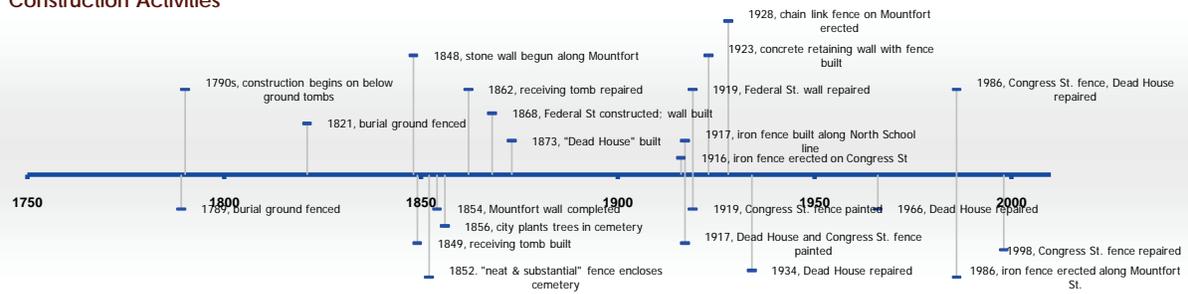
MASTER PLAN FOR EASTERN CEMETERY, PORTLAND, MAINE

Table 6.
Timelines of Events at Eastern Cemetery

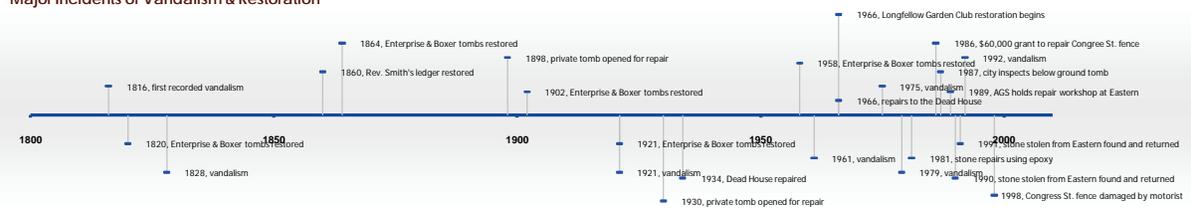
Land Purchases



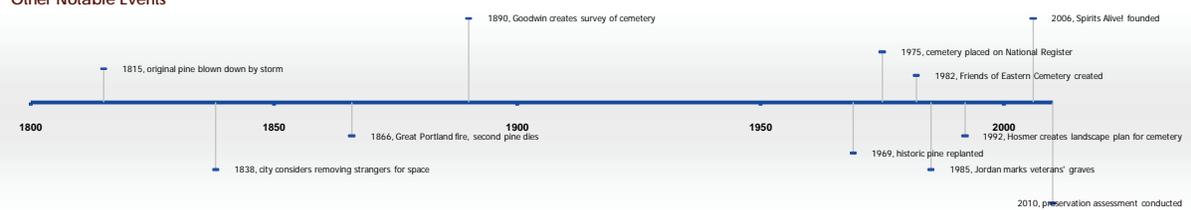
Construction Activities



Major Incidents of Vandalism & Restoration



Other Notable Events



HISTORIC SYNTHESIS

Table 6 does provide timelines of various activities at Eastern Cemetery that may be of interest as a brief and readily accessible summary. This table provides timelines for property acquisition, major construction and repair activities, episodes of vandalism and restoration, and other notable events.

ROADS AND PEDESTRIAN ISSUES

Vehicular Access and Circulation

During its early history the burial ground had no direct or convenient access route, creating the need for and eventual creation of Funeral Lane. With the acquisition of the 3.8 acres in 1795 access improved since it now bordered what is today Congress Street. Funeral Lane became an internal roadway. The location of the Dead House and city receiving tomb close to Congress and adjacent to Funeral Lane likely documents the importance of these routes.

Access to the Cemetery is still primarily by way of Congress Street, which is considered a minor arterial route to the west of its intersection with Washington Avenue and a collector route to the east. Congress, which is only two lanes, is also a major east-west bus route. Mountfort Street, on the north side of the Cemetery is also two lanes, but is a residential street with less traffic.

The 2009 Peninsula Transit Study provides some insight into issues affecting Eastern Cemetery. While the city is seen as pedestrian friendly and promotes a concept of a livable community, the study notes that traffic has increased on the peninsula. A number of recommendations have been offered in the area of walking, biking, and transit needs. These may be of greater importance to residents than to seasonal visitors likely to tour Eastern Cemetery.

Public forums have focused on two issues – parking cost and availability (together comprising 45% of public comments). Overall, the 2009 study seems to have far greater short and long-term applicability to residents than to seasonal visitors.



Figure 47. Entrance gates to Eastern Cemetery. The top photo shows the gates on Congress Street, the bottom photo shows the gate on Mountfort Street.

Many of the observations in the study's chapter on "Parking and Transportation Demand Management Strategies" also seem to be focused almost exclusively on the residents and those visiting the downtown. There is scant attention paid to seasonal visitors or to areas outside the central downtown business district. As a consequence, some suggested tactics, such as the favored "Park Once" strategy, provide virtually no assistance to visitors seeking to specifically visit Eastern Cemetery.



Figure 48. Funeral Lane looking southeast.

Parking issues became clear to us during the assessment. Parking garages are concentrated in the "downtown" area southeast of the Franklin Arterial where Portland has apparently sought to channel visitors. There is no convenient parking for those seeking to visit the Cemetery. On-street parking at Congress Street is extremely limited with fewer than 10 parallel parking spaces and parking is typically not available after about 10:00am during the week. There are no designated handicapped parking spaces. Parking on Mountfort and Federal streets appears to be largely taken up by residents and space is as difficult to identify as it is on Congress.

The 2009 study also fails to account for the fact that genealogy, cemetery, and history visitors often tend to be elderly and less inclined – or able – to park some distance away and then walk 10 minutes to visit a cemetery. To further complicate this situation Eastern Cemetery falls within the Munjoy Hill Impact Area (bordered by the Eastern Promenade, Fore Street, Mountfort Street, and Congress Street) for the Master Plan for the Redevelopment of the Eastern Waterfront, dated 2002. This document realizes that as the area is redeveloped "significant amounts of new traffic" will be generated, potentially causing congestion and further stressing parking.

In June 2010, the City projected that 70 ships and 75,000 passengers would visit Portland (<http://www.workingwaterfront.com/columns/Parallel-44-Portland-stanches-bleeding-at-cruise-ship-terminal/13912/>). The number visiting Eastern Cemetery may be expected to increase as conditions at the Cemetery are improved and the site is better promoted. Unless visitation is primarily "arranged" using tour buses (which create their own set of problems), parking will continue to be a significant issue at Eastern Cemetery. The City seems unaware of this concern.

A short-term solution may be to provide priority on-street parking to Cemetery visitors or alternatively developing an arrangement with some nearby surface parking lot to provide Cemetery visitor parking. Whatever arrangement is made it should be clearly articulated in signage posted at the entrance to the Cemetery.

Circulation is limited by the gates, roadway, and sharp turn in Funeral Lane. The entrance gates on Congress have a clear opening of 10'3". The gate at Mountfort Street has an 11' clear opening.

Circulation, however, is not an issue since private vehicles are not allowed in the Cemetery – a decision with which we concur. Vehicles in the Cemetery would cause additional damage to the

landscape, would endanger monuments in close proximity to the road, and would create congestion.

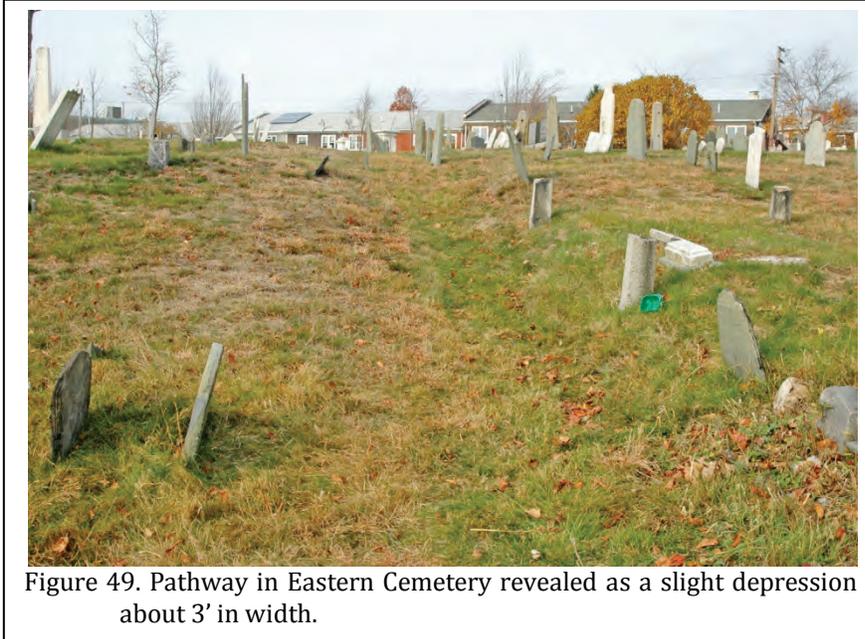


Figure 49. Pathway in Eastern Cemetery revealed as a slight depression about 3' in width.

The use of large maintenance vehicles may pose similar problems, including a difficulty in maneuvering the sharp turn in Funeral Lane. As a consequence the City should prohibit vehicles with trailers from entering the Cemetery and limit utilitarian vehicles to pick-up trucks. Larger vehicles should park outside the gates.

Within the Cemetery Funeral Lane is grassed-over soil with a width varying from 10 to 11'. The road varies from level with the surrounding graveyard to upward of a foot below the surrounding grade.

Original pavement material was likely soil and as use was reduced Funeral Lane became grassed over. Given the additional maintenance that would be required if Funeral Lane were stripped of grass, we recommend leaving it in its current condition. There was historically no edging on this road and none should be added.

Pedestrian Access, Sidewalks and Pathways

Situated in a mixed commercial and residential neighborhood we observed considerable pedestrian movement during our

visit. The number of pedestrian visitors to Eastern Cemetery, however, cannot be determined and the Cemetery is east of Portland's "Pedestrian Activities District Overlay Zone." The sidewalk on the Cemetery side of Congress is brick and in good condition. The sidewalk adjacent to the Cemetery on Mountfort Street is concrete and its condition varies from good to fair (see Figure 47). The sidewalk on Federal Street is brick and its condition is fair to poor.

A significant issue is that the Cemetery is not always open. While an effort is made to have City park rangers open and close the gates during the spring and summer, this does not seem to be consistently done. It is critical that the Cemetery be available to the public on a

regular (and clearly posted) schedule. We recommend that only the pedestrian gates on Congress be open; the drive gates should remain closed.

We also recommend that the Cemetery remain open beyond the perceived summer tourist season. Appropriate use of the Cemetery should be encouraged. In addition, to limit its access is to deny the public the ability to use public property. It does not seem unduly burdensome to have a City employee assigned to opening and closing the Cemetery at set hours beyond when the seasonal park rangers are available for this task.

The pedestrian gates at the Congress Street entrance have a free opening of 5'. This is a wide enough clear opening to be considered universally accessible.

While the plans of Eastern Cemetery (see Figure 32) show a series of pathways running southeast off Funeral Lane, these are grassed and many are today nearly impossible to discern without careful study. Some were deeply eroded

during their period of use and today are recognizable as “u”-shaped depressions (Figure 49).

Other pathways shown in historical photographs (see, for example, Figure 35) as packed soil are no longer present. Recreation of these pathways would result in a significant maintenance increase and they represent late creations that would not have been present in the burial ground during most of its use period.

At the present time pedestrian use in the Cemetery is not sufficient to cause any wear of the turf or erosion. Consequently, we do not recommend the creation of any formal pathways. Tour guides should seek to minimize the creation of worn areas by using different tour routes in the Cemetery whenever possible.

Universal Access

Many who visit cemeteries are elderly and therefore impairments associated with older age should particularly be taken into consideration, especially when cemeteries are amenities for tourism as in the case of Eastern Cemetery. In addition, while it is not always possible to make a natural landscape fully accessible, partial access is better than none at all.

A gradient of over 1:10 is found only at the southern and southeastern edges of the Cemetery; this area will be extremely difficult and dangerous for most people with disabilities to use. The remainder of the Cemetery, however, is accessible, at least with regard to the slope. Some areas have rough terrain and in a few locations the proximity of monuments can make movement difficult.

The existing grass is a less than ideal surface for wheelchairs and others with mobility or sight disabilities. Paths in a cemetery or grassed setting should have a smooth, regular surface, with tactile warning underfoot of any hazards

such as a change in level. A critical factor is to avoid simply repeating street pavement details that would clash with the cemetery setting.

Gravel should only be used if it is well compacted, with no loose stones greater than ¼”. This makes it possible to push wheelchairs and reduces the possibility of tripping for those who are unsteady on their feet. Regular maintenance is required, although bound gravel or epoxy bound

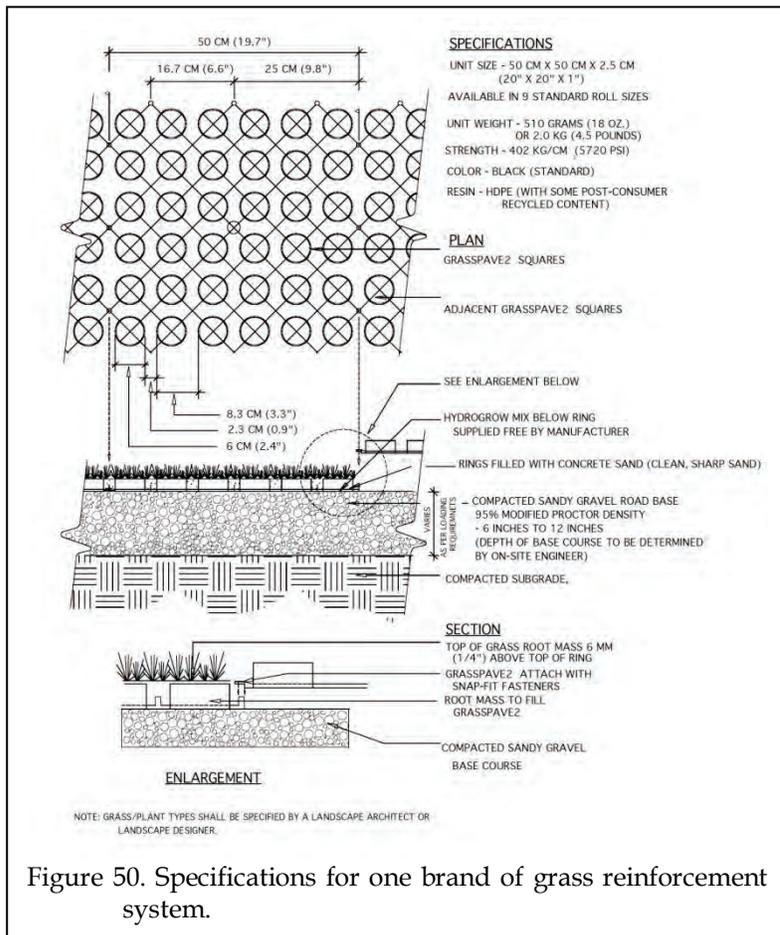


Figure 50. Specifications for one brand of grass reinforcement system.

gravel reduces the level of maintenance. Gravel, however, is often a harsh introduction into a burial ground where pathways were never found historically. Moreover, the gravel should not use stone already found in the cemetery (such as marble or granite) since such efforts may confuse the public, giving the impression that monuments were converted to paving material.

Should pathways eventually be required a far better choice is to use grass tracks underlain

by a reinforcing system to provide a firm, but free draining layer on which the grass can grow. If the grass is well maintained it will not unduly hinder wheelchairs. Unattended, however, it will inhibit wheelchairs, as well as hide tripping hazards – so maintenance is critical. The pathway can be clearly identified by using a grass distinct in color and texture, providing clear visual clues to those using it.

One grass reinforcement system commonly available is the Grasspave² porous pavement by Invisible Structures, Inc. (<http://www.invisiblestructures.com/grasspave2.html>). This system has the added benefit of having been approved for ADA use.

Paths should be at least 5'7" in width to accommodate wheelchair users and people with visual impairments assisted by a sighted person or guide dog. A path of this width will also allow an adult and child to walk together. The minimal suitable width is 3'11" and if paths this narrow are required, it is helpful to install at least occasional passing areas that are at least 5'7" in width.

There are, of course, additional issues in achieving universal access, such as the use of appropriate signage and even the selection of routes in the Cemetery. While ADA compliance may not be required, the goal should be to create additions to the Cemetery that are as accessible as possible. In addition, existing obstacles to access should be removed wherever possible.

Recommendations

There is inadequate parking for visitors to Eastern Cemetery and this will significantly deter visitation. The City must make some arrangements for historical and genealogical visitors. This may include dedicated parking spaces in front of the Cemetery or arranging Cemetery parking at some nearby lot. Whatever system is developed should be clearly articulated in signage at the Cemetery.

Because of the condition of Funeral Lane, Cemetery maintenance vehicles should be limited to pickup trucks. Larger vehicles and

those with trailers should be parked outside the Cemetery.

The Cemetery must be consistently opened and closed at posted hours and the period of availability should be extended beyond when seasonal park rangers are employed. The duty of opening and closing the Cemetery should be assigned to a City employee as a routine – and permanent – job assignment.

Only the pedestrian gates on Congress should be opened; the vehicle gates should remain closed except when maintenance is required.

At the present time pedestrian use of the Cemetery is not sufficient to require the construction of pathways; tour guides, however, should endeavor to avoid taking tours on consistent routes through the Cemetery.

If pathways eventually become necessary we recommend that grass reinforcement materials be used to create permeable pathways that will also be universally accessible.

All decisions regarding the introduction of new elements or the removal of existing materials should be evaluated against universal accessibility needs, with improved accessibility an identified goal.

SECURITY ISSUES

Vandalism

Current Conditions

Eastern Cemetery has been plagued by vandalism since at least 1816. For nearly 200 years the Cemetery has suffered periodic attacks, resulting in broken stones, graffiti, and theft.



Figure 51. Probable recent vandalism, based on the unweathered and very white break.

Evidence of past vandalism is still readily apparent throughout the Cemetery, consisting of broken and toppled stones, collapsed box tombs, and graffiti. Some of the damage is clearly quite old, while some breaks are clean and brilliantly white, suggesting damage that may be only months old. In addition, there are a large number of previously repaired stones where the simple epoxy repairs have failed.

Neither Spirits Alive nor the Public Services Department – the City’s caretaker of the Cemetery – has a formalized mechanism for identifying or reporting vandalism. Nor is there a permanent cemetery crew that would not only improve maintenance (there is a

correlation between maintenance and vandalism), but also provide a visible presence in the Cemetery.

The fence around Eastern Cemetery is at best a permeable barrier. There are breaches in the iron fence on Congress and at the rooftop level in the southern corner of the property. There is no fencing in the windows of the North School rear entry and there is easy access over the fence at this property line.

At the present time there is no systematic inspection process – either by the City or by Spirits Alive. It seems unlikely that the City staff – visiting the Cemetery so irregularly – would recognize vandalism for what it is, or have any idea when it occurred. It will be difficult to ascertain the level of damage the Cemetery suffers without some method of periodic inspection.

Spirits Alive is conducting a very detailed transcription project that includes a subjective assessment of each



Figure 52. Previous damage that continues to affect the appearance of Eastern Cemetery.



Figure 53. Example of graffiti in the cemetery. Graffiti should *always* be removed as soon as it is noticed.

Participating in vandalism often helps a youth to maintain or enhance his or her status among peers. They have typically done poorly academically and have little or no understanding of how their behavior affects others. They are not, however, any more likely to be emotionally disturbed than their peers who do not commit vandalism. Those who commit vandalism are not likely to be judged harshly by their peers. Youth who lack fulltime parental supervision during after-school hours are more likely to commit vandalism.

Options to Minimize Vandalism

Physical measures to reduce vandalism – such as installing fences and erecting lights – have great appeal. Such projects are easy to understand and physical measures generally have only a one-time outlay of funds. Nevertheless, most authorities agree that vandalism is the combined result of the offenders' characteristics and those of the physical and social environment in which the behavior occurs. If our response is to be effective we must focus on both the person and the environment. Programs that target only one of these variables – such as physical measures – will not be successful in the long-term. Moreover, they run the risk of making the cemetery appear fortress-like.

Unfortunately, measures that examine offender behavior, administrative policies, or community involvement seem more complex and difficult to implement. Group consensus for more complex programs may be more difficult, largely because the possible responses can be overwhelming. To simplify, we will focus on four main tactics: those that impact the physical environment, those that impact the offender, those that focus on administrative practices, and those that enlist the community's help. We encourage the implementation of a balanced approach involving all four tactics and believe that the success of programs to reduce cemetery vandalism rely on a broad-based initiative.

monument's condition. Photos, however, are not being taken at this time and the stone assessments, done by volunteers, may contain some variation from surveyor to surveyor. A process is needed to recognize new damages when they occur.

Causes

There are relatively few studies of the causes of vandalism. Those that exist present a broad range of possible reasons, including poverty, unemployment, disintegration of family life, and availability of drugs and alcohol. Other studies include problems inherent in single family homes and parents that fail to guide their children in social and moral issues. Even the judicial system itself is thought to contribute to the problem by failing to deal more harshly with offenders (see, for example, de Wet 2004). We know from the previous discussion that the Cemetery is situated in an area where property crimes are relatively high and where poverty is more pronounced than elsewhere in the city.

Unfortunately, cemetery specific vandalism has not been studied and we must rely on studies largely focused on school vandalism to understand the phenomenon (although we have no assurance that the two can be reasonably related). Most school vandals are typically young (junior high school), male, and act in small groups.

It is worth noting that vandalism reduction is a critical first step in the long-term preservation of Eastern Cemetery. If vandalism cannot be reduced – and reduced significantly and quickly – additional steps focusing on repair of stones, interpretation, or promotion of the site are all meaningless.

Changes to the Physical Environment

Control access to deter unauthorized entry

The Cemetery boundary must be less permeable. In practice this means immediate effective repair of the existing Cemetery fencing and the erection of additional fencing where needed. These measures can reduce the opportunities for illegal entry and can also delay intruders' efforts to get away. Specific steps

from failing and prevent people from forcing their way through it.

- Repair of the Mountfort Street fence attachment to the granite post at the corner of Mountfort and Congress. This will prevent the fence from failing and prevent people from forcing their way through it.
- Repair of the chain link fence breach on the concrete retaining wall on the south end of the Cemetery. This breach is currently well marked by individuals who routinely use this route. In the moderate term, approximately 67' of fence should be replaced with high security fencing (described below).

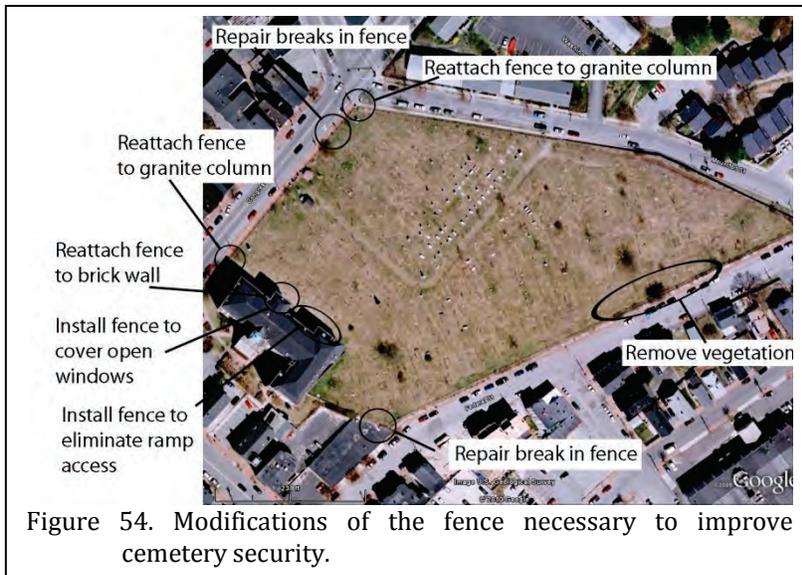


Figure 54. Modifications of the fence necessary to improve cemetery security.

- Install approximately 30' of high security fencing 12' in height in front of the three North School openings facing the Cemetery. This will prevent entry into the Cemetery through the windows. The fence can be planted to reduce its visual intrusion.

- Install approximately 50' of high security fencing 8 to 12' in height along the ramp at the North School. This will prevent individuals from jumping the fence where the ramp and associated railing provides clearance over the fence.

Post Regulatory Signage

Access-control signs are an important part of "rule setting" in that they establish the types of activities prohibited in the Cemetery. As discussed in the section entitled "Other Maintenance Issues," the Cemetery requires regulatory signage identifying the hours of operation and warning that individuals in the Cemetery outside of those hours will be arrested for trespass. These signs need to be installed at both entrance gates. Simpler posted or no trespass signage should be installed on the fence at the

include:

- Repair of the Congress Street fence to eliminate gaps that are unsuccessfully "plugged" using chain link fencing or are open. This will prevent people from walking through the fence.
- Repair of the North School iron fence by reattaching it to the granite post on Congress and to the North School brickwork. This will prevent the fence



Figure 55. Fence problems that require immediate action. Upper left shows damaged section on Congress Street that allows ready access to the cemetery. Upper middle shows the damage to the connector at the corner of Congress and Mountfort streets. Upper right shows the damaged connector on Congress at the North School line. Lower left shows the damaged connector attaching the fence to North School. Lower middle shows that the fence along the North School ramp is not high enough to prevent entry. Lower right shows the damaged connector of the chain link fence to North School. Not shown is the damaged fence at the south edge of the cemetery along the rooftop of adjacent businesses.

south edge of the Cemetery and at the fence at North School since these are access points.

Lighting

Lighting is sometimes seen as reducing vandalism. There is no consensus on whether

well-lit areas or "dark" locations are superior in terms of crime prevention. Cemeteries were not lighted historically. Thus, the introduction of lighting detracts from the historical integrity of the properties, changing the historic fabric. Another issue to be considered is that lighting is only useful if there is someone guarding the

property, using the lighting to identify problems. This is not the case in most cemeteries, including Eastern Cemetery.

There are a number of standard single arm steel brackets with cobra head luminaires mounted on existing utility poles at the periphery of the Cemetery. We have visited the Cemetery after dark and these lamps provide adequate boundary lighting in most areas.

We do not recommend that any additional lighting be installed.

Repair damage quickly and improve the appearance of the Cemetery

Clean, well-maintained cemeteries free of debris or garbage, free of evidence of past vandalism, and with attractively landscaped grounds are less at risk for vandalism. Consistent maintenance may serve as an "occupation proxy," giving the appearance that the cemetery is under steady surveillance by those concerned about keeping it safe. Conversely, cemeteries with much trash, evidence of damage, or poorly maintained grounds give the appearance of abandonment; if no one in society cares for the property, why should the prospective vandal? Simply put, the appearance of abandonment breeds additional damage and vandalism. Thus, it is critical that the level of maintenance at Eastern Cemetery be immediately improved. Trash must be collected throughout the year; grass must be mown; and broken stones must be repaired.

Ensure ready access to the property police

There is no quick and reliable means for law enforcement to enter the locked Cemetery at present. They must have this access to allow them to pursue and apprehend vandals and others improperly using the Cemetery.

We recommend that a Knox-Box® be installed at the Congress Street entrance. The Knox-Box® rapid entry system is a secure emergency access program developed for property owners and fire/law enforcement departments. When there is an emergency, Knox® products allow immediate entry into buildings

and property without forced entry damage or delay. Property owners store entrance keys in high-security Knox-Boxes mounted near building or property entrances. Each Knox-Box® purchased by a property owner is keyed to a single master key controlled by the fire or police department.

The cost of a Knox-Box® 3200 would be less than \$300.

Offender-Focused Responses

Increase the frequency of police patrols

Increasing the frequency with which police patrol the Cemetery periphery increases the likelihood that potential vandals will be seen. Even though police do not have access to the Cemetery grounds during routine patrols, the act of raking their spot light through the Cemetery from Congress and Mountfort will give the appearance of visibility. We recommend that vegetation along the periphery of the Cemetery on Federal Street also be removed to improve visibility from the street below.

Patrols are crucial at night and especially on long weekends and holidays when alcohol consumption increases. Halloween is a particularly common time for cemetery vandalism.

Use of electronic, CCTV, or photographic monitoring

An option for hardening cemetery targets is the use of video and photographic imaging technologies. At the high end are systems such as VistaScape – an automated wide-area surveillance system that detects, tracks, and classifies objects in real time on a computer screen. If an object violates a policy set by the user, the software streams live video of the alarm event to the display and can also send wireless alerts to law enforcement personnel. Although an ideal solution, the cost makes such system beyond the reach of most cemeteries.

An alternative, however, is the Flashcam by Q-Star Technology

(<http://www.qstartech.com>). This self-contained digital system is motion activated; a photograph is taken (a flash unit allows night photographs at 100 feet), and a customized recorded announcement is played. Units are solar powered, eliminating the need for electrical connections. Photographs are high resolution and time/date stamped. Units can be downloaded wirelessly. Although not inexpensive, they are among the most affordable solutions for cemeteries facing on-going vandalism and theft problems.

Though the initial financial outlay may be significant, over the long term, these surveillance systems may be less expensive than security patrols.

Improve opportunities for natural surveillance

The likelihood that adjacent neighbors and pedestrians going about their daily activities will spot an intruder depends on the visibility of the Cemetery grounds from nearby houses, sidewalks, and streets. Clear sight lines in key locations maximize the ability of residents and passersby to observe activity in vulnerable areas. It is critical that security be taken into consideration when plantings are chosen and located. Security is an equal concern when existing plants are pruned or receive similar maintenance.

Provide caretakers on the Cemetery grounds

The continuous presence of a caretaker in a cemetery can deter potential intruders. At one time this was achieved by resident superintendents who lived on the property in exchanged for rent free housing. Even the presence of dedicated and uniformed maintenance crews can deter inappropriate activities. Neither may be possible at Eastern Cemetery, but several other options are possible.

Volunteers should be given readily identifiable t-shirts (distinctive color and logo) to wear when working in the Cemetery and this should be publicized. Volunteers should be scheduled to conduct periodic inspections of the Cemetery during the week and on weekends, throughout the year. Like police patrols, these

visits should be unscheduled and occur at different times and on different days. These volunteers should not confront vandals, but should be eyes and ears, providing a presence in the Cemetery and immediately reporting any suspicious activities.

Hold offenders accountable

Very few perpetrators of cemetery vandalism are identified and apprehended, and even fewer are prosecuted. Courts are generally lenient with offenders, and in most cases, the damage from an individual incident is seen as minor and does not appear to warrant harsh penalties. However, creative and well-publicized interventions to hold offenders accountable can have both a specific and a general deterrence effect. Restitution programs include a set of administrative and legal procedures to get money from offenders to pay for repair or replacement of damaged property. Publicizing the results of these efforts is important to maintain their deterrent effect.

Both the City and Spirits Alive should ensure that police investigate vandalism and work to secure an arrest. If an arrest is made, representatives of Spirits Alive should be present in court, testify concerning the impact – and cost – of the damage, and ask for the maximum punishment possible. If no restitution is required by the court, Spirits Alive should consider civil court action to recover costs associated with professional repair of the damage.

Management Practices

Maintain an inventory of Cemetery stones and their condition

Vandalism often goes unreported because cemetery caregivers do not know what is present in the cemetery or its condition. Thus, vandalism can be overlooked as pre-existing damage. It is critical that Spirits Alive complete its transcription project and begin photography of all stones. Volunteers must also become familiar with the stones in the Cemetery and their condition. While it is obviously impossible to know each stone, volunteers may be assigned specific areas to

become familiar with the stones and the condition of the stones in that one area. Inspections could then be conducted monthly.

Educate the City

The Public Services and Police Department staff should be familiar with the vandalism prevention steps enacted at Eastern Cemetery. Spirits Alive should make periodic reports to City Council, describing vandalism and prevention efforts, the costs associated with vandalism, as well as the importance of the Cemetery (financial, social, and historical) to the community. Vandalism prevention strategies should be discussed regularly at Spirits Alive meetings.

Community-Focused Responses

Provide rewards for information concerning vandalism

Offender-focused responses require that vandals be identified and apprehended. Police investigations of vandalism incidents can be enhanced by high-quality information provided by community residents and even students from local schools. As seen with traditional "Crime Stoppers" programs, setting up telephone or internet-based tip-lines, offering rewards for information, and guaranteeing anonymity encourage people to come forward with specific information. The most effective programs actively involve volunteers in collecting and synthesizing information for police, and in determining payout amounts in the event of apprehension.

Create "Cemetery Watch" programs

Similar to "Neighborhood Watch" efforts, community residents can conduct citizen patrols of Cemetery property during evenings and weekends. Membership and regular participation in voluntary patrols increase when some form of prestige is offered to volunteers. Effective practices include:

- patrolling regularly, but at unpredictable times;

- equipping volunteers with cell phones for prompt communication with police or other emergency services;
- engaging in passive surveillance only, and not interacting with potential vandals or intruders in any way; and
- publicizing activities and outcomes through school-based and local media outlets.

As an adjunct to this, residents in adjacent buildings should be especially encouraged to be attentive to problems in the Cemetery. Unusual noise, lights, or activities should be sufficient to have neighbors call the police to report their concerns. Spirits Alive should seek to encourage the active participation of residents in North School and the apartments on the Mountfort Street side of Eastern Cemetery. Meetings should be held, preferably in the evening and preferably on the premises of the residents, to allow Spirits Alive to enlist the support of these residents.

In response to a specific problem or rash of incidents, Watch programs can produce short-term reductions in vandalism. However, these programs are difficult to sustain, so Spirits Alive will likely need to periodically "rejuvenate" the program by holding new meetings and bringing in new participants.

Spirits Alive should also consider developing similar programs in nearby schools, enlisting students to assist in collecting trash, cleaning stones, painting fences, or other activities. Boy and Girl Scout troops should also be contacted. Involving students in the care of cemeteries, and engaging them in ongoing, active projects will help create caring adults of the future.

Security Fencing

Where we have recommended new or replacement chain link fencing we strongly encourage the use of a higher security fencing than is typically provided by residential or even commercial fencing. It is, however, necessary to balance security with the concern that the

cemeteries not appear like a fortress. The cemetery is a public space and must remain inviting.

- Height – The height should be evaluated against the ease of breaching. At the windows of the North School the height must reach the top of the available openings to prevent individuals from standing in the window opening and hoisting themselves to the top of the fence. Likewise, the ramp at the North School provides easy access over a 6' foot fence. In these areas we recommend a minimum 8-10' fence.
- Top Rail – Fencing along North School and the replacement fencing along the rooftop at the south corner of the Cemetery should eliminate the top rail, installing instead a 7-gauge coil spring wire. This will make the fence more difficult to climb.
- Bottom Rail – Fencing along North School and the replacement fencing along the rooftop at the south corner of the Cemetery should require a bottom rail that is secured in the center of the two line posts using a 3/8" eye hook anchored into a concrete footing. This eliminates the possibility of forcing the mesh up to crawl under the fence.
- Chain Link Fabric – The material should be PVC color coated per ASTM F668 Class 1 minimum. The coating will significantly reduce maintenance and improve the life span of the fencing. Mesh should be 1" and 11 gauge. Most chain link is 2"; the reduced size makes it much more difficult to climb. Twisted selvage should be specified for the top and bottom selvage if permitted by local code; this will enhance security.
- Bolts – All bolt threads should be peened to eliminate the removal of bolt nuts.
- Fittings and framework – Higher security fences generally require heavier brace and tension bands, as well as wire ties.

Likewise, the framework is typically heavier. Line posts should not be spaced more than 8' apart.

Vandalism Records

We recommend that Spirits Alive develop a form designed for the reporting of cemetery-specific vandalism. This form should include several items:

- What was damaged, with specific information concerning each stone, including the name and lot/plot?
- How was the stone damaged (toppled, broken into how many fragments, scratched, etc.)?
- Where is the stone now (was the broken stone gathered up for storage, if so, where is it stored)?
- An estimate of when the damage occurred. This should routinely include the last time the stone was known to be undamaged.
- An estimate – from a conservator – of the extent of the damage and cost for repair.
- A photograph of the damaged stone.
- When police were notified.
- When police responded and took a report, with a copy of the report attached.
- The outcome of the police investigation.

Dealing with the Homeless

The 2010 Point in Time Survey, which provides a snapshot of people experiencing homelessness on a particular night of the year, reveals that the Portland area has at least 325 homeless individuals. Most are white males between the ages of 31 and 50. Fully 50% have a severe and persistent mental illness, 50% are chronically homeless, and 16% have chronic substance abuse.

Clearly homelessness is an extremely complex social problem that impacts the quality of life in every community. There are no easy solutions. There is a fine line between homelessness as a social issue and a criminal issue. Many homeless are on the street because of substance abuse, mental illness, or both. Often the disorder issues associated with homelessness are criminal in nature but difficult to enforce.

While being homeless is not a crime, many kinds of public conduct are illegal and should be reported to the Portland Police Department. These include being intoxicated, loitering, prowling, fighting, trespassing, aggressive panhandling, soliciting, urinating and defecating, consuming alcoholic beverages in public, camping or sleeping in public areas, littering, disturbing the peace by loud and unreasonable noises, using offensive words, behaving in a threatening manner, etc.

Spirits Alive and the Portland Department of Public Services should take steps to eliminate the use of Eastern Cemetery by the homeless. The property should have regulatory signage identifying the hours the property is open and informing visitors that anyone on the property after these posted hours will be arrested for trespass. This signage should also establish rules of conduct for use of the Cemetery, including the prohibition of loitering, drinking alcoholic beverages, use of drugs, etc. The signage should state that persons engaged in prohibited acts will be asked to leave the Cemetery and that failure to cease the conduct or leave will result in arrest.

Any shopping carts, bedding, or other personal belongings should be removed from the Cemetery promptly. The landscape must be maintained to prevent hiding places and to ensure clear lines of sight. The Cemetery must be kept free of litter and debris.

Recommendations

Access to the Cemetery must be better controlled. The existing fence on Congress should be repaired; the Mountfort Street fence connectors to the granite column at Mountfort and Congress should be repaired; the North

Street fence connectors on Congress Street should be repaired; the fencing along the rooftop at the south edge of the Cemetery should be repaired and eventually enhanced; a new fence should be constructed to prevent access through the window openings and off the ramp at the North School.

Regulatory signage must be installed at the Congress and Mountfort street gates and additional no trespassing signage should be installed on the fence at the south edge of the Cemetery and at North School.

It is essential that the level of maintenance at Eastern Cemetery be enhanced. Litter should be controlled and collected on a weekly basis throughout the year. An effort should begin to repair broken stones. The grounds must be regularly mowed.

A Knox-Box® should be installed at the main entrance on Congress Street to allow immediate emergency access to the grounds.

The frequency of police patrols must be increased. At nights police spotlights should rake the Cemetery, giving the appearance of visibility.

If vandalism is not brought under control, the use of a Flashcam by Q-Star Technology should be considered.

Security should be considered when plantings are chosen and located in the Cemetery. Security is an equal concern when existing plants are pruned or receive similar maintenance.

Volunteers in the Cemetery should be readily identifiable by distinctive t-shirts. They should be scheduled to conduct periodic inspections of the Cemetery during the week and on weekends, throughout the year.

Both the City and Spirits Alive should ensure that police investigate vandalism and work to secure an arrest. If an arrest is made, representatives of Spirits Alive should be present in court, testify concerning the impact

- and cost - of the damage, and ask for the maximum punishment possible. Consideration should be given to seeking civil court judgments against those accused of vandalism.

The inventory of Eastern Cemetery stones should be completed as soon as possible. The inventory should be quickly supplemented by photographs of all stones to clearly document current conditions.

City staff and council members must be educated concerning the cost of vandalism. They should be enlisted to assist with vandalism prevention efforts.

Public rewards should be offered for information leading to arrest and conviction of individuals responsible for vandalism in Eastern Cemetery.

A "cemetery watch" program should be started in the apartments and residences in close proximity to Eastern Cemetery.

Adjustments should be made in the height, top and bottom rails, the chain link fabric, bolts, fittings and framework to create higher security fencing at the North School and along the rooftop at the south edge of the Cemetery than is commonly associated with residential or commercial fencing.

Spirits Alive should create a written vandalism record useful for tracking problems in the Cemetery. Reports should be made to City Council on a regular basis.

Spirits Alive and the City's Public Services Department should adopt a zero tolerance policy for homelessness in Eastern Cemetery. This should include clear posting of cemetery regulations and the enforcement of these policies by the City police.

CEMETERY FIXTURES AND FURNISHINGS

Cemetery Buildings

The only extant structure in the Cemetery is the "Dead House," first constructed in 1873. By 1917 it was called a "tool house" and for much of its history it received only the most minimal maintenance. In 1934 it received new sills and a floor. By 1966 new shingles were installed and it was painted. In 1987 the structure was "restored."

There are at least two photographs of this structure prior to the 1987 restoration (Figure 44). They show a small structure (it measures 12'5" square) with Victorian scrollwork at the gable ends and along the roof line. The structure is roofed in wood shingles (wood shingles are sawn and have smooth sides; shakes are split and have at least one natural split grain surface; the former are more common). There is a window opening on the east gable elevation, although in the earliest photo the window is already missing. The door opening is on the north elevation, facing the Cemetery, and is not visible in either photograph. The walls are board and batten to about 3' above grade. The boards are about 1' in width; the battens are 1x2" strips. Below this the walls are vertical tongue and groove. The structure is sitting on ground sills with the tongue and groove terminating at ground level. This is consistent with the 1934 replacement of the sills and flooring.

The restoration in 1984 appears to have substantially altered the historic structure. The exterior cladding was replaced with boards less than a foot in width and the battens are 3/4" half rounds. The vertical tongue and groove has been entirely eliminated. The eastern opening now contains a modern 6/6 double hung window. The entrance is a modern double door. The interior of the structure reveals that virtually 90% of the framing is modern lumber; very few older 2x4s are still present. None of the siding is historic. The floor is plywood. The "restoration" appears to have thoroughly gutted the historic fabric,

replacing it with modern materials. There is no record of any architectural drawings or detailed photography taken prior to the structure's nearly complete recreation.

Today the scrollwork and siding are in need of immediate painting. The roof shakes are badly deteriorated with about 10% missing or displaced. Deteriorated tar paper is visible in several locations. Wood on the interior of the structure is stained from roof leaks.

The structure is, at best, a replica of the original building. While it should be retained as a visual "place holder," sadly very little of the historic fabric remains. Nevertheless, this structure requires immediate attention, including repair of damaged siding, painting, and replacement of the wood shingles.

The painting should include requirements for initial power washing to remove soil, contaminants, and chalking paint, ensuring that no damage is done to the structure. Loose coatings should be scraped or sanded; in areas of failing paint, the edges of intact existing paint should be beveled to minimize the visual impact of the previous failure. The contractor should be required to caulk all seams, cracks, and joints around doors, windows, siding, beams, and flashing with an acrylic urethane caulking to produce a watertight seal.

The structure should be primed with one coat of a 100% acrylic primer, followed by two coats of a 100% acrylic paint to all prepared surfaces.

The new roof should specify red cedar, cypress, or redwood. Regardless of the wood, only Grade No. 1 shingles should be used. The shingles should not be less than 16" in length and not less than 3" in width.

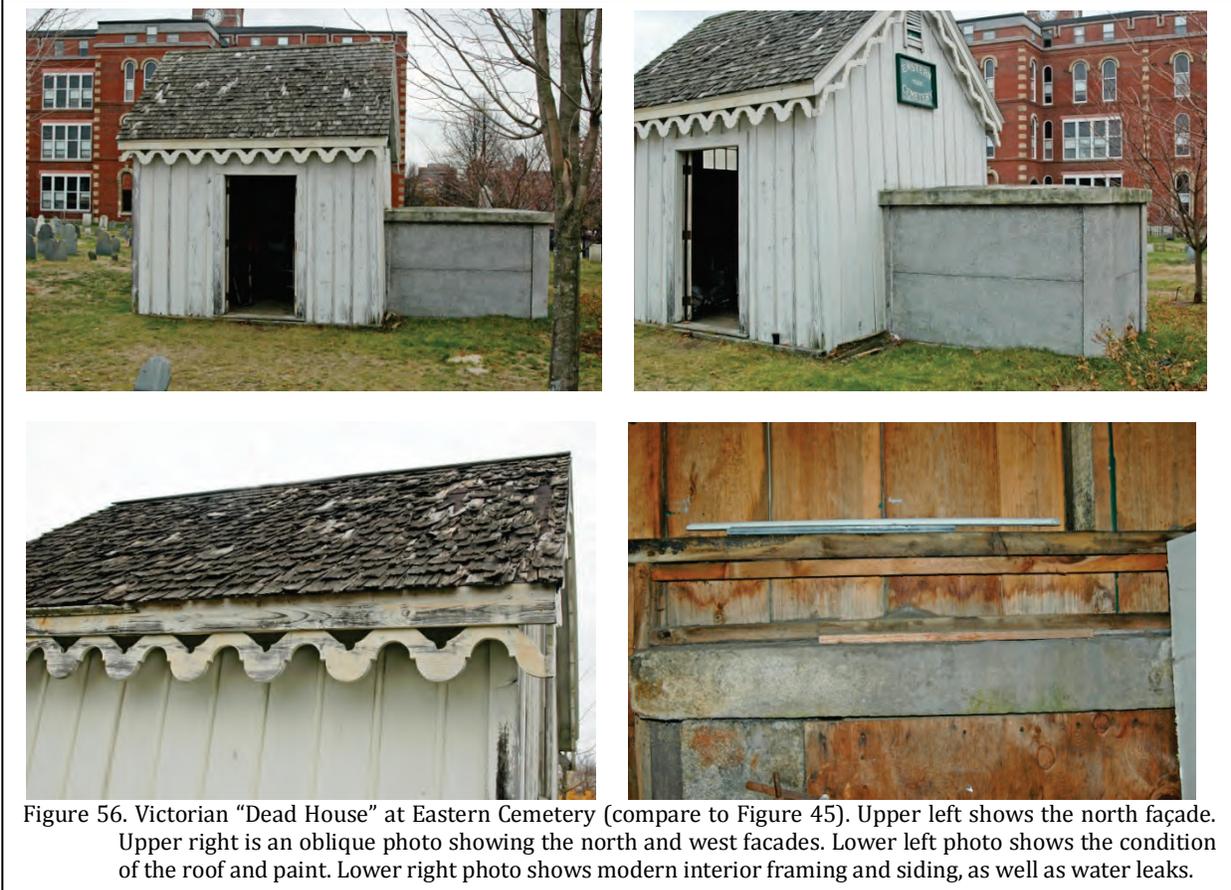


Figure 56. Victorian “Dead House” at Eastern Cemetery (compare to Figure 45). Upper left shows the north façade. Upper right is an oblique photo showing the north and west facades. Lower left photo shows the condition of the roof and paint. Lower right photo shows modern interior framing and siding, as well as water leaks.

Before installation the roof deck should be inspected. It is currently plywood – an option that is often not used since shakes are unable to dry out, causing cracks and excessive cupping. This tends to reduce the lifespan. More often shakes were applied over spaced wood sheathing, which allowed better air movement. If replacement is required and plywood must again be used, it should be exterior grade and not less than ½” in thickness. Consideration should be given to replacing it and using nailing boards. When open or spaced sheathing is used, the sheathing boards (1 by 3, 1 by 4, or 1 by 6”) are spaced the same distance as the anticipated shingle exposure and each course of shingles is nailed to a separate sheathing board. Underlay should be 30-pound roofing felt. Roofing nails should be galvanized. A stainless steel drip edge may be appropriate and would serve to minimize wood rot of the fascia.

The existing ridge appears to have been finished with ridge boards. The traditional

approach, however, was a combed ridge, which is described and illustrated at <http://www.rooftopsystemsengrs.com/interface01.htm>.

Congress Street Fence

This fence was moved from Portland High School in 1916. Since that time it has been painted multiple times, but in 1987-1988 it was restored. This included sandblasting and painting. The damaged pickets were recast by Etheridge Foundry and Machine Company in Portland and then brazed onto the original fabric. Multiple sections of the fence were removed from their supports and straightened. The pedestrian and drive gates were repaired and latching devices reworked.

The fence is about 300 feet in length. The granite pillars are about 16” square. Those at the drive gate are 8’ in height; those at the pedestrian entrances are 6’5” in height. The pedestrian gates

are 4'9" in width by 5'1" in height. The drive gates each measure 4'8½" in width and are 6' in height (in an opening that measures 10'3"). The fence sections are 10'6" from center of line post to center of line post and the line posts have a height of 5'8". The fence itself has a height of 4'10½".

Today many of the 1987 problems are again present. There are numerous areas where pickets have been broken and are missing. Some sections have had chain link temporarily attached in an unsuccessful effort to close the gap. The entire fence requires repainting.

There are, however, more serious problems beginning to be obvious. There is evidence of corrosion at the picket collars and the rod, as well as where the rod joins line posts. In these areas moisture has been drawn into the joints through capillary action and created significant rust pockets.

There is similar evidence of hidden corrosion where the pickets are embedded in the concrete curb – apparently a replacement for the original granite curbing that came with the fence. The concrete is evidencing iron jacking around the line posts, resulting from the corrosion of the posts, embedded in the concrete about 1-2".

Also observed during the assessment is evidence of alkali-silica reaction in some areas. Released silica in the concrete mix combines with alkalis to form ARS gel. The gel absorbs water and swells, resulting in tensile forces throughout the concrete matrix that cause cracking.

This assessment reveals that the fence manifests multiple problems, in excess of the aesthetic loss of finials. Appropriate treatment will address the multiple issues present.

Repairing the Curb

The concrete curb is weakened by ARS. Treatment consists of applying a waterproofing to the concrete to prevent water from reaching the ARS gel. Typically silane compounds have been used. A suitable product is R-97 Water Repellant

from Cathedral Stone (<http://www.cathedralstone.com/>). This will prevent water movement, but the substrate remains 97% permeable, allowing vapor movement out of the concrete. The concrete can then have cracks infilled with Jahn M30, M40, or M90, depending on the size of the crack.

Removing Pickets and Posts from the Concrete

By reducing the movement of water into the curb, corrosion of the ironwork will be reduced. Additional protection can be achieved by carefully exposing the metal components through mechanical removal of the concrete and infilling around the metal with a structural epoxy. This will not shrink back from the ironwork, creating microcracks that moisture can enter through. In some cases the small pin at the base of the picket may be lost and a new pin will be needed. This should be welded onto the picket on-site using 316 stainless steel.

Repair of the Ironwork

The pickets evidence breaks and losses of different components. The most critical for repair are those that provide structural stability and functionality. Thus, the replacement or repair of missing or damaged pickets should receive the highest priority and the replacement of decorative elements, a lower priority.

In many cases cast iron can be repaired by welding, if a skilled artisan is used. Appropriate welding processes may include gas tungsten arc welding (GTAW) and shielded metal arc welding (SMAW). Success in repair of cast iron has been achieved in the past using a nickel welding electrode called a NiRod Ni-99. This rod allows elasticity that eliminates the cracking in the transition zone characteristic of low carbon steel electrodes. It should be combined with peening the weld upon completion, reducing surface stress during cooling. The GTAW process uses silicon-bronze wire and stainless steel wire. These are selected for their compatibility and ductility.



Figure 57. Congress Street fence. Upper row shows missing pickets. Note also evidence of corrosion on some pickets that may require scraping and application of Rust Reformer. Middle row left shows build-up of corrosion at joint. Middle row right shows loss of concrete curb. Lower row left shows ARS gel and cracking of the concrete. Lower row right shows inappropriate locking mechanism staining the granite column.

If recasting is necessary, Etheridge Foundry and Machine Company created the repairs in 1987 and may still have the original patterns for the fence. If so, this would reduce the cost of the castings. Castings are typically produced in Class 30 gray iron. After casting, the individual pieces should be machined as necessary and then primed with a two component epoxy primer.

Another firm that recasts a number of items for historic restoration projects is Robinson Iron in Alexander City, Alabama (<http://www.robinsoniron.com/>).

Corrosion of Joints

The fence does not require sandblasting at this point. However, some joints do require special attention. This will be easier if the fence is disassembled, but this may not be feasible. If disassembly is not undertaken, these joints should be carefully brushed using small stainless steel brushes in order to remove as much corrosion as possible. The joint should then be flooded with Rust-Oleum Rust Reformer®, a product that converts corrosion into a stable base product that can be painted over. An effort should be made to have the Rust Reformer® drawn into the voids by capillary action.

Since the fence was reportedly sandblasted in 1987, it is unlikely that any lead-based paint remains. However, lead is toxic and care should be taken.

Painting

In general the fence does not exhibit many areas where either the 1987 paint or primer has failed. In areas of corrosion the minimal treatment consists of one application of Rust-Oleum Rust Reformer®, followed by two top coats of Rust-Oleum High Performance Protective Enamel®. Use of flat black is recommended.

If it becomes necessary to remove the existing coatings, an alternative treatment is the application of a polysiloxane such as Ameron PSX 700FD (used in ambient temperatures under 90°F) or equivalent. Research has shown that as

PSX 700 cures, the forces exerted on the paint film can result in the delamination of the old system. Thus, this treatment should be used only on bare metal primed with Dimetcote® 21-9, Amerlock® 400, or equivalent as specified by the paint manufacturer.

If paint removal is necessary, we recommend blasting with a garnet material to clean grey metal, at least equivalent to a Near White Blast as defined by SSPC Specification SP 10 or NACE 2. All work blasted in one day must be coated on that day.

If spray painting is to be used, special care must be taken to ensure that overspray is controlled. Monuments, the concrete curb, the brick sidewalk, and landscape must be protected. It is usually more practical to paint fences on-site using a brush.

It is important that coatings exhibit reasonable leveling without excessive sagging when applied at the required film thickness. Special attention must be paid to edges, angles, weld seams, flanges, nuts and bolts, and other places where insufficient film thickness is likely to occur. These areas should be stripe painted by brush, after application of any necessary primer.

Locking Devices

Although the latches for the pedestrian gates were to be reworked, it appears that poly-coated cables have been used to lock these gates. As the cable coating wore, the cable – and the lock – caused significant rust staining on the granite columns. This gives the Cemetery an uncared for appearance.

The cabling should be removed, and if needed, should be replaced with 316 stainless steel cable. Supplies to create cables of the appropriate length are available at a variety of boating supply stores. One on-line resource is Bosun Supplies in Arnold, Maryland (<http://www.bosunsupplies.com/default.cfm>). Stainless steel cables (listed under rigging) should be 3/16" wire rope 7x19. Many companies, including Bosun Supplies, offer swagging service, so the cable can be purchased ready to use.



Figure 58. Mountfort Street fence and wall. Upper left photo shows the fence, looking to the northeast. Upper right shows the fence set on the granite retaining wall. Middle left shows where the granite wall has been “extended” by dumping granite coping. Middle right photo shows where iron jacking has split the granite coping. Lower left photo shows loss of mortar in the joints of the wall. Note also the crack that has formed from iron jacking at the line post in the center of the photo. Lower right shows a noticeable bulge in the wall on Mountfort. Joints are open and the retaining rock is set back in the wall, showing the movement outward.

The existing locks are heavily corroded and it may be necessary to cut them off. They should be replaced with stainless steel locks such as those offered by American Lock or the Abus Lock Company.

Corrosion stains on the granite columns should be removed by a conservator.

The chain being used to secure the main gate will cause flaking and chipping of the paint. It should be replaced with a suitable chain in a rubber or poly sleeve, or a coated stainless steel wire rope (also available at marine supply stores).

Mountfort Street Fence and Wall

The retaining wall along Mountfort was completed in 1854, but the extant fence wasn't added until 1986.

The fence is a simple picket design with one bottom rail and two top rails, and is about 700' in length. It is generally in sound condition, although the paint is failing and requires attention in order to prevent additional corrosion damage. The fence is also no longer attached to the granite column at the corner of Mountfort and Congress. There are also several areas where the mounting to the stone wall is corroding, resulting in iron jacking and damage to the granite coping.

The granite retaining wall is coursed ashlar laid in a relatively soft mortar and is about 430' in length. The blocks measure about 8' in length and about 18" in width. The depth of the blocks is uncertain, but there appear to be similar blocks, about 8-10" in thickness, added to each course that appear to tie or anchor the wall to the cemetery. The wall is capped with a coping stone similar to the wall blocks except that it is laid flat. We have no information concerning construction details such as the footing for the wall or any installed drainage behind the wall.

The wall is in generally good condition with several exceptions. The coping blocks are exhibiting damage from iron jacking. This is the result of the mounting brackets not being maintained; the corrosion products are expanding and causing the granite to crack. Much of the

mortar in the wall has been reduced to sand or has eroded out of the joints. There is no evidence of the wall ever being repointed. There is one area of the wall that exhibits a bulge or displacement. The cause of this movement is unknown. It appears that an area of about 20 by 8' has been displaced outward by about 2-3".

The fence requires removal of corrosion and repainting. As previously recommended, in areas of corrosion the minimal treatment consists of brushing off loose corrosion products, followed by one application of Rust-Oleum Rust Reformer®. This should be followed by two top coats of Rust-Oleum High Performance Protective Enamel®. Use of flat black is recommended.

In many areas the corrosion is rather wide spread and it may be preferable to use Power Tool Cleaning, SSPC-SP3. Power Tool Cleaning removes all loose mill scale and loose rust. This will allow spot priming using Rust-Oleum High Performance Primer, followed by two coats of High Performance Protective Enamel®.

It is important that coatings exhibit reasonable leveling without excessive sagging when applied at the required film thickness. Special attention must be paid to edges, angles, weld seams, flanges, nuts and bolts, and other places where insufficient film thickness is likely to occur. These areas should be stripe painted by brush, after application of any necessary primer.

The wall requires repointing. We recommend the use of a 1:2.5 mix of NHL 5 and sand. This mortar should match the remnant mortar in color, texture and tooling. Color and texture will largely depend on the native sand. It may be impossible to find any remnant tooling on the wall. In such a case the new mortar should be placed slightly back from the edge of the granite blocks and once thumbnail dry should be struck with a churn brush to compact the mortar and give it a weathered finish. The work should comply with NPS Preservation Brief 2, *Repointing Mortar Joints in Historic Masonry Buildings* by Mack and Speweik (<http://www.nps.gov/history/hps/tps/briefs/brief02.htm>).

The damage to the coping stones may require some of these stones to be replaced. Repair may involve sealing the plates to prevent water intrusion in those areas where the stone has not yet been severely damaged. In areas where the stone has been more seriously damaged, exposing the retaining pin, the metal should be cleaned and treated with Rust Reformer. The stone can then be repaired using a product such as Jahn M160. The repair, however, will need to be tinted in order to match the color of the granite blocks.

on the height of the damage) has backed into the fence and caused several pickets to bend inward. It is this impact that may have damaged the two connectors at either end of the fence line.

This fence requires repainting. There is no need to sandblast or otherwise mechanically prepare the fence. Any loose corrosion should be brushed off; then one application of Rust-Oleum Rust Reformer®, followed by two top coats of Rust-Oleum High Performance Protective Enamel® should be applied by hand. Use of flat black is recommended.



Figure 59. North School fence running from Congress to the North School alcove.

As is the case with previous recommendations, it is important that coatings exhibit reasonable leveling without excessive sagging when applied at the required film thickness. Special attention must be paid to edges, angles, weld seams, flanges, nuts and bolts, and other places where insufficient film thickness is likely to occur. These areas should be stripe painted by brush, after application of any necessary primer. Care should be taken to prevent overpainting of the granite curb below the fence.

North School Fence

This iron picket fence was installed from Congress Street to North School, a distance of about 80 feet, in 1917. It is set in granite coping leveled on a rubble footing that brings the fence height to just over 8’.

The fence exhibits even corrosion, but little evidence of pitting or serious damage. The fence is no longer connected at the top of the granite pillar on Congress or to the North School building at its terminal point. Both connectors, with anchors originally set in lead, have failed. It will be a simple matter to replace these anchors and correct this problem. There is also damage to the third fence section from Congress Street, where it appears that a commercial vehicle (based

The straightening of the bent pickets is of low priority, especially compared to painting and repair of the fence attachments.

Federal Street Wall

The Federal Street wall was constructed in 1868 and was extensively repaired in 1919. No plans for this wall have been identified, although the 1919 work appears to have consisted of repointing using a Portland cement mortar.

The wall begins on Mountfort and then extends for about 710 feet along Federal Street, reaching a height of about 17’. At the top of the wall and set in the Cemetery about 10-20’ is a chain link fence. The wall consists of native stone laid as uncoursed rubble. It is capped by a similar

CEMETERY FIXTURES AND FURNISHINGS



Figure 60. Federal Street wall. Upper left photo shows the wall along Federal Street, looking southeast. Upper right shows the wall along Mountfort. Note the missing stones. Middle row photos show the different mortars identified visually in the wall. Lower left and middle photos show cracks following the mortar joints. Lower right photo shows a pronounced bulge in the wall, affecting an area measuring about 30 feet along the street and the full height of the wall.

stone. The original mortar appears to be identifiable, as are two repair episodes. The first, thought to date to 1919, consists of a hard Portland cement mortar with abundant coarse sand and fine gravel. There is a later episode of repair using a similar hard Portland cement mortar with fine to medium sand.

The wall exhibits multiple cracks; all appear confined to mortar joints but extend 3 to 5'. It is not possible to determine if they are active. There are also several areas where stones have been lost from the wall. At least one coping stone has been lost as a result of iron jacking. The repointing episodes exhibit uniformly poor workmanship, with the replacement mortar smeared over joints and stones.

The most serious issue is identification of a bulge measuring about 30 linear feet and extending the height of the wall. In general, retaining walls more than a few feet in height should be backed with drainage material, such as gravel, and should have some means of draining the accumulated moisture (for example a drain at the base of the wall or weep holes) and thereby relieving the pressure of ground water on the wall.

The Federal Street wall has no obvious drainage. Without plans or additional testing it is impossible to determine if drainage was provided in 1868. Regardless, the wall evidences a large bulge. This is generally a sign that the wall has inadequate strength to resist the load of soil behind the wall. This may be associated with ground water issues or it may be another defect in design.

Given the safety issues involved and the potential for liability, we strongly recommend that a structural engineer examine this wall to determine its safety and what mitigation may be necessary. The chosen structural engineer must have extensive historic preservation experience. Not only will such an individual have familiarity with historic construction methods, but they will have experience with the Secretary of Interior's Standards. It is absolutely critical that the historic character of the wall not be destroyed in an effort to preserve or protect it. Thus, any

recommendations should be compatible with the historic materials.

One such structural engineer is David Fischetti with DCF Engineering, Inc. in Cary, North Carolina (<http://www.dcfengineeringinc.com/>).

Once the wall has been evaluated and recommendations offered concerning correcting the bulge and cracks, the wall will also need to have the hard Portland cement mortars removed and be repointed. Absent conflicting recommendations by the structural engineer, we recommend a 1:2.5 mix of NHL 5 and sand. This mortar should match the remnant original mortar in color, texture and tooling. Color and texture will largely depend on the native sand. It may be impossible to find any remnant tooling on the wall. In such a case the new mortar should be placed slightly back from the edge of the granite blocks and once thumbnail dry should be struck with a churn brush to compact the mortar and give it a weathered finish. The NPS Preservation Brief 2, *Repointing Mortar Joints in Historic Masonry Buildings* by Mack and Speweik (<http://www.nps.gov/history/hps/tps/briefs/brief02.htm>) is a good source for additional information.

As a maintenance issue, it is important that vegetation be removed from the wall, as well as the base adjacent to the brick sidewalk.

Chain Link Fences

There are two chain link fences at Eastern Cemetery. One, 4' high, is atop the Federal Street wall. The date of its installation is unknown.

The second fence runs from North School to Federal Street. A portion of that fence sits atop a concrete retaining wall installed in 1923. Engineered drawings for this wall reveal that the fence was erected on top of a concrete wall that varies in width from 6" to 1'. The fence was installed using embedded pipes according to the available plans. It seems unlikely that this represents the original fence, erected over 70 years ago. Supporting its replacement is that the fence is no longer attached to the wall using

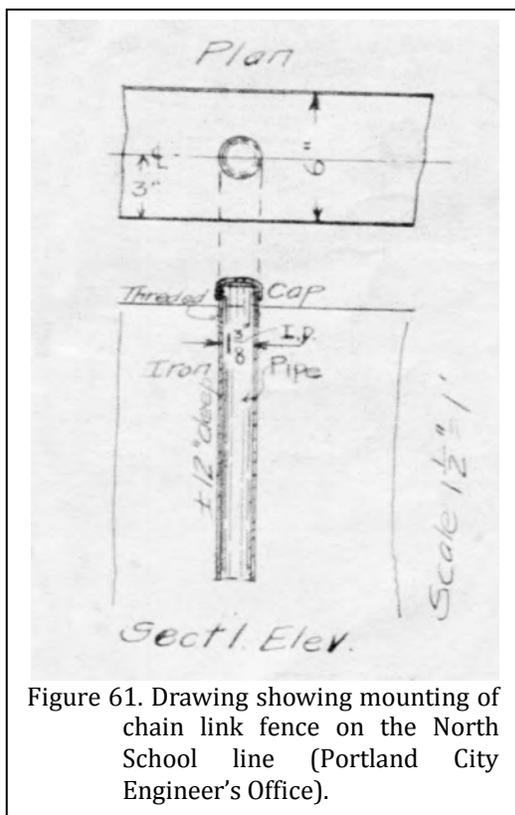


Figure 61. Drawing showing mounting of chain link fence on the North School line (Portland City Engineer's Office).

threaded connectors, but appears to be welded to the remnant concrete imbedded pipes.

Both fences are in fair condition. As previously noted, the chain link fence on the concrete retaining wall has been damaged to allow entry into the Cemetery from the adjacent roof top. Elsewhere the wire mesh, fittings, line posts, and top rail exhibit minor corrosion where the galvanizing has worn.

For security purposes we have recommended the replacement of the fence along the North School line. If that replacement is delayed, we recommend painting the fence with Rust-Oleum Chain Link Fence Paint. An alternative is to use a cold galvanizing paint, such as ZRC Cold Galvanizing Compound or the Rust-Oleum High Performance 7000 System Cold Galvanizing Compound.

The fence along Federal Street is in satisfactory condition. It should, however, be painted with Rust-Oleum Chain Link Fence Paint or with a product such as ZRC Cold Galvanizing Compound.

City Receiving Tomb

The city receiving tomb, built in 1849, is situated at the entrance to the Cemetery and is accessed through a doorway in the west wall of the "Dead House." An above-grade granite structure attached to the west side of the structure covers the stairway entrance.

This granite structure measures 8'6" in length, 5'7" in width, and is 5'8" in height. The structure's joints were originally lead, but in recent years as the blocks shifted, the lead was supplemented by a silicone caulk. The caulk should be removed and the joints repaired using wedge lead.

On the interior of the structure the entrance consists of a granite lintel measuring 6' in length and 6" in width supported by granite columns on either side. These are 5'1" in height and each is about 1' in width. They frame an opening that is 3'5" in width. Today this opening is covered by a piece of plywood. Originally the opening was covered by double doors hung on iron pentles set into the granite surround. While these initial doors closed the entrance vertically, a second set of doors inside the granite structure were laid horizontally with hooks on the side walls to secure the doors in an open position. The reason for the double doors is not known, but we can speculate that it was to fully secure the tomb.

The stairway was walled with the granite composing the above grade attachment to the "Dead House." Below grade the walls are brick laid up in a variation of running bond.

The weight of the granite end wall, perhaps combined with a less than substantial footer, has caused the brick on the left and right of the entrance to crack. No obvious movement of the brick was identified, but we recommend that both corners be fitted with corner crack gauges, available from Preservation Resources Group (SYC200; http://www.prginc.com/Masonry/PRG-crackmon_2.html). These will monitor the cracks to determine if there is still movement in the brickwork.



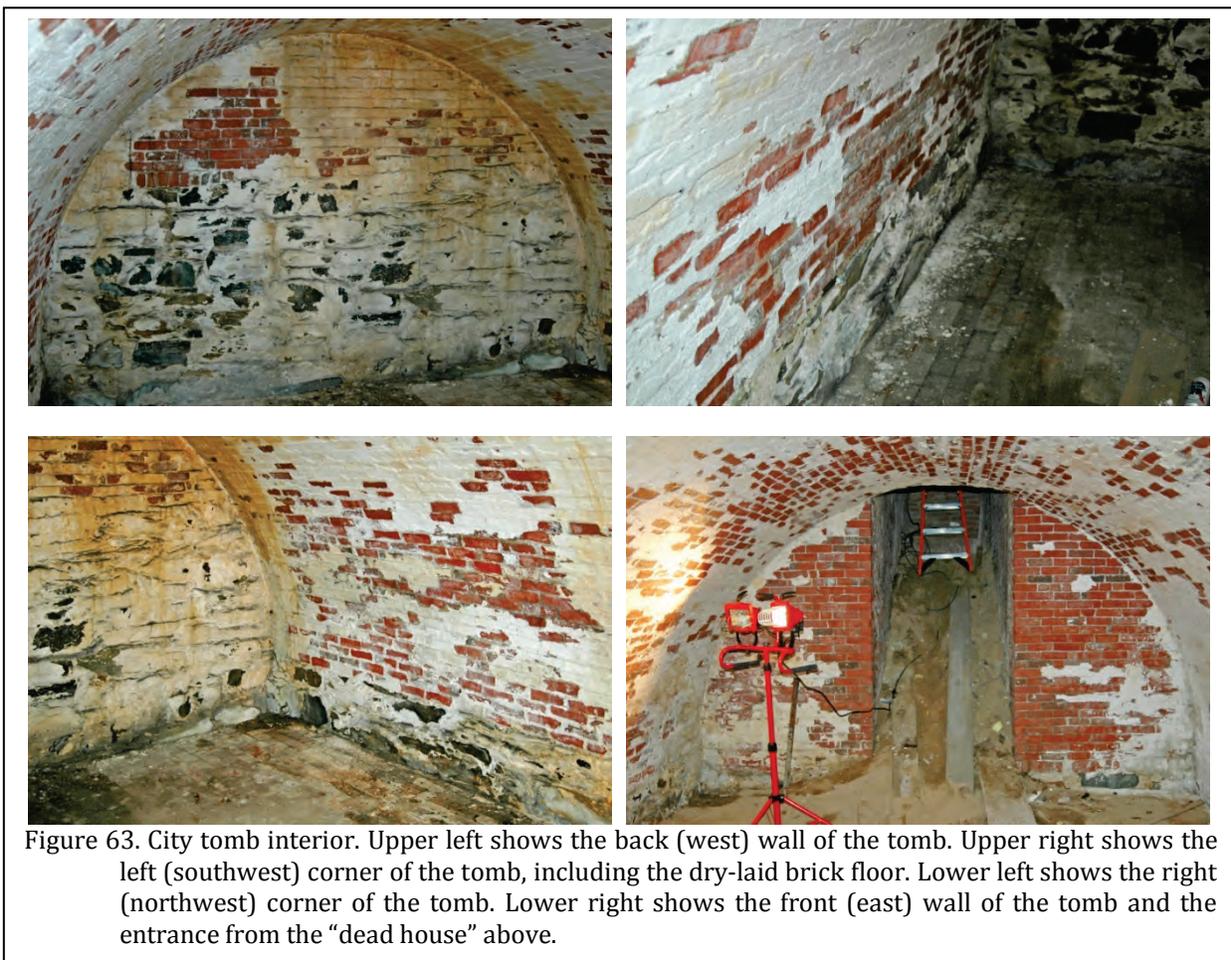


Figure 63. City tomb interior. Upper left shows the back (west) wall of the tomb. Upper right shows the left (southwest) corner of the tomb, including the dry-laid brick floor. Lower left shows the right (northwest) corner of the tomb. Lower right shows the front (east) wall of the tomb and the entrance from the “dead house” above.

The tomb, including the above grade granite entrance, the brick stairway, and the tomb itself, has been coated with multiple layers of whitewash. Much has flaked off, but the layers confirm the accounts of the tomb being regularly cleaned and whitewashed.

The tomb measures 21'2" in length, 11'9" in width, and 7'5" at its highest point. The width of the doorway is 3'5". The back (west) wall of the tomb was built of stone similar to that used for the Federal Street wall to a height of 4'6". Above this is brick laid as running bond. The side walls have rock laid up to a height of about 1'4" and construction then switches to brick. The east wall of the tomb has only one course of rock, with the bulk of the wall laid in brick. The floor of the tomb is dry laid brick.

The brick is laid in a relatively soft, sandy mortar, but large areas evidence repointing with a hard Portland cement mortar. The workmanship varies, but most is relatively well done.

The tomb is relatively dry, but there is moisture present on the ceiling. Where moisture is present the whitewash has been stained brown (note the staining in Figure 63).

We recommend that this tomb be cleaned and all soil in the entranceway removed under the supervision of an archaeologist. The sandy fill should be screened since there may be artifacts present that can help date when this fill was introduced into the tomb.

With the soil removed we recommend that free standing stairs be constructed to allow access into the tomb. The stairs should be

constructed using treated lumber, using a chemical such as alkaline copper quat (ACQ-C, ACQ-D, ACQ-D Carbonate; trade names Preserve or NatureWood®), micronized copper Quat (MCQ; trade names MicroPro™ or Smart Sense™), copper azole (CBA-A & CA-B; Wolmanized Natural Select™), or sodium borates (SBX/DOT; trade name Advance Guard®). For ground contact, a retention of 0.40 pcf should be specified for ACQ, or MCQ; a retention of 0.41 pcf should be required for CBA-A; and a retention of 0.21 pcf is necessary for CA-B. Given the hostile conditions of both the wood preservative and the damp subterranean setting, connectors and fastenings should be Type 304 or 316 Stainless Steel.

Free standing stairs will allow this space to be used for storage of orphan stones (discussed in a following section) on wooden racks (constructed using the same specification wood as the staircase). Lighting can be provided by battery powered lamps. The staircase should have handrails constructed on both sides to ensure the safety of those using the space.

The existing plywood door should be fitted with a horizontal iron bar that can be locked using hasps mounted in the wood on either side of the granite supports. Locking this door will ensure that it is not used by unauthorized individuals and will keep the stone fragments stored there safe.

The brick work is in satisfactory condition and we do not recommend any repointing at the present time.

Private Tombs

While the private tombs have been periodically opened for burials in the past and the historical research even identifies some episodes of repair, most of these tombs have received little attention since they were originally constructed at the end of eighteenth century or beginning of the nineteenth century. The only recent inspection of a tomb occurred in 1988 – over 20 years ago. As a result, during this assessment one of the tombs was opened. The choice was not truly random, but was based on a tomb having no known owners and the cover being previously broken open by a mower and recently replaced.

The selected tomb was A-22, thought to belong to the Dyer family. Jordan (2009:41) identifies the occupants as Emma Ford Dyer (1819-1877), Lemuel Ford (c. 1786–1847), Nabby Ford (1789-1828), Robert Ford (1816-1820), and Susan C. Ford (c.1824-1847). Goodwin, however, identified six occupants in the tomb.

Above grade the tomb is marked by a solid granite monument measuring 5'3" in length, 2'4" in width, and 2'6" in height. Sitting on top is an illegible marble ledger measuring 6' in length, 3' in width, and 2" in thickness. The monument is sitting on a granite base that measures 5'1" by 3' by 5".

The monument is accessed by an opening 1'10" below grade that was originally closed using 2x10" planks. The opening is today covered with plywood. This opening contained stairs that had been covered with soil that filled the entrance and had spilled into the tomb itself. Some of this soil was undoubtedly from previously collapsed planks as well as some that may have been intentionally placed in an effort to close the tomb. Intermixed with this fill was a large marble monument of a Milliken that had been thrown into the tomb, apparently to dispose of it. From this entrance the opening into the tomb is 2'6".

The tomb measures 12'8" in depth, 6'11¼" in width, and is 6'4" in height. The floor is dry laid brick, covered by about 1" of lime. While some of this deposit may represent whitewash flaked from the walls and ceiling, the depth suggests that the lime was laid down when the tomb was opened at some point and was probably intended to disinfect it. The ceiling consists of four slabs of a native stone, similar to granite, that covers the tomb from side to side (i.e., the 6'11¼" dimension). The slabs are approximately 8" in thickness and each one is just over 3' in width.

The side walls are uncoursed rubble and the rock is similar to that used for the Federal Street wall and the city tomb. Gaps in the rock indicate that the wall is at least 6" thick. The back and front walls are brick laid up in common bond with every sixth row headers.



Figure 64. Dyer Tomb (A-22). Upper left photo is of the right (north) side wall looking toward the tomb opening (east). In the corner is part of the old plank covering. In the lower right of the photo is the soil spilling in from the tomb entrance. Upper right photo shows the left (south) side wall looking toward the back of the tomb (west). Middle left photo shows the brick wall north of the opening. Note the iron eye bolt. Middle right photo shows the added central wall, looking toward the tomb opening. Note repointed brick. This wall, unlike the tomb walls, has never been whitewashed. Lower left photo shows the wet ceiling of the tomb to the left (south) of the central wall (in the background). Lower right photo shows a crack in the ceiling.

It appears that at some point there was concern about the stability of the roof – which does evidence at least one large crack. A central brick wall was built in the tomb, 3’6” from the left wall and 2’11” from the right, running 5’8”. Rock has been added to the top of the wall as shims to support the ceiling.

This flat roof system is different from the brick arch roof identified in the 1988 assessment (see Figure 45). The arch is significant because, at least in theory, it provides a structure that eliminates tensile stresses in spanning the open tomb space. All the forces are resolved into compressive stresses. This is useful because several of the available building materials such as brick or stone can strongly resist compression but are very weak under tension. By using an arch, significant spans can be achieved.

One disadvantage, however, is that an arch pushes outward at the base, so that the base must be restrained in some manner. In the city tomb, the earth provides restraint. In the arched private tombs, we presume that the force of one arched roof is retained by the opposite force of the adjacent tombs. What happens, however, when a flat roofed tomb is introduced into the mix? The greater the distance the roof must span, the more susceptible it becomes to compression and tension forces. If these forces become too concentrated, the roof may fail. It is likely that the designers sought to dissipate the forces throughout the members of the tomb by adding more material – such as the rock sidewalls or a thicker roof slab.

In the case of this tomb, the overhead monument weighs about 6,895 pounds (assuming a stone weight of 170 pounds per cubic foot). The tomb roof is about 1’10” below grade. The weight of the soil overlying the tomb is calculated to be approximately 16,000 pounds (assuming 100 pounds per cubic foot). Thus the roof is supporting a total of 22,895 pounds, or approximately 260 pounds per square foot. Directly under the granite monument the roof is supporting 563 pounds per square foot. Without additional testing it is not possible to determine whether these forces exceed the limits of the stone used. However, we do note that the stone has

cracked and at some point additional structural support was provided to help carry the load.

The assessment found that the mortar in the brick and stone joints has been significantly compromised. Much of the mortar was little more than sand. There is substantial water entering the tomb – the stone ceiling was actively dripping water and the stone appeared to be saturated. This is likely reducing the strength of the stone, as well as affecting the longevity of the mortar.

Cracks were found in the stone side walls, running through the mortar joints. We do not know if these are active.

While the historical data suggests that between five and six individuals were placed in this tomb, this assessment identified only two bodies. The others may have been moved to other burial grounds, been intermingled (although this is unlikely), or may have been covered by soil fill spilling into the tomb from the entrance.

The remains in the tomb were not disturbed, but it was possible to make some observations during the tomb assessment. Few remains were visible for the individual on the left side of the tomb. Only foot bones and a tibia were present. The tibia had a length of 315mm. Using Trotter and Gleser’s (1952:495) calculations for height determination, this individual would have been about 153 cm in height, or about 5’. Also present with these remains was a partial glass viewing plate, measuring 9” in width and over 1’ in length.

More remains were present on the right side of the tomb, including a skull. This skull was gracile with a sharp orbital ridge, small mastoid processes, and a slightly protruding brow ridge. These features are all suggestive of a female; the overall shape is suggestive of European ancestry. A femur present had a length of 443mm. Using Trotter and Gleser’s (1952:495) calculations for height determination, this individual would have been about 164 cm in height, or about 5’4½”.

It is difficult to generalize on the basis of one tomb being opened. There were clearly at least two tomb designs. The tombs were almost



Figure 65. Human remains identified in Tomb A-22. Top photo is a photomosaic of the remains on the right (north) side of the tomb. These appear to represent a female about 5'4½" in height of European ancestry. Bottom photo is a photograph of the remains present on the left (south) side of the tomb. These are of an individual about 5' in height. Also present is a partial glass viewing plate.

certainly built at different times and by different workmen. Some tombs had repairs, others likely did not. Some tombs were apparently closed with timbers, others by rock. On the other hand, all of the tombs have been under identical environmental conditions.

All of the tombs are therefore expected to exhibit human remains in excellent condition. Coffin hardware is expected to be present and also in good condition. Consequently, these tombs can make a substantial contribution to our understanding of the bioanthropology of a middling to upper status white New England community. The data can contribute to the study of diet, disease, and mortuary behavior. Any future opening of tombs should include a bioanthropological examination of the remains and the associated artifacts.

One of the most troubling aspects of the tomb examination is the water flow. A substantial amount of moisture appears to be entering the tomb roof – whether it is rock or brick. In addition, we can anticipate that much of the mortar will be deteriorated because of the water flow, as well as its age. Cracks in the stone wall also suggest that the tombs did not have well construction footers and that the overlying weight of the walls, ceiling, soil, and monuments, has caused some settling.

The one tomb inspected requires the repointing of its brick and stone walls, as well as monitoring of the various cracks observed in the ceiling and side walls. For repointing we recommend the use of a 1:2.5 mix of NHL 5 and sand. This mortar should match the remnant mortar in color, texture and tooling. Color and texture will largely depend on the native sand. It may be impossible to find any remnant tooling on the wall. In such a case the new mortar should be placed slightly back from the edge of the granite blocks and once thumbnail dry should be struck with a churn brush to compact the mortar and give it a weathered finish. The NPS Preservation Brief 2, *Repointing Mortar Joints in Historic Masonry Buildings* by Mack and Speweik (<http://www.nps.gov/history/hps/tps/briefs/brief02.htm>) provides additional important information on repointing.

In addition, the use of plywood to cover tomb entrances is insufficient. Further, we anticipate that many of the planks used to cover tomb entrances have exceeded their service life and present a growing hazard. A better solution to covering tomb entrances would be to use a reinforced concrete slab cast in a size to cover the entrance. We recommend a 6" slab using medium strength concrete (failing at about 4,000 pounds per square inch) reinforced with No. 10 6x6 wire mesh.

These slabs are inexpensive to create and rebar hooks inserted in the form can allow their transport, assist in lowering into place, and allow their easy removal in the future.

We recommend that the City open 10 tombs a year for the next 10 years (there are 97 tombs total). Each tomb should be inspected to determine the level of intervention – if any – that is necessary. Interventions should be prioritized 1-3, with 1 indicating a tomb in eminent danger of collapse and 3 indicating a tomb in satisfactory condition and requiring no immediate attention. During this assessment each tomb entryway should have the existing wood timbers replaced using a concrete slab, with the timbers laid inside the tomb for future study and documentation.

This approach will not resolve the problems presented by the tombs, but it will at least allow the City to budget the funds necessary for the repair and maintenance of these resources.

Until such time as all tombs can be assessed and the entryways reinforced, we strongly recommend that no equipment (such as riding mowers, backhoes, or trucks) operate over the tombs and that only push mowers with 21" decks be used for mowing the grass.

Other Amenities

Recently a series of memorial granite benches have been placed in the Cemetery. All are in good condition and granite tends to be relatively low maintenance. However, we recommend that the placement of such benches be suspended.



Figure 66. One of the granite benches recently placed in Eastern Cemetery.

Benches would not have existed during the period of time that Eastern Cemetery was most active and thus are out of character. In addition, granite is not common in the burial ground and further detracts from the landscape. The Cemetery does not presently receive the use that would make benches a necessity and their presence may simply attract vagrants or others that will discourage use of the Cemetery by the public. Finally, the Cemetery – as revealed by this assessment – has a variety of needs that are in excess of seating. We recommend that these other issues be addressed and then the issue of memorials can be again considered.

The Cemetery Flagpole

A flagpole is situated in the center of the Cemetery, at the turn of Funeral Lane. The pole is in good condition, but there does not appear to be an active constituency maintaining it and the flag was not observed being lowered or raised.

This feature is inconsistent with an eighteenth and nineteenth century cemetery. Moreover, there does not appear to be any constituency maintaining the feature. Consequently, we recommend that it be removed.

Recommendations

The “Dead House” on the Cemetery grounds retains little of its historic fabric and its

appearance was altered during the 1984 restoration. It retains little architectural integrity. Nevertheless, it should be maintained as a placeholder for the historic structure. It requires immediate reshingling and painting.

The Congress Street fence exhibits a range of preservation concerns. The concrete curb should be waterproofed and cracks infilled. Pickets should be removed from the concrete matrix and reset with epoxy. Pickets should be repaired or replaced with the primary focus on repairing the structural integrity of the fence. Corrosion in joints should be removed manually and coated with a rust converter. The entire fence should be repainted. The cables used to secure the pedestrian gates should be replaced with stainless steel cables. The corrosion stains on the granite columns should be removed by a conservator. All locks, keyed alike, should be stainless steel. These recommendations should be compared to the



Figure 67. Flag and flagpole in Eastern Cemetery. There does not appear to be a constituency maintaining this feature and it should be removed from the cemetery.

existing restoration plans and the plans modified to address the concerns evidenced by the assessment.

The Mountfort Street fence should be reattached to the granite column at Congress and Mountfort streets. The fence should have loose paint removed, a rust converter applied,

and then top coated. The wall requires repointing along its entire length. Coping that has suffered iron jacking should be repaired; coping not yet damaged should be sealed to prevent damage.

The North School fence requires reattachment to the granite column on Congress Street at the west end and to the brick building at its east end. The fence should be coated with a rust convertor and then painted.

The Federal Street wall exhibits cracking and a significant bulge. It should be examined by a structural engineer with experience in historic preservation. Depending on his recommendations, the wall will eventually require removal of previous efforts at pointing using improper mortars and techniques, and then repointed. Vegetation should be periodically removed from the wall as an ongoing maintenance activity.

The chain link fence along the North School line should be replaced with a higher fence that will prevent entry from the North School ramp. If that replacement is delayed, the existing fence should be repaired and repainted.

The fence at the top of the Federal Street line should be repainted.

The caulk on the granite structure at the "Dead House" should be removed and the joints repaired using wedge lead.

In the city tomb, cracks on both sides of the entrance should be monitored with crack gauges. If there is evidence of shifting a structural engineer should be consulted.

The city tomb should be cleaned of all debris and soil with this work being monitored by an archaeologist. A free standing pressure treated stairway should be constructed to make the tomb usable for the storage of stone fragments until repair is possible. The existing plywood doorway should be reinforced with a lockable horizontal bar to limit access to this space.

The one private tomb examined (A-22) exhibits cracking in the side walls, failing mortar, and water seepage. The flat roof exhibits a crack and a central support has been added at some point after construction. These features suggest that the tomb requires repointing and should be examined by a structural engineer. The City should begin a program of opening 10 tombs a year for inspection. This will provide the opportunity to assess their condition and develop a budget for their long-term preservation. During the openings a bioanthropologist should be present to examine the human remains present. Tombs that have had their entrances sealed with plywood or wood planks should have these closures replaced with cast concrete.

Until all tombs have been inspected and repaired, no equipment heavier than a 21" deck mower should be operated over the tombs or in their immediate vicinity.

Benches have recently been introduced into the Cemetery. Benches would not have been present during the primary period of the Cemetery's use and the granite used is out of character in terms of material, mass, and design. We recommend that no additional benches be introduced into the landscape.

The flagpole at Eastern Cemetery is not historically appropriate and does not appear to have a constituency to maintain it. We recommend that it be removed.

LANDSCAPE MAINTENANCE

Landscape Setting

From at least 1717 (the earliest date on a surviving headstone) through the eighteenth century, the Eastern Cemetery was likely typical of early church and town cemeteries. Its organization was less than perfect and space was likely always a critical issue. For much of this period the only vegetation was the pine used by mariners for navigation.

For seventeenth century New Englanders, death was a grim and terrifying reality. Puritans were taught to fear death and the likelihood that they would be consigned to eternal damnation. Cotton Mather put the point bluntly: "Go into Burying-Place, CHILDREN; you will there see Graves as short as your selves. Yea, you may be at Play one Hour; Dead, Dead the next" (quoted in Mintz 2004:20). Burial grounds were not places to linger, or decorate. Arrangements were geometric and since space was at a premium, plantings were uncommon. Sloane comments that, "ornamentation of the graveyards was sparse A few trees and scattered shrubs were the expected plantings" (Sloane 1991:20).

The New Haven Burying Ground, created in 1796, was an outgrowth of many factors, not the least of which was the ideal of civic improvement and natural beautification. It was felt that the reintroduction of nature as a moral virtue would make city life less harsh (Sloane 1991:30). The horticultural plans called for elements of eighteenth-century English gardens with flowering orchards. Lombardy poplars were used on the roads to accentuate the geometric design, as well as to provide shade. Weeping willows were scattered on the grounds. But the plan was not so cluttered as to make the graveyard a pleasure ground.

It is likely that Portland's citizens took note of New Haven's example. Certainly other communities did and it was the model for the

burial grounds in places like Buffalo, New York's Franklin Square Cemetery (1804) and Syracuse's First Ward Cemetery (1819).

In 1828 we have our first evidence of Portland citizens suggesting that plantings would be appropriate in the burial ground. It seems likely that they were imitating the efforts in other cities to make their burial grounds more pleasing and beautiful.

Portland's response, however, was largely to ignore Eastern Cemetery and, in 1829, open Western Cemetery following the New Haven plan. The city fathers continued to ignore the issues at Eastern Cemetery with the opening of Evergreen Cemetery in 1853, in the middle of the Rural Cemetery movement (1831-1870s). Subsequently, the lawn park movement (1855-1920s) sought to simplify the cemetery landscape, making it more pastoral and park-like. Portions of Evergreen clearly reflect this movement.

Thus, while new styles and designs were implemented in new burial grounds, Eastern Cemetery essentially sat ignored. As near as we can determine, trees weren't intentionally planted in Eastern Cemetery until 1856. By that time the picturesque or natural garden movement was so strong it was probably difficult to resist complaints about the appearance of Eastern Cemetery. The Victorian Period had brought in a new public relationship with the dead and demand that cemeteries be landscaped places of beauty, not stark and desolate burial grounds.

Efforts at Eastern Cemetery, in spite of public concerns, seem to have been minimal. Besides the elms planted along Funeral Lane, much of the landscape may not have been intentionally planted. Photos consistently show a landscape that was receiving the most minimal attention. Trees, where present, appeared to be struggling. Grass was usually high and weedy. Shrubs were almost non-existent. In the 1970s

the Longfellow Garden Club sought to “beautify” the Cemetery, but even those efforts appear to have been sabotaged by the City’s policy of benign neglect.

About 1992 Barry Hosmer, a Portland landscape architect, developed a planting plan for Eastern Cemetery that was eventually approved by the Portland Historic Preservation Committee in 1995. That plan has been gradually instituted, albeit with some changes. The plan is included as Figure 68.

Staffing

Eastern Cemetery is maintained by the City’s Department of Public Services. All of the cemeteries are incorporated under the Parks Division and there is a Cemetery Office at Evergreen Cemetery that provides management. The City website indicates that, “the cemeteries are maintained by a crew of five full-time employees supplemented by seasonal help in the spring.” We are told, however, that the permanent employees spend most of their time at the two functioning cemeteries, Evergreen and Forest City, and that most of the work in Eastern Cemetery relies on prison crews and work force participants. Only occasionally are City employees able to work in Eastern Cemetery.

From an administrative standpoint the City’s Park Commission meets monthly with the Director of Public Services to review projects, proposals and receive citizen input to provide recommendations to the Director of Public Services and the City Council. Our examination of the minutes available on-line revealed that the cemeteries were rarely a topic of discussion and Eastern Cemetery was discussed only when a representative of Spirits Alive was present. This gives the impression that the Parks Commission views its responsibility toward cemeteries as secondary to public parks. We recommend that a Spirits Alive representative be present at every Commission meeting and present a report on conditions at the burial ground with specific emphasis on maintenance issues and needs. If the City feels that parks and cemeteries are a good fit, then it is critical that as much effort be devoted to the oversight of cemeteries.

We have learned that it is a Park Ranger that opens and closes the park during the summer (the only time that it is routinely opened). These individuals are employed by the City through the Public Services Department and are responsible, according to the City, for “chasing homeless out, picking up garbage, and opening and closing gates.” This is only done for five months; some other Parks employee should be responsible for opening and closing the Cemetery the remainder of the year, weather permitting.

It is often a mistake to place cemeteries under the control of park departments. Cemeteries are scenic landscapes and in that sense similar to parks or open spaces. But they are far more; they are sacred sites, permanent collections of three-dimensional artifacts, and archives. The care they require is very different from the ordinary community park or recreation center. They demand different expertise and attention to the preservation of their historic integrity. There is far more to the maintenance of a cemetery than simply cutting the grass.

We imagine that much of the focus by the Parks Division has traditionally been on the turfgrass at athletic facilities or public parks. The Parks Division should not assume that the problems of grass growing are the same, regardless of where the turf is situated.

An excellent publication on cemetery lawns notes that, “there are peculiar problems which confront only the person responsible for the development and care of cemetery lawns.” These include the age of cemetery grounds and the fact that rarely were cemetery choices made on the basis of appropriate soils (Anonymous 1932:4).

We typically recommend two workers and one supervisor per 10 acres. This is based on the Boston Historic Burying Grounds Initiative (Atwood et al. 1989) and is particularly suitable for Portland’s situation since it is estimated that mowing old cemeteries with 3-dimensional monuments requires six-times the labor than modern lawn park cemeteries (Klupar 1962:239; Llewellyn 1998:100).

Thus, for the approximately 6.8 acres of Eastern Cemetery, we would recommend a full-time staff of at least two people.

Appropriate maintenance established by good practice includes weed control, tree trimming, pruning, seasonal cleanup, maintaining the roads, conducting section inspections, survey of monuments for maintenance needs, maintenance of shrub beds, maintaining section signs, maintaining water lines, rehabilitation of barren areas, raking, resetting stones as needed, inspecting and repairing fences, watering newly planted areas, sodding as necessary, identification of trees for removal, removal of flowers and grave decorations, removal of wild growth, and inspection and cleaning of catch basins (see, for example, Klupar 1962:226-228). Llewellyn (1998:206) also explains the management activities that occur at an appropriately operated cemetery – even one that is no longer active.

This larger – and permanent – crew would also allow the City to train certain employees in the appropriate way to reset monuments, as well as make simple repairs. It would be possible to undertake, for example, an appropriate level of fence maintenance at Eastern Cemetery, as well as conduct routine maintenance such as painting the Dead House and caring for the walls. It is important that these employees be assigned exclusively to the Cemetery, allowing them to develop a sense of ownership and continuity.

We have seen in the historical review that Portland's commitment to its cemeteries has never been strong. Episodes of maintenance were interspersed with much longer periods that amounted to essentially abandonment of the burial grounds. Only when citizens complained did the City again attempt to bring maintenance up to minimal standards.

The problem with cyclical maintenance is that each episode of abandonment creates more problems; it requires more effort and more funding to recover. After 200 years of deferred and cyclical maintenance activities, Eastern Cemetery exhibits so many critical maintenance needs that continued minimal or occasional

maintenance will result in such serious damage to the historical integrity of the property that it will not be able to recover. The City must provide a staffing level that will maintain the beauty, dignity, and historical significance of this Cemetery.

The current staffing level is impossibly low and affects the ability of the City to have an adequate presence in the Cemetery, perform the necessary maintenance, and help ensure the long-term viability of the Cemetery. The higher level of staffing – assigning two individuals to the Cemetery on a permanent basis – would also help minimize vandalism and inappropriate activities in the Cemetery.

Staff Training

Sadly, professional training in the landscape industry, at least among the public, is undervalued. This contributes to rapid turn-over and inappropriate maintenance activities.

In 2005 the Associated Landscape Contractors of America (ALCA) and the Professional Lawn Care Association of America (PLCAA) merged to form the Professional Landcare Network (PLANET). This organization offers three certification programs.

The first is the Certified Landscape Technician – Exterior. The exam for this certification is a hands-on field test and candidates can be tested in Installation, Maintenance, or Irrigation.

The second is Certified Turfgrass Professional – a comprehensive study of both warm and cool-season turfgrasses developed by the University of Georgia Center for Continuing Education. Certification in this area demonstrates a mastery of weed, insect and disease identification/control, as well as diagnosis of common turfgrass problems. The material supports Integrated Pest Management concepts and pesticide safety – significantly reducing the City's liability for operations.

The third is Certified Ornamental Landscape Professional. This certification emphasizes tree and shrub maintenance

procedures with candidates concentrating on landscape trees and ornamental woody plant physiology, health care management, and establishment.

There are also local programs. For example, the Maine Landscape and Nursery Association offers a certification program for members (<http://www.melna.org/certified-landscape-professional.php>). In addition, Southern Maine Community College in South Portland offers a Horticulture program for students.

We have identified one staff person in the Parks Division who is a Maine Certified Nursery Professional. No staff appear to have a landscape certification. We have also identified at least one City employee with the Forestry Division who is an ISA certified arborist. We do not know, however, how involved either individual is with cemetery management.

The City should provide opportunities for its staff to become certified in different areas. Such efforts would improve the level of care and maintenance and develop a greater sense of stewardship. Eventually this core of trained individuals could also provide in-house training to other staff.

The Quality of Supervision

Regardless of the credentials or certification, the complexities of Eastern Cemetery require that the technicians are well supervised and are held accountable for their performance. This is most particularly true if the City wishes to assign prisoners and work force participants to maintenance activities at Eastern Cemetery. These untrained and largely unskilled individuals require constant and careful supervision.

It is especially important, therefore, that the supervisory position we recommend be carefully defined. The selected individuals must not only be well trained and knowledgeable, but also possess demonstrated supervisory experience. The supervisor must be expected to work alongside the crews on a daily basis – this means that the City must not burden these individuals with administrative duties.

Continuity of the Staff

Maintaining the continuity of a maintenance staff with a commitment to the preservation of a historic cemetery is critical. It not only serves to help ensure the highest possible quality of care, but also allows the specialized knowledge that accrues to be transferred to new staff members over time.

Obtaining this continuity, of course, demands that the City provide a reasonable pay scale for new workers and ensure that staff do not feel trapped in a dead-end job.

Cemetery Trees

Selection Issues

Cemeteries, in general, have historically been dominated by large deciduous trees, although evergreens are also very common. They provide a distinctly inviting image for visitors and passersby. These trees also provide some visual separation from adjacent buildings – especially in cluttered urban environments.

All other issues being equal – plantings should focus on those tree species that are known to have been used or that are historically appropriate. We urge care in selecting additional plantings, focusing on a small number of historically appropriate trees to maintain the historical integrity of the cemetery.

The landscape plan for Eastern Cemetery (Figure 68) does an excellent job of identifying historically appropriate plantings, as well as minimizing problem trees. While no tree is perfect, it is useful to minimize those that pose significant maintenance issues, such as trees that will shade out the turf, that will produce abundant suckers or surface roots, that are vulnerable to wind or ice damage, or that produce quantities of litter (see Table 7).

The approved tree plan also does a good job of providing a mix of fast-growing but short-lived trees intermixed with slow-growing but long-lived trees to create a planned appearance.

Maintenance issues can often be overcome through judicious placement and appropriate planning. For example, those trees with surface roots should be planted in areas that do not contain dense monuments or below grade tombs. Trees that may pose breakage dangers are typically either weak at the crotch due to poor collar formation or the wood itself is weak and tends to break. Such trees should be planted in areas with few monuments and should be carefully inspected (see below). Finally, trees that produce much litter may be mitigated by ensuring that maintenance uses mulching mowers (described below).

At the present time the trees are young and are being tended by Mr. Hosmer and Spirits Alive volunteers. They are doing an excellent job pruning and training these young trees and these steps will dramatically reduce long term maintenance issues. Nevertheless, the City, using a certified arborist, should assess the health and condition of the existing trees as they age. As mentioned, there is at least one ISA Certified Arborist on city staff, but if his schedule prohibits this level of attention to the Cemetery, then an outside contractor (who is also an ISA Certified Arborist) should be retained.

Although not an issue at present, it is good practice to replant trees as older ones are removed. Likewise, it is important that any recently planted tree not surviving be replaced immediately using the same species and cultivar.

Some of the specified trees were either not available or not used, including white fir (Swiss Stone Pine, *Pinus cembra*, was used instead), Adams crabapple (replaced by Accolade Cherry, *Prunus* 'Accolade') and scarlet oak (used instead are other oaks on the list and white oak, *Quercus alba*). In addition, the Dutch elms were replaced with American elms with disease resistance (*Ulmus americana* 'Valley Forge' and *U. americana* 'New Harmony').

Of far greater concern, we also understand that the Korean mountain ash (*Sorbus alnifolia*) has been used in the plantings.

This tree is not on the approved list and is an exotic of very recent introduction into the United States. A far more appropriate choice would be *S. Americana* (American mountain ash), which was introduced to cultivation by 1783. The European mountain ash (*S. aucuparia*), while also an exotic, was introduced in 1792 and might be a more suitable choice than the Korean mountain ash. Likewise Dawn Redwood (*Metasequoia glyptostroboides*) has also been included in plantings. Although the tree has no particular problems, it is not listed on the planting plan and is also an exotic not introduced to the United States until the second half of the twentieth century.

If these trees are represented only by individual specimens, we do not recommend their removal. However, we strongly emphasize the need to plant only those trees identified on the planting plan as historically appropriate – especially since this plan has been approved by the City.

Planting Issues

Locations chosen for planting should not interfere with gravestones, curbing, or fences. Issues of security should also be considered and the use of small trees that obscure eye level views should generally be limited or avoided.

Research is suggesting that trees, especially as they grow older and mature, improve in health when turfgrass is removed under the branch spread and mulch is applied at a depth not exceeding 3 to 4-inches. This is a practice that could be productively employed at Eastern Cemetery. Staff should be closely supervised to prevent over mulching of vegetation.

The existing plan specifies the caliper or size of the trees to be planted and these recommendations should be closely followed. In addition, all trees should meet the minimum requirements of the American Nursery and Landscape Association's American Standard for

Table 7.
Characteristics of Trees Included in the Eastern Cemetery Planting List

Scientific Name	Common Name	Mentioned in Adams (2004)	Deciduous or Evergreen	Height	Spread	Litter a Problem	Breakage	Tolerance	Surface Roots	Issues/Notes
<i>Abies concolor</i>	White Fir	p. 69; introduced 1872	E	40-50	15-25	no	resistant	high	no	Creates dense shade that kills turf considered an improvement over Red Maple cultivars
<i>Acer x freemanii</i>	Celebration Maple	p. 71; native, introduced 1735	D	45	30	no	resistant	moderate	no	
<i>Acer saccharum</i>	Sugar Maple		D	50-80	35-50	no	resistant	moderate	no	
<i>Aesculus x carnea</i>	Red Horsechestnut		D	30-45	30-45	yes	resistant	moderate	no	a hybrid between <i>A. pavia</i> and <i>A. hippocastanum</i>
<i>Amelanchier x grandiflora</i>	Autumn Brilliance Hickory	p. 53; native	D	15-25	15-25	no	resistant	moderate	no	based on <i>C. carya</i>
<i>Carya spp.</i>	Autumn Brilliance Hickory		D	60-80	25-35	yes	resistant	moderate	no	var. <i>inermis</i> is similar to the species, but virtually thornless
<i>Crataegus crusgalli</i>	Thornless Codespar Hawthorn	p. 78; <i>C. crus-galli</i> introduced 1734	D	30-40	30-40	no	resistant	moderate	no	
<i>Crotaegus phoenopyrum</i>	Washington Hawthorn		D	20-35	20-25	no	yes	high	no	thorns are about 3" long and contact can be painful
<i>Fagus sylvatica</i>	Fern Leaf European Beech	p. 79; exotic, long cultivated; <i>Asplenifolia</i> introduced by 1804	D	60-80	35-45	no	resistant	moderate	yes	finely dissected foliage gives impression of fern old name for <i>Fagus sylvatica</i> Purpurea
<i>Fagus sylvatica</i>	Copper European Beech		D	50-60	35-45	no	resistant	moderate	yes	purple leaves with light pink border
<i>Fagus sylvatica</i>	Rose Margin European Beech		D	50	30	no	resistant	moderate	yes	very sensitive to Ash Borers
<i>Fraxinus americana</i>	Autumn Purple White Ash	p. 80; native, introduced 1724	D	40-60	35-50	no	resistant	moderate	yes	
<i>Larix decidua</i>	European Larch	p. 83; exotic, long cultivated (ca. 1736)	D	80-100	20-30	yes	resistant	low	no	Aphids can create heavy deposits of honeydew
<i>Liriodendron tulipifera</i>	Tulipree	p. 84; native, introduced 1668	D	15-20	20	no	resistant	moderate	no	Fragrant, showy flowers
<i>Malus Adams</i>	Adams Crabapple		D	15-20	17-22	no	resistant	moderate	no	Good resistance to typical diseases
<i>Malus Donald Wyman</i>	Wyman Crabapple		D	65-75	25-35	yes	resistant	high	no	Prefers moist soil
<i>Nyssa sylvatica</i>	Black Tupelo / Blackgum	p. 91; native, introduced 1759	E	40-60	30-50	yes	yes	moderate	no	State tree of Maine; poor self-pruner and lower branches will be retained
<i>Pinus rigida</i>	Pitch Pine		E	50-80	25-35	yes	yes	moderate	no	Very long-lived
<i>Pinus strobus</i>	White Pine	p. 91; native, introduced 1705	E	50-70	50-70	yes	resistant	moderate	no	
<i>Quercus bicolor</i>	Swamp White Oak		D	60-75	45-60	yes	resistant	moderate	no	Somewhat resistant to oak wilt
<i>Quercus coccinea</i>	Scarlet Oak	p. 96; native, introduced 1691	D	70-90	60-80	yes	yes	high	no	Oak wilt particularly affects red oaks
<i>Quercus macrocarpa</i>	Bur Oak	p. 96; native, introduced 1805	D	60-70	50-60	yes	yes	high	yes	This is a shrub; hybrid of <i>S. cantoniensis</i> and <i>S. trilobata</i> ; cultivar Snow White more compact and disease resistant
<i>Quercus rubra</i>	Red Oak		D	60-70	50-60	yes	yes	high	yes	This is a shrub; hybrid lilac from <i>S. obtata</i> and <i>S. trilobata</i> ; Asesippi is an early flowering plant with single, pale lavender-blossoms
<i>Spiraea x vanhouttei</i>	Snow White Spiraea	p. 128; exotic, introduced ca. 1866	D	3-6	3-6	-	-	moderate	-	While often avoiding Dutch Elm disease, it can be heavily damaged by the Elm Leaf Beetle
<i>Syringa hyacinthiflora</i>	Assesippi Lilac	p. 130; <i>S. vulgaris</i> is an exotic, introduced 1563	D	10-12	10-12	-	-	moderate	-	Hybrid between <i>U. carpinifolia</i> and <i>U. glabra</i>
<i>Ulmus glabra</i>	Camperdown Elm	p. 101; introduced by 1850	D	20-25	18-25	-	-	low	yes	
<i>Ulmus x hollandica</i>	Dutch Elm		D	40-120	30-80	-	-	low	yes	

Nursery Stock (ANSI Z60.1-2004). Trees that exhibit defects should be rejected. Additional planting tips are provided in the publication <http://www.umext.maine.edu/onlinepubs/PDFpubs/2366.pdf>.

Maintenance Issues

Maintenance involves at least four basic issues: watering, fertilization, pruning, and pest control.

The City does not water trees in the Cemetery, relying instead on rainfall. The exception are newly planted trees, which are watered, with great labor, by volunteers carrying water into the Cemetery. This is a poor use of volunteer efforts and some trees died as a result of inadequate water in spite of these efforts.

The City must establish at least one water faucet in the Cemetery. Water lines are present for North School, as well as the businesses on the opposite side of Congress – so water is readily available. A line should be run down the center of Funeral Lane to the vicinity of the dead house, after an archaeologist has examined and approved the route. A Woodford (or equivalent) Yard Hydrant should be installed. This is lockable and can prevent frost damage to a depth of 5 feet. We recommend that the lock be stainless steel and keyed the same as those used for the gates and dead house.

The presence of the faucet will allow volunteers to water the trees on a regular basis or, if necessary, use water bags, such as the Treegator (<http://www.treegator.com/home/index.html>).

This will also permit planning for deep-root water during periods of severe drought (assuming this is permissible). This is a critical step necessary to protect the historic landscape fabric of the cemeteries. Using a root feeder without fertilizer, it is possible to apply water 12-inches below the surface. This approach can also be used during extended periods of dry weather during the winter (as long as the temperatures are above freezing).

At the present time the trees are too young to require fertilization (although all have received some fertilization at planting). As these trees mature they will become vital components of the landscape. They will represent part of the historic fabric and steps must be taken to protect that aspect of the landscape and vista. While shoot growth (growth occurring in the present year) and foliage color are often used as indicators of nutrient deficiency, the best indicator of whether fertilization is necessary is a soil test.

The Maine Forest Service generally recommends 10-6-4, 10-10-10, 7-8-6, or 10-5-5 applied at the rate of 3 pounds for each inch in diameter at breast height of urban trees (<http://www.state.me.us/doc/mfs/fertiliz.htm>).

While broadcast fertilization is typically used for turf, tree fertilization – when necessary – is usually accomplished through deep root fertilization. This is a technique where the liquid fertilizer is injected into the soil with a probe, usually 6 to 12-inches below the surface at a spacing of about 2 to 3 feet. This process not only provides fertilization, but also some aeration of the soil. An alternative approach uses a drill to excavate holes in a similar pattern which are then filled with a granular fertilizer. Either is acceptable. The ANSI 300 standards allow foliar applications, injections, or implants only when soil application is impractical or ineffective.

It is best to fertilize trees when they are actively growing and have available water to help absorb nutrients. This is typically from the spring, after new leaves emerge, through mid-season. Fertilizer should not be applied late in the season or during periods of drought.

As previously mentioned, Mr. Hosmer and volunteers with Spirits Alive are currently pruning the trees. They have been doing an excellent job. Eventually, however, these trees will require more extensive pruning and it is important that the City is capable of fulfilling this need.

Trees should be inspected for potential threats to monuments, as well as general health. Ideally these inspections should be made yearly and after any storm where the winds exceed 55

mph. They should be pruned to remove potentially hazardous dead wood on a yearly basis, but safe pruning every 5 years by a certified arborist is acceptable.

Pruning may involve either thinning or cleaning. Thinning is a technique of pruning that removes selected branches to increase light and air movement through the crown. This also decreases weight on heavy branches. The natural shape of the tree is retained and its overall health is improved. In cleaning, the pruning removes branches that are dead, dying, diseased, crowded, broken, or otherwise defective. This includes narrow crotches.

Trees should be pruned in such a manner as to preserve the natural character of the plant and in accordance with ANSI A300 (Part 1) - 2001 standards.

In pruning, branches should always be cut just beyond the branch collar (an extension of the main stem) and not flush with the trunk. Large branches should be removed with three cuts to prevent tearing of the bark which can weaken the trunk and lead to disease.

Pruning may require the use of aerial platforms or a crane to minimize the potential for damage to stones or the landscape. Under no circumstances are tree climbers (hooks, spikes, gaffs) to be worn while ascending, descending, or working in trees to be pruned. As previously discussed, heavy equipment must not be allowed on top of subterranean tombs prior to their inspection.

All pruning within the Cemetery should be performed under the supervision of an ISA Certified Arborist. If the Parks Division does not have the staff needed to accomplish this routine



Figure 69. Voluntary vegetation that should be removed to prevent damage to the adjacent monuments. The upper photo shows suckering vegetation that should have been cut flush to the ground and then have had Roundup painted on the stump.

maintenance, then it will be necessary to contract that work out to an ISA Certified Arborist.

There are some situations in the Cemetery where plantings – primarily voluntary – have grown to interfere with stones (see, for example, Figure 69). It is important that the vegetation be removed to prevent the stone from being damaged. The vegetation should be cut as close to the ground as possible, leaving the stump in place to decay naturally. No chemical additives should be used to hasten decay. Where the vegetation is likely to sucker, the stump should be

painted with a concentrated glyphosate herbicide, such as Roundup®.



Figure 70. Example of damaged recent planting. This should be removed and replaced with a new specimen.

Pest Control

The Maine Forest Service, Insect and Disease Laboratory provides yearly summaries of insect and disease trends for forest and shade trees in the state (<http://www.state.me.us/doc/mfs/ConditionsReportsIndex.htm>). Some problems, such as white pine decline, emerald ash borers, pine tip blight, sudden oak death, and the Asian Longhorn Beetle, are receiving considerable attention.

Nevertheless, we observed no obvious evidence of pests or disease, although several dead plantings were observed (Figure 70). Given the importance of the trees to the cemetery landscape, it is of critical importance that the Eastern Cemetery trees be very carefully inspected on at least an annual basis.

In response to our preservation questionnaire inquiry regarding individuals with the City who hold commercial pesticide licenses with the Maine Board of Pesticide Control, we were told that the City does not use pesticides and therefore no employees are licensed.

There may be a time when an herbicide or pesticide is required for the proper maintenance of vegetation at Eastern Cemetery. In the absence

of a license, the City will need to contract the work to a firm capable of providing the necessary treatment.

As previously mentioned, the American elms used in the plantings are cultivars 'Valley Forge' and 'New Harmony.' Developed by the Agricultural Research Service in Maryland and released to wholesale nurseries without patent restrictions by the United States National Arboretum, these cultivars are reported to have "good resistance" to Dutch Elm Disease, although neither is immune. In addition to their resistance, these cultivars are also tolerant of air pollution such as ozone, drought, and poor soil conditions. They have the classic elm form.

These trees should be carefully monitored for evidence of Dutch Elm Disease, which is the result of a fungus infecting the vascular (water conducting) system of the tree. Initial symptoms include the wilting of leaves with a progression to yellowing and browning. Symptoms will tend to be first seen in the spring and may progress throughout the tree in as little as one season, although it may take two or more years. A variety of management practices are possible to limit the disease, including sanitation, insecticides, and use of fungicides, and careful pruning (http://www.na.fs.fed.us/spfo/pubs/howtos/ht_ded/ht_ded.htm).

Shrubbery

Selection and Planting

We did not observe abundant shrubbery in the Cemetery although the planting list indicates that spirea and lilac are present. In addition, we understand that there is a desire to include hydrangea and additional lilac. A large double hydrangea (*Hydrangea paniculata* 'Grandiflora') was introduced by 1862 and by 1889 was described as "a splendid late-flowering shrub, with its immense panicles and changeable shades, and it should enliven every garden in September (quoted in Adams 2004:117). The

Snowball hydrangea (*H. arborescens*) was introduced even earlier (1786) and there are heirloom varieties suitable for Portland's hardiness zone.

While the Assessippi lilac is currently on the planting list, the common lilac (*Syringa vulgaris*) has a very long planting history in American gardens, being introduced as early 1563. There are a variety of heirloom varieties, including 'Charles X,' 'Congo,' and 'Marie LeGraye.' The Persian or Siberian lilac (*Syringa x persica*) might also be appropriate. This was introduced as early as 1614 and boasted "panicles of rather brighter flowers," although it was also found to be more delicate and difficult to grow than the common lilac (quoted in Adams 2004:129).

The plantings should have a unifying or cohesive theme. For example, lilac were often planted in clumps and even as hedges, both pruned and unpruned. Hydrangea were often ubiquitous in the landscape and might be planted as specimens, as well as hedges.

Special care should be taken to avoid planting shrubbery too close to stones and monuments - a common occurrence at virtually every cemetery. For example, the *Hydrangea paniculata* 'Grandiflora' may spread from 8 to 16 feet and the common lilac has a spread of up to 12 feet.

As with trees, when shrubs require replacement, they should generally be replaced with like material, especially if they represent plants traditionally used in cemetery settings, such as hydrangea and lilac.

Fertilization

As with trees, the best indication of the need for fertilization is a soil test, which should be performed at least every three to five years. While some shrubs provide an indication of deficiency through the yellowing of lower leaves, such evidence can be missed and does not indicate the extent of the problem.

Where fertilization is necessary most shrubs, because of their shallow root systems,

respond adequately to broadcasting the appropriate organic fertilizer around the base of the plant, typically at the drip line.

Most shrubs should be fertilized when they are actively growing and have available water to help absorb nutrients. Broad-leaved evergreens are best fertilized in the winter or spring. Summer or fall fertilization of these plants may induce late season growth that is highly susceptible to winter injury. Some plants that exhibit episodic growth may benefit from a more continual fertilization program based on soil analysis and plant growth response.

Pruning

Shrubs are best pruned, rather than sheared, to maintain a natural shape and to keep plants at a desired size so that they do not outgrow their landscape too quickly.

Thinning (cutting selected branches back to a side branch or main trunk) is usually preferred over heading back. Thinning encourages new growth within the interior portions of a shrub, reduces the size, and provides a fuller, more attractive plant.

In general, summer-flowering plants should be pruned before spring growth begins since these produce flowers on the current season's growth. Spring-flowering plants should be pruned after flowering since they produce flowers on the previous season's growth. For more information consult the on-line document <http://www.umext.maine.edu/onlinepubs/htmlpubs/2169.htm>.

Turfgrass Issues

Turfgrass should be an important concern of cemeteries, although rarely is it given adequate attention. With an appropriate turfgrass, mowing frequency is reduced. This reduces labor costs, pollution, equipment expenditures, and perhaps most importantly for historic properties, damage to the stones.

Eastern Cemetery contains several types of grasses. We noticed a fair amount of fescue,

although there were some areas with Kentucky bluegrass. Much of the Cemetery, however, is dominated by broad leaf “weeds” – undesirable species that cause the grounds to look unkempt and require frequent mowing to keep them in check.

It is clear that the Cemetery turf has received little attention beyond mowing – and even this has been infrequent. The neglect of the turf has led to an overall decline in appearance

Another product being tested with equally good results is the Fleur de Lawn Mix from Pro Time Lawn Seed (503-239-7518; <http://www.protimelawnseed.com/collections/sidebar/products/fleur-de-lawn>). This mix contains 40% PR8820 Dwarf Perennial Ryegrass, 40% Eureka Hard Fescue, 10% Assorted Flowers (Pink English Daisy, Baby Blue Eyes, & Sweet Alyssum), 5% White Yarrow, and 5% Salina Strawberry Clover. The resulting lawn requires little or no mowing, and no water or fertilization after it becomes established. The lawn takes on an appearance that may be closer to what would have been present historically.

Table 8.
Characteristics of Typical Maine Turfgrasses

	Heat Tolerance	Cold Tolerance	Shade Tolerance	Drought Tolerance	Wear Resistance	Maintenance	Mowing Height
Kentucky bluegrass	good	excellent	poor	moderate	medium	moderate	1.5-2.5"
Red fescue	good	good	good	moderate	medium	low	2-2.5"
Tall fescue	excellent	good	good	excellent	high	low	2-3"
Hard fescue	fair	excellent	excellent	excellent	poor	low	-
Chewings Fescue	fair	good	excellent	excellent	medium	low	1.5-2.5"

and an increase in maintenance costs.

Grasses identified for Maine landscapes include Kentucky bluegrass and four different fescues. Each has distinct characteristics summarized in Table 8 and it is clear that as with many choices in preservation there is no perfect option. The different characteristics promote the use of mixed grasses. For example, a common mix is Kentucky bluegrass and red fescue in equal proportions. There is, however, research exploring some more exotic mixes that have excellent characteristics.

For example, the Maine Department of Agriculture has obtained excellent results using “No Mow Mix” from Prairie Nursery (800-476-9453; <http://www.prairienursery.com/store/>) that includes 25% SR5100 Chewings Fescue, 25% Azay Sheeps Fescue, 12% SR3100 Hard Fescue, 12% Scaldis Hard Fescue, 12% Creeping Red Fescue, and 12% Dawson Red Fescue. This produces a dense turf that is successful in both sun and shade. Once established it requires little water or fertilizer. Little or no mowing is needed. The mix also biologically reduces weed growth, reducing lawn maintenance dramatically.

While changing the existing grass will require considerable up-front effort, we believe that the long-term benefits can be dramatic, with significant reductions in maintenance and a better turf appearance. It is also possible to gradually phase in a new turf by dividing the Cemetery into different zones.

The most common conversion method is complete renovation in which the existing stand is killed with chemicals or by mechanical means. It may, however, be possible to introduce a new turf by overseeding after treating the existing grass with Roundup®, scalping, or coring.

Mowing

The City reports that the Cemetery was mowed three times during the 2010 growing season. Equipment used consisted of 21” and 36” walk-behind mowers.

Although these deck sizes are at the low end of commercial equipment, the use of 30-36” walk behind mowers can be problematic, especially in a setting such as Eastern Cemetery where monuments and the topography present significant obstacles. It would be far better to abandon the use of all mowers with decks larger than 21”.



Figure 71. Examples of mower and trimmer damage to stones in Eastern Cemetery. Upper and middle photos show typical scrapes and damage caused by mowers. The photo on the middle right reveals paint transfer from the mower onto the stone itself. The photos in the bottom row show parallel striations on the stones caused by careless trimmer use with a line too heavy for cemetery work.

Stones in the Cemetery clearly reveal the damage that can be done by large equipment and less than perfect handling (see Figure 71).

Mowing the grass infrequently using inexperienced, untrained, and uncaring crews can

cause extensive damage – as evidenced by these photographs. As the grass grows and hides stones, they are more likely to be impacted. Coupled with carelessness and a lack of professionalism, much damage is being done to the Eastern Cemetery stones.



Figure 72. Height of the grass prior to the most recent mowing. In missed areas it is clear that the grass was allowed to grow to 10-14" before being mowed. This would completely hide some monuments and contribute to the damage observed in the cemetery.

In addition to mowing, nylon trimmers are used around monuments. This is an acceptable practice, but it is critical that a very light weight line be used – along with worker attention – to minimize damage to stones. The maximum line diameter for use in the Cemetery should be 0.065". Thicker lines, such as the 0.095" reportedly in use will cause unnecessary damage to the stones. This damage is also evidenced by Figure 71 where even slate monuments – a far harder stone than marble – are being scored by the trimmer line that is too heavy.

We recommend that no trimmer line in the cemetery be heavier than 0.065" and that technicians be trained and closely supervised to prevent damage to the monuments.

Throughout the

Cemetery we found examples of the dead grass from trimming being allowed to remain on stones. This grass must be removed, either by sweeping or by using a blower. Failure to do so will obscure stones and allow the grass to hold moisture. This is not only disrespectful, but also damaging to the



Figure 73. Grass debris must not be allowed to remain on stones.

stone itself.

Fertilization and Weed Control

The City reports that it does not routinely conduct soil tests. We recommend such tests be conducted every three to five years. The Maine Soil Testing Service (<http://anlab.umesci.maine.edu/>) provides a standard soil testing for \$15 and a comprehensive test for \$22. This is certainly affordable since five tests for the Cemetery would cost only \$110 every three to five years.

A single test was collected as part of this assessment. The results are shown in Figure 74. Soil pH is at the low end of optimal (5.5-6.5) for turf and most trees. Organic matter is somewhat low, suggesting little build up in the A horizon coupled with leaching. This can be rectified by using mulching blades on mowers and leaving the clippings to compost. Nitrate, the available form of nitrogen, is low. However, nitrate is easily lost from the soil with rainfall. Because of its transient nature it is not generally considered reliable unless the sample was taken during the growing

optimal levels (0.8-1.2 ppm and 1-2 ppm, respectively).

A lead scan of the soil also revealed moderate contamination (there is no health risk with non-edible plants). The high lead and zinc levels might be from paint residues since historic paints often used both metals in the pigments. Lead and zinc were also historic ingredients in various whitewash recipes (see, for example Trautwine 1907: 972-973). Sponberg and Becks (2000) have also identified zinc, copper, lead, and iron as contaminants in cemetery contexts, suggesting these materials may come from a variety of contexts, including coffins and perhaps even embalming chemicals.

While none of the levels identified warrant remediation, it would be prudent for individuals working in the Cemetery to practice good hygiene, including careful washing of hands and washing work cloths separate from family laundry. Additional information regarding lead in the soil is available at <http://extension.umaine.edu/publications/2281e/>.

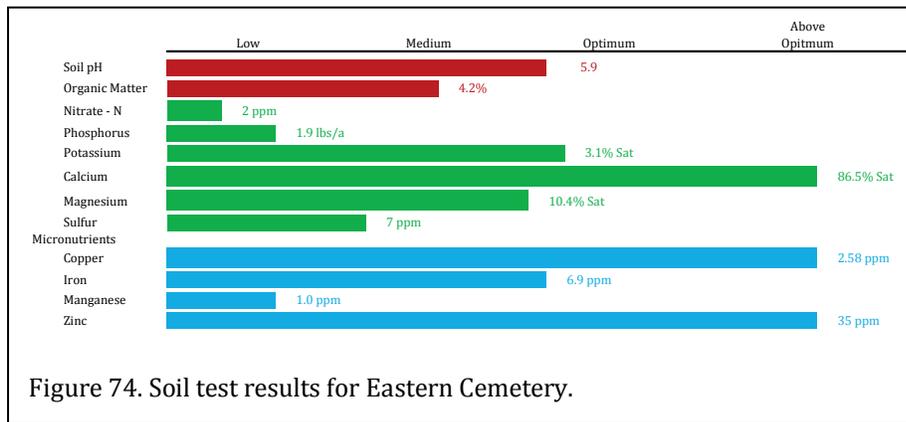


Figure 74. Soil test results for Eastern Cemetery.

season. Phosphorus is also low (optimum range is 7-10 pounds per acre). Potassium, calcium, and magnesium are at or above optimal levels. Sulfur is low (optimum range is greater than 15ppm); this can be provided by using organic fertilizers (see below).

The micronutrients provide an interesting picture of the soils. Manganese is low and can be supplemented by addition of fish meal. Iron is adequate. Copper and zinc, however, are above

Using conventional 22-6-8 fertilizer the report recommends 5 lbs per 1000 square feet in early spring and an additional 5 lbs in late August. No additional liming is recommended.

In order to minimize salt uptake by the stones, slow release organic fertilizers are preferable to commercial inorganic fertilizers. An excellent source explaining the differences between organic and inorganic fertilizers is <http://www.cmg.colostate.edu/gardennotes/234.pdf>. The publication at http://pubsadmin.caes.uga.edu/files/pdf/C%20853_2.PDF provides information on converting traditional inorganic fertilizer recommendations to safer organic recipes.

For example, 18 lbs of blood meal per 1000 square feet will provide the recommended nitrogen levels. The P_2O_5 levels can be met by using 5.5 lbs of steamed bone meal. Sulfate of Potash Magnesia will meet the K_2O demand at a rate of 3 lbs. per 1000 square feet. Each of these amounts would, of course, be divided into two applications – half in early spring and the remainder in late August.

Manganese sulfate is the most common source of manganese fertilizer. Organic materials such as animal compost will also provide this micronutrient, but it is combined with zinc and copper, neither of which are needed.

At the present time the City does not attempt to control weeds through the use of either pre-emergent or post-emergent herbicides. Since there is no well established turf, there may be little benefit in establishing such a program. Nevertheless, if our recommendation to establish

Cemetery for several years before establishing a yearly schedule.

Compaction causes a variety of problems, including reduced drainage and inhibited air exchange, decreased soil oxygen, altered infiltration and percolation rates, and it contributes to the build-up of thatch since the conditions for microbial activity and decomposition are adversely affected. We recommend hollow tine core aeration with treatments at least twice a year, typically in May and September.

While the Cemetery clearly reveals the need for extensive post-emergent (and possibly pre-emergent) herbicide use in order to rehabilitate the turfgrass, it is critical that the herbicides be carefully applied and that overuse is avoided. Use should also ensure that drift does not occur and that the herbicide is not applied directly to the stone. General blanket applications of

broadleaf herbicides containing 2,4-D, dicamba, and MCPP are most effective. Often herbicide products such as Triplet or the lower concentration brand Trimec are used since they combine all three herbicides.

We recommend that the weed issue be revisited after core aeration and after appropriate fertilization for several years.

Developing a Maintenance Schedule

We are told that in 2010 the City mowed Eastern Cemetery three times at a cost of \$2,200 or \$320 per acre. Means Cost Estimating suggests a rate of \$228 per acre and on-line forums reveal prices rarely higher than \$100 per acre in bids (<http://www.lawnsite.com/showthread.php?t=22284>). Of course these costs may escalate given the obstacles present in a cemetery and they do not necessarily include other services, such as



Figure 75. Lawn area at Eastern Cemetery showing evidence of soil compaction.

a low maintenance turf is accepted, weed control will become a more important issue and this concern should be revisited.

Regardless of the turf, it would be beneficial to reduce compaction, which is evident throughout the cemetery. Given the compaction level it may be necessary to core aerate Eastern

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trimming and removing grass from stones. However, the cost comparisons suggest that it may be useful to examine the use of outside contractors.

If the work is contracted out, it is critical that Spirits Alive work closely with the City to develop appropriate specifications. A sample is available on the Chicora website at <http://www.chicora.org/pdfs/Sample%20Landscape%20Maintenance%20Contract%20for%20a%20Cemetery.pdf>.

	Mowing	Aerate	Fertilize	Weed Control	Notes
Apr	X		X		Mow 2.5-3" as soon as grass greens up and begins growing
May	X	X			Frequent mowing is needed during this time to avoid removing more than 1/3 of the leaf blade during a single mowing
Jun	X				Continue mowing at 2.5-3"
Jul	X				Continue mowing at 2.5-3"
Aug	X		X		
Sep		X			
Oct				X	

Figure 76. A minimal maintenance program schedule for Eastern Cemetery.

Whether done in-house or by contract it is important to have a reasonable maintenance schedule. Absent intervention to obtain a good turf at the Cemetery, mowing will need to be conducted far more frequently than three times a year.

Figure 76 provides a minimal maintenance schedule for Eastern Cemetery. An increase in the maintenance program would include pre-emergence treatments for weeds, more frequent mowing (with a lower grass height), and treatment for lawn pests. Even this minimal program would include trimming adjacent to stones and ensuring that all grass is blown off stones.

The master plan for Western Cemetery provides an interesting estimation of time requirements for maintenance activities at the Cemetery. It may be of use to replicate this estimate for Eastern Cemetery, although we are recommending a somewhat less intensive maintenance program. Figure 77 reveals expected time requirements of just under 1,200 person hours at Eastern Cemetery – about half of that estimated for Western Cemetery. This is well

within the capabilities of the recommended full-time crew of a supervisor and two staff.

We also recommend that the City create a cemetery maintenance program that outlines specifically what must be done by season and/or month. Such a maintenance program can assist in quality control, clearly describes the minimal level of care, and ensures that staff are always aware of what needs to be done. One example of such a plan can be found at www.holyroodcemetery.org/fallservices.pdf (additional seasonal plans are available by substituting summerservices, winterservices, and springservices).

Collection of Leaves and Debris

Leaves and debris are not being collected prior to mowing. It is important to emphasize that these materials must be removed from the Cemetery and not allowed to collect. There are several options.

Many cemeteries deal with leaves by using power equipment to create rows that are then either mechanically bagged or, just as often, mulched using mowers with micro mulch blades.

Operation	Average Freq. per Year	Minutes per 1000 square feet	Area in Square Feet	Person Hours per Year
Mowing	15	9	296,200	666
Trimming	15	9	30,000	68
Blowing Off Stones	15	5	30,000	38
Aeration	2	15	296,200	148
Fertilizing	2	15	296,200	148
Weed Control	1	10	296,200	49
Collect Litter	8	2	296,200	79
Total Time Requirements per Year				1,196
Items not included: tree and shrub pruning, removal of volunteer growth, irrigation maintenance, and other miscellaneous items such as inspections and travel time.				

Figure 77. Landscape maintenance time requirements at Eastern Cemetery.

The latter approach not only eliminates the work of gathering and removing leaves, but it also adds nutrients back into the soil. This would be especially beneficial at Eastern Cemetery where the organic content of the soils is low.

For example, a Lexington, Kentucky cemetery deals with 130 acres of leaves with a crew of seven employees using blowers to blow all the leaves to the driveways. Next, a crew of three picks up the leaves using a large vacuum, which shreds and shoots them into a covered dump wagon. The shredded leaves can then be composted.

The process at Spring Grove Cemetery and Arboretum in Cincinnati, Ohio is even simpler. There, on 430 acres, they blow the leaves away from markers and flower beds, then mulch them with riding mowers. The same can be accomplished at Eastern Cemetery if the push mowers are fitted with mulching blades. These are specially designed blades that pulverize clippings. For example, some blades have jagged teeth instead of a traditional-looking cutting edge. Others have multiple cutting edges. Many mulching mowers employ kickers or tails that force blades upward for repeated chopping. Mulched leaves contain less nutritional value than green clippings, so the main value is in reducing your need to dispose of huge volumes of leaves in the fall.

Examples of commercial mulching mowers include the Toro 21" Heavy Duty models, Snapper Pro with their Ninja blade, and the Honda HRC Commercial mowers. All get very high ratings from professional users.

Irrigation

We have previously indicated the need to have water accessible for different activities in the Cemetery. Spot watering is generally preferable to any cemetery-wide irrigation system (which use very large quantities of water, interfere with markers and graves, and cause erosion to stones). The ability to spot water will

be essential to any renovation of turf in the Cemetery, as well as for maintenance of newly planted vegetation.

Water lines are certainly available on Congress and it should pose no significant problem to tap into one of these lines, install a

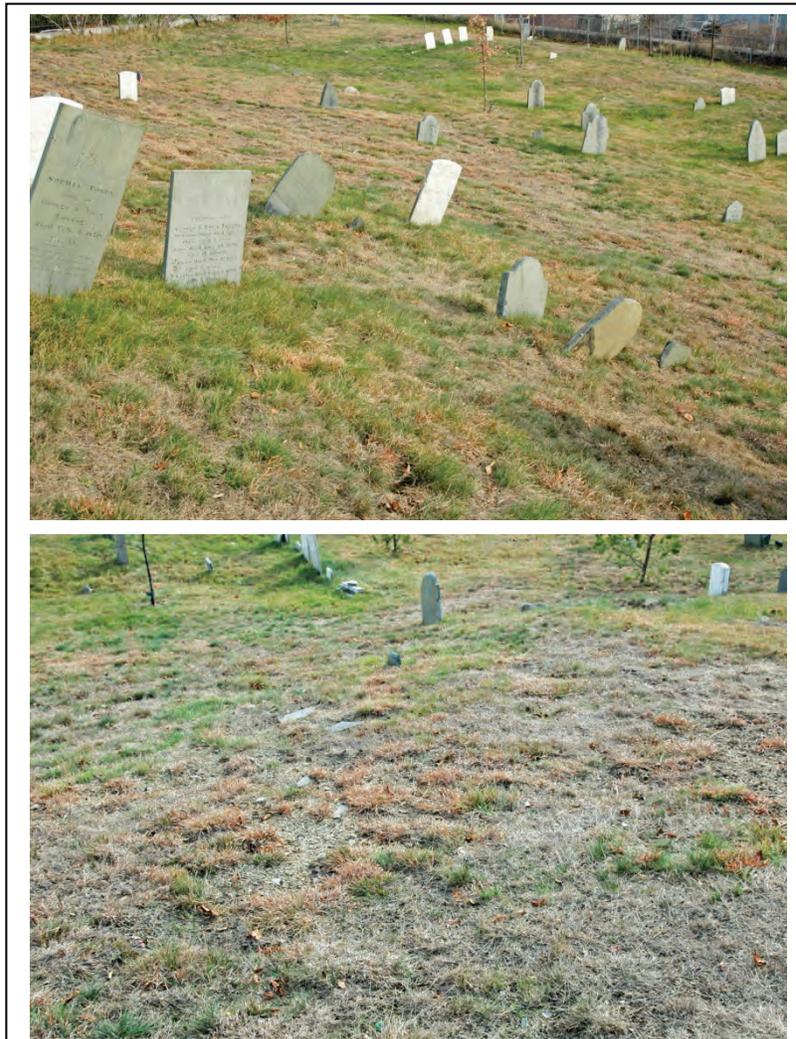


Figure 78. Erosion at the eastern slope in the cemetery. The upper photograph shows how this erosion has caused stones in this area to lean – these should be reset. The lower photograph illustrates compaction on this slope that is causing rainwater to run off, rather than be absorbed.

meter, and run a line down the center of Funeral Lane to a Woodford (or equivalent) Yard Hydrant in the vicinity of the dead house.

Erosion

There is evidence of erosion on the eastern slope of the Cemetery down to the Federal Street wall. This erosion is likely a long-term process, but it has been exacerbated by the decline in the turf.

It is important to reset those stones evidencing erosion force. It is also critical that the turf on this slope be monitored. It should receive spot irrigation as necessary and should receive aeration to reduce compaction that is causing water to run off rather than being absorbed.

Recommendations

A Spirits Alive representative should be present at every Parks Commission meeting and present a report on conditions at Eastern Cemetery, with specific emphasis on maintenance issues and needs.

Proper maintenance and upkeep of the 6.8 acre Eastern Cemetery requires a three-person crew working year-round. We recommend hiring to achieve that level of staffing dedicated to Eastern Cemetery.

Technicians and supervisory staff should be encouraged to become certified by PLANET (or some similar local organization) in landscape maintenance.

The City should work to ensure continuity of the staff by providing appropriate pay levels, fringe benefits, and educational opportunities (such as certification opportunities).

Since Park Rangers only open and close Eastern Cemetery for the five months a year they are employed, some other Park employee should be made responsible for opening and closing the Cemetery the remainder of the year, weather permitting. The Cemetery must be made available to the public on a regular, year-round schedule.

Maintenance issues, such as surface roots, associated with the trees selected for planting at Eastern Cemetery should be resolved by

judicious placement and appropriate planning (including adequate staff care and attention).

The Parks Division has not always followed the planting plan for the Cemetery. We strongly emphasize the need to plant only those trees identified on the planting plan as historically appropriate - especially since this plan has been approved by the City. All trees should meet the minimum requirements of the American Nursery and Landscape Association's American Standard for Nursery Stock (ANSI Z60.1-2004). Nursery stock should be carefully inspected and specimens with wounds, crooked or double leaders, broken branches, or girdling roots should be rejected.

Locations chosen for planting should not interfere with gravestones, curbing, or fences. Issues of security should also be considered and the use of small trees that obscure eye level views should generally be limited or avoided.

The City, using a certified arborist, should assess the health and condition of the existing trees yearly and after any storm where the winds exceed 55 mph. The trees should be pruned to remove potentially hazardous dead wood at least every 5 years by a certified arborist.

Voluntary trees and other vegetation should be removed. This is especially important where these plants may interfere with monuments, fences, or tombs.

The elm trees planted in the Cemetery, while resistant to Dutch Elm Disease, are not immune. They should be carefully monitored for symptoms.

The nylon trimmer line being used by the City must not be over 0.065-inch line. There is damage to monuments suggesting that a heavier line is being use or has been used in the past.

The use of large deck mowers in the Cemetery is causing damage to monuments and the practice must be stopped. Only 21-inch walk-

behind mowers should be used on the Cemetery grounds. All mowers should be fitted with closed cell foam bumpers to reduce accidental damage to the stones. These bumpers should be inspected on a weekly basis and replaced as needed.

After core aeration and fertilization, it may be appropriate to institute pre-emergent and post-emergent weed control, taking care to avoid stones.

The mowers should be fitted with micro mulch blades in order to mulch leaves on-site. This step will eliminate the need to collect leaves.

All grass debris must be blown off monuments after mowing operations.

All staff must be periodically reminded of the level of care necessary in cemetery operations.

Soil analysis has determined the level of fertilization needed in the burial ground. The recommendations for the use of organic, slow release fertilizers provided in this document should be carefully followed.

Soil analysis reveals moderate levels of lead contamination in the Eastern Cemetery soils. Individuals working in the Cemetery should practice good hygiene, such as washing hands before eating and washing work cloths separate from family laundry.

At least one water faucet should be installed in the Cemetery. A line can run off Congress Street down Funeral Lane to the vicinity of the dead house. A lockable and frost proof hydrant can be installed to minimize maintenance and provide security.

The current turf is in poor condition and requires renovation. There are a variety of very low maintenance and drought resistant turf blends that could be used. A sustainable stand of a desirable turf would reduce long-term maintenance costs.

Until a low maintenance turf is created, the existing turf requires more frequent mowing throughout the growing season. We also recommend fertilization twice a year, and core aeration twice a year. This represents the most minimal maintenance practices suitable for the Cemetery.

OTHER MAINTENANCE ISSUES

Trash

As mentioned elsewhere, the Park Ranger collects trash upon opening the Cemetery for the five months that the Cemetery is routinely opened and closed. The remainder of the year trash is either not collected or is only collected sporadically.

Our assessment was conducted during a period when trash had not been collected. We observed a number of beer cans from a recent “party” in the Cemetery, a used condom, and abundant trash such as cups and wrappers.

We understand that trash is collected once shortly after the Cemetery is closed and then again when it is about to be opened. During our assessment we observed Workforce participants collecting trash. They were unsupervised and the level of effort expended was modest. Abundant trash remained even after their collection efforts. They also routinely entered the Cemetery through breaks in the Congress Street fence, worsening the breaks and silently encouraging the public to use the breaks as well. We also observed one individual seemingly staring in the ground floor windows of the North Street School.

The trash in the Cemetery significantly degrades the appearance of the property, giving it an abandoned, uncared for appearance. Trash must be collected on a regular basis throughout the year. If Workforce is to be used, they must be supervised and they must be held accountable for the quality of their work – and their behavior.

The City does not provide trash cans in the Cemetery, having a city-wide carry in-carry out policy. Many public agencies have adopted this practice as a means of budget reduction since staff no longer are responsible for emptying trash cans. With appropriate public education this can be a

viable option – when the trash is primarily from park visitors.

That, however, is not the case at Eastern Cemetery where the trash in the Cemetery mirrors the trash outside the fence. We observed trash being generated by garbage collection. The use of plastic bags stacked on the curb, only to be opened by gulls, run over by cars, and spread by the wind is an inappropriate way to handle refuse. We also saw trash being spread by open dumpsters at the North School; there was much trash in the dumpster area, suggesting that no one at this complex picks up trash. And finally, we saw much trash clearly attributable to businesses in the immediate vicinity of the Cemetery.

We observed trash spread throughout the neighborhood, suggesting that this problem is far more pervasive and wider than just at Eastern Cemetery. A neighborhood wide problem cannot be solved by a carry in-carry out philosophy designed to reduce the budget.

There is abundant literature on the problem of littering (see, for example, National Cooperative Highway Research Program 2009). Males are twice as likely to litter as females, and adults under the age of 35 are twice as likely to litter as those over 35. Miscellaneous paper and plastic are the most common items. The extent of intentional littering is largely based on perceived social norms. That is, people are more likely to litter in an area that is already littered than in areas that are generally litter free. However, in urban areas at least 50% of the litter is thought to be accidental – such as debris blowing out of dumpsters.

It is absolutely critical that the trash in the Cemetery be reduced. But it will be difficult to address littering that is pervasive within the neighborhood. We recommend the following diverse strategies.

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Figure 79. Trash in and around Eastern Cemetery. The top left photo shows trash along the Congress Street sidewalk. The top right photo shows trash collecting at the North School chain link fence. Middle left photo shows the trash is very heavy along the North School line. Middle right photo reveals that at least some of this trash at North School originates from open dumpsters. Bottom left photo shows trash even at the Freedom Trail sign. Bottom middle photo shows trash in the cemetery. Bottom right photo shows trash blowing in from Congress Street.

OTHER MAINTENANCE ISSUES

Since much litter is blowing into the Cemetery from elsewhere, install temporary ¼" hardware cloth 2' in height on the bottom of the iron fence on the North School and Congress Street sides of the Cemetery. Assess the reduction of trash being blown into the Cemetery after a year.

We recommend that the vegetation be kept trimmed along the fence line so it doesn't collect trash. Trimming also offers an opportunity to periodically collect the trash that has collected.

Continue trash collection in the Cemetery on a year-round basis. This may require the use of Spirits Alive volunteers.

When trash collection is conducted by Workforce, insist that a supervisor evaluate – and ensure – appropriate performance.

Contact adjacent property owners and work with them to achieve trash reduction. Simply ensuring that dumpster lids are closed can reduce the spread of trash by gulls and the wind. Every property, however, should be responsible for collecting trash on its premises.

The City must take a more proactive role in dealing with trash. The carry in-carry out approach ignores the reality that most trash is generated in the neighborhood, not from visitors to the Cemetery. Spirits Alive should enter into serious discussions with the City Council on steps to improve the neighborhood trash problems.

A vandal proof trash container should be installed in the vicinity of the dead house for volunteers to use. The City should be responsible for the emptying of this trash container on a regular basis.

Signage

The Cemetery lacks effective signage. During our assessment the only signage we observed was a single sign to the right of the Congress Street entrance indicating that the Cemetery was closed at dark. Inside the Cemetery is the plaque placed by the Garden Club, but it is

not readily visible and can be read only when the Cemetery is open.

From a cemetery preservation perspective, signage is of four basic types: identification, regulatory, informational, and interpretative. They are generally recommended in this same priority.

Identification signage might include the name of the cemetery and might also include the cemetery's date of founding and historic significance (i.e., listed on the National Register). Regulatory signage specifies laws, regulations, or expected standards of behavior.

These two types of signage are immediate necessities at the Cemetery and should be placed as soon as possible (signage should be located at both the Congress and Mountfort street gates). The City, in cooperation with Spirits Alive, should develop signage dealing with, minimally, these issues (perhaps with some modifications of language as might be needed):

- Eastern Cemetery. Established about 1668 and listed on the National Register of Historic Places.
- The Cemetery is open from 8am to 5pm Sunday – Saturday except for holidays. Any individual in the Cemetery at other times is subject to arrest for trespass.
- Many of the stones in this Cemetery are very old and may be easily damaged. Consequently, absolutely no gravestone rubbings will be allowed.
- Please refrain from leaning, sitting, or climbing on any monument or tomb. All children must be escorted by an adult.
- Absolutely no alcoholic beverages, fireworks, or fire arms are allowed in the Cemetery. Proper conduct is expected at all times.
- No pets are allowed in the Cemetery.

MASTER PLAN FOR EASTERN CEMETERY, PORTLAND, MAINE

- Flowers will be removed by the staff 10 days after holidays or when the arrangements become wilted and unsightly.
- No plantings are allowed within the Cemetery and the City will enforce its right to remove any plantings deemed inappropriate, diseased, or damaging the Cemetery.
- For additional information concerning maintenance issues, please contact the City of Portland Public Services Department at _____. In case of emergency contact _____.

The last two types of signage are informational (for example, directional signs) and interpretative (information on historic people buried in the cemetery).

Spirits Alive at one point installed interpretative signs on plantings, but we understand that many of these have been lost to mowing. While we like the idea of identifying the plantings in the Cemetery, we do not recommend their replacement until maintenance is improved. Then we believe it would be appropriate to standardize the signage and ensure that it meets standards for universal access.

We recommend the addition of interpretative signage. Two panels could be used – one to briefly recount the history of the Cemetery and a second to talk about changing mortuary practices from the seventeenth through nineteenth centuries. A third panel might be added to describe the underground tombs in the Cemetery. These are all topics of general interest, whether a native or visitor.

The signage could be installed within the Cemetery property, adjacent to the Congress Street fence. This would allow passers-by and those visiting when

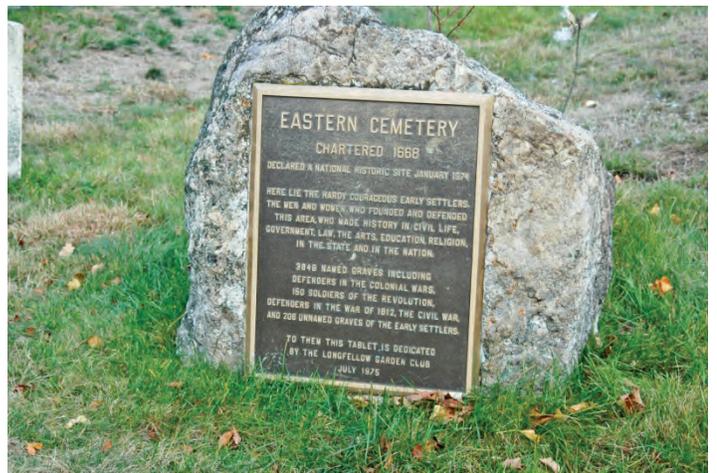


Figure 80. Signage at Eastern Cemetery is inadequate. The top photo shows the only regulatory signage currently present at the cemetery. The bottom photo shows one of the plant tags still present.

the Cemetery is not open to have access. Alternatively, they could be installed just within the main entrance at the side of Funeral Lane. Wherever placed, the signs should be readily visible to reduce the risk of vandalism.

There are two basic forms of interpretative signage. One is porcelain enamel; one supplier is Winsor Fireform (<http://www.winsorfireform.com/Default.aspx>, 800-824-7506). The other common material is fiberglass; one supplier of this type of signage is GS Images (<http://www.gsimages.com/>, 800-223-6920). Either would be suitable for Eastern Cemetery. Both types of signs are vandal resistant and both companies offer sign replacements at a fraction of the initial fabrication cost.

We also recommend that Spirits Alive, in cooperation with the City, develop an interpretative brochure, such as a walking tour of the Cemetery. This is a relatively inexpensive device that could serve to promote the resource, as well as provide information to those visiting the site.

Such brochures, however, should avoid focusing only on local history – creating what has been called the “old dead white man” trap. Instead, the brochure should focus on a wide variety of interests, such as a history of the Cemetery, eighteenth and nineteenth century mortuary customs, information on the symbolism seen on the slate and marble stones, information on the below ground tombs, as well as some narrative on Portland’s undertakers and monument carvers. It should also place the Cemetery in a broader regional context. The brochure is also a useful place to include Cemetery regulations as a reminder to visitors of appropriate – and inappropriate – actions.

The brochure could be made available to visitors at the entrance gate, but it should also be used as a tool for generating paid tours of the Cemetery, as well as engaging others interested in the preservation of the site.

Recommendations

Trash is a problem throughout the Cemetery, as it is in the surrounding neighborhoods and streets. We recommend a multifaceted approach.

- **Hardware cloth (2' in height with ¼" mesh) should be installed on the North School and Congress Street fences to prevent trash from blowing into the Cemetery.**
- **Vegetation should be kept trimmed on the chain link fences, especially at North School, where much trash tends to gather. All trash should be collected when vegetation is trimmed.**
- **Trash must be collected from the Cemetery on a year-round basis. This may require that Spirits Alive members volunteer for collection duty during the winter months.**
- **Workforce trash collection should be closely supervised to ensure quality control. All trash should be collected and removed from the Cemetery.**
- **Spirits Alive should contact nearby property owners and commercial businesses to work with them to reduce the amount of litter spread in the neighborhood. Dumpster lids should be kept closed to prevent trash from blowing out. Bags of trash should be placed on the street only shortly before scheduled pickup to minimize the potential for spread. All property owners should be responsible for collecting trash on their premises.**
- **The City should be proactive in dealing with trash. The City's program of benign neglect is clearly not working and City Council should participate in helping to reduce the trash problem in this area.**

Regulatory signage is critical for both entrances to the Cemetery. It should minimally deal with proper care of the monuments, prohibiting rubbings and warning visitors of their fragile condition; it should clearly state the hours the Cemetery is open; it should prohibit certain behaviors and actions, such as use of alcoholic beverages; it should prohibit pets; it should establish simple guidelines for plantings, as well as the placement and removal of floral and grave decorations; and it should include contact and emergency information.

There is no interpretative signage or brochure. Both could be used at the Cemetery to encourage more effective use of the facility and help ensure its preservation. Development of a brochure is relatively cost effective and should represent an immediate action, followed by on-site signage as funding allows. The brochure should include more information on the cemetery landscape, stone carvers, funerary customs, and reasons that a visitor should be interested in the individuals buried in the Cemetery, as well as providing the Cemetery regulations.

CONSERVATION ISSUES

In the introduction to this plan we briefly discussed a variety of preservation issues, tackling the question of why it is important to preserve sites like Eastern Cemetery, as well as how preservation and restoration differ, and introducing the reader to the Secretary of Interior's Standards for Preservation. Readers may want to refer back to those discussions since they form a foundation for our discussion of the conservation needs at Eastern Cemetery.

Standards for Conservation Work

The City of Portland is the steward of this Cemetery, holding what belonged to past generations in trust for future generations. As such the City bears a great responsibility for ensuring that no harm comes to the property during its watch.

One way to ensure the long-term preservation of this property is to ensure that all work meets or exceeds the Secretary of the Interior's Standards for Preservation, discussed on pages 5-6 of this study.

Another critical requirement is that the City ensure that any work performed in the Cemetery – whether it involves the repair of iron work, the cleaning of a stone, or the reconstruction of a heavily damaged monument – be conducted by a trained conservator who subscribes to the Guidelines for Practice and Code of Ethics of the American Institute for Conservation of Historic and Artistic Works (AIC) (http://www.nps.gov/training/tel/Guides/HPS1022_AIC_Code_of_Ethics.pdf).

These standards cover such issues as:

- Do no harm.
- Respect the original fabric and retain as much as possible – don't replace it needlessly.

- Choose the gentlest and least invasive methods possible.
- Is the treatment reversible? Is retreatment possible?
- Don't use a chemical without understanding its effect on the object and future treatments.
- Don't falsify the object by using designs or materials that imply the artifact is older than it is.
- Replication and repairs should be identified as modern so that future researchers are not misled.
- Use methods and materials that do not impede future investigation.
- Document all conservation activities and ensure that documentation is available.
- Use preventative methods whenever possible – be proactive, not reactive.

The AIC Code and Guidelines also require a professional conservator provide clients with a written, detailed treatment proposal prior to undertaking any repairs; once repairs or treatments are completed, the conservator must provide the client with a written, detailed treatment report that specifies precisely what was done and the materials used. The conservator must ensure the suitability of materials and methods – judging and evaluating the multitude of possible treatment options to arrive at the best recommendation for a particular object.

These Guidelines of Practice and Code of Ethics place a much higher standard on AIC conservators than individuals or commercial monument companies that offer “restoration services.” This higher standard, however, helps ensure that Eastern Cemetery receives the very best possible care and that the treatments conducted are appropriate and safe.

General Types of Stone Damage

The transcription work conducted by Spirits Alive provides some information on the condition of stones in the one section thus far added to an Excel spreadsheet. Of the 247 stones in Section B, 56 (23%) are identified as broken; 56 (23%) are identified as tilted; and 66 (28%) are identified as sunken. There are only 12 (5%) that have no comment concerning deficiencies. This suggests that a great deal of the stones in Eastern Cemetery exhibit some problem.

As useful as the current information is, it does not allow conservation assessments to be produced since we don't know the severity of the break, the presence of the broken fragments, or the fit of the fragments; we don't know the degree of tilt or if stones are sunken because of settling or appear sunken because a broken stone, missing its base, was simply reset. Thus, while the available information is quite helpful in arriving at a preliminary assessment, a stone-by-stone assessment is still necessary in order to arrive at an accurate estimation of total conservation costs.

Although no stone-by-stone condition assessment of damaged monuments is included in this study, this section will provide some general observations concerning the types of problems faced by Eastern Cemetery and repair options.

Broken Stones

There are numerous examples of broken stones. Leaving these stones laying on the ground subjects them to additional damage, increasing the eventual cost of appropriate repair. Stones on the ground are walked on, may have mowers run over them, and if they are marble, are subject to greater acid rain damage. It is always critical to erect fallen stones and volunteers with Spirits Alive are taking this important first step.

During past repair efforts many "simple epoxy" repairs – where stone fragments are joined using a continuous bead of epoxy adhesive – were conducted at Eastern Cemetery. Most of these repairs have failed. Experience indicates that for a long-lasting repair, particularly in structural applications, use of pins is necessary. Moreover,

most adhesives are far stronger than the stone itself, meaning that failure of the repair is likely to cause additional damage to the stone. An exception to this is the repair of slate stones, which are usually not drilled.

Appropriate conservation treatment requires a blind pin repair. This drilling and pinning is a process that involves carefully aligning the fragments, drilling the stones, and setting fiberglass, or occasionally threaded 316 stainless steel rod, using a structural epoxy in the drill holes.

Diameters and lengths of pins vary with the individual application, depending on the nature of the break, the thickness of the stone, its condition, and its expected post-repair treatment. The choice of epoxy depends on the required strength, among other factors.

Since there is also usually some loss of fabric along the break, this treatment will also involve infilling areas of loss with a compatible mortar. This consists of a natural cementitious composite stone material resembling the original as closely as possible in texture, color, porosity, and strength. This type of repair may be used to fill gaps or losses in marble and is often used to help slow the spalling of slate stones.

Under no circumstances should latex or acrylic modified materials be used in composite stone repair. These additives may help the workability of the product, but they have the potential to cause long-term problems. Such products are not appropriately matched in terms of strength or vapor permeability.

More suitable materials include Jahn (distributed by Cathedral Stone) or the lime-based mortars of U.S. Heritage. These closely resemble the natural strength of the original stone, contain no synthetic polymers, exhibit good adhesion, and can be color matched if necessary.

Drilling stones is a complex treatment that should only be conducted by a trained conservator. Infill is similarly complex and the Jahn products require certification in their use through Cathedral Stone.



Figure 81. Conservation issues. Top row shows stones that have old “simple epoxy” repairs that have failed. On the left the stone fragments have been reset one behind another. On the right the top of the stone is still in the ground and subject to additional damage. These stones should be drilled and pinned, returning them to their original condition and promoting the three-dimensional appearance of the cemetery. The middle row show die on base stones with ferrous pins. The example on the left shows that the pin was set with brimstone, the old name for melted sulfur. Unfortunately sulfur promotes iron corrosion, exacerbating the likelihood of iron jacking. These should be removed and replaced with fiberglass pins. The bottom row of photographs shows stones with tilts in excess of 20°. Stones with such severe tilts pose a threat to themselves and should be reset as soon as possible.

Ferrous Pins

Many die on base stones were observed that had been set using ferrous pins to join the die and base. These stones should be given a high treatment priority since, left untreated, the corrosion of the ferrous pin will cause significant spalling, cracking, and breakage of the stones – a process known as “iron jacking.” The corrosion products of these ferrous pins have a greater volume than the original pin and as the corrosion products expand, they crack the stone.

It is necessary to use diamond core drills to remove the corroded ferrous pins and replace them with either fiberglass or stainless steel. Afterwards it is necessary to fill the voids with a natural cementitious composite stone material such as that previously described for infill repairs.

In some cases the iron pins have already caused the stone to spall. Treatment is similar, except that the replacement pins must often be longer and inserted into stone that is still capable of bearing the weight of the monument. Such repairs also necessitate major reproduction of lost stone and therefore are more time consuming and expensive.

Some monuments were set with bronze pins. These are a better choice than iron, although the bronze may often result in significant staining. Where the staining is noticeable these should be replaced; otherwise, if the stone is stable these can be left in place.

Tilting and Resetting

Throughout the Cemetery we observed seriously leaning stones. Some are headstones, others are dies on bases and a few are tab in socket stones. When headstones or tab in socket stones begin leaning, the tilt may be sufficient to precipitate a ground break, dramatically increasing the cost of repair. For die on base monuments the tilt may be sufficient to cause the monument to fail and, in the process, there may be additional damage, or the monument may fall on a cemetery visitor. A typical threshold for concern is about 20°.

Monuments should never be reset using concrete, but rather should be set in pea gravel. This approach allows the stone some movement should it be accidentally impacted by lawn maintenance activities. The pea gravel will also promote drainage away from the stone, helping the stone resist the uptake of soluble salts.

Tab in socket stones originally set with a high lime mortar may become loose and require resetting. They require that the socket be cleaned of loose mortar and the stone reset using a soft mortar such as a 1:2.5 mix of NHL 3.5 and sand. The stone should be braced for 48 hours to allow the mortar to set. It is always important that the mortar used be soft – should the stone be impacted, we want the mortar to fail, not the stone. Thus, Portland cement mortars should never be used for resetting – they are too hard and inflexible. In addition, they can contain salts and other additives that can damage marble and other soft stone.

Resetting of a low stone on a base requires that the base first be leveled, again using pea gravel. Afterwards the stone can be reset using a high lime mortar, typically a 1:2.5 mix of NHL 3.5 and sand. This mix should be relatively dry to prevent staining the base and all excess mortar should be cleaned off immediately.

While such simple resets can be done by a conservator, it is a task that volunteers can readily perform.

The exceptions are larger stones that require drilling and pinning for stability. For example, many die on bases such as obelisks or pedestal monuments have a high center of gravity and are often not considered stable unless pinned.

There are examples of very complex monuments that have collapsed, such as box tombs. Their loss is significant since it changes the landscape of the Cemetery; every effort should be made to return these monuments to their original condition. In some cases this may require extensive conservation treatments, but the impact to the three-dimensional appearance of the cemetery will make the effort well worth while.



Figure 82. Conservation issues. The top row illustrates two fallen stones that should be reset to prevent additional damage. The photo on the right shows a stone that had previously been reset using a hard Portland cement. Not only did this not keep the stone upright, but it could cause additional damage. A conservator should carefully remove the concrete, allowing the stone to be reset in a pea gravel bed. The middle row, left photo shows a collapsed box tomb. The ledger is intact, but laying on the ground is subject to additional damage. The image on the right shows an obelisk reset without an intervening base (shown in the left foreground). The bottom row left illustrates the inappropriate use of Portland cement to “repair” a stone. Bottom row middle and right photos show spalling slate and marble.

It is very important that the individual doing resetting understands how stones were originally set and makes certain that all components are correctly installed. At least one stone was found in Eastern Cemetery where only a portion of the stone had been reset.

Spalling Stones

There are many examples of spalling slate and marble at Eastern Cemetery. The stability of slate depends on the formation. Some slates contain abundant clays or calcite and these can be affected by freeze-thaw and acid rain. The process of delamination or spalling is linked with moisture and wicking of ground water. Spalling of marble is also attributable to the presence of moisture, especially in combination with salts.

Treatment involves steps to prevent additional moisture from entering the stone, such as resetting in pea gravel, often combined with infills or grouts used to reattach loose flakes and reduce water intrusion.

In the past some slate stones that were spalling were repaired using a hard Portland cement to fill the spalls in an effort to prevent additional spalling as well as freeze-thaw damage from water. The Portland cement is too hard and causes additional damage. Appropriate infills are the Jahn mortars or the U.S. Heritage repair mortars.

Graffiti

Several stones in Eastern Cemetery exhibit graffiti using either a marker or spray paint. Graffiti is a type of vandalism and it is essential that it be removed as soon as possible.

Typically a poultice or paint remover will be used and it is often necessary to try several before one will be found that is successful. Examples of paint removers are the MasonRE® S-301 Light Duty Paint Remover or S-303 General Duty Paint Remover. Poultices are typically made by adding a solvent or a chemical cleaning agent to water that are then blended with an inert filler to make a smooth paste. The paste is then applied

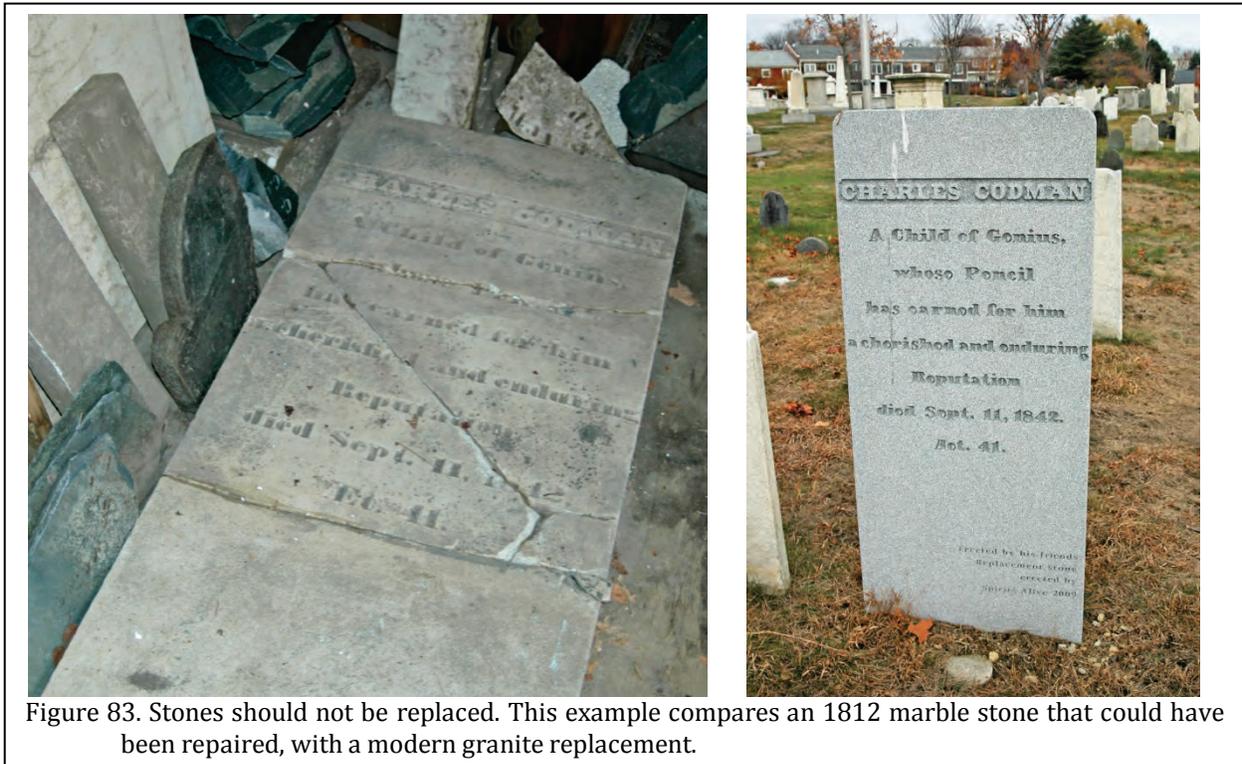


Figure 83. Stones should not be replaced. This example compares an 1812 marble stone that could have been repaired, with a modern granite replacement.

over the stain. The poultice is intended to draw the stain out of the stone.

Stone Replacement

Consistent with the Secretary of Interior's Standards for Preservation, it is important to retain the original materials in a cemetery, including the stones themselves. Whenever possible stones should be repaired, not replaced. New or replacement stones do not have the character or historical significance of the original stones and replacements detract from the beauty and historical relevance of the cemetery. In situations where a stone is no longer legible and descendants wish to ensure that the grave continues to be marked, the appropriate approach is to leave the historic stone and add a flush to ground stone that provides an accurate transcription of the original stone. The only addition should be a small notation the provides the date of this new addition.

Displaced Stones

Throughout the Cemetery we observed displaced or orphan stones. These are stones – or fragments of stones – that are no longer clearly associated with a specific grave. They are often found leaning against other stones, sometimes flat on the ground (typical of a fallen stone), or

occasionally stacked together. At present there appears to be no procedure to ensure that damaged stones are identified and cared for.

Every cemetery must develop some mechanism to care for these stones, protecting them from additional loss or damage. Repairing damaged stones is the surest way to protect them, but in many cases fragments can be provided temporary storage until funding is available for repair. Temporary storage should be in a dry, secured facility. Individual items must be marked with information concerning where they were found. One solution would be to mark the location on a map and include that map with the stored stones (Ben Meadows "Rite-in-the-Rain Copier Paper # 145110). Another approach is to use aluminum tags (Ben Meadows Aluma-Boss 9" Aluminum Wire Tags # 152428) secured to the stone fragments using nylon string.

Whatever technique is used, it should ensure the preservation of the stones, as well as ensuring that the stones can be correctly replaced in the cemetery once repaired.

We have previously suggested that the city holding tomb be converted into temporary monument storage by being cleaned and having safe stairs constructed to allow its use.

Cleaning of Monuments

A significant amount of damage may result from inappropriate cleaning techniques. The most common cleaning technique is the use of a bleach product – probably because bleach (either sodium hypochlorite or calcium hypochlorite) is widely available and inexpensive. It is, nevertheless, unacceptable for historic monuments since it creates an artificially white marble and, over time, will cause erosion and yellowing of the stone.

Table 9 discusses problems with a variety of "common" stone cleaning



Table 9.
Comparison of Different Cleaning Techniques

Cleaning Technique	Potential Harm to Stone	Health/Safety Issues
Sand Blasting	Erodes stone; highly abrasive; will destroy detail and lettering over time.	Exposure to marble dust is a source of the fatal lung disease silicosis.
Pressure Washers	High pressure abrades stone. This can be exacerbated by inexperienced users. Pressures should not exceed 90 psi.	None, unless chemicals are added or high temperature water is used.
Acid Cleaning	Creates an unnatural surface on the stone; deposits iron compounds that will stain the stone; deposits soluble salts that damage the stone.	Acids are highly corrosive, requiring personal protective equipment under mandatory OSHA laws; may kill grass and surrounding vegetation.
Sodium Hypochlorite & Calcium Hypochlorite (household and swimming pool bleach)	Will form soluble salts, which will reappear as whitish efflorescence; can cause yellowing; some salts are acidic.	Respiratory irritant; can cause eye injury; strong oxidizer; can decompose to hazardous gasses.
Hydrogen Peroxide	Often causes distinctive reddish discolorations; will etch polished marble and limestone.	Severe skin and eye irritant.
Ammonium Hydroxide	Repeated use may lead to discoloration through precipitation of hydroxides.	Respiratory, skin, and eye irritant.
D/2 Architectural Antimicrobial	No known adverse effects, has been in use for nearly 10 years.	No special precautions required for use, handling, or storage.

Cemetery may help deter abusive cleaning.

While cleaning is largely an aesthetic issue, we did observe a number of stones where lichen was so heavy that the stone had become illegible. This detracts from the experience of the visitor and may encourage the use of inappropriate materials to clean the stones. In some cases the lichen is actually eating into the surface of the granite or slate stone, causing permanent disfiguration. As a consequence, lichen obscured stones should be cleaned using low pressure water and D/2 Biological Solution distributed by Cathedral Stone.

Wear and Erosion of Monuments

processes widely used by commercial firms and the public. Providing this sort of information to families who have loved ones buried at the

It is worth mentioning that many of the marble monuments at Eastern Cemetery exhibit extensive erosion with the resulting loss of inscriptions and details. This is likely the result of acid rain and other natural factors such as the winds off the bay, perhaps combined with the quality of the prevailing marble being used in the Cemetery.

Some of these monuments may be sufficiently important to deserve intervention using a process known as consolidation. Simply put, this is the use of a chemical that helps strengthen the stone; but the use of consolidation is not without controversy. This controversy has to do with the longevity of the treatment (probably a decade or so) and the possibility that its use may block future conservation treatments. Thus, we recommend reserving its use for only the

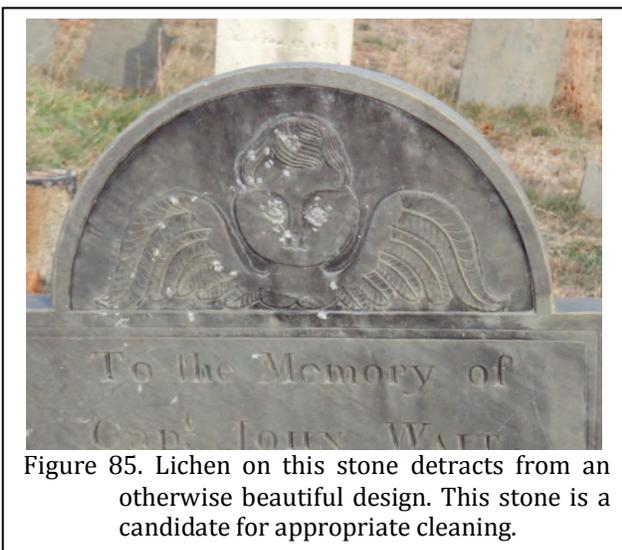


Figure 85. Lichen on this stone detracts from an otherwise beautiful design. This stone is a candidate for appropriate cleaning.



Figure 86. Iron plot fences at Eastern Cemetery.

most damaged materials, essentially considering its use appropriate only as a last resort.

There are two primary chemicals used, both manufactured by Prosoco. The first is HCT, a water-based material used on marble to reduce the effects of acid rain, pollution, and normal weathering. There seem to be few, if any, adverse side effects of this treatment. Its primary limitation is the cost of treatment.

The second consolidation treatment is OH100. Also used on marbles after pre-treatment with HCT, the OH100 consists of liquid silicic ethyl esters designed to be converted into a glass-like silicon dioxide gel in the stone, which serves to bind the stone together, actually providing additional strength.

While HCT is appropriate for Eastern Cemetery stones, OH100 is a solvent base and its VOCs exceed the limits allowed by Maine. This precludes its use on-site, although the stones

could be removed to our lab, treated, and returned.

Ironwork Conservation

Although boundary fences and their treatment have been previously discussed, there are plot fences in Eastern Cemetery, many of which are also exhibiting significant deterioration. In fact many of the fences originally reported by Goodwin have disappeared over the past 110 years. Those that remain are important aspects of the cultural landscape and every effort should be made to retain all existing ironwork, regardless of condition.

Most of the fences remaining are granite post and iron pipe rail fences. The iron exhibits heavy corrosion and in many cases iron jacking has caused the breaking of the granite posts and loss of the iron pipes.

These are relatively easy fences to repair. The iron pipe is typically of a size that is still available. The single best protection of ironwork is maintenance — and this revolves around painting. We have previously outlined specific steps and materials to use, typically focusing on minimal cleaning, followed by a coat of rust converter and a two top coats of a flat or semi-gloss alkyd paint.

The broken granite posts can be readily repaired using a blind pin repair technique that embeds a stainless steel pin to reattach broken posts.

It may be appropriate to use small stainless steel braces with stainless steel nuts and bolts to re-attach rails to posts. While welding may be appropriate in some cases, once welded, pieces are no longer able to move with expansion/contraction cycles, and this may cause internal stresses that lead to yet additional structural problems.

There is at least one iron fence remaining. Each of the square posts has lost its original finial or cap. In order to prevent rain water from entering the posts and causing internal corrosion, these posts should have plain flat caps installed after the interiors have been cleaned and a rust converter applied.

Recommendations

All work in the Cemetery should be conducted by trained conservators who subscribe to the Code of Ethics and Guidelines for Practice of the American Institute for Conservation of Historic and Artistic Works (AIC). This should be the minimum level of competency required by the City and Spirits Alive on all projects.

There are some treatments, such as resetting, that can be undertaken by volunteers or City staff with training and oversight. Neither the City nor volunteers, however, should attempt repairs beyond the skill level of the individuals available.

Given the large number of stones that require conservation treatments, we recommend that

these repairs be given a high priority once the boundary fence issue has been resolved.

The City should strictly limit replacement of historic fabric and require that all such modifications receive approval.

Many of the marble stones may warrant consolidation using HCT and perhaps OH100 if moved off-site. These treatments would help the stones better weather the acid rain and reduce loss of carving detail and inscriptions.

Cleaning is necessary of those monuments exhibiting heavy lichen growth obscuring the inscription. This cleaning may be done by City staff or volunteers as long as it is conducted in a manner that does not endanger the stone or eliminate the stone's patina. We recommend the use of D/2 Biological Solution and soft scrub brushes. Pressure washers must NOT be used.

The Cemetery's iron plot fencing should be painted and, where necessary, repaired. So few remain that every effort should be made to ensure the protection of those still present.

Displaced or orphan stones should be stored in a clean, dry facility until they can be repaired. A suitable storage place would be the city tomb with only minor modifications.

PRIORITIES AND FUNDING LEVELS

Recommended Priorities

Ask anyone familiar with Eastern Cemetery who also has a passion for its preservation what the most critical issues facing the Cemetery are and you will surely hear at least three issues:

- Inadequate maintenance,
- Pervasive homelessness and trespassing, and
- Vandalism.

William Jordan has been passionate about these problems for most of his adult life and yet, they remain as critical today as they were in 1960. While our study has identified nearly 70 goals, many of our concerns are in one way or another associated with these three concerns.

The only appreciable difference is that today Eastern Cemetery has a grassroots organization focused on its preservation. The importance of this organization can't be over emphasized – that should be readily apparent as the tasks we identify below are considered. It will require the committed, consistent, and continuing efforts of these citizens to ensure that Eastern Cemetery is present for their children to enjoy and learn from.

While there is considerable agreement concerning what needs to be done, it is far more difficult to prioritize those actions. Essentially all such efforts are matters of opinion. Every person brings their own personal values and experiences to the table and these have an impact on how priorities are set.

Even attempting to evaluate technical feasibility (Is it easy or hard to do? How long will it take to implement? Is there adequate technical staff or budget to accomplish the task?), creative feasibility (Is there adequate content? Is there

adequate staff and budget to make it?), importance to the user (Will visitors to the Cemetery benefit? Will they see a difference?), and importance to the resource (Will the Cemetery see a clear and significant benefit or preservation improvement?) depends on qualitative assessments.

With this in mind, Table 10 lists the recommendations offered throughout this assessment, classifying them as a *first, second, or third priority*.

First priorities are those we recommend undertaking during the current fiscal or calendar year. Some are issues that have the potential to affect the public health and safety and consequently require immediate attention. Most, however, are planning issues that require immediate attention to “set the stage” for future actions. We strongly believe that most cemetery projects fail through inadequate or inappropriate planning – thus, we recommend in the strongest possible terms that the City engage in the necessary planning to help ensure success.

Second priorities are those that should be budgeted for over the next 2 to 3 years. They represent urgent issues that, if ignored, will result in both significant and noticeable deterioration of Eastern Cemetery as a historic resource.

The most costly of these actions will involve the conservation treatments. These costs are the result of critical maintenance actions being deferred. As a result, many of the stones are today at a crossroad. If appropriate conservation treatments are not undertaken, it is likely that many of the stones will be forever lost.

Third priorities are those that may be postponed for 3 to 5 years, or alternatively, may require 3 to 5 years to see fruition. They are issues that can wait for appropriations to build up to

allow action. Some actions are also less significant undertakings that require other stages to be in place in order to make them feasible or likely to be successful. Although they are given this lower priority they should not be dismissed as trivial or unimportant.

Budget estimates are offered only for direct conservation issues (in the appendix of treatment recommendations) and reflect 2011FY costs. No budgets are offered for other tasks since this is beyond the scope of this assessment.

Just as parks or water service or police protection have yearly costs, so too do historic resources. Preservation costs must be continuous. The City cannot, every few years, suddenly remember the Cemetery and devote attention. The Cemetery must receive constant, on-going care and preservation efforts. The central problem is that Portland has, for years, deferred these costs, creating cumulative problems that now must be addressed or else the resource will be so degraded that its continued significance to the community will be doubtful. Eastern Cemetery has already seen significant losses to monuments as well as dramatic changes to the landscape. The Cemetery is an exceptional and unique resource and it deserves every possible effort to ensure its long-term preservation.

Funding Issues

Eastern Cemetery has virtually no endowment funds, unlike most commercial cemeteries. In spite of the efforts of Spirits Alive, Eastern Cemetery is a city cemetery and its care and long-term preservation must be funded by capital programs of the City through the Public Service Department.

Spirits Alive must recruit and develop a Board capable of "giving" and "getting" money. The oft-repeated expression, "Won't you join me in giving \$x to this project" is the most powerful opening sentence in fundraising. A Board that is simply "advisory" traditionally has a difficult time achieving stated goals and objectives. One can buy "advice;" getting donors is an entirely different matter. Stated differently, people give money to people, not to ideas.

Federal and National Funds

Simply put, the current economic climate has put numerous "non-essential," and even previously thought "essential," programs at-risk, to say the least. The National Trust for Historic Preservation is an obvious potential source and does have a tradition of the unusual projects (e.g., GIS satellite imaging for historical corridors). However, grants tend to be small (\$5,000) and have the added disadvantage of potentially funding "planning" or "implementation" - but usually not both phases.

"Education" is more of a priority, but Eastern Cemetery would have to be put in a broader context, probably with a free public component (lectures, school groups, etc.). The "Catch-22" of such educational programs generally is on-site cemetery visits have an impact that may be translated into the need for more maintenance/preservation. Measurement also may be hard to track - both in terms of total public numbers (use of a history trail or the Historic Trolley Tours) and in increased maintenance attributable to tourism. Also, while such educational programs might allocate part of a grant award to preservation and maintenance, once the program ends (and, ideally, tourism continues) the City might potentially be faced with a greater sustainability challenge than the current status.

The Johanna Favrot Fund for Historic Preservation is a related possibility with up to \$10,000 per grant award. However, sites must be National Historic landmarks.

Challenge grants, such as those of the National Endowment for the Humanities are another possibility, with amounts ranging from \$20,000 to \$1,000,000, but competition is fierce and very few projects are funded.

National Park Service Certified Local Government funding administered through the Maine Historic Preservation Commission has frequently been tapped by the approved

governmental entities for survey projects, National Register nominations, and other similar projects. It therefore does not need specific discussion here.

The Advisory Council on Historic Preservation's Preserve America program and the Save America's Treasures program, initiated by Executive Order as a public-private partnership, now largely between the NPS and the National Trust, should be considered. These programs tend to be rather time-intensive in terms of paperwork preparation. In addition, the Maine Historic Preservation Commission is more supportive of applications for sites that are either National Historic Landmarks or that are listed on the National Register at a national level of significance (the Save American's Treasures program requires that the site be nationally significant). Applications for both FY 2011 grants will be available when Congress passes an appropriation for FY 2011.

Separately, if we broaden our discussion to purely Federal grants, the chance of success is roughly 7%. Equally discouraging are the bookkeeping, reporting, and surveillance functions involved in Federal grants. Moreover, there is the whole issue of projects that get "approved but not funded," which is governmental language for Federal programs that become victims to budget constraints, changes in administration policies, etc.

It is fair to say that administering the grant may be as burdensome as the conservation efforts themselves. Plus, if there is follow-up surveillance at the end of the grant period, there are no guarantees that additional vandalism or "acts of God" might actually render the project only slightly better off than when an effort began. An additional aggravation is who handles and allocates the Federal money on a local basis. Here, the City might well be the consortial partner holding the purse strings - a scenario that neither the City nor the nonprofit might envision or enjoy.

Something else to be considered, best practices and best use of funds could mandate an approach or nuance that neither the City nor the nonprofit anticipated or are prepared to implement. Also, Federal programs are rife with requirements of "matching money" - often in cash rather than in kind (which both corporations and foundations are more apt to allow).

State Funds and Organizations

Besides the NPS Certified Local Government funding administered through the Maine Historic Preservation Commission, Maine has, in the past, funded projects through the New Century Preservation Grants program. Unfortunately, it doesn't appear that Maine has funded this program since 2008. Maine Preservation offers Poliquin Heritage Education Grants that focus on educational programs. Their Preserve Maine Fund grants are intended for condition assessments only and are limited to \$500. The Cultural Resources Information Center in Portland does not currently have funds to grant, but can perhaps offer assistance in locating funding sources.

The Maine Humanities Council offers three levels of grants typically supporting exhibits, conferences, lectures, films, and other initiatives. They are generally not supportive of "restoration" or conservation efforts and grant funding does not generally exceed \$7,000.

Most of the grants from The Maine Community Foundation come from donor-advised funds. Their competitive grant program focuses on community life. Specific granting funds that might have an interest in Eastern Cemetery include the Edward H. Daveis Benevolent Fund, the Maine Charity Foundation Fund, and the Rines/Thompson Fund. These tend to award relatively small amounts (under \$5,000), but might be suitable for a small and tightly defined sustainable project.

Foundations and Corporate Donors

This project did not task a detailed search for potentially matching donors. We can, however, make some recommendations. One or more Spirits Alive volunteers should examine subscription-based on-line resources, such as the Foundation Center's Directory. These resources may be available through the State Library or a local resource, such as The Maine Community Foundation. Another resource is Grantscape, an electronic fundraising database; this, too, may be locally available and can assist in searching for compatible funding matches. We recommend expanding grant searches beyond the usual Fortune 500 companies to include the top sources for corporate giving. Attention should be paid to foundations that provide grants of \$10,000 or more with specific focus on arts, culture, and the humanities.

We must note that the number of foundations is a constantly changing number and the mission and focus of these same foundations (including corporations) is also in flux. Foundations increasingly are taking advantage of "periods of reflection," which is foundation jargon for not providing grant support for any particular group of internal initiatives during a particular year. Also, the odd grant of extraordinary size is often a "trustee discretionary grant," which means that it was the turn of a particular trustee for a special allocation during a specific grant cycle. Plus, be advised that some industries or sectors (oil, for example) have had extraordinary profits and may be positioned for greater philanthropy than other sectors.

What this means is, first, there is no definitive source (including the Foundation Center) of every single grant award during a particular quarter or year, second, no definitive source of who is funding what and when, and third, that past performance by a foundation or corporate entity has little predictive value of present or future funding.

Based on our past searches for clients, we can warn that cemeteries are not on the traditional foundation or corporation's funding radar. While the reason is not apparent from the "exclusionary" section of foundation profiles (e.g., "no grants for film projects, deficit spending, complimentary advertising," etc.), there may be some validity in the assumption that cemeteries are either privately-funded entities or *supported by some governmental body*. Anyone's hopes for financial support for mowing, pruning trees, repair of fences, so forth are quickly dashed.

To put foundation funding (and, in many cases corporate as well) in perspective, the average grant size (say, \$5,000) would cover such items as a modest lecture series ("Art & Architecture of Historic Portland Cemeteries" or "The African-American Experience: Burial Practices and Iconography from Reconstruction through the Rural Cemetery Movement") or perhaps a field day for genealogists that could include some "demonstrations" concerning proper preservation techniques. In the second case, part of the funds might actually be dedicated to the repair of, say, an important monument. The very real challenge here is determining which monuments are most important, weighing issues of "dire need" vs. historicity.

Also, one needs to keep in perspective that most corporate funders are interested in how a project meets their Mission/Vision Statements rather than that of a specific nonprofit. These parameters must be taken into consideration in developing a project that meets corporate donor needs.

A final comment on grants: proposal writing can be arduous and costly in terms of time spent. The average, small Federal grant is usually estimated in the 100 to 150-hour range, simply for preparation time. A one-page grant proposal to a small family foundation (plus a simple budget) may take 10 hours, with the budget the main time-consumer. If one estimates

the volunteer time at \$10 per hour (a rule-of-thumb standard), that equates to \$1,500 spent for a Federal proposal and \$100 devoted to a small one-page proposal. Experienced "grantwriters" usually charge in the \$35 to \$125/hour depending upon complexity and track record. Raising money quickly becomes expensive.

Individual Donors

As noted above, project funding from foundation and corporate sources may be small and, frankly, ephemeral. One time-gifts are common and cemetery upkeep is clearly not on any major foundation or corporation's radar unless there is a clear, urgent, compelling, and interesting "Case for Support." Eastern Cemetery needs to look at context as a funding platform, with the City and Spirits Alive working together to raise public awareness of the plight of the Cemetery and its importance in the broader historical and social fabric of Portland.

One warning is that foundations and corporate entities have a growing concern that governmental entities are competing with small, fledgling nonprofits for funding for what many perceive as taxpayer services. A simple example is what used to be known as "state universities." These are now referred to as "state-assisted universities" as states seek greater involvement from individual donors, foundations, and corporations to underwrite education.

Moreover, Spirits Alive must be vigilant to not appear to be a shell organization through which the City can raise money for "essential services." Each and every grant proposal must be donor mission specific, while providing public education, conservation, and repair within some legitimate context.

Individual donors, despite the perception of "donor fatigue" brought on by the

constant onslaught of requests for cash in a major city like Portland, could prove the short-term salvation of Eastern Cemetery. We say "short-term" because a "long-term" sustainable effort would require an endowment.

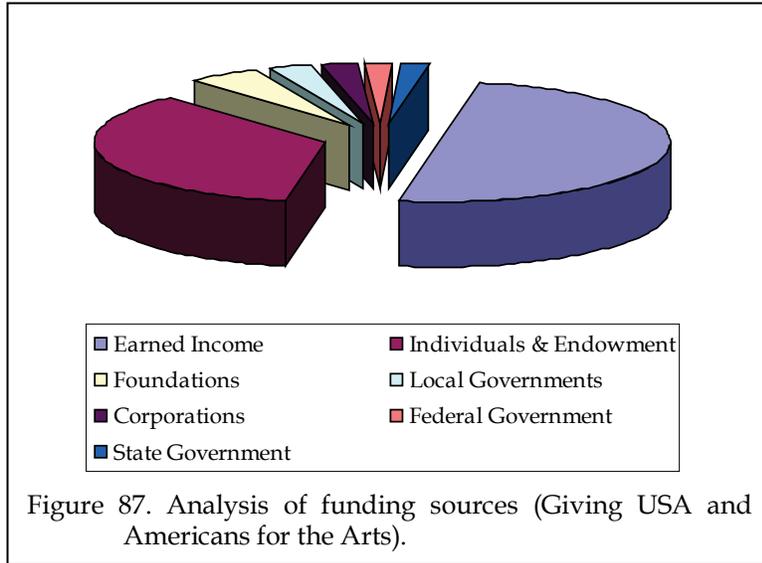
First, let's look at individual donors. Conventional wisdom might be that the best targets are the families of those currently interred in the Cemetery. However, best guess is that 65% or more (on average) of the plots do not have identifiable descendants ("donor constituencies") or, worse, have constituencies who may be shy about stepping forward for fear that they will be "assessed" some duty or tax related to renewed upkeep. With conservation costs estimated at \$1,000 per monument, this is a substantial amount for some previously long-lost descendant to pay.

Perhaps a better approach is to examine the current state of philanthropy in Portland. This would involve creating what is known as a "flat list," namely a list of individuals with a penchant for supporting historical preservation and a checkbook to match.

These individuals should be identified not only based upon interest and cash, but also using three other key factors: commitment, clout, and contacts. Simply, commitment is a long-term vision of the goals and objectives, needs and opportunities of the individual cemeteries. Clout is the recognition by others that Jane or John Doe has the ability to engender enthusiasm and commitment within the broader donor community. Contacts are others with the means, method, and mentality to give and get money.

Summary

The City cannot expect federal, foundation, or corporate support for maintenance and mowing.



The *Chronicle of Philanthropy* (May 17, 2007, p. 16) published an interesting chart produced by Giving USA and Americans for the Arts that has some relevance for Eastern Cemetery (Figure 87). While the analysis must be used very carefully as it clearly isn't a perfect fit, it nevertheless suggests that organizations designed for cemetery preservation can expect around 50% of their funding to come from a category termed "earned income." This is a bit generic, but likely means everything from special events to sponsorships. The Foundation and Corporate support numbers (5% and 2.5% respectively) are consistent with a wide range of project categories and the assumptions we have suggested for the Eastern Cemetery situation. Moreover, experience tells us that Federal and State (each 2%) support are going to be minimal, at best.

An aggressive, focused umbrella nonprofit may, through programming and perseverance, attract foundation, corporate, and - especially - individual donor dollars that may, in part only, "rescue" some of the more historically important monuments under threat at Eastern Cemetery. It may provide important interpretive, educational, and awareness-raising functions for the burial ground.

Ultimately, however, the bulk of funding for the long-term preservation of Eastern Cemetery must come from its owner - the City of Portland.

Conservation Costs

As previously explained, only budget estimates for conservation work are provided. These estimates are based on 2011 dollars.

- Tomb inspections will require a conservator and an assistant. Two tombs can be opened and inspected per day. Based on the recommendation that 10 tombs be examined per year, the per year cost is \$16,000.
- We estimate that upwards of 670 stones will require conservation treatment based on the information provided by Spirits Alive for Section B. Total costs are projected to be \$700,000.
- Plot fence conservation, including repair of damaged columns and replacing missing parts, but not painting (a task that is suitable for volunteers), is estimated to be \$20,000.
- Removing the silicone caulk and installing wedge lead in the above grade granite city tomb fixture will have a cost of \$10,000.

It is likely that repointing of tombs and walls, as well as repair of the Congress Street fence can be successfully contracted out to local companies. We recommend, however, that each aspect of the work have specifications developed by a conservator. We also recommend that a conservator oversee the work, including evaluation of test panels and final inspection of the completed work. The cost of such activities may be approximately \$5,000 - \$7,000 per project, depending on complexity.

PRIORITIES AND FUNDING LEVELS

Table 10.
Prioritization of Recommendations

Priority	Recommendation
First - this fiscal or calendar year	<p>1.1 All decisions regarding modifications, alterations, additions, or other actions affecting Eastern Cemetery should be carefully evaluated against the Secretary of the Interior's Standards for Preservation. (http://www.nps.gov/history/hps/tps/standguide/preserve/preserve_standards.htm).</p> <p>1.2 Special care should be taken to protect all remaining historic fabric and the context of the Cemetery.</p> <p>1.3 The City of Portland should amend the City Code to reflect the importance and special needs of the historic cemeteries.</p> <p>1.4 Because of the condition of Funeral Lane, cemetery maintenance vehicles should be limited to pickup trucks. Larger vehicles and those with trailers should be parked outside the Cemetery. Until all tombs have been inspected and repaired, no equipment heavier than a 21" deck mower should be operated over the tombs or in their immediate vicinity.</p> <p>1.5 At the present time pedestrian use of the Cemetery is not sufficient to require the construction of pathways; tour guides, however, should endeavor to avoid taking tours on consistent routes through the Cemetery.</p> <p>1.6 The inventory of Eastern Cemetery stones should be completed as soon as possible. The inventory should be quickly supplemented by photographs of all stones to clearly document current conditions.</p> <p>1.7 A "cemetery watch" program should be started in the apartments and residences in close proximity to Eastern Cemetery.</p> <p>1.8 Adjustments should be made in the height, top and bottom rails, the chain link fabric, bolts, fittings and framework to create higher security fencing at the North School and along the rooftop at the south edge of the Cemetery than is commonly associated with residential or commercial fencing.</p> <p>1.9 Spirits Alive and the City's Public Works Department should adopt a zero tolerance policy for homelessness in Eastern Cemetery. This should include clear posting of cemetery regulations and the enforcement of these policies by the City police.</p> <p>1.10 The North School fence requires reattachment to the granite column on Congress Street at the west end and to the brick building at its east end. The fence should be coated with a rust convertor and then painted.</p> <p>1.11 The fence at the top of the Federal Street line should be repainted.</p> <p>1.12 In the city tomb, cracks on both sides of the entrance should be monitored with crack gauges. If there is evidence of shifting a structural engineer should be consulted.</p> <p>1.13 The city tomb should be cleaned of all debris and soil with this work being monitored by an archaeologist. A free standing pressure treated stairway should be constructed to make the tomb usable for the storage of stone fragments until repair is possible. The existing plywood doorway should be reinforced with a lockable horizontal bar to limit access to this space.</p> <p>1.14 A Spirits Alive representative should be present at every Parks Commission meeting and present a report on conditions at Eastern Cemetery, with specific emphasis on maintenance issues and needs.</p> <p>1.15 The City should strictly limit replacement of historic fabric and require that all such modifications receive approval.</p>

Table 10, cont.
 Prioritization of Recommendations

Priority	Recommendation
First – this fiscal or calendar year, cont.	<p>1.16 The Parks Division has not always followed the planting plan for the Cemetery. We strongly emphasize the need to plant only those trees identified on the planting plan as historically appropriate – especially since this plan has been approved by the City. All trees should meet the minimum requirements of the American Nursery and Landscape Association’s American Standard for Nursery Stock (ANSI Z60.1-2004). Nursery stock should be carefully inspected and specimens with wounds, crooked or double leaders, broken branches, or girdling roots should be rejected.</p> <p>1.17 Locations chosen for planting should not interfere with gravestones, curbing, or fences. Issues of security should also be considered and the use of small trees that obscure eye level views should generally be limited or avoided.</p> <p>1.18 The nylon trimmer line being used by the City must not be over 0.065-inch line. There is damage to monuments suggesting that a heavier line is being used or has been used in the past.</p> <p>1.19 The use of large deck mowers in the Cemetery is causing damage to monuments and the practice must be stopped. Only 21-inch walk-behind mowers should be used on the Cemetery grounds. All mowers should be fitted with closed cell foam bumpers to reduce accidental damage to the stones. These bumpers should be inspected on a weekly basis and replaced as needed.</p> <p>1.20 The mowers should be fitted with micro mulch blades in order to mulch leaves on-site. This step will eliminate the need to collect leaves.</p> <p>1.21 All grass debris must be blown off monuments after mowing operations.</p> <p>1.22 All staff must be periodically reminded of the level of care necessary in cemetery operations.</p> <p>1.23 Soil analysis reveals moderate levels of lead contamination in the Eastern Cemetery soils. Individuals working in the Cemetery should practice good hygiene, such as washing hands before eating and washing work clothes separate from family laundry.</p> <p>1.24 Until a low maintenance turf is created, the existing turf requires more frequent mowing throughout the growing season. We also recommend fertilization twice a year and core aeration twice a year. This represents the most minimal maintenance practices suitable for the Cemetery.</p> <p>1.25 Trash is a problem throughout the Cemetery, as it is in the surrounding neighborhoods and streets. We recommend a multifaceted approach.</p> <ul style="list-style-type: none"> • Hardware cloth (2’ in height with ¼” mesh) should be installed on the North School and Congress Street fences to prevent trash from blowing into the Cemetery. • Vegetation should be kept trimmed on the chain link fences, especially at North School, where much trash tends to gather. All trash should be collected when vegetation is trimmed. • Trash must be collected from the Cemetery on a year-round basis. This may require that Spirits Alive members volunteer for collection duty during the winter months. • Workforce trash collection should be closely supervised to ensure quality control. All trash should be collected and removed from the Cemetery. • Spirits Alive should contact nearby property owners and commercial businesses to work with them to reduce the amount of litter spread in the neighborhood. Dumpster lids should be kept closed to prevent trash from blowing out. Bags of trash should be placed on the street only shortly before scheduled pickup to minimize the potential for spread. All property owners should be responsible for collecting trash on their premises. • The City should be proactive in dealing with trash. The City’s program of benign neglect is clearly not working and City Council should participate in helping to reduce the trash problem in this area.

PRIORITIES AND FUNDING LEVELS

Table 10, cont.
Prioritization of Recommendations

Priority	Recommendation
First - this fiscal or calendar year, cont.	<p>1.26 Regulatory signage is critical for both entrances to the Cemetery. It should minimally deal with proper care of the monuments, prohibiting rubbings and warning visitors of their fragile condition; it should clearly state the hours the Cemetery is open; it should prohibit certain behaviors and actions, such as use of alcoholic beverages; it should prohibit pets; it should establish simple guidelines for plantings, as well as the placement and removal of floral and grave decorations; and it should include contact and emergency information.</p> <p>1.27 All work in the Cemetery should be conducted by trained conservators who subscribe to the Code of Ethics and Guidelines for Practice of the American Institute for Conservation of Historic and Artistic Works (AIC). This should be the minimum level of competency required by the City and Spirits Alive! on all projects.</p> <p>1.28 There are some treatments, such as resetting, that can be undertaken by volunteers or City staff with training and oversight. Neither the City nor volunteers, however, should attempt repairs beyond the skill level of the individuals available.</p>

Table 10, cont.
 Prioritization of Recommendations

Priority	Recommendation
Second – over next 2 to 3 years	<p>2.1 The Cemetery must be consistently opened and closed at posted hours and the period of availability should be extended beyond when seasonal park rangers are employed. The duty of opening and closing the Cemetery should be assigned to a City employee as a routine – and permanent – job assignment.</p> <p>2.2 Spirits Alive should create a written vandalism record useful for tracking problems in the Cemetery. Reports should be made to City Council on a regular basis.</p> <p>2.3 The frequency of police patrols must be increased. At nights, police spotlights should rake the Cemetery, giving the appearance of visibility.</p> <p>2.4 Volunteers in the Cemetery should be readily identifiable by distinctive t-shirts. They should be scheduled to conduct periodic inspections of the Cemetery during the week and on weekends, throughout the year.</p> <p>2.5 City staff and council members must be educated concerning the cost of vandalism. They should be enlisted to assist with vandalism prevention efforts.</p> <p>2.6 The “dead house” on the Cemetery grounds retains little of its historic fabric and its appearance was altered during the 1984 restoration. It retains little architectural integrity. Nevertheless, it should be maintained as a placeholder for the historic structure. It requires immediate reshingling and painting.</p> <p>2.7 The Congress Street fence exhibits a range of preservation concerns. The concrete curb should be waterproofed and cracks infilled. Pickets should be removed from the concrete matrix and reset with epoxy. Pickets should be repaired or replaced with the primary focus on repairing the structural integrity of the fence. Corrosion in joints should be removed manually and coated with a rust converter. The entire fence should be repainted. The cables used to secure the pedestrian gates should be replaced with stainless steel cables. The corrosion stains on the granite columns should be removed by a conservator. All locks, keyed alike, should be stainless steel. These recommendations should be compared to the existing restoration plans and the plans modified to address the concerns evidenced by the assessment.</p> <p>2.8 The Mountfort Street fence should be reattached to the granite column at Congress and Mountfort streets. The fence should have loose paint removed, a rust convertor applied, and then top coated. The wall requires repointing along its entire length. Coping that has suffered iron jacking should be repaired; coping not yet damaged should be sealed to prevent damage.</p> <p>2.9 The Federal Street wall exhibits cracking and a significant bulge. It should be examined by a structural engineer with experience in historic preservation. Depending on his recommendations, the wall will eventually require removal of previous efforts at pointing using improper mortars and techniques and then repointed. Vegetation should be periodically removed from the wall as an ongoing maintenance activity.</p> <p>2.10 The chain link fence along the North School line should be replaced with a higher fence that will prevent entry from the North School ramp. If that replacement is delayed, the existing fence should be repaired and repainted.</p> <p>2.11 The one private tomb examined (A-22) exhibits cracking in the side walls, failing mortar, and water seepage. The flat roof exhibits a crack and a central support has been added at some point after construction. These features suggest that the tomb requires repointing and should be examined by a structural engineer. The City should begin a program of opening 10 tombs a year for inspection. This will provide the opportunity to assess their condition and develop a budget for their long-term preservation. During the openings a bioanthropologist should be present to examine the human remains present. Tombs that have had their entrances sealed with plywood or wood planks should have these closures replaced with cast concrete slabs.</p>

PRIORITIES AND FUNDING LEVELS

Table 10, cont.
Prioritization of Recommendations

Priority	Recommendation
Second – over next 2 to 3 years, cont.	2.12 Proper maintenance and upkeep of the 6.8 acre Eastern Cemetery requires a three-person crew working year-round. We recommend hiring to achieve that level of staffing dedicated to Eastern Cemetery.
	2.13 Maintenance issues, such as surface roots, associated with the trees selected for planting at Eastern Cemetery should be resolved by judicious placement and appropriate planning (including adequate staff care and attention).
	2.14 Voluntary trees and other vegetation should be removed. This is especially important where these plants may interfere with monuments, fences, or tombs.
	2.15 Soil analysis has determined the level of fertilization needed in the burial ground. The recommendations for the use of organic, slow release fertilizers provided in this document should be carefully followed.
	2.16 At least one water faucet should be installed in the Cemetery. A line can run off Congress Street down Funeral Lane to the vicinity of the dead house. A lockable and frost proof hydrant can be installed to minimize maintenance and provide security.
	2.17 After core aeration and fertilization, it may be appropriate to institute pre-emergent and post-emergent weed control, taking care to avoid stones.
	2.18 Given the large number of stones that require conservation treatments, we recommend that these repairs be given a high priority once the boundary fence issue has been resolved.
	2.19 The cemetery's iron plot fencing should be painted and, where necessary, repaired. So few remain that every effort should be made to ensure the protection of those still present.
	2.20 Displaced or orphan stones should be stored in a clean, dry facility until they can be repaired. A suitable storage place would be the city tomb with only minor modifications.

Table 10, cont.
 Prioritization of Recommendations

Priority	Recommendation
Third - over next 3 to 5 years	<p>3.1 Only the pedestrian gates on Congress should be opened; the vehicle gates should remain closed except when maintenance is required.</p> <p>3.2 Public rewards should be offered for information leading to arrest and conviction of individuals responsible for vandalism in Eastern Cemetery.</p> <p>3.3 Consideration should be given to modifying the zoning of Eastern Cemetery from Recreational Open Space (ROS) to Resource Protection (RPZ).</p> <p>3.4 A Knox-Box® should be installed at the main entrance on Congress Street to allow immediate emergency access to the grounds.</p> <p>3.5 If pathways eventually become necessary we recommend that grass reinforcement materials be used to create permeable pathways that will also be universally accessible.</p> <p>3.6 There is inadequate parking for visitors to Eastern Cemetery and this will significantly deter visitation. The City must make some arrangements for historical and genealogical visitors. This may include dedicated parking spaces in front of the cemetery or arranging cemetery parking at some nearby lot. Whatever system is developed should be clearly articulated in signage at the cemetery.</p> <p>3.7 If vandalism is not brought under control, the use of a Flashcam by Q-Star Technology should be considered.</p> <p>3.8 The caulk on the granite structure at the dead house should be removed and the jointing repaired using wedge lead.</p> <p>3.9 Technicians and supervisory staff should be encouraged to become certified by PLANET (or some similar local organization) in landscape maintenance.</p> <p>3.10 The City should work to ensure continuity of the staff by providing appropriate pay levels, fringe benefits, and educational opportunities (such as certification opportunities).</p> <p>3.11 The City, using a certified arborist, should assess the health and condition of the existing trees yearly and after any storm where the winds exceed 55 mph. The trees should be pruned to remove potentially hazardous dead wood at least every 5 years by a certified arborist.</p> <p>3.12 The elm trees planted in the cemetery, while resistant to Dutch Elm Disease, are not immune. They should be carefully monitored for symptoms.</p> <p>3.13 The current turf is in poor condition and requires renovation. There are a variety of very low maintenance and drought resistant turf blends that could be used. A sustainable stand of a desirable turf would reduce long-term maintenance costs.</p> <p>3.14 There is no interpretative signage or brochure. Both could be used at the cemetery to encourage more effective use of the facility and help ensure its preservation. Development of a brochure is relatively cost effective and should represent an immediate action, followed by on-site signage as funding allows. The brochure should include more information on the cemetery landscape, stone carvers, funerary customs, and reasons that a visitor should be interested in the individuals buried in the cemetery, as well as providing the cemetery regulations.</p> <p>3.15 Many of the marble stones may warrant consolidation using HCT and perhaps OH100 if moved off-site. These treatments would help the stones better weather the acid rain and reduce loss of carving detail and inscriptions.</p>

PRIORITIES AND FUNDING LEVELS

Table 10, cont.
Prioritization of Recommendations

Priority	Recommendation
Third - over next 3 to 5 years, cont.	<p>3.16 Cleaning is necessary of those monuments exhibiting heavy lichen growth obscuring the inscription. This cleaning may be done by city staff or volunteers as long as it is conducted in a manner that does not endanger the stone or eliminate the stone's patina. We recommend the use of D/2 Biological Solution and soft scrub brushes. Pressure washers must NOT be used.</p> <p>3.17 Benches have recently been introduced into the cemetery. Benches would not have been present during the primary period of the cemetery's use and the granite used is out of character in terms of material, mass, and design. We recommend that no additional benches be introduced into the landscape.</p> <p>3.18 All decisions regarding the introduction of new elements or the removal of existing materials should be evaluated against universal accessibility needs, with improved accessibility as an identified goal.</p> <p>3.19 The flagpole at Eastern Cemetery is not historically appropriate and does not appear to have a constituency to maintain it. We recommend that it be removed.</p> <p>3.20 Both the City and Spirits Alive! should ensure that police investigate vandalism and work to secure an arrest. If an arrest is made, representatives of Spirits Alive! should be present in court, testify concerning the impact - and cost - of the damage, and ask for the maximum punishment possible. Consideration should be given to seeking civil court judgments against those accused of vandalism.</p>

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